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Assessing Student Leadership Competencies and Adequacy of Preparation in Seminary Training

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Walden University
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Abstract

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DMin, San Francisco Theological Seminary–GTU, 2006

MDiv, American Baptist Seminary of the West–GTU, 2001

BS, Hampton Institute, Hampton University, 1973

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

As more seminary student-practitioners seek non-pastoral leadership roles in faith-based and secular organizations, the complexities of the roles demand leadership competencies beyond traditional religious study. Limited research assessing leadership competencies in seminary contexts raises uncertainty about whether leadership preparation needs are addressed adequately in seminary. This quantitative study focused on whether or not student self-assessed adequacy of preparation is related to, affected by, or influenced by self-assessed leadership competencies, individually or in the aggregate. The theoretical foundation joined Evers, Rush, and Berdrow's learner-centered theory that urges student input on competency development needs and Boyatzis's leadership competency theory that frames a triadic model of competencies: knowledge, skills, and practices. Multiple regression evaluated relationships between these factors and class level as predictors of adequacy of preparation (the dependent variable). Respondents (n = 94) from a census in 8 graduate schools completed a web-based survey of pre-validated instruments: Bases of Competence (BOC), Administrative Competency Dimensions (ACD), and Leadership Practices Inventory (LPI-self). Regression analysis indicated that leadership practices was a significant predictor. Class level, knowledge, and skills did not predict preparation. Rather, score comparisons revealed that students differentiated knowledge and skill competencies to show student-rated gaps in preparation. This research may lead to positive social change by increasing student awareness of their own preparation needs using evaluation tools to enhance leadership role readiness while in seminary. In turn, prepared students in leader roles can effect positive social change in staff relations and productivity while working in a positive work climate.

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Dedication

To the fond memory of my parents, Rosie Scott Miles and James Stanley Miles, I thank you for instilling in me the passion for learning and the drive to achieve levels of higher education that you did not have the opportunity to pursue. This accomplishment is a tribute to your motto that education was not an option, but an expectation. To my siblings, especially youngest brother Wesley who introduced me to Walden and urged that we embark on the PhD journey together, thank you for the dare and most of all for the positive support. To Myrtis Cochran, my fellow church member, sister-friend, and UC librarian extraordinaire, I could not have done my research without you. Thank you for locating search resources that seemed impossible to find. To ABSW colleagues, personal friends, family, and to my beloved son and tech genius, Timothy Miles Tribble, I thank you for the love, prayers, encouragement, and especially patience when my writing had to take precedence. And last but not least, to my fellow "WWWs." Who knew that we would meet on life's journey as Walden University scholars to form an unofficial, but awesomely diverse cohort of four Oakland-East Bay females and declare ourselves to be: Wonderful Women of Walden! Thank you for opening your homes, the rotating dinners, research discussions, and fellowship. Most of all, thank you for not letting me quit. Friends for life.

Acknowledgments

This dissertation represents my passionate pursuit to understand what it takes to be an effective and inspirational leader. I am blessed with role models and mentors throughout my upbringing, schooling, and career. From each, I noted and tried to model leadership qualities that made these ordinary men and women quite extraordinary. I found they were unselfishly generous, authentic, and ethical in personal and professional interactions. Some were dedicated teachers or professors from whom I gained deep insights, an excitement to strive, and a commitment to pass-the-baton by helping others. My PhD journey would not have been possible without the extraordinary leadership of Dr. Branford McAllister, Walden mentor and dissertation committee chair who patiently guided and directed me for nearly eight years while I navigated personal challenges and breakthroughs. Thank you for your scholarship, your diligent precision, and endless patience to help me avoid grievous errors. I appreciate your ability to listen, your sense of humor, and most of all, your friendship. I will always be grateful and thankful to Dr. Teresa Lao for agreeing to serve on my committee and providing a sharp mastery of content, flow, and meaning in each review. These dedicated professors are leaders of the highest caliber. Finally, to my URR member, Dr. Howard Schecter and to all the unseen staff involved in the Walden University PhD program, I humbly extend my thanks.

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Chapter 1: Introduction to the Study

As increasing numbers of student-practitioners seek non-pastoral leadership roles in varied faith-based and secular organizational venues, the complexities of the new role expectations in those settings create an urgent demand for leadership acumen (ATS, 2011). Assessment of leadership competencies could reveal preparation challenges beyond the scope of traditional religious pedagogy and identify student needs while in seminary (Cohall & Cooper, 2010). Leadership competencies assessment is prevalent in business schools and enterprise to measure aptitude for leadership development, but is not commonly used to prepare seminary student-practitioners (Hillman, 2008). My study focus is student self-assessment of leadership competencies. Positive social change occurs when students' perspectives of own leadership competencies help identify training needs, promote learning, and ultimately benefit their work roles as capable leaders. A few theorists describe leadership competencies as (a) knowledge, (b) skills, and (c) practices. In this chapter, the problem, purpose, research questions, and nature of the study are presented with theoretical rationale for leadership competency assessment among student-practitioners at the Graduate Theological Union (GTU) in Berkeley California.

Background

Leadership has been studied extensively within the secular context of business enterprise related to effectiveness and productivity in organizational operations (Cho & Dansereau, 2010). An emphasis on leadership development to enhance role performance led to a significant body of research on leadership competencies in other organizational venues, such as clinical health (Chen & Baron, 2007), military (Hanna, Woolfolk, & Lord, 2009), and not-for-profit service sectors (Pinnington, 2011). Although leadership

competencies assessment has been widely accepted and utilized as a measure of proficiency expectations for effective leadership, the transferability of assessment in business enterprise to leadership preparation in other sectors such as faith-based graduate training is not as well understood (Pinnington, 2011). One reason is that the classic vocational preparation model for faith-based leadership roles traditionally centered on biblical studies and pastoral care in church ministry (Frank, 2006). Prior research emphasized pastoral and doctrinal rituals or individualized religious beliefs as the variables rather than generalizable measures of leadership proficiencies transportable to roles and venues (Francis & Pocock, 2007).

Self-assessment has been used as a training tool for leadership development in business and educational settings to strengthen leadership competencies. The results included increased confidence levels in one's capabilities, consistent with behavioral research on leadership efficacy (Hannah, Avolio, Luthans, & Harms, 2008). For example, responses of graduate business students to survey assessment of scaled competencies provided indicators of leadership potential through demonstrated aptitude and self-awareness of capabilities that were used to enhance learning (Berdrow & Evers, 2010). In contrast, faith-based researchers often surveyed practitioners post-graduation (Powell, 2009) and respondents noted retrospectively that their seminary training did not provide preparation for effective leadership practices (Carter, 2009). Recent post-graduation evaluation of seminary education conducted by Cohall and Cooper (2010) yielded results consistent with Carter (2009), Powell (2009), and Tilstra (2007) by affirming that training did not focus sufficiently on competency-based skills or practices to lead people and organizational processes effectively. A positive social change outcome of my research on

assessment of leadership competencies was to demonstrate increased student self-awareness and interest in opportunities to address preparation needs while in seminary.

Increasingly, seminary student-practitioners seek non-pastoral leadership roles in secular and traditional faith-based venues. As organizational paradigms shift, the role expectations for effective leadership create an urgency to prepare students beyond traditional religious study and develop leadership competencies while in seminary. In workplace research, Fry and Cohen (2009) connected spirituality to perceived well-being through an influential convergence of ethic values and behavioral practices. Johnson (2012) also found executive leaders' self-rated spirituality was influential on their ethical behavioral practices in the workplace. Spirituality in leadership parlance shares meaning within faith-based contexts as a relational ethics construct (Reave, 2005) exhibited in exemplary behavioral practices (Posner, 2010). However, to investigate a non-religion construct of faith-based leadership as proposed here, additional exploratory research is needed. The aim here is to assess exemplary practices as one of three variables of leadership competencies and relate to leadership preparation needs.

Seminary graduates are presumed capable by traditional pedagogy rubrics for leadership in vocational roles (Boyatzis, Brizz, & Godwin, 2011), yet feedback from individual students vary widely in their assessed range of strengths to uncertainty of leadership capabilities (Johns & Watson, 2006). Self-assessment while in training raises self-awareness of leadership potential and preparation opportunities to address learning needs (Berdrow & Evers, 2009). Therefore, this exploratory study addressed a gap in the body of research by examining self-reported variables of leadership competencies in the context of preparing seminary student-practitioners. The study explored a model for

leadership competencies using self-rated parameters of knowledge, skills, and practices. The study also provided a means to relate competencies to preparation needs while in seminary that might indicate learning gaps from a student perspective.

Statement of the Problem

The problem addressed by this study is that there is a lack of scholarly research and practical understanding in a faith-based context of student aptitude in leadership competencies. Student-practitioners in seminary are presumed capable for leadership roles; however, no consistent diagnostic is utilized to assess leadership aptitude or capabilities of seminarians. Without assessment of knowledge, skills, and practices as leadership competencies, it also is not known whether student-practitioners' leadership preparation needs are addressed adequately while in seminary. If students are unaware or uncertain of their leadership capabilities, they cannot proactively identify their strengths or learning needs in specific competencies as part of their seminary preparation.

The urgency of preparing leaders with effective leadership capability in pastoral and non-pastoral roles has social change implications as an important component of faith-based praxis (Frank, 2006). However, a baseline assessment of leadership competencies has not been measured consistently in a seminary preparation context to identify students' leadership aptitude (Cohall & Cooper, 2010). In the GTU context, a presumption of student-practitioner readiness for leadership roles upon completion of seminary (ATS, 2012) is not documentable without consistent diagnostic measures for students to self-assess leadership aptitude or capabilities relative to preparation needs while in seminary. It is not possible to know to what extent student-practitioners view themselves as prepared for leadership roles without a focused assessment conducted on knowledge,

skills, and practices as leadership competencies.

Purpose of the Study

The purpose of my research was to explore the influence of students' self-rated leadership competencies as the explanatory variables on their rated seminary preparation as the response variable. I investigated a triadic model of indices–knowledge, skills, and practices–and student aptitude as a composite of these variables. My cross-sectional research focused on student self-assessment of transferable leadership competencies for effective role performance in secular and faith-based contexts. Student aptitude in leadership competencies can be compared by class level to examine if there exists a predictable relationship to assessed adequacy of preparation while students still are enrolled in seminary training. The results from a dual-scaled psychometric tool used as the knowledge variable (Welch, 2003) also could indicate learning gaps in leadership role preparation when specific leadership competencies are compared by student-rated level of importance in relation to the adequacy of preparation.

In my search of Walden EBSCO, GTU-GRACE, and the University of California OSKICAT databases, I examined more than 300 studies but I found fewer than 100 conducted since 2000 with a workplace spirituality or faith-based leadership focus. Only 20 quantitative studies conducted since 2003 had peer-reviewed reporting of measurable indicators relating leadership to ministerial practices or role effectiveness. Self-report assessment has precedence in secular student learning preparation (Moore, Boyd, & Dooley, 2010). Notably, since 2008 ten or fewer studies with a faith-based context of leadership compared experiential effects of ministry internships (Hillman, 2006), mentorship (Johns & Watson, 2006), church practices (McKenna & Yost, 2007),

executive or administrative roles (e.g. Powell, 2009; Welch, 2003), pastoral engagement (Boyatzis et al., 2011), and effectiveness linked to satisfaction (Cohall & Cooper, 2010). Of those, only Hillman (2006, 2008) surveyed seminary students for self-rated practices as one measure of leadership competencies. The limited empirical research in a faith-based student context provided the impetus for further investigation through my research focus on leadership competency assessment.

Prior research suggested a diagnostic model for empirical assessment of competency-based leadership (Pless & Maak, 2011). My research purpose aligned with prior research conclusions that a diagnostic component of competencies assessment is an increased self-awareness to develop relevant values-driven practices (Posner, 2009) for leader development. For example, values-driven practices aligned with ethical and relational constructs identified in faith-based practices (Reave, 2005). Furthermore, use of competency scales for exploration of theoretical constructs of leadership competency theory provided capability indicators apart from religious or ideological overtones of specific faith traditions (Fry & Cohen, 2009).

Assessment results might not reveal gaps that warrant major pedagogical changes; however, Berdrow and Evers (2009) argued that an ongoing process of reflective examination is an important learning model to increase awareness and enhance leadership efficacy. For example, Hannah et al. (2009) showed that a self-construct process linking conscious aspects of self with leadership competencies served to promote self-efficacy in development of effective leadership skills (pp. 270-271). An investigation appeared to be timely to augment traditional models of seminary training preparation. My research contributed to greater understanding about leadership competencies as well as leadership

role preparation. Examining student-practitioner ratings of their leadership competencies with a modeled process of assessment revealed useful information that may positively impact faith-based approaches to leadership preparation.

Research Question

My study was guided by a central research question that reflected the exploratory aim to assess student-identified leadership competencies while in seminary: To what extent, if any, is adequacy of preparation related to, affected by, or influenced by student-rated leadership aptitude or competencies when compared individually, in the aggregate, and by class level? The research, therefore, pertained to student-rated leadership aptitude or competencies by the independent variables, knowledge, skills, and practices. I also compared if class level moderates what influence the three independent variables have on student-rated adequacy of preparation as the dependent variable.

Theoretical and Conceptual Framework for the Study

Precedent theoretical constructs guiding this research provided a conceptual framework of leadership competency theory in a triadic model of knowledge, skills, and practices. For example, Romano, Townsend, and Mamiseishvili (2009) and later Boyce, Zaccaro, and Wisecarver (2010), found that knowledge measured as importance in self-assessed leadership competencies reflected the respondents' reality of viewpoint on specific capabilities indicated at the time of the research. Hannah et al. (2008) associated skills and behavioral practices to efficacy-influenced perspectives of leadership training that have positive implications for associating student self-assessment of skills and practices to the adequacy of their training while in seminary. I approached my study design and research question with a psychometric framework of three assessment

instruments to explore what students indicate as leadership competencies and the extent of the relationship, if any, to identified needs for preparation while in seminary.

Leadership Competency Theory

Leadership competencies were treated as variables through a triadic model of knowledge, skills, and practices (Boyatzis, 2009). Müller and Turner (2010) posited that competencies embodied "a specific combination of knowledge, skills, and personal characteristics" (p. 438). Boyatzis (2009) also examined competencies models for cognitive capabilities demonstrated in behavioral practices and assessed for relational performance with others (p. 750). Boyatzis, and later Müller and Turner, validated constructs of emotional intelligence as a behavioral framework that viewed competencies as behavioral actions adaptable for effective outcomes. My survey instruments incorporated relational competencies as noted in these theoretical constructs.

A triadic model of knowledge, skills, and abilities presumed levels of capabilities for performance that were transferable among leadership roles and contexts (Hollenbeck, McCall, & Silzer, 2006). Hannah et al. (2009) and Dai, DeMeuse, and Peterson (2010) surmised that an advantage of competency modeling was its transferability to multiple leadership roles and venues. Bolden and Gosling (2006) cautioned against the singular focus on performance in competency models apart from the ethical and relational impact of behavioral practices because ethical values significantly influenced behavioral practices across sectors (Battliana, Gilmartin, Sengil, Pache, & Alexander, 2010). In essence, management and leadership functions revealed similar core competencies when compared in private, public, and non-profit sector organizations with varying situational emphasis in a specific setting as Pinnington's (2011) comparative findings confirmed.

Learner-Centered Theory

In learner-centered theory, the most effective leadership preparation occurred when students have active participant responsibility for self-directed input on their competency development needs (Evers, Rush, & Berdrow, 1998). Competency-based education and training preparation for corporate or business roles focused on business students' awareness to develop key skill competencies in cognitive and affective domains of performance (p. 45). Learner-centered leadership assessment occurred in a range of specializations in arts and social sciences, business, and engineering with a baseline of key skills aggregated as transferable competencies to multiple roles in the public, non-profit, and educational sectors (Berdrow & Evers, 2009).

According to Berdrow and Evers (2010), use of competency-based assessment as a learner-centered approach is integral to self-directed learning since changed conception of leadership competencies precedes changed leadership practices. As detailed in the literature review, learner-centered approaches to leadership skills development were used in educational research to emphasize: (a) self-awareness of competencies, (b) experiential learning to develop skills, and (c) self-reflection and efficacy aligned within a learner-centered framework (p. 8).

Nature of the Study

The nature of the study was quantitative survey research designed to gather cross-sectional data on student-practitioners' aptitude of leadership competencies. Use of three pre-validated psychometric instruments provided data to operationalize knowledge, skills, and practice variables of leadership competency as a triadic assessment model (Boyatzis, 2009). An enrolled census of masters level student-practitioners comprised of first-year,

mid-range, and seniors were recruited from eight GTU-affiliate schools in Berkeley, California. At the GTU schools' request for anonymity, collected data were analyzed as a composite rather than comparisons between schools. The criteria for recruitment were enrollment of male and female students for vocational preparation and access to leadership roles.

Respondents used a web-based survey engine at http://www.surveygizmo.com. Web access codes distinguished the responses by school to enable a summary report to each school. Paper copies of the survey were not provided. Profile questions inquired about the student-practitioner's seminary affiliation, class level, and gender. Independent variables were compared by class level to determine if there were differences in student-rated mean values. Other profile data were collected for future research, as suggested by Hillman's (2008) subsequent analysis of profile characteristics after an initial study.

Analysis of survey data examined relational effects using multiple regression to compare calculated means and standard deviations of Likert-type scale scores. The analysis was intended to explore competencies as independent variables for overall assessed aptitude including the relationships between ranked importance of competency factors when compared to adequacy of preparation as the dependent variable. Multiple linear regression analysis evaluates the influence, if any, that the independent variables have on the dependent variable.

Definitions

The following operational definitions were measurable in my research:

Adequacy of preparation. A dependent variable measured on a separate scale of the Administrative Competency Dimensions (Welch, 2003) to indicate students' self-rated

learning or training in specified leadership competencies while in seminary. A mean score to rate leadership competency development in current seminary context (Earley & Evans, 2004; see also Francis & Cowan, 2008).

Aptitude. Cognitive meaning-making ability (Raven, 2009) that contextualizes and integrates proficiencies assessed as leadership capabilities (Magno, 2010), as a composite independent variable of the student self-assessed competencies.

Class level. A category of student seminary tenure at the Graduate Theological Union (GTU) based upon completed course units. For my analysis, class level is a dummy variable to compare student scores when grouped by class level and to examine for influences on preparation as the dependent variable.

Knowledge. Cognitive capacity to recognize demonstrated proficiencies measured by the ACD scale (Welch, 2003) as a variable of the triadic model. Knowledge also signifies awareness of the importance to possess a level of mastery in transferable leadership competencies (Nale, Rauch, Wathon, & Barr, 2000) or a level of necessity for proficiency and employability in leader roles (Robinson & Garton, 2008; Romano et al., 2009).

Leadership competencies. Knowledge (Welch, 2003), skills (Berdrow & Evers, 2009), and practices (Posner, 2009) are operating variables measured for analysis of mean scores to indicate capabilities for effective situational leadership performance (Boyatzis, 2009).

Learning gap. A differential or discrepancy that Robinson and Garton (2008) determined by (a) calculating student aptitude mean scores of selected leadership competencies for relationship between competencies and (b) rated importance of competency factors compared to (c) the mean score rating adequacy of preparation for each competency factor (see also Welch, 2003).

Practices. Relational interactions evidenced as frequency patterns of behavioral decisions and measured by the Leadership Practices Inventory (LPI-self) instrument (Kouzes & Posner, 2007) as a variable of the triadic model.

Skills. Proficiencies demonstrating present capabilities and measured by the Bases of Competence (BOC) scale (Berdrow & Evers, 2010) as a variable of the triadic model.

Assumptions

The research was predicated on three assumptions: (a) A framework of leadership competencies self-assessed by student-practitioners is integral to learner-centered development that prepares students as leaders while in graduate seminary training. (b) As a tool, leadership competency assessment is useful to prepare for effective leadership roles whether in ecclesial organizations such as churches or in other organizational leadership venues. (c) Three secularly developed psychometric scales measure variables of knowledge, skills, and practices that are applicable to faith-based and secular leadership role preparation given prior research contexts in business, education, health, non-profit, and faith-based settings.

Scope and Delimitations

My study utilized a graduate-level student census population from eight seminaries affiliated with the GTU that enrolls males and females. The census was based on confirmation of total enrollment obtainable from consenting GTU schools. When the study commenced, the census estimate initially obtainable from the GTU web-site exceeded 500 students. The study focus did not primarily or exclusively pertain to pastoral leadership roles in church ministry; rather, scaled measures address leadership competencies pertinent to multiple roles and organizational venues. My study was

designed to examine if relationships might exist between students' self-assessed aptitude of leadership competencies, and the importance of the assessed competencies related to adequacy of preparation in seminary for leadership roles.

My study was not longitudinal, and assessment was not tied to specific courses, training modes, or organizational venues. In a future study, exploration of the extent that perceptions of students relate to or differ from faculty on preparation adequacy in existing courses or training may offer insights for vocational impact over a period; such comparative exploration of student-faculty perceptions also was beyond the purview of my research. This exploratory study examined a cross-section of students by class level for initial findings to compare assessment during each class level of seminary preparation. Results might be generalizable to measure student capabilities in other seminary settings for leadership potential upon graduation.

Limitations

Limitations of the study were as follows: First, the cross-sectional design of a survey is used to capture a singular view rather than replicating causal effects. Survey responses are self-assessments of leadership competencies that might produce a level of self-report bias since respondents tend to overstate capabilities and practices (Fowler, 2008). However, the self-report method is commonly used to gather perspectives for leadership development in the workplace (Fry et al., 2010), or as a learning assessment tool to consider training preparation (Hillman, 2008). Therefore, methods of weighted analysis were effective to adjust for higher ratings (Nale et al., 2000; Robinson & Garton, 2008). Self-rated aptitude of leadership competency variables is important for the context of the research and demonstrates leadership efficacy. However, measuring individual

efficacy as a theoretical construct was not the primary aim of this research.

Second, neither faculty ratings of students nor faculty impressions of student-practitioners' competency ratings were part of my study. Faculty assessment of curriculum was not a primary focus of this research study. It was not known to what extent student-assessed adequacy of preparation in existing seminary coursework might differ from faculty perceptions. Third, curriculum evaluation was not a proposed outcome of my study. Specific curricular approaches to pedagogical training for leadership preparation at each institutional context were beyond the focus of the research since there was no intent to assess specific courses, pedagogical styles, or teaching methods of faculty. Rather, it was hoped that assessment data from an exploratory study of student leadership potential would serve as a starting point for future institutional review of pedagogical assessment processes. Increased student-practitioner awareness of leadership competencies and the importance to preparation may raise expectations for greater institutional exploration to focus on leadership proficiencies in seminary pedagogical training process.

Significance of the Study

Results from my research contributes to a limited body of knowledge on leadership competencies in a faith-based context of graduate-level seminary training preparation. The research was intended to assess leadership training preparation to supplement other important vocational components such as biblical and pastoral preparation; however, survey scales were used empirically to measure knowledge, skills, and behavioral practices in relational leadership capabilities apart from religious doctrine and beliefs. As a regular practice, leadership competency models are used in secular

college or graduate student assessments for learner-centered leadership development in varied medical, nursing, business, and teacher training preparation. In the faith-based context, examination is warranted to determine if findings are sufficiently linked to enable student-practitioners and assigned faculty advisors to address proactively any learning needs for strengthening leadership competencies while in seminary. Focus on specific competency areas also are warranted for conceptual learning and training that provide a means for student-practitioners to discover if leadership gaps exist.

A potential for social change occurs if learning needs could be addressed rather than wait until vocational placement after graduation to discover proficiency gaps. Gaps can signify discrepancies in areas of importance versus preparation (Nale et al., 2000). Assessed links between competencies particularly knowledge measured by importance indicators provide a relational comparison to the adequacy of preparation for leadership roles. Comparisons of three assessment tools for association between variables provided significant insights that urge future use of a combined or tailored assessment tool for data collection and an ongoing process to measure student leadership competencies. Assessing competencies invites comparisons in specific skill areas that are transferable to multiple situational leadership roles (Hollenbeck et al., 2006).

With compiled data, institutions could evaluate student responses to understand student competencies and address needs-relevant leadership training. For example, the results may contribute to a body of knowledge to demonstrate how on-going assessment could provide a composite view enabling learning institutions to (a) examine to what extent student-practitioners rate their competencies by aptitude levels in knowledge, skill, and behavioral practices; (b) determine if relationships exist between competencies and

adequacy of preparation that might constitute potential learning gaps; and (c) examine if learning gaps might signal the need for focus on leadership competencies to increase capabilities in graduate seminary training. Graduate seminary training is uniquely positioned as a professional and vocational source of direct placement into leader positions, but to date, specific leader self-assessment and preparation has been limited. My research in graduate-level education was pertinent to my workplace context as a former business professional, student advisor and adjunct since 2003, and presently a professor at one of the seminaries comprising the Graduate Theological Union (GTU) in Berkeley, California.

As an ordained clergywoman and 2001 graduate of a GTU school, I am familiar with the graduate-level seminary environment where curricular focus on leadership development is varied, but limited. The 2010-2011 schedule had 17 courses identified with leadership in the title or description of more than 500 published offerings. A dearth of offerings is consistent with Tilstra's (2007) research comparing leadership focus in the United States from a sample of graduate institutions accredited by the Association of Theological Schools (ATS). Without a leadership development process, there is a greater risk of student-practitioners acquiring or functioning in organizational leader roles for which they are ill-prepared with negative effect on organizational communities. The accrediting report of the Association of Theological Schools (2009) stated that pastoral openings are declining, thereby requiring increased numbers of seminarians to seek roles in other vocational venues beyond traditional church pastoral roles (ATS, 2012).

A review of the literature revealed limited usage of a multipronged assessment instrument to measure knowledge, skills, and behavioral practices in a faith-based

context. In prior research, benefits in secular learning preparation were shown to increase student self-awareness of leadership competencies (Berdrow & Evers, 2009). Therefore, this research explored self-assessment with parametric tools for data collection that could significantly contribute to determining the adequacy of preparation and identify training gaps. Leadership competencies integrated with ethical values-based behavior of fairness, integrity, and service offer measures for effective or exemplary leadership in faith-based or secular contexts (Posner, 2010).

Preparing leaders has significant social change implications: First, student-practitioners could take an active part in their leadership self-assessment with input on gaps to address and improve leadership competencies. Students and faculty could enhance best practices in pedagogical preparation for leadership roles with an engaged learner-centered approach that is documented as a successful model in other fields of graduate-level education (Francis & Cowan, 2008).

Second, multifaceted focus on leader competencies could impact the extent students feel prepared to lead in roles beyond traditional church pastorates or in varied work contexts that require increasingly complex leader role expectations to guide social transformation. Learning needs for effective leadership require integrated theory and skills development. In turn, individuals, organizations, and the broader community benefit from a caliber of effective leaders prepared to guide positive social change.

Summary

The current chapter summarized integral components of my research to provide a documented rationale for the research focus on assessing leadership competencies of seminary student-practitioners. Leadership competencies constitute a model of core

performance factors that are transportable and relevant to varied organizational leadership roles. Capabilities include conceptual leadership principles (knowledge), proficiencies in leading and managing tasks (skills), and constitute the interactions or relational behavior with others (practices) that tend to result in effective outcomes (Battilana et al., 2010). In Chapter 2, a literature review of theoretical foundations of leadership competencies examined classic and recent data. Use of competency assessment in leadership development and pedagogical training preparation was compared and contrasted for adaptability to a faith-based seminary educational context. This introduction to the study and the research review in Chapter 2 provided a basis for the research methodology, data collection, and statistical analysis in Chapter 3.

Chapter 2: Literature Review

Introduction

Contextual use of leadership competencies in assessment models is a central focus of this literature review and my study. The literature review served as a theoretical overview and precursor to my research by providing a framework for the problem, the purpose of the study, the research questions, and a rationale for the selected research method. The research problem, in the context of seminary training, is a dearth of data on graduate-level students' self-assessment of core leadership competencies for secular or faith-based roles. It is not clear from prior research whether leadership preparation needs are addressed adequately while in seminary. My study explored relationships of preparation evaluation by students in light of their self-assessed leadership competencies. The interdisciplinary nature of my research prompted review of foundational leadership competency theory in multiple organizational sectors to inform my study.

The review of the literature has four sections: (a) the theoretical foundation of leadership competencies in leadership theory; (b) rationale for leadership competencies in traditional faith-based paradigms; (c) assessing leadership competencies in learner preparation; and (d) theoretical basis for research method and analysis. In sections one and two, I compare and contrast theoretical concepts of leadership competencies in multiple leadership and management roles. My review of competency variables provided shared values language and behavior adaptable to leadership preparation in a faith-based learning environment. In section three, I examine precedent research to identify core leadership competencies for relationships to training preparation in business, education, psychology, and healthcare sectors. In section four, a theoretical construct of a triadic

model for leadership competencies research is presented for relevance to the proposed methodology. Competencies models pertinent to examine for student assessment indicators and the analytical method are detailed in Chapter 3.

Literature Search Strategy

An exhaustive search of academic peer-reviewed journals was conducted for the latest research since 2000 with a focus period from 2006-2014. I used the multidatabase Thoreau and Google-linked search engines of Walden University's online library, the University of California Berkeley library system, and the GRACE search engine of the Graduate Theological Union library. I utilized keywords such as *leadership capability*, *effective leadership*, *competencies*, *training*, *learning*, *workplace spirituality*, *adequacy of preparation*, and *assessment* to access primarily ESBCO Academic Source Complete, Business Source Complete, SocIndex, and Education Research Complete. I examined literature on leadership competencies in enterprise, education, and faith-based sectors that offered practical applications to leadership development and training preparation with pertinent concepts to assess leadership competencies in a faith-based setting. My review of classic theory and studies in educational contexts across sectors provided a broadened range of perspectives relevant for research on leadership competencies of student-practitioners in a graduate theological seminary setting.

Theoretical Foundation

Role of Leadership Competencies in Leadership Theory

Babcock-Roberson and Strickland (2010) defined leadership from a systems perspective as "a process of social influence, in which one or more persons affect one or more followers by clarifying what needs to done, and providing the tools and motivation

to accomplish set goals" (p. 314). Many other definitions of leadership exist. For example, leadership has been defined as a positional role of directing and enabling followers (Hanna et al., 2009); as an identifiable set of skills and best practices for interrelational influence (Kouzes & Posner, 2007); and as the capacity to coordinate, communicate, and integrate teams effectively for positive outcomes (Pinnington, 2011). Together these views suggested that leadership is a relational engagement that demonstrated effectiveness through a range of core competencies.

Early leadership trait theory focused on trait characteristics with innate links to behavioral performance that Fry (2003) reported later proponents of cognitive theory disputed. For example, Müller and Turner (2010) studied evolving theoretical approaches to leadership in the business sector that contributed to an expanding body of research as schools of thought that challenged traits as a premise of capabilities. Research in the behavioral school emphasized leadership acumen as learned skills or practices, whereas research in the contingency school emphasized leadership characteristics with situational adaptability to external dynamics (p. 438). The focus of visionary and charismatic schools of the 1980s centered upon transformational and transactional leadership analysis of interpersonal behavioral styles to guide change (Bass, 1985, 1997).

The emotional intelligence school emphasized research of psychological processing for reflective and relational decision-making (Boyatzis, 1982). For analysis, researchers designed psychometric assessment instruments, such as the Multifactor Leadership Questionnaire (MLQ) to measure a full-range of leadership indicators and behavioral styles (Avolio & Bass, 1995). Harms (2010) assessed emotional intelligence factors for relationships to effective leadership while Posner and Kouzes (1993)

measured frequency of behavioral practices in relational interactions. In the latter example, the Leadership Practices Inventory (LPI) operationalized competencies in Kouzes and Posner's (2002) exemplary leadership model as best practices to motivate others toward positive outcomes.

According to Müller and Turner (2010), the competence school of thought gained prominence in the late 20th century by integrating prior theoretical schools of leadership research into competencies models to examine leadership skills and practices. Leadership competencies models frame specific capabilities as indicators of performance based on cognitive knowledge, skills, and abilities evidenced through practices. In recent research, practical applications for leadership competencies assessment were devised as learning tools for development and training. A review of studies rooted in the competence school indicate that leadership competencies models are widely accepted for research assessment of capabilities related to role awareness, engagement, and preparation to perform across leadership venues. In theory and practice, researchers usually aligned with one of three major theoretical streams representing composites of prior leadership schools of thought.

Each theoretical stream was reviewed–(a) the triadic competencies model, (b) the performance model, and (c) the emotional intelligence model. One or more streams might be evident in the research design of management and leadership studies. A triadic competencies model had operable variables useful for my research.

Triadic Competencies Model

The first theoretical stream examined in the literature was a triadic model with knowledge, skills, and personal behavioral patterns as components associated with relational conduct and optimal performance (Müller & Turner, 2010). Ansari and

Khadher (2011) examined leadership competencies to construct indicators for a "common language" (p. 239) of aptitude, skills, and practices foundational for successful outcomes. In each study, respondents indicated competencies importance by parameters of actions, practices, or behaviors required to achieve end-results. Pinnington (2011) compared and found similar core leadership competencies in private, public, and non-profit sectors despite distinctive outcome expectations. For example, in private versus public sectors, the emphasis on specific proficiencies were based on operative organizational aims and stakeholder expectations. In the private sector, profitability was a priority with focus on performance competencies for productivity outcomes. In contrast, public sector emphasis on accountability for social responsibility prioritized values-based performance and relational competencies for public good outcomes (p. 350). In each context, Pinnington noted a triadic model of core competencies that were transportable and adaptable to roles.

In other research, Hanna et al. (2008) utilized a triadic model to examine leadership competencies for relationships with mental self-structures in leadership self-efficacy. From results, a central component in competency performance was an individual's "level of confidence in the knowledge, skills, and abilities of leading others" (p. 669). Similarly, Berdrow and Evers (2010) identified core leadership skills as base competencies in an educational training context (pp. 3-4). Assessment of leadership aptitude was urged as a training tool because self-assessment was associated with developmental learning to increase cognitive awareness of personal leadership competencies (Berdrow & Evers, 2009). From each of these examples in the triadic stream, core leadership competencies were measured by operative factors of knowledge, skill, and practices as capabilities adaptable to multiple contexts.

Performance Model of Characteristics and Attributes

A second theoretical stream emphasized performance models evident in a composite of attributes or styles exemplified by an acronym KSAO–"knowledge, skills, abilities and other characteristics" (Dai et al., 2010). Competencies were defined as a cluster of attributes and qualities for successful performance rather than interactions. Theoretical constructs of competency modeling gained acceptance in performance-focused contexts oriented to organizational productivity. In longitudinal research of performance development and improvement, Dai et al. utilized a multi-source feedback tool of 67 productivity measures for competency modeling in organizations (pp. 202-204). The results confirmed that leadership competencies were learned and adaptable to varied work venues and organization levels (p. 200).

Takeuchi, Chen, and Lepak (2009) focused on high-performance work settings to examine the relationship of practices and attitudes to performance instead of a prescribed model of competencies. Since Takeuchi et al. examined establishment-level outcomes, an alternate model of individual competency parameters was not provided; rather, analysis of climate satisfaction and performance was associated with effective leadership to motivate others (pp. 22-23). The studies of Dai et al. (2010) and Takeuchi et al., independently typified an emphasis in this stream on performance for effective outcomes. However, associating outcomes prompted arguments to redefine measures and reduce overemphasis on functional performance proficiency by acknowledging emotive relational dynamics of behavioral competencies.

Emotional Intelligence Model

In the third theoretical stream, situational and interpersonal needs in social and

work settings were examined (Boyatzis, 2009, pp. 750-752; see also Boyatzis, 1982). A focus on leader-centered qualities by emotional intelligence descriptors included ethical processing to account for beliefs, attitudes, and emotional involvement. Also termed emotional leadership competencies in the literature, the emotional intelligence model was described by researchers collectively as: ability to recognize and mediate one's mental performance (Boyatzis, 2009); awareness of innate qualities that foster and enable well-being in others (Harms, 2010); characteristic emotional competencies underpinning relational behavior (Clarke, 2010); and emotional leadership competencies to intuitively influence or motivate with conscientiousness and sensitivity (Müller & Turner, 2010).

Early research centered on psychoanalytical approaches to emotional intelligence that linked interpersonal relationships to behavioral practices; leadership competencies were conceptualized as elements of influence that demonstrated actions and effectiveness (Boyatzis, 2008, pp. 752-753). Theoretical concepts of self-management in the Boyatzis research results were supported by other findings in the emotional intelligence stream to affirm that leadership competencies reflecting beliefs and values in behavioral practices also impacted organizational culture (p. 754). Research also emphasized reflective processes of empathy and attentiveness to engage people strategically in interpersonal relations; therefore, proficiency as technical criteria for performance was not the sole indicator of effective leadership capability or positive outcomes (Dreyfus, 2008, p. 76).

Separate studies on emotional intelligence by Harms (2010) and Clarke (2010) associated impact with critical thinking, interpersonal communication, leadership influence on strategic positioning, and team-oriented motivation that are essential to lead managerial implementation cohesively with followers and co-workers as active, not

passive agents. Emotional intelligence factors in leadership competencies were studied in varied contexts to analyze the relationship of values, behavior, and cognitive performance across sectors. For example, Clarke found that emotional intelligence parameters of project managers included awareness, self-confidence, and transparency considered to be character underpinnings of leadership competencies. Although empirical attempts to assess interpersonal development had mixed results, identified values, beliefs, sense of calling, or mission were manifested in decisions and behavioral practices (p. 6).

However, Harms' (2010) meta-analytical research results raised caution about the lack of a universally accepted measure of emotional intelligence for consistency in a scaled instrument to avoid reliance on simplified personality parameters (p. 7). The psychometric properties of independent emotional intelligence scales showed mixed results in empirical research when researchers attempted to link emotional intelligence behaviors as a sole competency predictor of effective transformational leadership (p. 12). Although Clarke (2010) found slightly stronger relationship of emotional intelligence to scaled interpersonal parameters for transformational leadership, Harms (2010) raised a similar caution on the low reliability coefficient for the prevalent emotional intelligence scale (pp. 15-16).

Harms (2010) also found stronger correlation to self-report leadership scales than to third-party observational assessment, affirming that emotional intelligence behaviors were highly individualized assessment of psychological connectivity. For example, when comparing self-report and third party 360-assessments, the use of independent emotional intelligence scales to assess 360 relational influence on transformational characteristics produced much weaker correlations (pp. 13-14). Harms and Clarke (2010) independently

utilized the MLQ instrument to compare interpersonal leadership characteristics. Notably, emotional intelligence was not adequately correlated as a differentiating factor in the MLQ scaled items; Clarke posited that correlational issues with MLQ transformational scales were due to the emphasis on leader qualities to effect change (p. 17).

Leadership competencies offer potentially important indicators for the faith-based context of my research. The three theoretical streams intersected in the area of behavioral practices. Increased research emphasis in recent years has aligned ethical values with leadership competencies. A practical ramification of the Clarke and the Harms' studies is the need to consider the three leadership competency streams for applicable options from each to assess values-based behavioral practices. From the literature, one feasible approach might be to incorporate emotional intelligence variables as ethical parameters of leadership competencies in a triadic model.

Other indicators of self-awareness and actions reflecting values-based behavior might be more saliently examined and assessed using an exemplary practices model such as Kouzes and Posner's LPI (Posner, 2010) with scales that integrate ethics and relational behavior (Reave, 2005). Although the streams of leadership competencies theory were not specifically faith-based in contextual emphasis, adaptable concepts and strategies in leadership competency theory provided a shared language to align competencies assessment models with ethical leadership values for a faith-based context (Fry, 2003).

Challenges to the Competencies Paradigm

Recent leadership studies used theoretical models of leadership competencies to assess capabilities, effectiveness, and performance outcomes; however, a critique of leadership competency theory and models also offered perspectives to challenge

competencies approaches as a panacea. Bolden and Gosling (2006), and later Carroll, Levy, and Richmond (2008), critiqued the paradigmatic scope of competency measures and misuse as universal indicators. One contention was that applied competencies approaches oversimplified the developmental preparation and selection of leaders to a few indices without regard for other complex frameworks in the leadership process (Bolden & Gosling, 2006). The restriction to quantifiable performance reporting overshadowed other dimensions in ethical and relational processes that were found to foster collectivism (p. 148).

Specific to the paradigmatic model of leadership competencies, Carroll et al. (2008) critiqued purely performance-oriented constructs of leadership competencies that neglected an orientation to moral and ethical parameters, as well as relational aspects of behavioral practices for consistent actions. Qualitative interviews of 65 management-level leaders from multiple sectors revealed awareness of emotional and situational factors in the social and organizational climates to develop arguments against universalizing leadership competencies measures (p. 367). A point of analysis distinguished leadership within a deepened sense-making process of interrelational practices that accompanied engagement of knowledge and skills (pp. 368-369). From the findings, Carroll et al. substantiated Bolden and Gosling's (2006) conclusions that reliance on a competency paradigm risked limiting leader assessment to proficiency measurements. In contrast, ability to reflect on experiential leadership practices invited intuitive study (Carroll et al., 2008, p. 369).

Other critics raised cogent arguments against competencies assessment as the sole generic measure of leadership capability (Hollenbeck et al., 2006). In the private business

sector, Hollenbeck et al. (2006) debated the overreliance on leadership competencies models as a panacea for effective performance measurement. On one hand, critics argued against a single set of characteristics defining effective leaders, and for person-centered and situational variables as fundamental indicators of knowledge, skills, and practices in a range of effective leadership roles or positions (p. 399). In the same debate, proponents detailed the assessment benefits of a triadic competency model of knowledge, skills, and abilities acknowledged for its usefulness as a guide and self-developmental learning tool for leadership capabilities (pp. 401-402). Large-scale research assessment might not feasibly or cost-effectively be accomplished solely by reflective interview processes; however, competency assessment is one option for developmental training at multi-branch companies or a multi-affiliated graduate theological institution, as in my research context. The aim of Bolden and Gosling (2006) was to urge "discursive use of competencies as a language for organizational leadership" (p. 154) that conveyed organizational leadership ideals.

Competency assessment proposed as an educational tool could effectively center a learning process for students and advisors to reflect and tailor subsequent training needs identified from the assessment results (Evers et al., 1998). Leadership competencies assessment, whether in educational or workplace settings, provided an empirical frame as a starting point for periodic developmental evaluation (Berdrow & Evers, 2009). I examined similar rationale for developmental assessment in a faith-based context.

Rationale for Leadership Competencies in Faith-Based Paradigm

From the literature, a shared language of ethics was studied in values based leadership models and workplace spirituality. Several studies reported on ethics and

practices as ethical dimensions of leadership competencies that could bridge to a faith-based educational environment. The term "bridge" has rhetorical use here to connect a shared ethical language to values-based behavior in leadership competencies for secular or faith-based leadership roles.

As in secular research environments, linking ethical best practices that contribute to leadership effectiveness in varied roles and work settings would be particularly useful for leadership competencies assessment of student-practitioners in a faith-based education context for leadership role preparation. For example, competency assessment provided measurable capabilities of performance tendencies, opportunity to reflect upon self (Smith & Wolverton, 2010), and demonstrated leadership efficacy in a situational context of experiences (Hannah et al., 2009). Persons with high self-efficacy demonstrated better performance of leadership competencies with a positive impact on others; therefore, leadership efficacy was identified as: "A specific form of efficacy associated with the level of confidence in the knowledge, skills, and abilities associated with leading others" (Hannah et al., 2008, p. 669).

Self-efficacy as a belief or self-confidence in success also correlated to manifested characteristics of hope, resilience, and optimism (Gooty, Gavin, Johnson, Frazier, & Snow, 2009, p. 354). Therefore, ethics in relational practices is pertinent for leadership competency assessment in a faith-based training context. An ethical bridge of competencies to leadership effectiveness in values-based models will be discussed first, followed by a review of competencies in workplace spirituality as an ethical bridge to faith-based contexts.

Bridging Leader Ethics in Competencies to Effectiveness in Values-Based Models

Beyond positional leadership, effective leadership was defined in the literature as an ability to engage in a social meaning making process that utilized task oriented and group oriented interactions to address situational needs and achieve outcomes (Avolio & Bass, 1995). Leadership competencies research showed positive correlations of effective leadership parameters and theoretical commonalities in ethical behavior. Ethics in leadership involved behavioral standards of moral management (Reed, Vidaver-Cohen, & Colwell, 2011). For example, Webb (2009) assessed 315 administrators of faith-based colleges and universities, and identified motivational and relational factors in leadership competencies that inspired others while increasing trust and confidence in the leaders.

Similarly, student self-identity and aptitude for leadership roles could be strengthened with competencies assessment. Dreyfus (2008) reported interpersonal ethics in leadership competencies were more likely to predict the effectiveness of managers in the work setting. Harris and Kuhnert (2008) also found a direct correlation of assessed proficiency levels of competencies to leadership effectiveness perceptions of others. Exemplary leaders possessed competencies to engage others effectively in constructive relational interactions that strategically optimized a climate for positive social change (Phipps & Burbach, 2010, pp. 141-142).

In general, association of values-based leadership competencies and effectiveness could be categorized into two segments of research: (a) focus on relational capabilities and (b) focus on transformational change capabilities. In one segment, leadership competencies were examined to measure relationships of analytical, behavioral and communication capabilities to leadership effectiveness (Smith & Wolverton, 2010). In

numerous studies, leadership competencies and effectiveness were associated with values behavior; for example, Cangemi, Lazarus, McQuade et al. (2011) showed that exhibited values behavior was essential to effective leadership especially to navigate worker attitude and organizational climate through challenging situations. According to Weaver, Rosen, Salas et al. (2010), a competency-based approach for training offered language to describe attitudes, behaviors, and cognition associated with effectiveness; under the rubric of attitudes were factors such as mutual trust and efficacy.

Effectiveness variables were measured in several studies by indicators of values based behavior to influence of ethical practices (Michel, Lyons, & Cho, 2010); fairness in justice climates (Cho & Dansereau, 2010); and trustworthiness as a mediator of ethical stewardship (Caldwell, Hayes, & Long, 2010). In these studies, competencies linked with effectiveness and associated with ethical approaches in mentoring, reflection, enabling, and accountability to stakeholders. Generational differences were found to be statistically insignificant in 16 competencies examined as leadership practices; among three age groups of boomers, gen x, and millennials (Gentry, Griggs, Deal, Mondore, & Cox, 2011). Similar gaps between the identified importance of the competency and rated skill levels indicated shared concerns for effectiveness in leadership capabilities (p. 45).

In the second segment of research, leadership competencies were associated with effectiveness to lead transformational change (Michaelis, Stegmaier, & Sonntag, 2010) and to foster an innovative climate of creativity (Gumusluoglu & Ilsev, 2009). Relational attitudes and values in behavior were linked to levels of effectiveness at implementing change (Battilana et al., 2010). In an empirical assessment of managerial leaders, distinction was made between style characteristics and leadership competencies to

examine practices categorized as either task-oriented or person-oriented behaviors; results aligned key competencies required for both types of leadership orientation, such as the ability to communicate, mobilize, and evaluate (pp. 426-427). Leaders with task-oriented mobilization skills were found most effective at implementing change; however, leaders with person-oriented communication skills effectively motivated people to prepare for change (p. 433). To examine competencies for change initiatives, Gilley, McMillan, and Gilley (2009) surveyed 470 masters and doctoral level students to ascertain effective change skills and behaviors in varied work environments; results showed high correlation of interpersonal values to interrelational needs and effectiveness (pp. 41-42). Some correlations of leadership competencies to effectiveness were found when examining capabilities to sustain positive change climates (Gilly et al., 2009) and to achieve collective follower outcomes (Deng & Gibson, 2009).

Investigation of leader competencies for organizational change effectiveness extended from earlier theoretical research on functional characteristics or styles of leadership as transactional or transformational. For Bass (1997), a structural focus of transactional leadership models was distinguished from a relational motivating influence modeled in transformational leadership (p. 134). Psychometric tools such as the MLQ assessed leadership typology, yet did not categorize items as competencies; rather, characteristic behavioral functions were tied to leadership styles for organizational change (p. 135). Increased examination of values behavior in recent research has focused on relational effectiveness to foster innovative climates for change; as a result, examining leadership competencies to guide adaptive and proactive change is now common in transformational leadership models (Griffin, Parker, & Mason, 2010).

Core competencies for effective leadership were identified in Pinnington's (2011) transnational studies, yet findings revealed some nuanced and meaningful distinctions in values; characteristic leadership models required certain competencies more than others. For example, in charismatic and transformational leadership, the leader was the center of visionary influence and "followers identify with their leaders" (p. 339); however, a values-based approach exemplified by an authentic leadership model shifted to followers' self-awareness, as supportively influenced by the leader. Similarly, Bunch (2012) compared leadership competencies in for-profit and non-profit sectors. Results showed certain competency priorities were shared and distinct to non-profit and profit contexts with shared emphasis on authenticity; integrity and trust were combined into a high priority competency for profit and non-profit sectors (pp. 99-100).

Comparison of leadership models below focuses on values-based behavior by higher-order theoretical constructs in which ethics figured prominently:

- Transformational leadership. A relational ability exemplified in positive interactions to motivate others with a vision to build a sense of shared identity (Sarros, Cooper, & Santora, 2008), and to guide a strategic process for improved outcomes (Avolio & Bass, 1995); and to positively address wellbeing and justice needs (Riggio, Zu, Reina, & Maroosis, 2010).
- Servant leadership. As architect of a servant leadership model in organizational contexts, Greenleaf (1977, 2002) posited that praxis of effective leadership shifted theoretical approaches toward a relational concern for others embodied in moral and ethical interaction. Leader exhibited behavior was grounded in an ethic of integrity, trust, respect (Senjaya, Sarros, & Santora, 2008). Genuine caring for

others has highest priority (Reed et al., 2011); role modeling fosters loyalty and cooperation between leader and followers (Savage-Austin & Honeycutt, 2011).

- Authentic leadership. A sense of duty, integrity, and transparency by example to genuinely develop an open climate of creativity, communication, and motivation for productivity (Pinnington, 2011). Moral virtues exhibited in leadership behavior linked to dimensions of authenticity (Riggio et al., 2010).
- Exemplary leadership. Relational leadership behavior exhibits a composite of the values-based leadership models above to synthesize best practices; includes honesty and credibility, measurable in psychometric assessment tools such as the LPI (Kouzes & Posner, 2002; see also 2007).
- Spiritual Leadership. Leader's behavioral values and example fosters a genuine sense of higher calling (Pawar, 2009); genuine concern and commitment to positive social change (Pinnington, 2011); and the importance of belonging and learning that appeals to followers' beliefs and transcendent sense of purpose as a motivating life and work ethic (Fry, Matherly, & Ouimet, 2010).

In the leadership models above, behavioral values may overlap; identification with a certain behavioral model depends on the leader's individualized reflection and organizational factors beyond the purview of this literature review. What was pertinent to this discussion was that a language of ethics bridged the models as exemplars of effective leadership in which relational competencies were linked in precedent research.

Pinnington (2011) and Fry et al. (2010) paralleled in separate assertions that behavioral characteristics indicated personal approaches, attitudes, or styles that cannot be presumed to be static or exclusive; rather, effective leadership was adaptable in

situational contexts. Therefore, models have use for business sector or student training (Müller & Turner, 2010). Leadership competencies operationalized by knowledge, skills, and practices were deemed more accurate indicators of likely interactions or approach of a leader, rather than character labels of style or attitudes (Berdrow & Evers, 2010). Although leadership competencies proponents conceded that models should not be viewed as prescriptive for effective leadership, Wickramasinghe and DeZoyza (2009) showed substantive evidence relating integrated usage of competencies across situational contexts (p. 356; see also Hollenbeck et al., 2006, p. 404).

Notably, Michel et al. (2010) paired the MLQ with a managerial practices survey (MPS) to investigate specific competencies that delineated relations-oriented behaviors, change-oriented behaviors, and ethical leader behaviors. In the analysis, worker ratings were influenced by positive managerial effectiveness; further, the researchers contended that leader effectiveness to guide change involved a broader range of behavioral practices than found in the MLQ scale (pp. 11-12). The contention was significant given the integral focus of values behavior pertinent to this literature review–assessment of ethical leader behaviors required inclusion of specifically values based competencies in the indices.

Other researchers used the LPI in studies for psychometric measure of leadership competencies as exemplary behavior. Practices in the LPI include ethical conduct as scaled items to associate leadership competencies with ability to exemplify a sense of purpose and convey an articulated vision (Posner, 2010). As one example, Holt, Bjorklund, and Green (2009) comparatively examined leadership practices for values considered effective to instill relational ideals using indices of the LPI exemplary

leadership model. As a result, the top four factors from a cross-cultural survey in 19 countries were responsibility, empathy, service, and authenticity, including measures of honesty, integrity, and credibility (p. 161).

Results confirmed prior assertions of Bass (1997) and Posner (2010) that leadership ability to motivate and mobilize others required competencies in interrelational skills and behavioral practices to effect positive social change. The bridge of relational values behavior to ethical constructs found in the literature warranted attention to parameters for a faith-based context in this review. Assessment measurement and instrument selection are detailed in Chapter 3.

Bridging Ethical Constructs of Workplace Spirituality to Faith-Based Context

Reave (2005) conducted a meta-analysis of spiritual values and practices to examine parameters of leadership competencies and effectiveness framed in a shared language embodying ethical values, such as honesty, service, humility, and integrity (p. 656). Analyzing over 150 qualitative and quantitative studies, Reave found common ethical constructs linking values with effective leadership practices and with workplace spirituality for a shared language of characteristic practices. In workplace studies, leader integrity related to leader success in nine of twelve measures: worker perceptions, motivation, satisfaction, retention, ethics, relationships, organizational citizen behavior; group productivity-performance; and worker-leader motivation (pp. 658-659).

Ethical practices were relevant to workplace spirituality since ethical values and reflective practices linked significantly with effective leadership ability to motivate others. Reave (2005) cited and concurred with Fry's (2003) emphasis on values in practices with a language bridge associating spirituality, ethics, and leader success. The

measures consistently assessed leadership competencies rather than what Reave termed: "amorphous qualities such as a person's faith" (Reave, 2005, p. 680). Like Reave, others found that integrity in practices reinforced ethical values evident in leader behavior and inherent in effectiveness measures of values-based models of leadership (Toor & Ofori, 2009).

Relating spirituality to self-assessed leadership practices revealed distinctions between leaders with self-identified spiritual and non-spiritual dimensions; the greatest statistical significance to relational measures of effective leadership was found in self-scores of leaders self-identified with higher dimension rankings in the spirituality scale. Spiritual authenticity was evident in six ethical practices that focused on consideration for others: respect for others' values; genuine care and concern; fair treatment; listening responsively; showing appreciation of others, and leader engagement in reflective practice–shown to empower follower participation and satisfaction (Reave, 2005, pp. 673-674). Therefore, spiritual leadership was an ethically collaborative process integrating leader influence by example in relational practices with follower trust; religious affinity was not required since proselytization was not viewed as an ethical or legal workplace practice.

Workplace spirituality was a formative theory of spirituality-centered values in leadership articulated by Garcia-Zamor (2003) and modeled by Fry (2003) as an operational framework. Definition of workplace spirituality was debated in emergent theories for religious attributes, while others connected spirituality to inner-reflective values, sense of purpose, and ethics guiding normative behavior (Garcia-Zamor, 2003, p. 356). Garcia-Zamor explicated theoretical and practical distinctions in the concepts

of religion and spirituality; the former was viewed as outward focused to evangelize others within boundaries of rites, doctrine, and scripture, while the latter inwardly focused on moral self-awareness displayed in positive values of integrity, truth, and interconnectedness (p. 358). A sustained sense of deeper meaning or calling, fulfillment, and a sense of community fostered belonging, rather than isolation by differences among organizational members (p. 361).

At the organizational level, leadership integrated ethical values of service, integrity, and justice to support worker experiences of connectedness and ethical well-being. Specific to leadership competency models of workplace spirituality, Fry (2003) conceptualized spiritual leadership qualities in the workplace as ethical dimensions of leadership competencies that appealed to emotional values prompting behavior in others. In Fry's (2003) theoretical model, spiritual leadership was inclusive of "the religious-and ethics and values-based approaches to leadership" (p. 695) that also were attuned to core values of care and concern for others. Leadership practices motivated others effectively with a sense of calling to "attend to both task-oriented and social / emotional [*sic*] issues through directive and supportive behaviors" (p. 696).

To build upon earlier analyses of ethical influences in spiritual practices, Fry and Cohen (2009) used a model of workplace spirituality to examine leadership competencies for relational factors that translated spiritual values into a communicated work ethic and sense of social mission. Consistent with Reave's findings, Fry and Cohen (2009) argued that an ethical bridge shared language with a religious ethos while not necessarily bound to religious creeds (p. 266). Results provided significant evidence that reflective effects of ethical values on emotional and motivational

performance outcomes could impact organizational climate (p. 269). With a humanistic approach as a foundational model, the bridge of ethical values to behavioral practices ideally would transcend particularism within the diverse interfaith environments found in secular organizations. Therefore, when combined with knowledge of conceptual dimensions and skills capacity, a leader's relational practices also would ideally exhibit the triadic competencies of effective leadership.

In a separate analysis, Pawar (2009) termed interconnectedness of spirituality and ethical values as an "inside-out" approach that began with reflective self-awareness of the individual leader (p. 379; see Fry & Cohen, 2009). As a humanistic organization model, holistic leadership competencies integrated physical, logical, emotional, and spiritual essentials of human need requiring a level of ethical behavioral commitment that was distinct yet related to spirituality (Fry et al., 2010; see also Fry, 2003, p. 722). Workplace spirituality also was viewed as moral organization behavior associating transformational leadership and organizational justice (Pawar, 2009, pp. 245-246). A spirituality model framed leadership values into exhibited behavioral practices fostering an environment of ethical well-being and procedural justice in the workplace (p. 257). Examining behavioral practices as enacted leadership competencies suggested that assessment of aptitude to elect conscious leader actions facilitated a mutuality of social responsibility and cohesiveness (p. 258).

In theory, Aupperle (2008) presented a rationale for investigating moral awareness as a logical processing of behavioral decision making that required self-examination of context and choice. Spirituality values of leader behavior also linked to self-image and interrelational climate (Francis & Pocock, 2007). Researchers explored

positive and negative links of spirituality and effective leadership practices for related parameters. For example, researchers noted that reflective language of self-awareness was a crucial element in the ability to learn about ideal practices (Boyatzis et al., 2011); to self-reflect with integrity about one's own shortcomings (Fry & Cohen, 2009); and to strive toward idealized virtues of relational leadership (Pawar, 2009). Effectively, the resultant ethical bridge links self-awareness to actions.

A composite of subsequent research further substantiated conclusions from Reave's (2005) meta-analysis. Exhibited ethical character, labeled as virtues in some of the research, connected knowledge of ethical influence to conscious decisions for virtuous behavior from which a construct of ethics in leadership competencies could evolve (Neubert, Carlson, Kacmar, Roberts, & Chonko, 2009). Cho and Dansereau (2010) also identified ethical indices of integrity and honesty as interpersonal factors of the competency variables. Staff perceptions of ethical dimensions in leadership capabilities related to perceived self-sacrificial leadership and prosocial behavior (DeCremer, Mayer, vanDijke, Schouten, & Bardes, 2009).

Relational impact of leadership behavior patterns was exhibited in worker perceptions of inclusion, wellbeing, and leader respect through a sense of equity communicated among group members (Nishii & Mayer, 2009). Perceived well-being in organizational justice climates were associated with the influence of leadership competencies on behavioral outcomes in organization culture (Asree, Zain, & Razalli, 2010); study results confirmed that leadership competencies or capabilities effectively influenced and fostered individual and collective responsiveness (pp. 503-504).

In earlier research, Mayer, Nishii, Schneider, and Goldstein (2007) linked

leadership competencies to ethics influencing organizational climate levels of justice. Worker perception responses showed that leader attitude and behavior characteristics exemplified in practices impacted positive organizational citizen behavior with and among workers (Mayer et al., 2007). Recent studies confirmed that ethical leader behavior prompted individual and collective responses of positive organization citizen behavior (Babcock-Roberson & Strickland, 2010). For example, communication was a behavioral competency that has multidimensional impact on organizational culture and group receptivity to perceived leadership effectiveness in processes and procedures (deVries, Bakker-Pieper, & Oostenveld, 2010, pp. 369-370).

Practical application of a values-based approach centered on a work ethic to motivate work productivity and profitability (Fry et al., 2010). Connecting workplace spirituality to perceived wellbeing in the business sector included the presence of articulated leadership values in the organizational culture to foster a shared sense of purpose and freedom of choice under the rubric of social responsibility without proselytism (p. 290). However, critics of the workplace spirituality paradigm argued that the profit aim in applied cases threatened to co-opt the faith and ethical values of individuals for prioritized performance outcomes to increase worker productivity (Case & Gosling, 2010).

Case and Gosling (2010) viewed spirituality as independent of work settings, not as a means to profitability, and argued against "subjectification of persons within reductive, instrumental matrices…to reinforce and satisfy the appetites of extant capitalist discourse" (p. 261). Ethical authenticity as theoretically conceptualized in spiritual leadership did not accentuate religion, but framed collective values in support

of worker wellbeing and creativity (pp. 267-268). Potential exploitation is at issue if spiritual feelings of workers are manipulated for the sake of productivity; the aim for ethical values underpinning social responsibility of leadership and organization centers on a relational climate enabling workers to contribute or find meaning through work, but not solely because of the work (pp. 274-276).

Ethical values centered in the case study of Cordon Bleu-Tomasso Corporation (Fry et al., 2010). An assessment framework of leadership competencies included values-based behavior and capabilities to implement strategic growth and learning for staff innovation and sustainability (pp. 305-306). A common set of articulated values in the organizational culture and in leadership practices, as found in the Cordon Bleu-Tomasso example might be referenced by a rubric of workplace spirituality or simply as a relational work ethic. Twelve groups of defined values were identified as competencies, measured as knowledge, ability, or practices for a language of ethical constructs shown in Table 1:

Table 1

Values Defined as Competencies Parameters of Knowledge, Ability, and Practices

Values measures	Definition of the values measured
1. Dignity	Respect due to all people
2. Peace	Inner state of harmony untroubled by conflict; sign of reconciliation
3. Serenity	Tranquility from moral or inner, unagitated peace
Brotherhood	Quality of relationship among people working in the company
Solidarity	Relationship of common interest; moral obligation for everyone to help everyone
4. Humility	Proper esteem that blocks pride; chooses to give up own will to others per circumstances; uproots self-sufficiency preventing recognition of the absolute (god love) present in everyone; service commitment to neighbors and society
5. Truth	Knowledge at highest value of assent; agreement between envisioned good and a person's behavior
Authenticity	Quality of person or attitude that expresses a deep truth about the person; not superficial or conventional
6. Prudence	Mental attitude reflecting on extent and consequences of acts; reject harmful choice for appropriate means to attain goals
7. Discernment	Mental disposition to clearly evaluate things and their evolution
Listening to others	Paying attention to people and messages communicated
8. Justice	Firm, unshakable intent to recognize and promote human rights
9. Faith	Confidence and belief
Hope	Ability to wait with confidence in reaching goal based on values
10. Freedom	Capacity to initiate action, choose among alternatives, control behavior, and accept moral responsibility
Responsibility	Competence and action required to fulfill a duty, keep one's word, and right a wrong
11. Love	Desire for what appears to be the most valuable thing (to be loved and appreciated); put it into practice; desire to do for others what is good and just
12. Efficiency	Ability to produce the most results with the least effort while giving highest value to resources
Productivity	Ability to produce while increasing efficiency so as to be competitive

Note. Condensed from "The spiritual leadership balanced scorecard business model: The case of the Cordon-Bleu-Tomasso corporation" by L. W. Fry, L. L. Matherly, & J. R. Ouimet, 2010, *Journal of Management, Spirituality & Religion*, pp. 301-302. Copyright 2010 Routledge, London

The organizational measures for an integrated system of management activities provided a language of values similar to the Reave (2005) meta-analysis of other research that espoused spirituality and faith-based ethics to guide interactional behavior. Ethical constructs in leadership competencies bridged a values language for effective leadership with knowledge, skills, and practices to guide personal and collective transformation as an aim of positive social change at the individual and organizational levels. Based on the existing literature, when aptitude and actions of a visionary leader modeled ethical conduct and clarity of purpose, the conveyed leadership values impacted effectiveness of work engagement (Gumusluoglu & Ilsev, 2009). Values measures could be similarly constructed in faith-based leadership ethics (Webb, 2009) and reflected in the assessment of behavioral practices (Voegtlin, 2011).

Bridging ethical values language is relevant to prepare student-practitioners for possible leadership roles that require filtering traditional faith-based values in secular settings (Pless & Maak, 2011). Rationale for bridging ethics of secular and faith-based leadership was that values constituted ideals for practices found in diverse spiritual teachings, similar to leader values and ethical practices in secular climates that create trust and positive work relationships (Kouzes & Posner, 2007). A bridging language of ethical principles in values-based behavioral practices that informs moral spirituality in a faith-based training context could connect to a relational orientation of workplace spirituality in a secularized business environment (Waldman, 2011). Still, a leadership competencies model approach in faith-based training assessment context is not as well understood from limited research as compared to extensive study in private enterprise sectors. In precedent research, the traditional paradigm of leadership preparation in faith-

based contexts has challenges and opportunities for leadership competencies assessment as an emerging component in leadership role preparation of student-practitioners (Carter, 2009). In my research, student assessment revealed the extent that ethics inherent in relational practices were self-rated as leadership proficiencies. Specific indices integrate ethical values as exemplary practices to engage others for positive outcomes (Kouzes & Posner, 2007; also Posner, 2010).

Traditional Paradigm of Leadership Role and Preparation in Faith-based Context

Leadership style characteristics and practices considered adaptable for faith-based contexts were derived from models in "the world of business and commerce" (Frank, 2006, p. 3). Research on workplace spirituality discussed earlier was paralleled by growing awareness in faith-based contexts of organizational dynamics and operational needs that require higher-level leadership capabilities to strengthen churches as viable entities (Frank, 2006). However, in faith-based education, leadership role preparation to lead effectively in non-church roles of secular organizations was overlooked due to the primary training paradigm for church pastoral roles of leadership. Further, traditional pastoral leadership paradigms focused primary emphasis in two areas: biblical studies and preaching (Boyatzis et al., 2010).

In the secular workplace, increased attention to spirituality focused on enactment of ethical interpersonal behavioral practices (Senjaya et al., 2008) with renewed examination of competencies that best characterized and measured servant leadership (Savage-Austin & Honeycutt, 2011). While leadership competencies were fundamental to business enterprise, direct transferability of secular-modeled principles to faith-based leadership assessment initially met with resistance to secular commercialism due to

clergy emphasis on religious tenets of spirituality linked to practices of prayer, preaching, and meditation (Reave, 2005). A schism of suspicion distanced theological views grounded in religious transcendence; reluctance to emulate economically-driven paradigms meant that well-validated, non-faith centered models were not adapted for integration into the moral fiber of theological education and training (Frank, 2006).

Classical preparation at graduate educational institutions, such as Christian seminaries or divinity schools focused on theological studies and experiential training for the vocation of ministry or leadership capacities for which faith-based sensibilities related leadership roles to traditional church organizational mission. For practitioner training in a clinical setting, Weaver et al. (2010) argued that actual practice in learning experiences held greater influence for competency development than solely classroom theory; moreover, the designed practicum and classroom experiences had to offer meaningful preparation of teamwork competencies identified as interdependent learning, collaboration, and care.

Similar alignments with faith-based preparation were found with internship placement supplementing classroom theory and discourse to develop aptitude (Hillman, 2006). However, traditional vocational training emphasized church administration or pastoral care roles rather than integrating theoretical constructs of leadership competency assessment into leadership role preparation adaptable to other organizational venues (Hillman, 2008). With core biblical and theological preparation emphasis, paradigmatic approaches to preaching, teaching, and pastoral care resulted in misplaced association of leadership with simply being a strong preacher or orator (Frank, 2006, p. 114).

A classic view of seminary also held that existing pedagogy integrated leadership

adequately into a theologically centered curriculum (Frank, 2006). However, examination by Tilstra (2007) and later, Powell (2009) revealed institutional emphasis on conceptual leadership knowledge in core pedagogical training varied widely and inconsistencies were found in course descriptions and training rubrics. Comparatively limited focus on constructs of leadership theory in primarily theological approaches to church pastoral roles might undervalue assessment of leadership competencies as measurable parameters of capability. Assessment of capability in leadership roles could be under or over rated without awareness of the knowledge, skills, and behavioral aspects of leadership competencies (Johns & Watson, 2006). In seminary pedagogical training, preparing leaders has not yet been linked to a competency model as a means of envisioning and understanding self as a leader, as assessed in college students (Fischer, Overland, & Adams, 2010) or in secular graduate school (Berdrow & Evers, 2010).

The broad variation in religious practices limits empirical studies; operational characteristics of faith and spirituality in assessment instruments were difficult to validate as generalizable measures of leadership competencies (Carter, 2009). In faith-centered studies, researchers acknowledged inconclusive results measuring effectiveness in leadership competencies when theological precepts of religion and spirituality defined effective pastoral centered practices (Carter, 2009). For example, relationships of transformational leadership to pastoral role effectiveness with a five-factor personality measure (NEO-FFI) and five-factor spiritual transcendence scale (STS) focused on personality dimensions and religious beliefs (pp. 265-266). Results did not show that correlations were significant enough to predict pastoral leadership effectiveness as hypothesized (pp. 269-270), raising feasibility questions on personalized religious

ideology as a primary mediating factor in leadership assessment.

Other analytical difficulties in the Carter (2009) study also were present in the Strack et al. (2009) study in which religious beliefs and ritualized practices were analyzed for relationship to effective leadership practices. For example, scales specifically focused on religious or spirituality indicators produced less significant correlations to leadership effectiveness than did measures of relational leadership competencies. In leadership research on students while in seminary, the primary focus was leader development centered on an internship or practicum to compare contextual experiences of on-site training in temporary or short-term field placement opportunities (Hillman, 2006). However, field opportunities had limited focus on leadership competencies, did not approach ecclesial organizations as social systems of people, or as human resources impacted by leader effectiveness to foster positive social change outcomes (Hillman, 2008). Other leadership studies centered on pastoral worship functions (McKenna & Yost, 2007) or levels of mentorship (Johnson & Watson, 2006) rather than attention to competency-based skills in organizational leadership processes. Tilstra (2007) found limited pedagogical focus on leadership preparation in curriculum content comparisons.

As the faith-based vocational climate evolves, broadened aims of student-practitioners may shift the ratios that pursue diverse venues and roles as openings in traditional pastoral church roles decline (ATS, 2009). For example, Hillman (2008) examined student demographics that profiled the rise of "non-traditional" students with interests in leader role preparation beyond the traditional pastoral paradigm.

Adaptability and Transportability of Leadership Competencies Model

Investigation of leadership competencies as a means to prepare for multiple

leadership roles has precedent support in the literature (Delamarter et al., 2007). Discussion of adaptability and transportability highlighted a recurrent premise of leadership competencies theory. Researchers reported on basic similarities of core competencies when measured across functional roles, types of organizations, and managerial or leadership levels (Hollenbeck et al., 2006); however, caution was raised to consider that leadership practices required situational agility rather than a static overlay of a singular model. For example, when Dai et al. (2010) studied leadership competencies as "clusters of people capabilities" (p. 200), the results indicated that values and practices of leaders were mediating factors of situational effectiveness. Essentially, leadership capabilities, role responsibilities, or opportunities impacted how adequately training models addressed preparation needs (Painter-Moreland, 2008, pp. 522-523).

Hannah et al. (2009) and others found that as roles change in complexity, leadership competencies gained importance as reliable indicators of capabilities that are transferable into varied situations to meet organizational demands, rather than sole reliance upon personality attributes (see also Hoover, Giambatista, Sorenson, & Boomer, 2010). These results are timely as research from the Association of Theological Schools (2009), a national accreditation organization, reported longitudinal trends of student enrollment in seminary education and training had decreased overall. Moreover, seminary tracking of demographic data on ministry preference and vocational placement confirmed trend evidence that openings for ecclesial parish ministry have decreased (pp. 3-4). For seminarians opting to pursue ecclesial leadership roles, females notably are confronted by resistance to their selection in the traditional view of male-dominated pastoral leadership, as researched by Green (2002), Johns and Watson (2006), Hillman (2006), and Powell

(2009). Therefore, for varied reasons beyond the purview of my study, seminary enrollees and graduates in greater numbers may opt to pursue roles in venues of organizational leadership such as secular business, clinical, non-profit, and education as alternatives to traditional parish leadership (ATS, 2009, pp. 5-6).

Multi-denominational trend data show increasing vocational choices for seminary student-practitioners in organizations beyond traditional church congregations (ATS, 2009). Placements now extend to leader roles in varied organizational settings, including but not limited to community service outreach for private enterprise; chaplaincy leadership in clinical hospitals; executive roles in denominational associations or parachurch organizations; supervisorial or managerial roles in prison chaplaincy; directing advocacy foundations and community organizing; leadership roles as faculty or administrators in higher education; and managerial roles directing social services among others (ATS, 2011). Emergence of workplace spirituality as a paradigm interconnected leadership values behavior to the wellbeing of individual workers within an ethical and supportive collective organizational culture (Garcia-Zamor, 2003). For example, when demands-for-life coaching or spiritual direction increased in numerous secular organizations, numbers of chaplains were hired as a result (ATS, 2009).

As faith-based leaders extend beyond traditional pastoral roles to vocational experiences in public and private sector organizations, they are expected by organizational colleagues to possess sufficient leadership competencies to navigate through increasingly complex situations (Yanofchick, 2009). In clinical and health venues, performance accountability was expected at varied organizational levels of leadership (O'Reilly, Caldwell, Chatman, Lapiz, & Self, 2010) as experienced in business

and government sectors. Similar requirements for leadership competencies in nonprofit sectors stemmed from an emphasis on strategic leadership to lead change and enhance organizational performance to bridge the needs of constituents (Phipps & Burbach, 2010). In each venue, specialization proficiencies vary; still, prevalent research results found a core set of leadership competencies transportable to varied roles and settings. Further, the faith-based influence on ethical values behavior learned in leadership competencies preparation is transferable to a relational workplace ethic.

Graduate seminary training is uniquely positioned as a professional and vocational source of direct placement into pastoral leader positions, but with limited consideration of competencies for leadership. Candidates for leader roles in largely secular venues faced organizational operations that measured levels of performance as normative procedure (Wickramasinghe & DeZoyza, 2009). Leadership competencies assessment throughout seminary training would provide a tool to examine competency areas and develop knowledge, skills, and practices to qualify for leadership roles in diverse venues (Walter & Bruch, 2010).

Among the divergent views on the reliability of competencies, there was agreement that one benefit of leadership competencies as a model was an increased individual awareness of effective leadership by integrating competency assessment into pedagogical training to strengthen knowledge, skills, and practices "applicable across a range of positions and leadership situations" (Hollenbeck et al., 2006, p. 403). The assessment of leadership competencies enabled individuals to identify personal capabilities and apply developable practices as effective leadership behaviors, primarily resulting from directed focus on patterns of action (Leigh, Shapiro, & Penny, 2010). The

developmental uses of competencies assessment were comparatively examined for learning processes in educational contexts.

Assessing Leadership Competencies in Learner Preparation

Competencies assessment in the academic context of leadership role preparation has parallels and distinctions with leadership development in the work setting where leadership competencies and effectiveness are determinants of capacity for success (Harris & Kuhnert, 2008). The role of aptitude and reflection in leadership competencies assessment as a learning tool was examined in the literature for a relationship to learner preparation. Researchers utilized psychometric surveys of student aptitude of leadership competencies for self-reported assessments to provide a basis for learner preparation and to conceptualize leadership into cognitive and behavioral measures (Hannah et al., 2009).

A competency framework contributed a behavioral approach to assess student capabilities in relational or soft skills necessary for interpersonal communication, problem-solving, and teamwork (Bolkan & Goodboy, 2009). In higher education where conceptual learning and experiential training models were used to prepare future leaders, Posner (2009) contended that cognition and critical reflection were essential since people learn differently (p. 392). Learner preparation for leadership roles involved learning tactics of action, thinking, feeling, accessing, and versatility (Posner, 2009). These approaches combined experiential learning with conceptual theory identified as whole person learning; consistently, study results showed students were more engaged in their learning (Hoover et al., 2010).

The concepts discussed from precedent research provided a theoretical basis for student-practitioner self-assessment of knowledge, skills, and practices as variables in

leadership competencies and to examine for a relationship to adequacy of preparation. Numerous studies analyzed student assessment of leadership competencies in varied contexts: to examine a developmental framework for skill-based learning among graduate-level business students (Hoover et al., 2010); to measure efficacy in leadership competencies in student teachers (Khasawneh, 2010); and to assess student-practitioner perceptions of preparation for organizational leadership roles (Romano et al., 2009).

Conceptual Terms Related to Leadership Competencies and Role Preparation

Studies associated with learner preparation offered a framework of concepts that were pertinent to the context and method in this research:

1. The term student-practitioner referred to graduate students who might bring prior career experiences to a self-directed process of continued professional development of abilities (Francis & Cowan, 2008). As "thinking performers" (p. 337), student-practitioners were expected to possess higher-level cognitive and interpersonal capabilities to critically analyze, reflect, plan, and resolve issues in group process, and to possess the ability to self-engage in experiential workplace learning (pp. 338-339).
2. Self-directed learning was synonymous with initiative for self-development to acquire knowledge, skills, and abilities that stemmed from cognitive choice, self-efficacy, and motivated work orientation (Boyce et al., 2010, p. 161). Cognitive development from self-assessment of competencies helped to gauge oneself as a leader since rapidity of organizational change and increased complexity required motivational factors for self-development to strengthen leadership skills (p. 160).
3. The term learner-centered conveyed intentional focus of pedagogical emphasis from teacher-centered direction to a facilitated process of adaptive learning that enabled the

student-practitioner to expand capacity for self-direction in leader development (Boyce et al., 2010). Learner-centered education fostered decision-making, evaluation, and skills development when knowledge and perception patterns were developed in the context of educating future teachers (Kilic, 2010, pp. 80-81).

4. Self-reflection was explained as an active process of applying experiential insights to current learning, and a crucial action of assessing personal leadership capabilities and essential to learner-centered or self-directed learning (Moore et al., 2010). Leadership competencies assessment was a self-engaged form of "reflective practice" (Francis & Cowan, 2008, p. 339) derived from past learning experiences and involving critical cognitive dynamics that influence perceptions of capabilities.
5. Leadership role preparation is a concept used here to convey higher education approaches in the literature that combined pedagogical training to develop practices that integrated classroom centered learning of conceptual theory with on-site field placement or internships for experiential learning (Postaroff, Lindblom-Ylänee, & Nevgi, 2007). Leadership role preparation involved self-reflection and application of leadership competencies assessment (Berdrow & Evers, 2009, 2010). Leadership role preparation is attributable to development of student aptitude from conceptual theory and experiential capabilities with assessment centered on learning goal orientation (Dragoni, Tesluk, & Oh, 2009, pp. 733-734).
6. Aptitude was described as problem-solving or meaning making ability (Raven, 2009, pp. 6-8) usually contextual to a training or educational environment. For Magno (2010), aptitude involved cognitive or intellectual ability to integrate competencies factors in a triadic model of knowledge, skill, and practiced behaviors (pp. 37-38). In

a competency assessment study of student nurses and psychiatric nurse professionals, aptitude was described as a sub-component of competencies, resulting in a slightly different triadic model of knowledge, skill, and aptitude (Haspelagh, Delesie, & Igodt, 2008, pp. 408-409). However, this conceptualization of a competency model was not found elsewhere in the literature.

An early thrust of leadership competencies theory in the educational sector centered on preparation of student-practitioners for organizational leadership roles (Evers et al., 1998). Applied to higher education, Berdrow and Evers (2010) posited that competency-based assessment was a pedagogical learning tool further developed for learner-centered training in clinical health and business schools. A process of leadership competency self-rating was a key element of a learner-centered focus to develop parameters to segment new learning as needed for leadership role preparation (Berdrow & Evers, 2010). Assessment was an initial step in student preparation for future leadership roles while in college or postgraduate business school as a means to enhance employability (Brungardt, 2011).

In the BOC model developed by Evers and Rush (1996), aptitude was evidenced in student knowledge of concepts and behavioral choices necessary to enhance skill development and practices. For example, the model was comprised of four base competencies–managing self; managing people and tasks; mobilizing innovation and change; and communication–and measured 17 skill sets comprised of classical and contemporary leader-manager functions (Berdrow & Evers, 2009, p. 3). Later research results showed similar emphasis on skills development for leader roles while in an educational setting. In particular, aptitude and self-reflection warranted examination of

interrelated roles in leadership competencies assessment considered central to preparation for organizational roles (Berdrow & Evers, 2010, p. 5).

Linking Aptitude and Assessment as a Self-Reflective Learning Process

In an educational context, student self-reflection was found to be relevant to and associated with aptitude and a self-awareness of preparation needs in a learner-centered environment prior to matriculation; both were inherent to a self-assessment process (Kaiser & Hogan, 2010). For example, the action-reflection dynamic amongst postgraduate student-practitioners facilitated critical thinking and practices (Francis & Cowan, 2008), as studied in leadership preparation for positions in library information management (Ansari & Khadher, 2011), education (McNair, 2010), and health care (Strack, Kottler, & Kilpatrick, 2008).

For Feldman, Aper, and Meredith (2011), leadership competencies were learned practical skills (pp. 18-19); aptitude involved cognitive and emotional processing of critical thinking including decision-making and moral responsibility (pp. 21-23). Aptitude also conveyed an awareness of leadership competencies' importance to develop proficiency, associated with a level of confidence in own capabilities (Maurer & Weiss, 2010). Awareness was central to a self-construct model linking conscious aspects of aptitude with assessment of leadership competencies to promote self-development of effective leader skills; these behaviors were defined as self-reflective and self-regulatory behaviors that promoted positive leadership skills responsive to varied role demands (Hannah et al., 2009, pp. 270-271).

Leadership role preparation was approached as a competency learning process of task management and self-management to develop student responsibility for active

learning and voicing a position (Edwards, 2010); further, training experiences required self-reflection to facilitate personal mastery of core leadership competencies for effective communication, teamwork, and critical thinking. Self-directed approaches in graduate-level education also held similar learner-centered applications to a graduate-level seminary context where student-practitioners actively set pedagogical priorities for course work aided by a faculty advisor to weigh vocational goals, prior work experience, and desired outcomes (Kilic, 2010). Reflection engaged perceptions of self-efficacy when students evaluated their capabilities and learning needs; further, skills development of student teachers improved through a self-assessment process. Kilic's conclusion aligned with Romano et al. (2009), positing that aptitude for leadership competencies also indicated a self-awareness of proficiency levels or capabilities that needed to be addressed adequately in role preparation.

Linking Aptitude for Leadership Competencies to Importance for Role Preparation

The association of leadership competencies to importance analysis and to adequacy of preparation for learning development has precedence in the research. For example, Nale et al. (2000) measured importance and adequacy of preparation in a business context and Welch (2003) comparatively analyzed the variables in a faith-based context. In the literature, precedent research also reported on student-rated importance of assessed leadership competencies for employability. As examples, Ansari and Khadher (2011) stated an explicit research goal to identify competencies considered necessary for success to posit that respondents' perceived importance of competencies was integral to assess present abilities, predict performance, and identify gaps (pp. 240-241). When assessing competencies needed for employability, Robinson and Garton (2008) examined

aptitude levels of leadership competencies together with perceptions of importance to indicate the necessity for mastery and employability (p. 97). The aim aligned with Berdrow and Evers' (2010) model to utilize competency skills for needs assessment in a learner-centered context. Results showed that students distinguished self-rated competencies from the rated importance of a specific competency; in some cases a competency was rated as highly important, while rating themselves only moderately in capability (p. 103), signaling a need area to develop greater proficiency.

Romano et al. (2009) also conducted a descriptive exploratory study of doctoral students' self-assessment focused on the importance of leadership competencies. Survey responses were analyzed for relationships between student perceptions of most important competencies and the extent of training preparation in those competencies. The results supported the logic of similar questions posed in my research. Importance-adequacy analysis provides a basis to determine what leadership skills were needed from the perspective of the learner rather than a third party.

The following insights from the Romano (2009) study were pertinent for consideration of competency assessment associated with adequacy of leadership role preparation. (a) Training experience and conceptual learning were ranked by student-practitioners as equally important aspects of leadership role preparation (p. 314). (b) Based on a panel of core competencies, communication, organizational strategy, and collaboration were ranked most important, affirming similar findings in other studies on relational practices (p. 317). (c) From a panel of core leadership competencies, students were able to identify competency areas in which they rated the extent to which current graduate education prepared them or not (p. 318). Finally, (d) relational gaps existed

between competencies rated as important and the extent that competencies were addressed in leader role preparation (p. 319). However, the Romano study had two distinctions from my research.

The first was a focus on curricular competency rather than a student competency focus. A second compared demographic and programmatic influences on student perceptions; however, the conclusions drawn required analysis of certain data that offered relevant considerations in this literature review. For example, although assessment results showed student perceptions of leadership role preparation pertaining to an accreditation panel of core leadership competencies for community college leadership positions, the study did not address student self-assessment in those core competencies. Therefore, no assessment was conducted to analyze individual capabilities. In my research, an added dimension of student self-assessment examined for potential relationships among parameters; assessment of competencies also associated knowledge with importance of leader roles in relation to the assessed adequacy of preparation.

Relating Leadership Competencies Assessment to Adequacy of Preparation

The term adequacy of preparation was contextual to leadership development in education training (Earley & Evans, 2004, p. 329), in Ph.D. student preparation for job placement (DeNeef, 2002), and in perceived preparedness in the health field (Gross, Block, Engstrom, & Donahue, 2008). The term refers to the extent of leadership competency development in the integration of experiential training and conceptual learning. For my research, adequacy of preparation is used in accordance with Earley and Evans (2004) description of the term as a perception of the degree to which students felt prepared by the program for a positive difference or impact in the learning of specified

skill sets (pp. 327-329). Further, adequacy of preparation as used here does not focus on traditional biblical, liturgical, or pastoral capabilities, but centers on the extent of competency development in leadership role preparation.

Welch (2003) examined rater-assessed importance for effectiveness compared to the adequacy of preparation in the comparative analysis of self-rated managerial leadership competencies in functions of administration (pp. 187-189). The ACD tool was developed for research in a ministry context and working ministerial alumni of a specific school and denomination comprised a target sample. The parameters measured were managerial or administrative and not limited to pastoral-specific functions. In effect, associating competency assessment to an importance parameter and comparing to adequacy of preparation was shown to demonstrate a level of respondent cognition and aptitude; the transportability of identified competencies in the scale enable use in conjunction with other psychometric instruments.

Although Welch focused on specific competencies, Eich (2008) also compiled comparative data to analyze determinants of programmatic adequacy; however, focus was on programmatic attributes as contributive factors to determine actions and enhance student learning outcomes in a single course or integrated curriculum of a leadership program (p. 179). Among 16 identified attributes of programmatic adequacy were: development opportunities of leadership practices, reflection activities, meaningful discussions, values content, and systems thinking in a culture that challenged and supported the students (pp. 180-181). Desired outcomes included increased self-efficacy, capabilities, and greater cognitive understanding of leadership, group, and organizational dynamics (p. 182).

Eddy (2012) examined university-based leadership training for students with a self-reported evaluation, similar to Berdrow and Evers (2010) research of skill-sets and behavioral approaches in an educational context. However, distinct from my research, Eddy's focus like Eich was to glean responses on pedagogical or programmatic attributes, since the experimental pre and post assessment was conducted after structured learning in classroom modules (p. 66). Both studies examined processes of developmental learning, but experiential exposure was not directly studied. Eddy's intent was to show causality by comparing groups with distinct course content rather than student assessment of interactive skills in learner-centered experiences (pp. 75-76). Eddy's study results showed positive student response to an understanding of leadership knowledge, skills, and practices; however, the methodological aims differed from my research. In my study, specific programmatic attributes of coursework were not measured as variables; rather, student-rated adequacy of preparation provided some perspective on present curriculum emphasis of specific leadership competencies.

Theoretical Basis for Research Method and Analysis

A review of theoretical aspects of leadership competencies research parameters and analysis had relevance to my research. My comparative review of the theoretical constructs of survey assessment formed the basis for my methodology. In addition, my review of leadership competencies models compared triadic components operational in each model. Research methodology specific to my study is detailed in Chapter 3.

Comparing and Analyzing Survey Research for Psychometric Assessment

Survey research is a common method to collect psychometric assessment data that are descriptive, behavioral, or attitudinal (Rea & Parker, 2005, p. 6). Survey research

utilizes open or closed-ended questionnaires, interviews, or a combined format for cross-sectional or longitudinal studies (Creswell, 2003, p. 14). One purpose of survey research is to produce data about a target study population from a sizeable number of responses on select variables that might sufficiently generalize or infer characteristics, perceptions, behavioral practices, or attitudes (Fowler, 2008, p. 12). Surveys traditionally probe opinions, situations, or choices that construct descriptive attributes or explanatory relationships (Singleton & Straits, 1999, p. 243).

Surveys have methodological distinctions and similarities to assessment with psychometric tools. Traditional design was often, but not solely in a questionnaire format, whereas psychometric assessment utilized Likert-type scales to rate itemized statements that require cognition and judgment to respond (Tourangeau, Rips, & Rasinski, 2000, 2004, pp. 8-11). Psychometric assessment also probed for underlying psychological factors prompting behavior or actions (Chen & Baron, 2007). Empirical measures of psychological constructs include respondent choices as indicators of emotions, identity, thinking, experiences, values, or perceptions that inform actions (Riggio et al., 2010, pp. 235, 239). Low response rate was a reported disadvantage of survey research (Groves et al., 2004); however, distribution and follow-up methods along with respondent proficiencies and contextual setting could positively impact response rates (Dillman, 2000/2008). A concern and potential problem raised by several survey response theorists (Coelho & Esteves, 2007; Dawes, 2008; Adua & Sharp, 2010) is that the neutral central point of the Likert scale can be overly used and result in response bias.

Use of the same psychometric tool for specific survey purposes yield distinctions and similarities in results. For example, when Berman and Ritchie (2006) utilized the

BOC tool by Evers and Rush (1996) to combine with bio-data for correlating personal background to capability, a paper survey issued during classes to full-time attendees returned a 77% response rate (n = 193) on self-rated leadership competencies (p. 206). Higher survey response rates among respondents likely were attributable to an intact target audience such as an assigned class (Eddy, 2012). When Robinson and Garton (2008) used the BOC to examine importance categories of assessed competencies, surveys mailed to 272 students returned a 52% response rate (n = 141). In practice, survey methodology examining aptitude of leadership competencies tends to involve self-rated assessment with greater risk of self-report bias (Sarros et al., 2008, p. 150). The potential for self-report bias is an acknowledged limitation of the survey method. Some researchers statistically adjust for variance either as weighted values in the Robinson and Garton study, or standardized values (Nale et al., 2000). Notably, as reported by Strack et al. (2008), analysis often reveals minimal response bias.

Triadic Model to Operationalize Competencies as a Theoretical Construct

Competency factors in a triadic model vary depending on the research focus; however, among studies discussed earlier, theoretical arguments supported a triadic model most commonly comprised of knowledge, skills, and practices. In separate studies, Müller and Turner (2010) and Pinnington (2011) showed that behavior was demonstrable in leadership practices. Ethics, values, and attitudes interconnected into actionable behavioral practices in a transformational process (Kouzes & Posner, 2007; Posner 2009, pp. 392-393). Ethical values behavior involved mental and emotional processes for action (Boyatzis, 2009). Influences of ethical values on interpersonal behavior was linked to effectiveness (Weaver et al., 2010). Prevailing rationale for leadership competencies with

operational variables of knowledge, skills, and practices held that ethics and values had interrelated influence on knowledge and practices (Reave, 2005), while attitudinal influences on behavior were demonstrable in skills and practices (Posner, 2009; Posner, 2010; see also Raven, 2009).

Pertinent to this research context, integrating selected scales for a triadic model might facilitate expanded analysis and usage for self-reflective training and learning. Influences on competencies variables in a triadic model are interrelated as conceptualized in Figure 1.

Figure 1. Triadic model of knowledge, skill, practices comprising leadership competencies.

Use of selected psychometric assessment tools for each parameter operational in leadership competencies were examined in the context of the research; analytical measures for each tool are detailed in Chapter 3.

Theoretical Basis for Use of Multiple Regression Analysis

Multiple regression is a statistical model used to explore if a significant relationship can be found between one dependent and multiple independent variables

(Aczel & Sounderpandian, 2009). The significance of the relationship is determined by the amount of variance due to manipulation of independent variables, which are hypothesized to influence, predict, or explain effects on the values of the dependent variable (pp. 410-411). In a multiple regression model, values of the variable *Y,* identified as the dependent variable, are regressed to check the response, if any, to changes in the values of two or more independent variables $X_1, X_2, X_3, \ldots X_k$.

In theory, a simple regression model examines the significance of the relationship between two factors (*X,Y*) of a population measured by a *t*-test or *p*-value, used to accept or reject the hypothesis (p. 432). Assessment of fit in a regression model examines the slope along a regression line for deviations in the predicted *y*-values, and statistical significance is tested with *t*-test statistic with calculated *p*-value as the coefficient to indicate if the hypothesis can be rejected (pp. 439-440).

In a multiple regression model, there are multiple slope parameters β_k based upon the number of independent variables X_k; regression coefficients β_i indicate an increase or decrease of value in *Y* for a unit increase in any variable X_i when other explanatory variables are held constant (Aczel & Sounderpandian, 2009, pp. 470-471). The *F*-test in multiple linear regression is an evaluation of whether or not a linear relationship exists between the variable *Y* and any of the independent variables in the regression equation (p. 475). The t-test evaluates slope parameters $(\beta_1 \ldots \beta_k)$ for each variable $(X_1 \ldots X_k)$ to determine the extent of explanatory influence that each independent variable has on the dependent variable as indicated by the *t*-statistic and the *p*-value (p. 489). In addition, the statistical fit of the multiple regression model is assessed. A multiple coefficient of

determination expressed as r^2 and the adjusted r^2 proportionately measure variance to evaluate how well the model fits the data (pp. 478-479). The formula for a multiple regression model is as follows (Agresti & Finlay, 2008):

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \ldots \beta_k X_k + \varepsilon.$$

Chapter 3 details the study design with multiple regression analyses. In my study, a triadic model of leadership competencies was operationalized by three independent variables–knowledge, skills, and practices–that were analyzed along with a composite variable and categorical variables. Each variable was adjusted or manipulated to determine impact, if any, on the dependent variable.

Use of Bases of Competence (BOC) to Assess for Skills

In my study, the BOC itemized skills as a component of a triadic leadership competency model. When exploring leadership self-identity and preparation, skills most often were identified in the literature as a parameter despite variations in other triadic parameters. According to Evers and Rush (1996), competencies are synonymous to skills as abilities, expertise, or mastery of specific but related action tasks critical to leadership success in an organizational workplace (pp. 277-279). For scaled measures of the BOC, managerial and leadership action tasks were delineated from study results by Berdrow & Evers (2009) of 1,610 undergraduate and graduate students. A core of 17 actions comprised skill-sets indicated in four base competencies to help students evaluate transferable capabilities in knowledge and skill areas.

In separate studies, Berman and Ritchie (2006) and later, Robinson and Garton (2008) utilized the BOC to measure student skill-sets as competencies based on a 5-point Likert scale. The reliability coefficients at 0.05 alpha level were reported as $\alpha = 0.70$ for

Managing Self (MS); $\alpha = 0.72$ for Communicating (CO); $\alpha = 0.82$ for Managing People and Tasks (MPT); and $\alpha = 0.76$ for Mobilizing Innovation and Change (MI) in an independent study (Berman & Ritchie, 2006) that were consistent with reports by Evers, Rush, and Berdrow (1998) of $\alpha = 0.71$ for MS; $\alpha = 0.69$ for CO; $\alpha = 0.82$ for MPT; and $\alpha = 0.81$ for MI (pp. 280-281). Skills assessment had generic applicability to public and non-profit sector use of the tool for self-assessment and institutional assessment (Berdrow & Evers, 2009, pp. 2-5); the BOC was described as a "tool for learner-centered, self-reflective pedagogy" (Berdrow & Evers, 2010). Studies were conducted in secular educational settings for leadership preparation of identifiable performance skills.

Although Berman and Ritchie (2006) compared competencies to undergraduate student profiles independent of curriculum, reported results showed that self-efficacy and interpersonal skills from contextual learning experiences correlated to the assessment of communication, managing self, and managing others as aptitude ratings of "students' self-perceived competence" (p. 208). Using the BOC to compare categorical links to importance ratings, Robinson and Garton (2008) applied a mathematical factor to mean importance ratings for 67 skill-based competencies (pp. 98-99). Twenty-eight skills had high discrepancy gaps to preparation, while 39 had low to negligible gaps or need to enhance their curriculum (pp. 102-103). For this research, methods to analyze comparative relationships are addressed in Chapter 3.

Use of Leadership Practices Inventory (LPI) to Assess Behavioral Practices

In my research, the assessment scale measuring practices as a competency variable was developed by Kouzes and Posner (2007), and integrated ethical characteristics, proficiencies, and relational behavioral practices (Posner, 2010).

Kouzes and Posner (2002) linked leadership competencies to effectiveness by measuring relational behavior in exemplary practices. Relational behavior included assessment of ethical practices for effective leadership or managerial roles (Dai et al., 2010). As reviewed earlier, the implications for a faith-based context are indicated through the shared meaning in ethical constructs of workplace spirituality and faith-based values behavior (Reave, 2005).

For my study, the LPI-self also measured self-assessed behavioral practices as one parameter of the leadership competencies assessment.The LPI focused on practices rather than on characteristics or style (Posner, 2009). An exemplary practices model comprised actions that "were translated into behavioral statements" (Kouzes & Posner, 2002, p. 2) and focused on enacted leadership competencies by frequency of relational behavior. Other researchers viewed practices as an exercised process and technique that Carroll et al. (2008) described as "where and how" the work of leadership is done (p. 372). Theoretical constructs and cases for behavioral based leadership practices resulted in development of the LPI in 1987 (Kouzes & Posner, 2007); the 20+ years of research among diverse groups in private, public, and educational settings showed broad contextual applicability to measure effective leadership (Posner, 2010).

Enhanced discriminate validity resulted from the changed 5-point to 10-point scale, addressing earlier critique of weak validity at higher values (Carless, 2001), and of response precision (Zagorsek, Stowe, & Jaklic, 2006). Test-retest findings on the revised 10-point frequency scale format verified internal reliability from national and international research of five scales with alpha coefficient ratings reported as follows: Model the Way (MTW), $\alpha = 0.84$; Inspire a Shared Vision (ISP), $\alpha = 0.91$; Challenge

the Process (CTP), $\alpha = 0.86$; Enable Others to Act (ETA), $\alpha = 0.86$; and Encourage the Heart (ETH), $\alpha = 0.91$ (Posner, 2010).

As modeled by the LPI, exemplary leadership measures a composite of values-based behaviors, interpersonal relations, and change-oriented behaviors as ethical best practices (Kouzes & Posner, 2002). Widespread use of the LPI in prior research suggests that the scaled measures offer transportability of practices in competencies assessment to multiple organizational and leadership venues in business, non-profit, and public sectors. The use of the LPI in a student-learning environment to examine leadership practices is of particular importance to my research. For example, Leigh et al. (2010) used the LPI to measure leadership aptitude in a university sponsored leadership development program with significant correlation of assessment results to increased awareness of leader behavioral practices. Use of the LPI to measure exemplary practices in transformational leadership behavior (Posner, 2009, p. 390), prompted research of the LPI for parallels and distinctions to the MLQ characteristic profile of transformational, transactional or laissez-faire leader styles (Hinkin & Schriesheim, 2008). In a separate study, Fields and Herold (1997) found transformational and transactional leadership characteristics in the LPI scaled variables.

Chen and Baron's (2007) comparison of psychometric properties in the MLQ and LPI scales revealed strong positive correlations of concurrent validity of scaled items signifying the LPI has embedded transformational leadership indices (pp. 6-8). Of the psychometric instruments used in varied studies, Kouzes and Posner's (2002) LPI model was noted for distinct ethical constructs within scaled measures that could bridge with ethics of spiritual practices (Reave, 2005, pp. 677-678; see also Strack et

al., 2008, p. 238). Recently, similar links of spirituality to leadership practices were examined among business executives (Johnson, 2012) to determine if spirituality variables were significant predictors of leadership practices.

Ethical behavior inherent in the exemplary leadership model of the LPI resulted in its common use in the limited number of faith-based leadership studies in the literature. For example, Hillman (2006) used the LPI as the sole measure to focus on interpersonal practices as competencies with proficiency ratings compared to training hours in seminary field experiences. Johns and Watson (2006) utilized the LPI in a mixed method leadership self-assessment of seminary women. Itemized competencies in the LPI scales also have been used to investigate underlying constructs operationalized as ethical beliefs and values found in effective practices that were integral to positive workplace interactions (Strack et al., 2008, pp. 245-246). Analysis of the LPI with a spirituality scale showed higher factor coefficient (r value) for correlations between honesty, humility, and service in relationship to effective leadership practices than by definitive spirituality dimensions of faith and prayer (pp. 243-244).

In other research, Johnson (2012) recently examined workplace spirituality and leadership competencies by measuring characteristics (MLQ) and practices (LPI) among a sampling of African American female executives in private enterprise. The LPI was one of three scales used to assess and predict outcomes of other scales (pp. 99-100). The tenets of spiritual values related to ethical approaches found in the workplace spirituality model of Fry et al. (2010) that did not require a faith-based training context.

Reported results in the Johnson (2012) study had several points of interest for my research. Three subscales of a spirituality scale (IS) were found not significantly

linked as predictors of either the LPI or MLQ scales; as a result, seven of nine hypotheses were not supported. For example, the IS scale exhibited multicollinearity and required removal of one component for slightly improved correlations (p. 74). Reliability coefficients for the LPI exceeded 0.70 for all except one component (0.63); whereas, the IS and MLQ scales had several indices below 0.70 (p. 71).

The use of the LPI to measure behavioral values as exemplary practices in my study was logical, based on the supportive evidence in the literature. It appears, from this discussion, an exemplary practices model in which an ethic of spirituality is expressed as values behavior can be operationalized by the LPI in lieu of other less validated spirituality scales.

Use of Administrative Competency Dimensions (ACD) to Assess Knowledge and Adequacy of Preparation

The ACD instrument (Welch, 2003) measured knowledge as one of the triadic parameters in my research. The ACD was contextually faith-based and identified additional managerial skills that were less evident in the other two instruments. The examined knowledge and skills of seminary-graduated, working clergy focused on perceptions of administrative or managerial competencies important to pastoral roles held by 80% of respondents (p. 92). The Welch (2003) study has notable implications for my research since the precedent findings, albeit on a limited target group, substantiated a method to compare for relationships between self-reported competencies based on importance and adequacy of preparation as parameters.

As discussed earlier, rated importance of a specific skill signifies an expectation of familiarity or sufficient conception to decide on a level of perceived importance for

each item as well as a respondent decision to indicate whether or not the itemized skill or task was adequately demonstrated in the seminary's pedagogical preparation of the student (Welch, 2003, pp. 93-94). Measures of perceived importance were compared to perceptions of the level of focus on specific knowledge and skills as competency dimensions in seminary training preparation. As used in the Welch study, the importance heading read: "Effective ministry requires knowledge and skill in this competency" (Welch, 2003, p. 210). The preparation heading read: "The seminary learning experience provides adequate preparation for this competency" (p. 210).

Clergy ranked importance of managerial competencies with leadership principles among the top four competency areas, preceded by knowledge of biblical models as the top ranked; decision-making ranked second; and staffing, ranked as third (Welch, 2003). Notably, Welch (2003) and later Pinnington (2011) utilized factor analysis of importance rankings to distinguish adequacy relationships among the responses. The ACD assessment had not been replicated in other studies according the expressed recollection of the researcher via emailed permission correspondence. My intent in the research was to validate the instrument further in a learning context as well as professional practice context as demonstrated with the LPI. An advantage of the ACD instrument for the knowledge parameter was a dual-scale used to compare competencies by importance for effective leadership and compare adequacy of preparation in key competencies obtained in seminary pedagogical training.

Summary: Faith-based Research Gaps and Ramifications

In the literature review, gaps identified in faith-based research have social change ramifications for my study. At the GTU in Berkeley CA, no specific assessment of

leadership competencies has been conducted among enrolled seminarians. It is not known what student-rated competencies might reveal about leadership aptitude or the relational factors. As a constructive learning opportunity, a review of the literature showed that the research lacks an investigation to integrate a triadic model of knowledge, skills, and practices for application to student-practitioners in seminary training preparation. Such investigation was timely to inform traditional models of seminary training preparation.

My research included multiple assessment parameters for faith-based research and would be exploratory to investigate relational effects of students' aptitude. The rationale was to investigate whether theoretical constructs of leadership competency theory can be used to assess basic capability indicators apart from heavily religious, ideological overtones of a faith tradition that might divert focus from student efficacy ratings of proficiency in perceived leadership competencies. My purpose was to investigate for relationships in order to understand what relational links might exist between aptitude of personal leadership competencies and perspectives on the adequacy of preparation in leadership training while in seminary. In the literature, descriptive exploratory studies examined student aptitude in leadership competencies. Further, a leadership competency model operationalized a triadic rubric of knowledge, skills, and practices as variables (Müller & Turner, 2010) or as knowledge, skills, and abilities (Hollenbeck et al., 2006). Inclusion of moral and relational dimensions of leadership was urged (Bolden & Gosling, 2006) with increased emphasis on practices aligned with organizational context (Carroll et al., 2008).

Since 2000, a limited number of studies conducted in a faith-based context had varied emphasis on leadership role preparation. Researchers examining leadership

competencies reported results for leadership role preparation in varied areas: mentorship and organizational leadership skills (Johns & Watson, 2006); leader interaction and administrative skills (Powell, 2009), and knowledge to identify important managerial functions for leader development (Welch, 2003). Some faith-based studies utilized a single assessment instrument such as the LPI to assess subjects while in seminary (Hillman, 2006; Johns & Watson, 2006). My research aim was to refine results by using multiple instruments to measure leadership competency variables: knowledge, skills, and practices.

Research contextual to leadership competencies in faith-based preparation included qualitative or mixed methodologies, utilizing interview research designs to collect data. Use of interviews in qualitative or mixed method studies provided valuable opportunities for self-reflection on the effectiveness of leadership training; however, data from these studies might be difficult to test for reliability. In separate studies, clergy interviews conducted to glean key developmental lessons, also revealed the perceived importance of handling relationships, personal awareness, managerial and organizational thinking, values, God's role, and pastoral temperament. McKenna and Yost (2007) used clergy responses to order by frequency the noted key events learned from spiritual priorities and mistakes in subsequent years after graduation. Boyatzis et al. (2011) examined religious leaders' emotional and social competencies in the parish setting related to parishioner satisfaction, but other leadership competencies revealing skills and practices were excluded. Therefore, an empirical examination of leadership competencies and relationships would contribute to the body of knowledge to understand applications to preparation in a faith-based learning environment.

Several studies emanated from traditional evangelical theological contexts where primacy of biblically based scripture was a theological premise of the literature review and guided pastoral-centered practices inherent to the study design such as Powell, 2009; Tilstra, 2007; and Welch, 2003. From different perspectives, two separate studies assessed leadership of working clergy after completion of educational preparation in seminary. Welch (2003) and Powell (2009) focused on vocational assessment of working clergy beyond graduation. However, the selection of assessment indicators varied with the degree of theological constructs in the research design. In more recent research, Olatunji (2012) focused on spiritual formation disciplines and ministerial leadership of a specific denomination of practitioners limited to religious practices specific to a faith-based sector. These stated distinctions were not intended to diminish crucial theological connections of biblical studies or reflective faith in ministry practices; rather, the research gap supports my study of leadership competencies assessment as an integrative measure of capabilities for transportability to either secular or faith-based roles and venues.

As a conceptual approach to describe reflective practice, Frank (2006) viewed self-assessment as "a form of deliberate and disciplined processing of experience through interpretive frames" (p. 130). To associate self-assessment of competencies with adequacy of preparation, other researchers examined connections of leadership efficacy with leadership competencies for a sense of agency and belief in one's capacity and capability (Hannah et al., 2008). In essence, self-assessment invites self-reflection and self-identity. Self-reflection on individual competencies could provide the student learning opportunities to strengthen existing skills and to learn new ones.

The Hillman (2006), Powell (2009), and Welch (2003) studies separately

demonstrated that self-assessment was one means to provide a starting point for reflective practice as an ethical framework, noting that practitioners indicated they were not adequately prepared in seminary for leadership skill-sets. For example, Green's (2002) survey of vocationally active female student-practitioners and Powell's (2009) survey of predominantly male denominational executive ministers included interview reports that the seminary learning experience did not prepare them adequately. Although Hillman, Green, and Powell mentioned feedback concerning seminary inadequacy of preparation in leadership skill development, none empirically explored the relationship. However, the Welch study structured an importance-adequacy assessment of competencies that has not been used or reported in subsequent research design; therefore, an opportunity arose to utilize and further validate the ACD tool and results.

Finally, in this literature review I examined ethical dimensions in conceptual constructs that offered parallel language and meanings useful in faith-based leadership contexts to provide a commonality of behavioral expectations as to what constitutes a spirituality of ethics (Fry & Cohen, 2009). The bridge of values-based relational behavior to a spirituality of ethics provides a shared language for self-directed learning and practice that could be adapted to faith-based leadership role preparation.

Contextual Ramifications for Positive Social Change

The composite of studies in the literature have useful learning ramifications for student preparation in a faith-based context of graduate-level seminary preparation. First, in the present process of preparing seminary students for leadership roles, the curricular focus on field training and theoretical discourse does not include benchmark assessment of leadership competencies. Competency assessment was discussed as an accepted

learner-centered training standard in health specialties (Strack et al., 2008), business management (Asree et al., 2010), and higher education preparation (Berdrow & Evers, 2010). Results showed leadership competencies assessment was a tool to measure leadership aptitude as part of a learner-centered action model (Leigh et al., 2010) that could impact positive social change in the learning environment. By assessing critical competencies for secular or faith-based environments, conceptual learning and experiential training of students could optimize behavioral outcomes (Yanofchick, 2009).

Second, few researchers assessed leadership competencies by scaled measures of knowledge, skills, and practices, or investigated whether a relationship existed between assessed leadership aptitude, ranked importance of competency factors, and assessed adequacy of preparation while in seminary. Student-practitioners demonstrating aptitude in a cognitive sense of their leadership competencies could indicate the importance of specific competencies to their leadership development and the adequacy of preparation stemming from a level of awareness of their learning skill requirements.

Third, a vision for social change in a faith-based training context underscores a rationale to investigate leadership competency assessment as an incorporated component of vocational preparation. Assessment of student-practitioners could be used to determine strengths and needs in specific competency factors, to tailor student learning, and evaluate future directions of seminary preparation to develop leadership competencies. If leadership topics continue to be offered as course electives, students might opt-out of offered electives and miss potential benefits of leadership-focused courses. Integrated assessment may increase self-awareness of leadership capabilities and gaps in preparation needs.

Lastly, environmental influences shift as social needs raise greater demands and expectations for ethical and transformational leadership in the workplace. Secular leadership theorists increasingly engage values-driven language compatible for an ecclesial context to connote integrity, honesty, faith, and to pursue community, vision, and transformation. Traditional church leaders once were less likely to view their role as drivers of change or connect behavioral effects of leadership practices on the community; a presumption of leadership capability was traditionally linked to positional authority without a focus on adequate preparation for leadership roles based on assessed competencies.

In this section, my review of literature on leadership competencies assessment provided a basis to examine the adaptability to a faith-based context. In faith-based education training, a self-assessment focus on leadership competencies without the specificity of religious-laden values might help to reveal key leadership proficiencies transferable to perform leadership roles in a variety of organizational settings. The literature supported leadership competencies assessment in learner-centered leadership role preparation. In Chapter 3, the research methodology outlines the details for a quantitative survey design, data collection, and analysis procedures.

Chapter 3: Methodology

Introduction

Limited faith-based studies were retrievable in the literature search for leadership competency studies; none examined students' self-assessed aptitude using a triadic leadership competencies model. Further, few examined student responses for relationships among variables in an importance-adequacy analysis. Therefore, this quantitative study was crafted specifically to explore variables of self-assessed student aptitude in leadership competencies for relationships to compare for differences, and to examine relationships between self-assessed variables and adequacy of preparation while in seminary. Class level was treated as an independent categorical variable that could potentially moderate the influence on the dependent variable; therefore, dummy variables were assigned values to evaluate in the model. This methodology chapter presents the design, research question, participants and setting, instrumentation, procedures, data collection, and analysis used in the study.

My research assessed leadership competencies as a triadic model operationalized by knowledge, skills, and practices. The survey combined scales of the BOC to assess skills (Berdrow & Evers, 2009), the LPI to assess behavioral practices (Kouzes & Posner, 2007), and the ACD to assess knowledge by rating selected competencies required for effective ministerial leadership (Welch, 2003). The ACD has dual response scales to rate knowledge and adequacy of preparation.

Research Design

A multiple regression model was used to explore if student aptitude of leadership competencies as three independent variables influenced or related to adequacy of

preparation as the dependent variable when assessed while in seminary. My exploratory aim was to investigate what leadership competencies, self-reported by students, were significant predictors or influences upon adequacy of preparation as a self-reported level of learning. Results of the quantitative analysis might indicate preparation gaps in the learning process. I used a formatted survey of three validated psychometric instruments to obtain cross-sectional measures of a population as suggested by Creswell (2003). Closed-ended standardized statements with summated Likert-type response scales provided aptitude measures of knowledge, skills, and practices as the independent variables in a triadic model of leadership competencies. Attributes of each variable were measured and compared with regression analysis for strength of relationships, if any, and for differential effects when moderated by class level.

Adequacy of preparation, as the dependent variable, indicates the extent an identified competency was learned or developed in seminary theoretical and experiential training for leadership roles as used by Welch (2003). Nale et al. (2000) also measured responses to the knowledge variable for an importance-adequacy analysis that compared for relationships between assessed importance of rated competencies and the assessed adequacy of preparation in those same competencies. In those studies, a higher mean score of knowledge and lower score of adequacy in a student's assessment indicated a gap in how well his or her seminary preparation addressed development needs in core competencies for vocational leadership roles. In my study, I used multiple regression analysis to glean the extent of association, if present, between knowledge as one of three independent variables and adequacy of preparation.

As discussed in Chapter 2, multiple regression analyses of independent variables

for influences on one dependent variable could show if significant relationships linked student-rated competencies to rated adequacy of preparation. In theory, knowledge, skills, and practices are variables to operationalize leadership competencies for assessment of potential leadership role effectiveness, but scores might vary in significance of influence on preparation needs.

Data were collected using the online survey engine Survey Gizmo accessible via http://www.surveygizmo.com. No paper survey option was offered. I used the software package for social sciences (SPSS statistics version 21) and the G*Power 3.1.3 program (Faul, Erdfelder, Buchner, & Lang, 2009) to test variable factors. Each operational variable and the process used for regression analysis are detailed in subsequent sections of this chapter.

Operational Variables in the Study

Analyses using multiple regression models were used to evaluate the stated hypotheses for relationships between the operational variables defined in Chapters 1 and 2. As stated earlier, a multiple regression equation of the form $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \ldots \beta_k X_k, + \varepsilon$ was constructed. The model included one dependent variable, three independent variables, a fourth independent variable defined as the normalized sum of the first three, and a three-level categorical variable converted to two dummy variables. Y = the dependent variable: *Adequacy of preparation* was an index derived from an averaged sum of all 34 items in the ACD instrument on a 5-point Likert-type scale (Welch, 2003). Three primary independent variables (X) comprised a triadic model of *leadership aptitude or competencies*:

X_1 = Knowledge was an index derived from the averaged score of all 35 items

in the dual-scaled ACD instrument on a separate 5-point Likert-type scale (Welch, 2003).

X_2 = Skills was an index derived from the average score of all 58 items in the BOC instrument (Berdrow & Evers, 2010).

X_3 = Practices was an index derived from the average score of all 30 items in LPI instrument (Kouzes & Posner, 2007).

X_4 = The normalized sum of X_1, X_2, and X_3. The individual variables were normalized to ensure a common mean and standard deviation. X_4 represents a composite measure of leadership aptitude or competencies, to be tested in the regression analysis.

X_5, X_6 = Class level (*CL*) is a categorical variable treated as a dummy variable in the multiple regression model for the proposed study. *CL* was a categorical variable with multiple levels used to group students by one of three levels of seminary study to compare group scores for each independent variable. At the Graduate Theological Union, *CL* has three values reflecting three ranges of course units completed; in the survey profile, students self-identified at CL_1 = 1-24 units; CL_2 = 25-49 units; or CL_3 = 50 units or more.

For categorical variables, the formula *k*-1 determined the number of dummy variables where *k* is the number of levels. In this case, 3-1 = 2 dummy variables (X_5 and X_6) were used for *CL*. A coded numerical value is assigned to each dummy variable in the regression model to test for significance or explanatory power of each independent variable on the dependent variable. The two variables X_5 and X_6 were assigned coded values as depicted in Table 2.

Table 2

Combination of Values for Dummy Variables Corresponding to Class Level

Categorical variable	X_5	X_6
Class level CL_1 = 1-24 units	0	0
Class level CL_2 = 25-49 units	1	0
Class level CL_3 = 50+ units	0	1

Note. Adapted from *Applied Regression Analysis and Generalized Linear Models* (2nd ed) by J. Fox, 2008, p. 125. Copyright 2008 by Sage Publications.

To summarize, the multiple regression model explored the significance of relationship on the dependent variable, *Y*, by testing the influence of independent variables X_1 = Knowledge; X_2 = Skills; or X_3 = Practices, X_4 = Composite competency; and the dummy variables X_5 and X_6 reflecting *CL*. Each instrument used to measure the values for each variable is detailed in the instrumentation section of this chapter. The resulting regression model is as follows:

$$Y = b_0 + b_1X_1 + b_2 X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6$$

Research Question and Hypotheses

The research question is restated with null and alternative hypotheses to pursue the exploratory aim:

To what extent, if any, is adequacy of preparation related to, affected by, or influenced by student-rated leadership aptitude or competencies when compared individually, in the aggregate, and by class level?

This research question pertained to student responses to investigate which self-reported items they select as their leadership competencies. In addition, if aptitude is an aggregate of three independent variables X_1, X_2, X_3, then investigating the impact of the

aggregate index of student-rated competencies as independent variable X_4 along with class-level as independent variables X_5, X_6 is warranted. In the multiple regression analyses, two separate tests will be performed:

The overall *F*-test determined whether there was a significant relationship between the dependent variable *Y* and the entire set of independent variables $X_1 \ldots X_6$, based on the following null and alternate hypotheses:

H_0: There is no linear relationship between the dependent variable and the independent variables.

$$\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$$

H_a: There is a linear relationship between the dependent variable and at least one of the independent variables.

At least one $\beta_j \neq 0$

In addition, the *t*-statistic used to test the slope (coefficient) of each independent variable also determined the significance of the relationship between *X* and *Y*. The null and alternate hypotheses are as follows:

H_0: $\beta_j = 0$

H_a: $\beta_j \neq 0$

for each independent variable, X_j.

Instrumentation and Operationalization of Constructs

The formatted survey in Appendix A was ordered with the BOC as the first scale followed by the ACD, and the LPI. Each assessment instrument was validated previously for reliability and found generalizable to varied study subjects. Subscales in each

instrument showed reliability and validity measures above an acceptable level of *0.70* as recommended in the literature (Preston & Coleman, 2000). Web-based formatting distinctions that impact a visual channel of presentation and response order effects were addressed in a web-based design to minimize response error (Tourangeau et al., 2004; Dillman, 2008; Fowler, 2008). The design and theoretical uses for each instrument were detailed in Chapter 2; use of the instrumentation for my study is described below.

Administrative Competency Dimensions (ACD)

The ACD is a 34-item instrument structured with a 5-point Likert-type scale ranging from 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree (Welch, 2003, p. 89). The ACD was designed with a dual-scale under separate headings for the analysis of (a) knowledge required, and (b) the adequacy of preparation in the seminary training (Welch, 2003). The Likert-type scale to the left of the 34 itemized factors under the heading: "Effective ministry requires knowledge in this competency" (p. 83), will be used to measure student ratings of required knowledge in the proposed study as the independent variable X_1 = Knowledge. Student ratings indicate recognition that knowledge is required in the specified administrative and managerial competencies. A separate Likert-type scale to the right side of the 34 itemized competencies under the heading: "The seminary learning experience provides adequate preparation for this competency" (p. 83), will be used to measure student ratings of preparation while in seminary, as the dependent variable Y = Adequacy of preparation.

The original context for the design of the ACD instrument was to assess knowledge and seminary preparation perceptions of alumni after graduation from the seminary setting, whereas assessment in the proposed study occurs while in the seminary

setting. Similar to the proposed study, the original assessment focused on competencies rather than religious ideology (Welch, 2003, pp. 109-110); only one ACD item reads: "knowledge of biblical models of administration and leadership" (p. 210). According to Welch, the 34 items include five internal dimensions that were not labeled in the instrument: (a) Foundational knowledge, (b) Planning, (c) Organizing and staffing, (d) Leading, and (e) Assessing and reporting (p. 85). Reported reliability coefficients were 0.82, 0.81, 0.73, 0.85, and 0.71 respectively for the importance alpha, and 0.85, 0.83, 0.88, 0.91, and 0.83 respectively for the adequacy alpha (p. 85).

In my survey, the ACD was administered intact with one exception: (a) the words "and ethical" will be added to existing words of item 2–to then read "Legal and ethical issues that impact ministry." Use of the ACD in my study was distinct from the Welch study because of (a) the present focus on currently enrolled seminary students rather than alumni in solely pastoral roles, and (b) use of the ACD instrument with two other well-validated scaled instruments for comparative analysis of factors. The author conducted order ranking and correlational analysis between groups; however, my study examined for the significance of relationship, if any, between the variables.

Results from the ACD scales in my study contributed comparable data to the author's initial results. When permission was granted to utilize the instrument, the author indicated no knowledge of other studies that used or further validated the ACD scale subsequent to the original research. For my study, the ACD responses were converted into an averaged score or mean value to create a single composite measure for the knowledge variable (X_1). My permission to use the ACD is shown in Appendix D.

Bases of Competence (BOC)

The BOC had 58 scaled items, originally developed in 1985 to assess skill development (Evers et al., 1998). Phase II refinement of a 10-year longitudinal study reported validation findings for four scaled base competencies operationalized by 17 skill-sets in 56 items (Berdrow & Evers, 2009, 2010). Four scales: (a) MS–managing self; (b) CO–communicating; (c) MPT–managing people and tasks; and (d) MI–mobilizing innovation and change are measured on a 5-point Likert-type scale ranging from 1=very low, 2=low, 3=average, 4=high, and 5= very high. The BOC will be formatted as developed. For my study, the responses to the BOC were converted into an averaged score or mean value to create a single composite measure for skills as the second independent variable (X_2). Permitted use of BOC is shown in Appendix E.

Leadership Practices Inventory (LPI)

The LPI-self has 30 scaled items to assess behavioral practices (Kouzes & Posner, 2007). Although the LPI does not list subscale categories for respondents, five scales assess exemplary interpersonal practices that are coded as: (a) MTW– model the way, (b) ISV–inspire a vision, (c) ETA–enable others to act, (d) ETH–encourage the heart, and (e) CTP–challenge the process (Posner, 2010). A ten-point frequency scale ranges from 1=almost never, 2=rarely, 3=seldom, 4=once in a while, 5=occasionally, 6=sometimes, 7=fairly often, 8=usually, 9=very frequently, and 10=almost always. Statements such as, "I set a personal example of what I want from others" [MTW] and "I treat others with dignity and respect" [EOA] reflect ethical values behavior in the exemplary practices (Kouzes & Posner, 2002). For my study, responses to the LPI were converted into an averaged score or mean value to create a single composite measure for practices as the

third independent variable (X_3). Permission to use the LPI without modification is conditioned on research purposes and shared analytical conclusions, as shown in Appendix F.

Profile Questionnaire and Invitation Letter

The profile questionnaire in Appendix B probed basic demographic information including the class level categories used in the proposed analysis. Students were asked to provide data on the GTU school where enrolled; personal characteristics; present work experience; and past work experiences. Based on prior GTU registrar criteria, class level designation for the master degree is as follows: class level 1 (0-24 completed units); class level 2 (25-49 completed units); class level 3 (50+ completed units). A sample cover letter also is provided in Appendix C.

Participants and Setting

The study took place at the GTU, a consortium of theological education institutions in Berkeley, California. To date, the eight seminaries with student enrollment at the masters and doctoral degree level include the American Baptist Seminary (ABSW), Christian Divinity School of the Pacific (CDSP), Starr King Unitarian (SKSM), Pacific School of Religion (PSR), Jesuit School of Theology (JST), Dominican School (DSPT), Lutheran Theological School (PLTS), and the San Francisco Theological Seminary (SFTS). In compliance with Institutional Review Board (IRB) procedures, school cooperation agreements first were obtained. Thereafter, the study was accessible to a census population of graduate student-practitioners at the masters degree level with enrollment numbers verified at the time of study from the Academic Dean or Registrar of each cooperating institution.

Sampling and Sampling Procedures

The survey targeted a census population of masters-level student-practitioners enrolled in GTU schools. The census was stated as 1000 students in 2011 according to a GTU web-site and estimated at 800 for 2012. However, estimates included post-graduates and five institutes that were not qualified degree-conferring institutions and omitted from the study. On the profile questionnaire, GTU students were asked to select one of three master degree class levels set at GTU recognized ranges of completed course units. Class level is designated by course units completed, rather than labeled by 1st, 2nd, 3rd year or junior, middler, or senior categories, to minimize potential discrepancy among full and part-time graduate students. The distinctions are comparative as unit rates of progression that might extend beyond three years of study. Post-graduates beyond masters-level seminary preparation were not part of the research. Comparative analysis required student selection of indicated class level in the study profile. In my study, class level was a predictor that objectively indicated students' course preparation and used with other predictor variables to assess the relationship or influence on the dependent variable.

To estimate the participants needed from a census population at the GTU, a power analysis using G*Power 3, version 3.1.3 (Faul et al., 2009) was set at an alpha setting of 0.05 for a multiple regression analysis, fixed model, r^2 deviation from zero. To analyze six independent variables in the model at a power setting of $1-\beta = 0.90$, and 0.15 margin of error effect size (Takeuchi et al., 2009), my initial power analysis indicated at least 123 respondents were needed. Based on survey response rates of 20-40% (Fowler, 2008), a minimum recruitment distribution to 653 student-practitioners would be required for a 20% response rate of $n = 130$. However, I did not obtain the desired minimum sample. I

anticipated that an estimated GTU census of 800 student-practitioners would provide adequate student response ratios. By the start of my study, the actual GTU census was a smaller total of 457 students in the master degree level as confirmed by enrollment in each participating school. Of 154 survey responses, only 92 qualified as complete for analysis; the implications are discussed in later sections of this chapter and in Chapter 4. The IRB process for student consent and confidentiality is detailed below.

Data Collection

An enrolled census population of GTU student-practitioners at masters degree level was recruited to participate. Self-report survey data was collected from respondents using web access. Instruments were bundled into a 123-item format with an option button response on www.surveygizmo.com as the web-based provider. A paper survey option was not available to non-web users. To comply with IRB, electronically signed student consent to participate was required in order to proceed with coded access to the identified web-based survey. An assigned code as a school identifier field tracked the number of respondents from each institution. To minimize response error, a filter on the web-based survey required completion of each statement on a page before progressing to next survey page. The estimated timeframe for survey completion was 30 minutes or less. In the GTU context, a web-communication system is the dominant institutional base for student-faculty exchanges, which means that a web-based survey mode would be feasible given a high level of computer access and usage within the GTU.

A multi-phased approach was reported to aid higher response results (Millar & Dillman, 2011). For initial recruitment with prior permission from each seminary, GTU students received a promotional solicitation letter at each seminary to announce the study.

Participation invitations were emailed directly to email lists provided by each academic dean, or alternately posted via general announcements in each school's e-news or blogs. I held informational recruitment forums at each seminary. A third request included a deadline reminder. As a fourth step, I thanked students for participation and encouraged others to respond prior to the deadline. Data collection time allotment depended on the actual start date for the research; school breaks and precedent events on the GTU calendar could impact student responsiveness. Incomplete surveys were omitted.

Reconciling Scale Scores

Data were collected from two instruments with 5-point Likert-type scales and one with a 10-point scale that required formatting the scores for comparison. In each instrument, responses to an item on the quantitative scale at a higher numeric value indicate stronger agreement or positive self-assessment of competencies. Use of scales with differing numbers of response categories could affect comparative mean scores; however, the treatment of ordinal responses as interval data in Likert scale format allows proportional adjustment among scale sizes and produces summed data for comparative analysis (Dawes, 2008). The number of points in a scale format also might affect computer generated analytical measures that are sensitive to standard deviation computed from mean scores and the shape of the data around the mean when one scale has a larger scale format enabling more respondent options than another scale (Lozano, Garcia-Cueto, & Muñiz, 2008). Refined analytical measures showed that an increased range of a 10-point scale has less dependency on extreme points (Coelho & Esteves, 2007).

In my study, collected data were rescaled before use in multiple regression analysis. Accordingly, the scores for the LPI 10-point scale did not change, and scale

point reconciliation for the ACD and BOC resulted in adjusted 5-point scales for value consistency to analyze comparable data. The mean scores and the standard deviation for each scaled item were computed by rescaling proportionate to the 10-point scale tested by Dawes (2008). Therefore, the ACD and BOC data were collected from qualified responses of the census population based on coded response ratings, and converted to rescaled interval values of *1.0*; *3.25; 5.5; 7.75;* and *10* before summation and averaging of the values for computation of the mean and standard deviation (p. 75).

Arithmetic re-scale formatting methods calculated by Dawes (2008) and based on method by Preston and Coleman (2000) are shown in Table 3:

Table 3

Comparing Rescale Methods of 5-point to 10-point Format for Analysis

Method 1: Rescales all scale formats to a score compatible with 10-pt scale
Formula: (respondent rating – 1) ÷ (number of response categories – 1) X 10

BOC and ACD Original	5-pt scale rating (1-5) * Rescaled	LPI 10-pt scale rating Original	Scale Value
1	0	1	unchanged
2	2.5	2	unchanged
3	5.0	3	“
4	7.5	4	“
5	10	5	etc.
		etc.	
		9	“
		10	“

Method 2: Rescale format anchored endpoints to 10-pt scale by adjusting interval values

BOC and ACD Original	5-pt scale (1-5)** Rescaled	LPI 10-pt scale rating Original	Scale Value
1	1.0	1	unchanged
2	3.25	2	unchanged
3	5.5	3	“
4	7.75	4	“
5	10	5	“
		6	etc.
		etc.	“
		9	“
		10	“

Note. Comparison of rescale methods adapted from “Do Characteristics Change According to the Number of Scale Points Used?” by J. Dawes, 2008, *International Journal of Market Research, 50(1*), p. 69. *Method one rescales to item-whole correlations recalculated by J. Dawes, 2008 based on a method (rating-1) ÷ (number of response categories -1) x 100 reported by C. C. Preston & A.M. Coleman, 2000. Optimal number of response categories in rating scales: reliability, validity, discriminating power, and respondent preferences, *Acta Psychologica, 104*, p. 7. ** Method 2 formula: (no. of 10-pt response categories -1) ÷ (no. of response categories–first point). For 5pt scale ranked 1 to 5: (10 - 1 = 9) and (5 – 1 = 4) thus 9 ÷ 4 = intervals of 2.25

In accordance with Dawes’s (2008) findings and recommendation, both methods had similar results, but Dawes asserted that method 2 was simpler (p. 70). In my study, I utilized the method two format to reconcile the scale parameters; the rescaled average value or mean for the 5-point scale is 5.5, which is the same average or mean value of the

10-point scale.

Normalizing Multivariate Analysis for Hypothesis Testing

Collected descriptive data were computed by summing the responses to obtain the mean and standard deviation of each dataset for the dependent variable *Y*= adequacy of preparation; for each independent variable X_1, X_2, and X_3; and a composite student-reported competency score as an independent variable X_4. In the event, respondent ratings along a scaled index of each instrument result in different mean values that would affect the fit of the regression model, data was transformed or standardized so that dependent and independent variables have a mean score of zero and standard deviation of one (Allen, 1997/2004). This mathematical process normalized the data to maximize linear fit in the regression model.

In my study, the regression model included X_4, a composite variable of student-reported aptitude or composite competency that could be evaluated as a potential influence on *Y*. A normalized value for X_4 results when values for X_1, X_2, and X_3 are standardized and summed for each respondent. The values for each independent variable were standardized by subtracting the mean of the summed *x* scores from the *x*-value and then dividing by the standard deviation:

X_i changed = (x_i – mean) / std (x), also expressed as $z_x = (x_i - \mu_x) / \sigma_x$.

However, the dummy variables X_5, X_6 with a value of 0 or 1 could not be adjusted by standard deviation; and dummy-regressor coefficients do not need to be standardized (Fox, 2008). To interpret each dummy variable, a positive beta-coefficient associated with X_5 or X_6 would indicate the significance of influence in the model.

Measuring Adequacy of Preparation

Adequacy of preparation was assessed from a separately rated scale of the ACD instrument under the heading, "the seminary learning experience provides adequate preparation for this competency" (Welch, 2003, p. 210). Similarly, to maximize fit of the regression model, survey responses for each respondent to the values of the dependent variable *Y* could be normalized by subtracting the mean for the summed *y*-values from each y-value and then dividing by the standard deviation:

$$Y \text{ changed} = (y - \text{mean}) / \text{std}\ (y), \text{ also expressed as } z_y = (y - \mu_y) / \sigma_y$$

This normalized *Y'* variable would then be regressed on the normalized composite X_4 to compare (X_4, *Y'*) to the other variables in the model for linearity and strength of relationship.

To specifically compare the Likert-type scores of the dual-scaled ACD instrument for an importance-adequacy analysis, a scatterplot grid could be used to diagram mean scores of itemized parameters for X_1 = Knowledge along a horizontal axis and the mean scores of the itemized parameters for *Y* = Adequacy of preparation along the vertical axis (Nale et al., 2000). Although Robinson and Garton (2008) ranked the scores for analytical comparison by weighted mean, the multiple regression model statistically measures the extent of association by determining what values in the dependent variable can be expected given certain values of the independent variable. Analysis of the collected data is described below.

Data Analysis

Multiple regression analysis using SPSS 21 software investigated the best fit of the model when the dependent variable was regressed on the independent variables

individually and collectively. In addition to descriptive statistics and correlations, data from three SPSS outputs–model summary, the ANOVA table, and the regression coefficients table–were analyzed for results:

(a) Computed r^2 value, a coefficient of determination, indicated the proportion of variance in the dependent variable Y = adequacy of preparation that was attributable to independent variables $X_1 \ldots X_6$. The r^2 value between indices 0 and 1.0 reflects the fit of the regression line.

(b) The adjusted r value (r^2_{adj}) corrects for the number of independent variables. In the proposed model, the fitted value of r^2_{adj} is a more accurate test of the significance between variables since a very high r^2 value without other indicators could signal multicollinearity among several independent values (Aczel & Sounderpandian, 2009, pp. 478-479).

(c) The ANOVA table uses an F-test to determine if there is a relationship of value with at least one of the independent variables. The F-test statistic indicates the quality of the overall regression model and if the null hypothesis can be rejected. Then, to determine the best fitting model, bivariate tests will be conducted to identify strongest fit of the variables, as follows:

(d) In the coefficients table, each t-test evaluates individual slope $(b_1 \ldots b_k)$ for each variable $(X_1 \ldots X_k)$ to test whether H_0: $\beta_1 \ldots \beta_k = 0$ can be rejected. In the proposed study, a t-test determines the extent of explanatory influence of each independent variable X_i, while controlling for others, on the Y variable so those that are not influential can be eliminated (Fox, 2008), and a revised model will be derived. The output produced are regression coefficients for each standardized and unstandardized variable. The

coefficients must be different from zero to reject the null, and a *t*-value greater than 1.96 (95% confidence interval) is needed.

(e) A *p*-value test is the probability of obtaining the sample under examination (and its *t*-statistic) given that the null hypothesis is true. In my study, a *p*-value must fall below $\alpha = 0.05$ to reject the null hypothesis; the smaller the *p*-value, the stronger the evidence to reject H_0.

To summarize, statistical analysis with a multiple regression model measures the strength of association among the variables and extent of influence on the dependent variable, and will signal to check for multicollinearity (Aczel & Sounderpandian, 2009; Rea & Parker, 2005). With the SPSS regression functions, I evaluated the interactions among X_1, X_2, X_3, to Y and compared the interaction of the normalized composite value X_4 for significance to Y in the model.

Limits to Generalization

Findings and conclusions pertaining to my study were applicable to the GTU population of graduate student-practitioners, and might not be generalizable to other contextually faith-based graduate student populations in other institutional settings or geographic areas. Although located in a faith-based educational context, the study was neither limited to leadership competencies for faith-based roles nor intended to assess or evaluate religious beliefs held by individual student-practitioners. The study also was not intended to compare, evaluate, or critique the existing curriculum that might form the basis for student assessment of adequacy of preparation in the specific GTU school where enrolled. The results were used for the purpose of investigating student aptitude for leadership competencies. Knowledge demonstrated in student selected competencies in

relation to self-assessing the level of preparation in the competency might reveal distinctions that indicate need areas or learning gaps specific to the study population at the GTU; further research would need to be conducted at other institutions to investigate for comparable results.

Participant Rights and Permission

Ethical standards of the IRB process were addressed. For example, the IRB process for student recruitment was followed by obtaining cooperative agreements from each of the participating GTU seminaries. School cooperating agreements included (a) a request for student emails for posting; (b) request to notice in school newsletter; and (c) request to schedule a student forum at each school for researcher presentation to encourage student sign-ups. Informational letters were placed in on-campus mailboxes or sent via email to invite student participation. An introductory letter addressed the study purpose, confidentiality and anonymity concerns, collection timeframe, and potential benefits of the study. As a second step, direct solicitation of students complied with permission of the academic dean at each school to utilize other modes of student contact via on-line or paper newsletters, the in-person contact at student forums, and through periodically emailed updates. Intended use of an ice cream social award to the school with highest percentage of returned and qualifying responses was an incentive to peak school spirit and motivate responsiveness without individual monetary offers; however, IRB competition concerns resulted in IRB disallowing the incentive. An explanation of what constitutes qualifying response criteria for fully completed surveys appeared in the recruitment information and at the start of the online web-based survey.

Communications to solicit student participation expressly committed to

confidentiality and anonymity of respondents, including any report of collective results to a specific school or in the event of journal publication. Student consent had to be acknowledged online in order to access the survey; students were informed in the consent page that participation is voluntary and independent of any influence on grades since faculty and school personnel would not see individual responses. Student participation was anonymous except for school coding; there was no anticipated conflict of interest with my part-time adjunct role at one of the GTU schools since I could not identify individuals within the code access system. Per IRB, survey data was archived for five years; downloaded data analysis was secured in a locked file. Online response data was encrypted per written agreement with the web-based provider for five years and I have sole access to delete the web-based survey responses permanently.

Summary

My research was a cross-sectional investigation of assocations among student self-reported leadership competencies and the assessed adequacy of preparation while in seminary; as a result, causal inferences were not suggested. Resulting data could be used to inform focus areas to develop transferable competencies for effective leadership roles in varied organizational settings. By investigating for relationships that might exist between student self-assessment of leadership competencies variables, I aimed to ascertain what gaps might be identified between student-rated importance of leadership competencies and the adequacy of preparation. If relationships or differences were found between student-rated importance of each competency and rated adequacy of seminary training preparation for each competency, the results might signify what students identify as learning gaps. Gap ratings calculated as a differential between mean values in the

competency importance column and the preparation column might show negative gap values that signify competencies have greater importance rating than adequacy ratings (Gentry et al., 2011). The findings might indicate learning needs not presently addressed in seminary, which together with the opportunity for increased student self-awareness, has positive social change implications for consideration of leadership competencies as an assessment tool.

Comparison of student groups by class level categories directly associates the study focus on student assessment during the pedagogical process while in seminary; therefore, controls for age, gender, and work experience are not integral to the purpose of this investigation. Web access coding enabled compilation of anonymous student results by cooperating school for later synopsis reporting to each of the eight schools, as incentive to participate. However, school specific compilation reports are beyond the purview of this study. The survey results and analysis are reported in Chapter 4 and a summary of the research with the social change implications are offered in greater detail in the final Chapter 5.

Chapter 4: Results and Analysis

Introduction

This chapter presents the quantitative findings of my exploratory research as detailed in Chapter 3. I conducted my research at the Graduate Theological Union (GTU) in Berkeley, California and explored to what extent graduate-level students self-assessed their leadership competencies. I used response scales examining knowledge, skills, and practices in relationship to the assessed adequacy of preparation while in seminary. The regression results showed limited relationship between student-assessed competency variables and assessed preparation. Rather, the findings showed students distinctly self-assessed leadership competencies with marked differences or gaps in their ratings for preparation. The results sections are organized to discuss the data collection protocols, the outcomes of the collection process, the survey method and assessment protocols, the resulting descriptive statistics, the multiple regression analysis conducted to evaluate the regression model, and the summary of findings. Samples of the collection protocols are provided in Appendices G-J and the research data are summarized and depicted with tables and figures throughout this chapter.

Restatement of the Research Question and Hypotheses

The research question pertained to exploration of student responses to self-reported items selected as their leadership competencies. The following research question guided the analysis:

> To what extent, if any, is adequacy of preparation related to, affected by, or influenced by student-rated leadership aptitude or competencies when compared individually, in the aggregate, and by class level?

I utilized multiple regression analysis to test null and alternative hypotheses and to address the research question. I examined three independent variables–knowledge, skills, and practices–as operational variables X_1, X_2, X_3, in a triadic model of leadership competencies. The research question also warranted analysis of an aggregate index of student-rated competencies as independent variable X_4, to explore if student aptitude as a composite of the three independent variables X_1, X_2, X_3 influenced preparation as the dependent variable. The analysis also compared graduate student responses by class-level as independent dummy variables X_5, X_6. Therefore, the variables comprised the following multiple regression model:

$$Y = b_0 + b_1X_1 + b_2 X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6$$

I evaluated the regression model using several separate tests. The overall *F*-test determined whether or not there were significant relationships between the dependent variable *Y* and the entire set of independent variables $X_1 \ldots X_6$. The research question prompted tests for the following null and alternate hypotheses:

H_0: There is no linear relationship between the dependent variable and the independent variables.

$$\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$$

H_a: There is a linear relationship between the dependent variable and at least one of the independent variables

At least one $\beta_j \neq 0$

To further respond to the research question, a *t*-statistic in multiple linear regression tested the slope (coefficient) of each independent variable to determine the significance of relationship between *X* and *Y*. The null and alternate hypotheses stated:

H_0: $\beta_j = 0$

H_a: $\beta_j \neq 0$

for each independent variable, X_j.

Finally, I used multivariate and bivariate testing to validate the best fit in a multiple or simple linear regression model. Since the respondent characteristics showed a reasonably even distribution, I did not weight values to account for disproportionate representation.

Data Collection

Collection Protocols

Data collection took place during two semesters in a consortium of eight seminaries comprising the GTU in Berkeley, California:

- American Baptist Seminary of the West (ABSW),
- Christian Divinity School of the Pacific (CDSP),
- Dominican School of Philosophy and Theology (DSPT),
- Pacific Lutheran Theological Seminary (PLTS),
- Pacific School of Religion (PSR),
- San Francisco Theological Seminary (SFTS),
- Santa Clara University Jesuit School of Theology Berkeley (SCU-JSTB), and
- Starr King School of Ministry (SKSM).

I followed the same collection protocols at the eight schools. In accordance with the Walden University Institutional Review Board's protocols, I utilized email and U.S. postal service to introduce the study to the Academic Dean or to the Dean of Students at

each school between May and September 2013. A Cooperation Agreement (Appendix G) outlined a phased recruitment process adapted from the Dillman (2008) tailored design method for Internet survey recruitment discussed below. Each Cooperation Agreement addressed IRB protocols of anonymity and confidentiality stipulations for student privacy during recruitment and participation. The Dean at each seminary authorized a Cooperation Agreement on school letterhead that granted me permission to recruit student participants. I received signed agreements from all eight schools, and included those in the Walden IRB application submitted initially on October 5, 2013 for review. Upon receipt of Walden's IRB approval #: 11-12-13-0119215 on November 13, 2013 to commence the study, I notified each dean to request a student enrollment census in Masters degree programs for the current fall semester. On-site visits also were scheduled at each GTU seminary for a non-mandatory recruitment information forum to address student questions, if any.

As reported in Chapter 3, the GTU estimated an enrolled student population in 2012 at 600 students in all Masters degree and certificate programs. The actual 2013 GTU enrollment census in Master degree programs had declined among the eight GTU schools at my study commencement, consistent with reports of declining enrollment trends by the Association of Theological Schools (2012) and the In Trust Center for Theological Schools (Wheeler & Ruger, 2013). At the start of my study, the actual enrollment census in GTU Master degree programs totaled 457 students in the Fall 2013 semester according to census numbers obtained from each school, and corroborated by enrollment data reports obtained from the GTU consortia registrar office. Numerical differences between active and inactive students resulted from names retained on student

rosters and those actually enrolled as registrants in courses during fall semester. The omission of students in certificate programs or in dual-degree programs where they might be doubly counted in a degree-specific report also accounted for some numerical reduction. The enrollment census of students included on-campus residents, commuter students, and those registered in assigned internships off-campus, out-of-state, or international.

Collection protocols addressed anonymity, confidentiality, and privacy of student respondents in compliance with Walden's IRB stipulations. My arrangement with each school was to work through the Dean's office to provide each IRB approved recruitment item for distribution to students, rather than provision of student email lists to me for direct contact. While this process was intended to reduce potential for student coercion or conflict of interest in my role as GTU faculty, the lack of student identity in the provided data also prevented follow-up access to mitigate a sizable number of students who began but did not complete the survey, resulting in my inability to utilize the data. Other collection factors discussed in subsequent sections of this Chapter 4 include suggestions for future research considerations mentioned here, but detailed in Chapter 5.

Recruitment Collection Process

The Denver-based Survey Gizmo tool located at http://www.surveygizmo.com was used to design the survey and securely store the survey data. Data were stored as an encrypted password protected file on the server for my sole access and /or deletion of data per IRB protocols. As a web-based server, Survey Gizmo offered (a) numerous design options for responses and large data capacity for simultaneous respondent access; (b) quality level of customer service and technical support to guide my online survey

creation and coding of values for SPSS export; (c) the provision of a direct URL link specific to my research survey for respondent access; (d) the capability to tailor passwords for access as school identifiers; and (e) the flexibility to track anonymous responses as a collective database or as a later option, by each school identifier.

Student recruitment involved a multiphased method developed by Millar and Dillman (2011). In phase one, after IRB approval, I introduced the dissertation research by distributing the initial Recruitment Invitation Letter (Appendix H). The letter included the web survey link, school-specific password access, and the date of my on-site visit for student questions, if any. At each session, I brought hard copies of the letter, if a student requested. I also informed attendees that the dean or assigned personnel at each school had emailed the same letter intact to a student listserv. Phase two occurred within three weeks after my scheduled on-site visit. My distribution of the IRB pre-approved announcement entitled Recruitment Reminder (Appendix I) occurred twice during this phase via email to a listserv of enrolled students in Masters degree programs at each school. I transmitted a second reminder via email either as an intact attachment to the listserv or placed intact as a block announcement in a specific school's electronic newsletter vehicle, in accordance with the signed Cooperation Agreements in the approved IRB application.

As phase three, distribution of an IRB pre-approved End of Study Announcement (Appendix J) served to inform students of the response timeline, thank students for their respondent participation, and invite other students to participate. I distributed the announcement to the schools' masters student listserv just before the close of fall semester to urge students to respond over the GTU holiday and Intersession. A second

announcement distribution confirmed that the end of study period extended into the spring semester to end May 10, 2014, comprising a total response period of six months. By that date, 153 students accessed the site. Another student completed after the end of study period to total 154, but was not included since data analysis had commenced. Four tried to enter the site with incorrect passwords by either a school name or personal email, and were disqualified. Only 93 of the 457 enrolled student census correctly completed the surveys on schedule, rather than a desired minimum sample of 123 respondents based on a 0.90 power setting, as noted in Chapter 3. The probability for a Type II error is discussed in the data treatment section of this chapter and in Chapter 5.

In the fourth phase, I emailed each dean at the cooperating schools to thank them for the cooperation. I indicated data collection was underway and reiterated my intent to provide each school with a consolidated report of the Chapter 4 data analysis and findings once approved by Walden University. Beyond the purview of my study for Walden research requirements, I restated my offer to furnish a school-specific report after final Walden dissertation approval, provided there were sufficient student responses for a school-specific data analysis.

One data collection discrepancy from the plan stated in Chapter 3 was addressed in the approved IRB application to omit paper surveys as a student option. Instead, the mode of survey was entirely web-based; emailed communication was the primary mode for student recruitment, supplemented by on-site mailbox distribution of recruitment materials. Several factors contributed to this decision: First, the length of the survey made a paper version unwieldy and the return of paper surveys incompatible with the aim of student anonymity in compliance with IRB stipulations. Second, several deans

independently urged that recruitment protocol material at each step be transmitted electronically through use of institutional email to each school's listserv of masters students to expedite distribution, partly due to the commencement of the survey late in the semester. Third, emailed transmissions supplemented or replaced issuance of hard copies to on-site mail slots because at least two schools no longer utilized on-site mail slots. Per agreement with the dean at each school, a listserv for school communications made it possible to distribute IRB pre-approved recruitment notices intact and addressed IRB conflict of interest protocols by limiting my access to individual student data. The assigned personnel in each dean's office with whom I worked to distribute IRB pre-approved recruitment material, in turn forwarded each piece intact to a listserv of currently enrolled students.

Use of email as a primary mode of recruitment was confirmed when the initial recruitment invitation letter distributed to on-site student mail slots at three of eight GTU schools did not meet the intended purpose to supplement the listserv. During my subsequent site visits, personnel at each school showed me that most of the paper copies remained untouched in those on-site slots. School personnel confirmed that students often were too busy or neglectful to retrieve paper forms of communication when retrievable via Internet media from cell phone or computer. The few students who attended my onsite information sessions attributed overall low attendance to end of semester inundation with course requirements, and the commuter profile of the student body.

To comply with Walden IRB protocol stipulations, and to heed the deans' advice to utilize email recruitment distribution, I utilized and relied upon the GTU email listserv operative at each school as the primary mode for my recruitment collection process. As

stated earlier, I used email communication to notify the dean for each phase with the requisite IRB pre-approved notice as an attachment. Either the dean or designated personnel at each school forwarded the recruitment notice or announcement intact via email to the masters student listserv and notified me by blind copy of the communication when sent. All communication indicated that I was the initiator of the recruitment material. This process of recruitment distribution maintained student anonymity and precluded release of student emails to me for direct access.

Demographic Characteristics

The demographic profile of respondent characteristics among the eight GTU schools included student-identified school affiliation, gender, selected age range, and enrolled class level by completed masters degree course units; however, my multiple regression analysis did not include gender and age range. Affiliations of participants among the eight GTU schools were distributed as shown by school in Table 4.

Table 4

Comparing Survey Respondent Distribution in GTU Schools

School	Respondents	Percent of Total
PSR	24	25.8
ABSW	21	22.6
SFTS	13	14.0
PLTS	11	11.8
CDSP	10	10.8
SKSM	7	7.5
SCU/JSTB	6	6.5
DSPT	1	1.1
Total (*n*)	93	

As the largest seminary, PSR had the most respondents at 24 completions (25.8%) and 14 incomplete surveys; ABSW had 21 completions (22.6%) and three incomplete; SFTS had 13 completions (14.0%) and eight incomplete; PLTS had 11 completions (11.8%) and six incomplete; CDSP had 10 completions (10.8%) and two incomplete; SKSM had seven completions (7.5%) and five incomplete; and JSTB/SCU had six completions (6.5%) and 15 incomplete. I found that DPST had the lowest response level of one completion (1.3%) and three incomplete. When I reported the participation to the deans and personnel at each of the latter three schools, no determinable difference in recruitment protocols or process was confirmed. For the purpose of analysis and reporting, the data from the eight schools were consolidated to report in the results section below.

The 93 respondents included 52 females (55.9%) and 41 males (44.1%). From GTU registrar data and reported GTU women's studies data, females comprised forty-six percent of the overall GTU student population. Age ranges of the respondents showed a slightly higher percentage reporting in the 50-59 years age range, consistent with GTU registrar profile of enrolled census. Of the 93 respondents, 18 (19.4%) reported 20-29 years of age; 20 (21.5%) reported 30-39 years of age; 22 (23.7%) reported 40-49 years of age; 24 (25.8%) reported 50-59 years of age, and 9 (9.7%) reported 60+ years of age. Age and gender distribution is consistent with GTU reported census demographic and with national theological school trends reported by In Trust data. (Wheeler & Ruger, 2013). A cross-sectional age and gender distribution is shown in Table 5.

Table 5

Distribution of Gender and Age Characteristics

Gender	20-29 years	30-39 years	40-49 years	50-59 years	60+ years
Male	8	13	8	8	4
Female	10	7	14	16	5

Students identified their class level in the demographic profile as one of three categories determined by completed course units. In the multiple regression formula, class level (*CL*) was an independent categorical variable expressed as two dummy variables X_5 and X_6. Respondent distribution was nearly even among the three class levels. Among the 93 respondents completing the survey, 31 (33.3%) were in class level I at an entry level of 1-24 units completed; 28 (30.1%) were in class level 2 at a mid-level of 25-49 units completed, and 34 (36.6%) were in class level 3 at 50+ units completed. When combined with the age and gender profile, the respondent distributions among the three class levels were as shown in Table 6.

Table 6

Distribution of Respondents by Class Level, Age, and Gender

Class Level	20-29 years	30-39 years	40-49 years	50-59 years	60+ years
1 (1-24 units) Total: 31	3 M 4 F	3 M 1 F	3 M 4 F	3 M 8 F	1 M 1 F
2 (25-49 units) Total: 28	2 M 2 F	6 M 3 F	2 M 5 F	4 M 1 F	1 M 2 F
3 (50+ units) Total: 34	3 M 4 F	4 M 3 F	3 M 5 F	1 M 7 F	2 M 2 F

Note. $n = 93$

Consistent with the GTU student enrollment, most respondents were in the Master of Divinity (MDV) degree program. Among the 93 respondents, 76 (81.7%) reported enrollment for the MDV; 7 (7.5%) reported enrollment in a Master of Arts (MA) or MA of Community Leadership (MCL) degree program; and 10 (10.8%) selected the category "Other Masters" to include varied degree programs offered in select schools. Although gender, age, and degree selection were not variables in the multiple regression analysis, the data provided a check for consistency in characteristics among those who accessed the survey, my respondent data sample, and the GTU enrollment census of 457 students.

Data Cleansing and Removal of Outliers

Initial data cleansing of the sets of indexed scores revealed outliers that required removal of one respondent; as a result, 92 respondents remained in the multiple linear regression analysis. The presence of outliers was tested by examination of standardized values that fell above 3.29 or below -3.29 (Tabachnick & Fidell, 2012). Although Aczel and Sounderpandian (2009) contended that outliers should remain in the data sets unless due to recording errors, they conceded that adverse fit of data affected squared deviations from the diagonal regression line. The deleted data set (a loss of one male respondent, 20-29 years age range in CL 1) resulted in my data analysis derived from 92 GTU student respondents.

Treatment and/or Intervention Fidelity

Completion of the web-based survey on suveygizmo.com was the sole method of respondent participation and data collection for quantitative multiple regression analysis. The web-based tracker recorded that 154 accessed the survey; however, after removal of incomplete and outlier surveys, I had a respondent sample of 92 completed surveys. As a

result, the sampling criteria for the previous power setting of $1\text{-}\beta = 0.90$ stipulated in Chapter 3 were not met. Therefore, to analyze results, I had to accept that sampling power criteria using G*Power 3 version 3.1.3 (Faul et al., 2009) had to be recalculated at a reduced power setting of $1\text{-}\beta = 0.80$. The reduced sampling criteria of $n = 92$ resulted from a 20% response rate based on actual GTU enrollment census of 457 students. I also had to accept that a lower power setting of $1\text{-}\beta = 0.80$ meant that greater risk of a type II error could impact my inability to reject the null hypothesis when it possibly could be rejected by results of a larger sample. Still, in separate studies analyzing statistical power and sample size, Bradley and Brand (2013) found that a power setting of $1\text{-}\beta = 0.80$ was deemed adequate for most social sciences and psychological studies (p. 835). Liu (2013) constructed a range of confidence limits to determine actual power for small samples, indicating if the sample size is $n = 84$, and desired power is 0.80, the actual power fell within a range of 0.80 and 0.95 (p. 46). Further, Bradley and Band reported that limited sample size or respondent numbers were a reality in many studies and urged flexibility in alpha values or in effect sizes (p. 843).

The research question in my study suggested a maximum number of six independent predictor variables to test for possible relationships of influence on the Y variable. In the multiple linear regression model, one of six independent variables was a composite variable, X_4, composed of a normalized composite of indexed scores for X_1, X_2, and X_3. Allen (2004) found an increased likelihood of multicollinearity when a variable Y was regressed by a composite variable comprised of other variables in the same regression equation.

My initial data load into SPSS 21 showed multicollinearity among the predictor variables, requiring further tests to determine which one or more variables were attributed to multicollinearity in order to eliminate those. As a result, the regression model likely would result in five or less independent or predictor variables as discussed in the data screening section. To revisit minimum sampling criteria, I used G*Power software set at an alpha setting of 0.05 and a power setting of $1\text{-}\beta = 0.80$ and selected the analytical test entitled: *F-tests–Linear multiple regression: Fixed model, R^2 deviation from zero* (Faul et al., 2009).

Sampling criteria were computed for three and five independent variables in a regression model at 0.15 effect size, based on Cohen's (1992) population effect size index for multiple predictor variables (p. 157). G*Power 3 sampling criteria for multiple regression analysis for five predictors at an 0.15 effect size f^2 (Faul et al., 2009), resulted in sampling criteria of 92 respondents as shown in Table 7 and in the sampling plot shown in Figure 2:

Table 7

Sampling Criteria for Five Predictors at 0.15 Effect Size and 0.80 Power

	Analysis	Data Results
Input	Effect size f^2	0.15
	α err prob	0.05
	Power (1-β err prob)	.80
	Number of predictors	5
Output	Noncentrality parameter λ	13.8000000
	Critical F	2.3205293
	Numerator df	5
	Denominator df	86
	Total sample size	92
	Actual power	0.8041921

Note. Statistical power analysis from "*F*-tests–Linear multiple regression: Fixed model, R^2 deviation from zero" by F. Faul, 2009. *Behavior Research Methods*, pp. 1149-1160

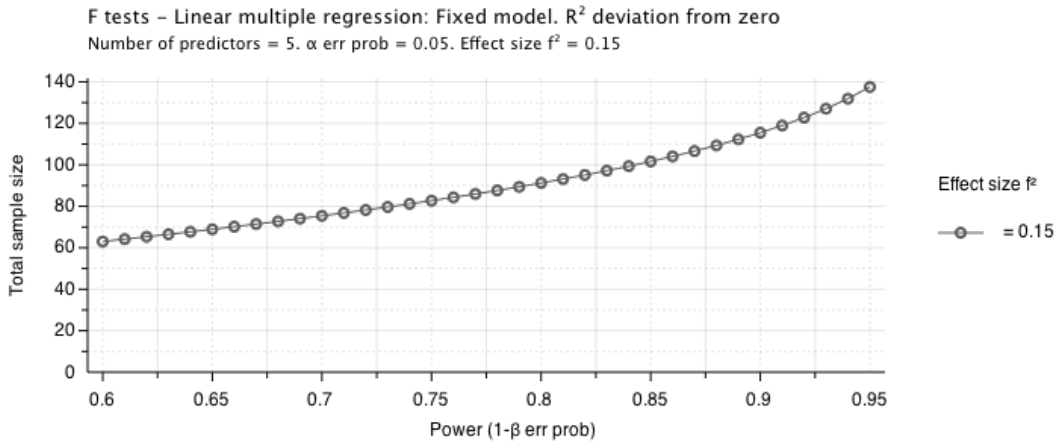

Figure 2. Sampling plot for five predictors at 0.15 effect size and 0.80 power.

In either case, sampling criteria were based on an effect size index in the medium range as recommended by Cohen (1991). As stated earlier, SPSS discovery of one outlier resulted in removal of one respondent, reducing my data to 92 respondents. In addition, power analysis was computed for a multiple regression equation to analyze the size of sample sufficient to test three predictors, such as the main triadic variables operational in leadership competencies, at a medium effect size of 0.15, an alpha setting of 0.05, and power setting of $1-\beta = 0.80$. The minimum sampling criteria of 92 for the five-predictor model also sufficiently met the computed criteria for a three predictor model.

My decision to proceed with the analysis was based on the sampling criteria in the $1-\beta = 0.80$ power analysis indication that 92 respondents might be utilized to conduct a series of regression analyses to test the null hypotheses. Nevertheless, I recognized that the limited sample size increased probability risk for either type I or type II errors with implications for either of the five-predictor or three-predictor multiple regression models at a 95% confidence level and a power of 80.2%. For the purpose of this research, the alpha level set at *0.05* was a commonly designated value in social science research (Aczel & Sounderpandian, 2009). An acceptable significance level to determine when to reject a null hypothesis was important to reduce the chance of rejecting a true null hypothesis, i.e., the probability of committing a type I error (p. 260). The alpha setting equated to a 95% confidence level as the maximum probability of committing a type I error and the maximum *p*-value at which the null hypothesis can be rejected (p. 262). The *p*-value criteria also reduced the likelihood of committing a type I error, such as a researcher rejecting the null hypothesis erroneously by concluding a significant relationship existed when it did not.

Additionally, my smaller sample size increased the probability of a type II error of failing to reject the null hypothesis when it is false. Ordinarily, data might show results significant enough to reject the null hypothesis, but small samples or reduced power are less likely to meet statistically strong associations and discrepancies might occur. Type II errors are determined indirectly by the alpha level; the lower the alpha, the lower the probability of type I error, but the likelihood of type II error increases. A symbol for type II error is β, and the power level (1-β) indicates likelihood of detecting a false null hypothesis when tested (Azcel & Sounderpandian, 2009, p. 264). As counterparts, the α and β values that I selected offered a feasible balance to minimize type I and type II error possibilities; still, a larger sample reduces probability of errors. I exported the qualifying data to the SPSS 21 software to examine variables as detailed in the results section.

Results

Participant Demographics and Class Level

The participant demographics listed as gender, age, and class level frequencies and percentages for the 92 allowable participants are shown in Table 8.

Table 8

Frequencies and Percentages for 92 Participant Demographics

Demographic	*n*	%
Gender		
Male	40	43
Female	52	57
Age range		
20 – 29	17	19
30 – 39	20	22
40 – 49	22	24
50 – 59	24	26
60+	9	10
Class level		
1 – 24 units	30	33
25 – 49 units	28	30
50+ units	34	37

Note. Percentages may not total to 100 due to rounding error.

Instrumentation, Scale Scoring, and Reliability

Three instruments provided data for analysis of indexed mean scores as variables in the multiple regression equations. I summarized the theoretical foundation of each instrument in Chapter 2, and detailed the methodological measures of each in Chapter 3. In this chapter, I report on data related to respondent scoring. To test the survey instruments, I conducted a one-time Cronbach's alpha test to analyze internal consistency or reliability for accuracy of itemized data sets from student respondents for each measure. Table 9 lists Cronbach's alpha coefficients for the four scales ranged from *0.84* to *0.98*, indicating good to excellent reliability.

The ACD instrument (Welch, 2003) measured knowledge as an independent variable, X_1. Welch contended that respondent self-ratings inferred necessity or importance of the competency for effective leadership and included a heading for scale that read: "Effective ministry requires knowledge and skill in this competency" (p. 210). In my study, 92 respondents answered up to 34 items on a 5-point Likert-type scale of 1 = strongly disagree to 5 = strongly agree. As detailed in Chapter 3, the scaled values for two instruments in the survey required reconciliation of the 5-point scale values for numerical compatibility with the 10-point scale of the LPI-self. I used the point values computed by Dawes (2008) to retain the interval spread by proportional adjustment among the scales. For the ACD instrument, I entered the rescaled scoring into SPSS 21 as 1.0, 3.25, 5.5, 7.75, and 10. As a result, the mean and standard deviation of indexed scores on a 5-point scale were valued for compatibility with a 10-point scale used in the LPI-self. For the ACD and other instruments in my study, Cronbach alpha reliability tests indicated how reliably my sample of 92 participants responded to each scale (Trochim, 2007). The alpha levels in Table 9 showed the internal reliability of the ACD scale at $\alpha =$ *0.84* based on the datasets of student respondents as the measure for knowledge.

The BOC instrument (Evers et al., 1998) measured skills as independent variable X_2. Ninety-two respondents answered 56 items on a 5-point Likert-type scale of 1 = very low to 5 = very high. Again, for compatibility with the LPI-self 10-point scale, I coded the values for the 5-point response scale of the BOC at the rescaled values of 1.0, 3.25, 5.5, 7.75, and 10 used to compute the mean and standard deviation of the indexed scores. Based on reliability tests described above, the computed reliability of the BOC was $\alpha =$ 0.96, as shown in Table 9.

A third instrument, the LPI-self, developed by Kouzes and Posner (2007) measured relational behavioral practices as independent variable X_3. The 92 respondents answered 30 items on a 10-point scale with point scores of 1.0 = almost never to 10.0 = almost always. I computed the mean and standard deviation of the indexed scores based on the 10-point scale. In my study, the reliability tests described above showed response reliability of the LPI was $\alpha = 0.96$.

Finally, a separate scale of Welch's (2003) ACD instrument measured preparation as the dependent variable, Y. To assess preparation, the author provided a heading for the scaled items that read: "The seminary learning experience provides adequate preparation for this competency" (p. 210). The 92 respondents answered 32 items on a 5-point Likert-type scale. The computed mean and standard deviation were re-scaled for compatibility with the 10-point scale, as described earlier. Scale reliability reported in Table 9 for the preparation scale in the ACD was $\alpha = 0.98$ based on response reliability tests discussed above.

Descriptive Statistics

In SPSS, I computed student responses as summed indexed scores for the skills, knowledge, practices, and preparation scales. Consistent with SPSS, I labeled the table columns by name, abbreviated letters, or math symbol. Table 9 lists the mean scores and standard deviations of student responses for each variable. The resulting mean (M) for each scale, with standard deviations (SD) in the last column, showed that respondents self-scored highest on the knowledge scale at $M = 8.17$ (0.74); for practices at $M = 8.04$ (1.09), for skills at $M = 7.62$, and lowest on the preparation scale at $M = 5.99$ (1.82).

Table 9

Cronbach's Alpha, Means, and Standard Deviations for Scales

Scale	No. of items	A	*M*	*SD*
Skills	56	0.96	7.62	0.93
Knowledge	34	0.84	8.17	0.74
Practices	30	0.95	8.04	1.09
Preparation	32	0.98	5.99	1.82

Note. Cronbach's alpha (α) estimate of reliability for each measure based on itemized participant responses (n = 92).

Data Transformations and Normalizing the Composite Score

To transform the data, indexed scores for each independent variable (knowledge, X_1; skills, X_2; and practices, X_3) were standardized in SPSS to maximize linear fit. To standardize, data were transformed to adjust the variance of dependent and independent variables at a mean score of zero and standard deviation of one (Allen, 2004). As detailed in Chapter 3, I transformed the variables by standardizing the itemized scores into a z-score indicating the number of standard deviations that an individual participant's score falls from the mean of that score. For example, I computed the mean of the summed respondent scores for the variable X_j and subtracted the mean from each itemized score in that variable. Then I divided each by the standard deviation of each variable. The resulting z-score indicated a number of standard deviations that the standardized mean respondent scores lie from a centralized mean value. As presented in Chapter 3, transformation of the independent variables was depicted as a formula:

X_i changed = (x_i – mean) / std (x), also expressed as $z_x = (x_i - \mu_x) / \sigma_x$.

Standardization of the dependent Y variable also involved subtracting the mean

for the summed *y* values from each *y*-value and then dividing by the standard deviation. As found in Chapter 3, the *Y* variable transformation was depicted as a formula:

Y changed = (*y* – mean) / std (*y*), also expressed as $z_y = (y - \mu_y) / \sigma_y$

Tables 10 and 11 respectively, provide the pre- and post- transformed descriptive data for each variable; SPSS also showed that skew or kurtosis in the data were minimal and not affected by the transformations.

Table 10

Descriptive Statistics for Knowledge, Skills, and Practices Before Transformation

Variable	*M*	*SD*	Skew	Kurtosis
Knowledge	8.17	0.74	-0.26	-0.14
Skills	7.62	0.93	0.13	-0.14
Practices	8.04	1.09	-0.32	-0.59
Preparation	5.99	1.82	0.20	0.09

Table 11

Descriptive Statistics for Knowledge, Skills, and Practices After Transformation

Variable	Standardized: z-score	*M*	*SD*	Skew	Kurtosis
Knowledge	$(x-\mu) / \sigma$	0.015	0.99	-0.26	-0.14
Skills	$(x-\mu) / \sigma$	0.032	0.95	0.13	-0.14
Practices	$(x-\mu) / \sigma$	0.036	0.94	-0.32	-0.59
Preparation	$(x-\mu) / \sigma$	0.000	1.00	0.20	0.09

For the normalized composite variable X_4 in the regression analysis, I summed the standardized mean for each of the three independent variables into a single composite mean score of 0.027 (*SD* = 0.78) as independent variable X_4.

Data Screening for Normality and Model Testing

With multiple linear regression analysis, I assessed the relationship between the dependent variable *Y* and independent operational variables, knowledge X_1, skills X_2, and practices X_3; the composite variable X_4; and two dummy variables for class level, $X_{5,6}$.

Prior to conducting the analysis, I assessed the linear regression assumptions of normality with normal probability plots and histograms of the standardized residuals. The data points did not appear to deviate greatly from the line, and distribution approximated a normal, bell-shaped curve; the assumptions of normality were met. Homoscedasticity was examined by visual inspection of the scatterplots; data did not deviate greatly from a rectangular distribution. The assumptions for a full six-predictor regression model were met as presented in Figures 3-5.

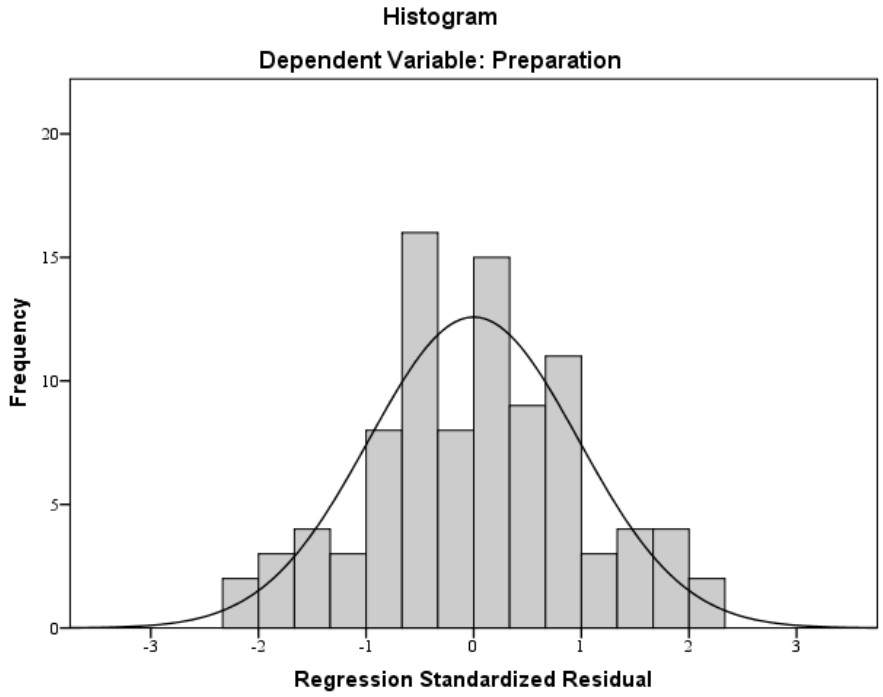

Figure 3. Histogram for standardized residuals; includes composite X_4.

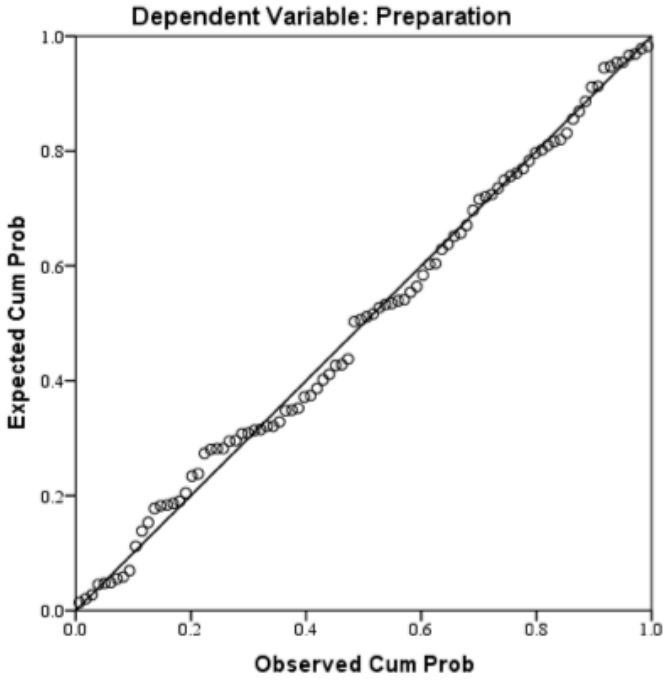

Figure 4. Normal probability plot of regression standardized residuals; includes X_4.

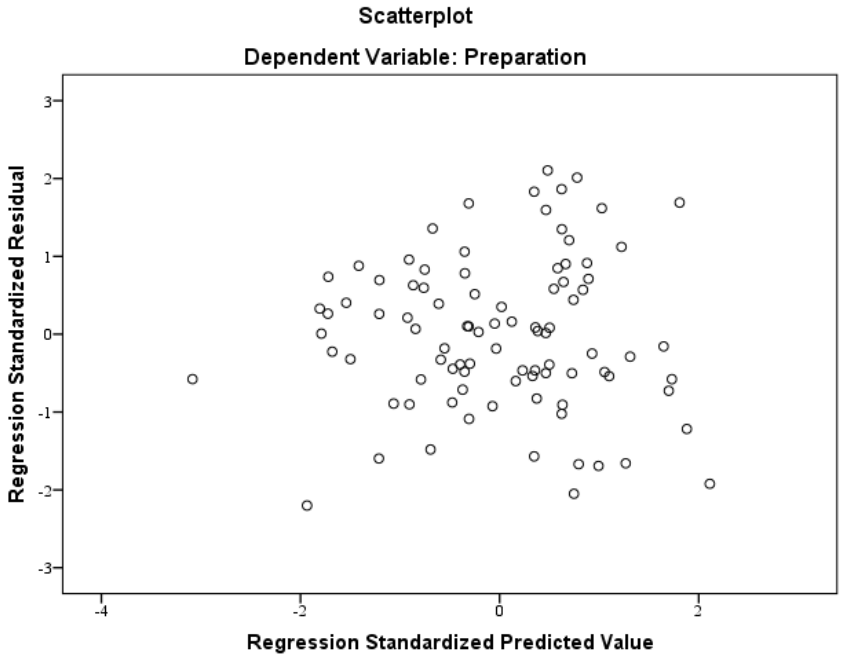

Figure 5. Plot of regression residuals against predicted values; includes composite X_4.

Issues of multicollinearity arose in the first attempt to conduct a multiple regression of the full six-predictor model. Since the normalized composite variable X_4 included mean standardized scores of the knowledge, skills, and practices scales, a VIF of 11.03 excessively correlated with one or more of other predictors as subcomponents of the composite. Multicollinearity assessment required examining the variance inflation factor (VIF). A VIF of 3 or higher indicated multicollinearity; a highly correlated VIF > 10 violated statistical assumption that predictive power is greatest if independent variables are not highly correlated (Azcel & Sounderpandian, 2009). SPSS 21 functions to automatically exclude highly correlated variables; the output function removed the skills variable X_2 from my aggregate multiple regression model for having a high VIF relative to the composite variable, X_4. As shown in Table 12, the knowledge variable X_1 and practices variable X_3 also exceeded VIF < 3 levels; although not shown, a tolerance collinearity statistic also signaled moderate interaction with the composite.

Table 12

Preliminary Multiple Linear Regression Model to Determine Multicollinearity

Source	*B*	*SE*	B	*t*	*p*	VIF
Practices	0.45	0.46	.23	0.97	.337	5.47
Knowledge	-0.14	0.38	-.08	-0.37	.715	4.03
Composite	0.18	0.79	.08	0.23	.820	11.03
Class level 2	-0.57	0.48	-.14	-1.18	.242	1.42
Class level 3	-0.76	0.45	-.20	-1.69	.096	1.39

Note. SPSS eliminated the skills variable X_2 and its VIF could not be computed in the six-predictor model.

The composite variable, X_4, a normalized sum of the three operational variables, represented student aptitude of leadership competencies as detailed in Chapters 2 and 3. I analyzed a multiple regression model solely with X_4 and the dummy variables *CL* 2 and

CL 3 to explore if a predictor relationship existed with preparation as the dependent variable *Y,* and to check if the VIF of the composite variable changed. In Table 13, the SPSS output for the model showed that the composite variable decreased to an acceptable VIF of 1.034. Notably, the *p*-value for the composite X_4 showed statistical significance at $p = 0.044$ to reject the null hypothesis for that specific independent variable (indicating significance); still, *F*-test results in the model summary exceeded criteria at $p = 0.109$ for significance of the overall model. The results highlight a Type II error risk with a smaller sample.

Table 13

Multiple Linear Regression: Composite X_4 and Class Level Predicting Preparation

Regression Statistics	
Multiple R	0.257
R Square	0.066
Adjusted R Square	0.034
Standard Error	0.983
Observations	92

ANOVA	*df*	*SS*	*MS*	*F*	*Sig. F*
Regression	3	6.026	2.009	2.080	0.109
Residual	88	84.974	0.966		
Total	91	91.000			

	Coefficients	Std Error	*t-Stat*	*p-value*
Intercept	0.241	0.181	1.337	.185
Std. Composite	0.275	0.134	2.047	0.044
Class Level 2	-0.333	0.262	-1.268	0.208
Class Level 3	-0.399	0.247	-1.614	0.110

Collinearity Statistics		
	Tolerance	VIF
Std. Composite	0.968	1.034
Class Level 2	0.719	1.390
Class Level 3	0.736	1.359

Note. Collinearity table included here to show changed VIF values in regression model

In order to continue exploring the other independent variables in a multiple

regression model, I next conducted a series of SPSS collinearity assessments to evaluate if removal of a variable would remove issues of multicollinearity among the predictors. As an SPSS 21 function, each independent variable regressed against other predictor variables showed a VIF for each variable in the model. In Table 14, the VIF for the skills variable, X_2 as well as knowledge, X_1, and practices, X_3 had acceptable statistics after treating the composite, X_4 as a dependent variable.

Table 14

SPSS Assessed Result of Multicollinearity VIF Statistics

Coefficients[a]		
Model	Collinearity Statistics	
	Tolerance	VIF
Skills	0.567	1.765
Knowledge	0.796	1.256
Practices	0.583	1.714

a. Dependent Variable: Composite of all standardized scales

Based on SPSS results, I revised the model to exclude the composite variable X_4 and performed other regression analyses as discussed in the subsequent sections of this chapter. Subsequent regression tables do not show VIF statistics.

Evaluation of Statistical Assumptions for Multiple Linear Regression (MLR)

As detailed above, when I conducted the *F*-test to determine whether or not there was a significant relationship between the dependent variable *Y* and the entire set of six independent variables $X_1 . . . X_6$, the SPSS 21 modeling did not allow MLR outputs without elimination of a variable. Since the MLR model was reassessed to address multicollinearity and elimination of composite variable X_4 as a predictor, I conducted a

five-predictor regression analysis to assess knowledge, skills, and practices as the three components of the triadic model and class level as two dummy variables. In this new model, there was no longer evidence for multicollinearity once the VIFs < 3 for all independent variables. I analyzed a revised multiple linear regression equation without the composite X_4 to test the null hypotheses as a five independent variable model. For discussion purposes, I retained the identifying variable numeration as follows:

$$Y = b_0 + b_1X_1 + b_2 X_2 + b_3X_3 + b_5X_5 + b_6X_6$$

Again, assumptions of normality and homoscedasticity were assessed first using visual inspection of a histogram, normal probability plot, and scatterplot; all of the assumptions were met as presented in Figures 6, 7, and 8.

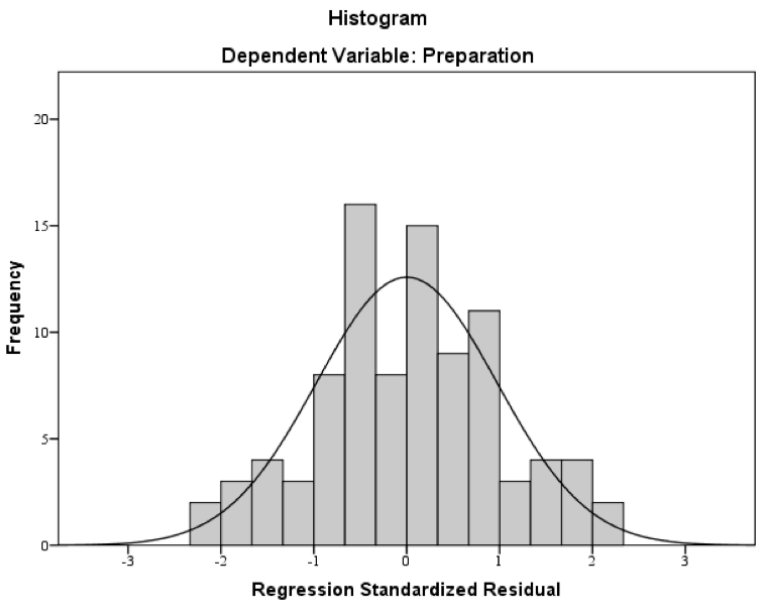

Figure 6. Histogram for standardized residuals; composite X_4 removed.

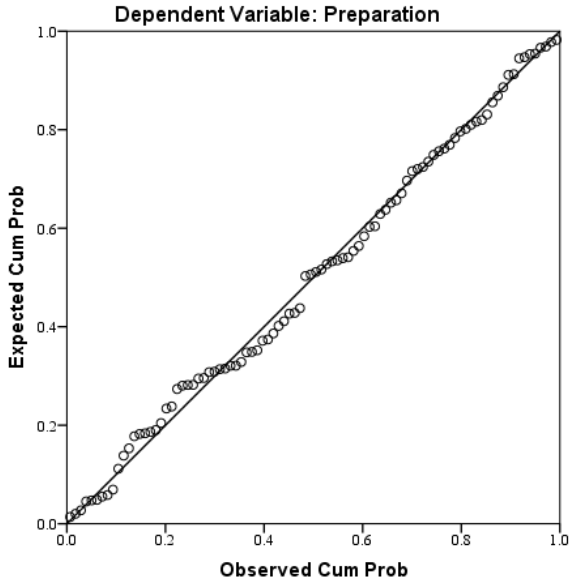

Figure 7. Normal probability plot of regression residuals; composite X_4 removed.

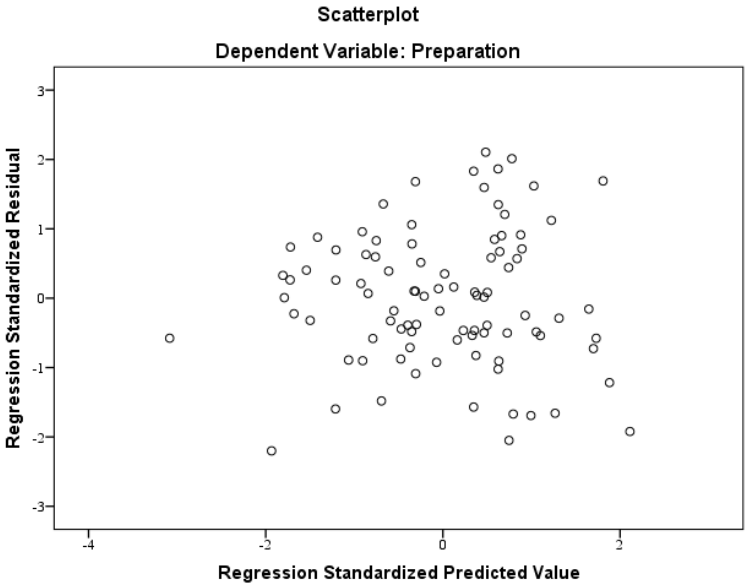

Figure 8. Plot of regression residuals against predicted values; composite X_4 removed.

The output data for revised multiple regression models are presented next.

Hypothesis Testing: Five Predictors–Multiple Linear Regression (MLR)

To explore the research question, the restated null and alternate hypotheses required testing by MLR with the remaining five independent variables including class

level (*CL*), a categorical variable analyzed as two dummy variables in the model. As shown in Table 2 of Chapter 3, scoring values to CL_2 as X_5 had a numeric value of (1,0) and CL_3 as X_6 had a numeric value of (0,1). The resulting hypotheses were:

H_0: There is no linear relationship between the dependent variable and the independent variables.

$$\beta_1 = \beta_2 = \beta_3 = \beta_5 = \beta_6 = 0$$

H_a: There is a linear relationship between the dependent variable and at least one of the independent variables.

At least one $\beta_j \neq 0$

The results of five predictors as variables in the MLR model appear in Table 15. An analysis of degrees of variance with the *F*-test statistic resulted in an *F* ratio of $F(5, 86) = 1.774$. Further, $p = 0.127$. Therefore, the null hypothesis stating that $\beta_k = 0$ could not be rejected.

Table 15

Results for Multiple Linear Regression with Five Predictors for Preparation

Regression Statistics	
Multiple R	0.306
R Square	0.093
Adjusted R Square	0.041
Standard Error	0.979
Observations	92

ANOVA	*df*	*SS*	*MS*	*F*	*Sig. F*
Regression	5	8.507	1.701	1.774	0.127
Residual	86	82.493	0.959		
Total	91	91.000			

	Coefficients	Std Error	*t-Stat*	*p-value*
Intercept	0.240	0.181	1.321	.190
Skills	0.033	0.146	0.229	0.820
Knowledge	-0.042	0.116	-0.364	0.716
Practices	0.279	0.143	1.955	0.054
Class Level 2	-0.312	0.265	-1.178	0.242
Class Level 3	-0.420	0.249	-1.686	0.096

Note. SPSS 21 regression output for standardized variables, skills, knowledge, practices and class level (two dummy variables).

The research question also prompted further exploration of the hypothesis using the *t*-statistic to test the slope (coefficient) of each independent variable and check for significance of relationship, if any, between X_j and Y.

The null and alternate hypotheses were as follows:

H_0: $\beta_j = 0$

H_a: $\beta_j \neq 0$

for each independent variable, X_j.

None of the *t*-statistics exceeded the critical value of *t* (1.96) and each *p*-value exceeded the alpha 0.05 as shown in Table 15. The null hypothesis could not be rejected and no inference from the *t*-statistic could be made. An adjusted r^2 value of 0.04 indicated

that only 4% of the variance in preparation scores could be accounted for by the five predictors. The *F* ratio, *p*-value, and *t*-statistic did not meet criteria sufficiently to reject the null hypothesis, as shown in Table 15. This indicates that the regression model is a poor predictor of the dependent variable.

The fact that the model was not significant and none of the independent variables were significant prompted further exploration of a triadic model of three-predictor variables to see if multiple regression equation met the significance criteria without class level as control variables. In the next section, I summarize my rationale for removal of the dummy variables since earlier regression results in Tables 13 and 15 did not show that class level had a significant impact on student survey responses, as indicated by the multiple regression analysis.

Hypothesis Testing: Influence of Class Level as Control Variable in MLR

As stated earlier, respondent demographics showed fairly even distribution of students among class levels. The full aggregate model of six predictors and the revised five-predictor model included class level as a categorical variable composed of two dummy control variables. The research question and hypotheses explored if class level had an influence on student assessment; for example, did the responses of one class level show greater or lesser relationship between student-rated competencies and adequacy of their preparation while in seminary? In Table 15, values did not indicate an association since the *p*-values did not meet criteria for significance; no inference about influences of class level on students' preparation assessment could be made.

As shown in Table 16, I examined mean responses by class level for distinctions in scoring apart from the regression analysis. Respondents in Class Level 1 scored lower

on practices and higher on preparation than students in other class levels. Based on a 10-point scale, students self-scored their competencies in the mean range of 7.33 to 8.31 out of 10 possible points. In contrast, mean scores for adequacy of preparation were lower and within a close range of 5.72 to 6.35. The scores indicated assessment differences between student-rated competencies and rated preparation, but not based on class level.

Table 16

Descriptive Data for Skills, Knowledge, Practices, and Preparation per Class Level

Class		Skills		Knowledge		Practices		Preparation	
Level	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Level 1	30	7.33	0.74	8.11	0.60	7.86	1.11	6.35	1.46
Level 2	28	7.86	0.94	8.31	0.76	8.15	0.88	5.92	1.97
Level 3	34	7.68	1.03	8.11	0.82	8.11	1.24	5.72	1.96

Note. $n = 92$. CL_1 = 1-24 course units complete; CL_2 = 25-49 units complete; CL_3 = 50+ units complete

Similarities in these actual mean scores and standard deviations of each indexed variable showed minimal class level distinctions among students that influenced their self-assessed competencies scores. In Table 16 and later in Chapter 5, I discuss response details and implications of students' actual mean scores for use in the GTU learning context along with statistically transformed scores used in my regression analysis.

Hypothesis Testing: Three Predictors–Multiple Linear Regression (MLR)

For a triadic variable MLR model, I excluded the two dummy control variables for class level to explore the research question further, and assess if removal of class level improved the regression model comprised of the three main independent variables in the

study: knowledge, skills, and practices ($X_{1\text{-}3}$). The regression equation was revised:

$$Y = b_0 + b_1X_1 + b_2 X_2 + b_3X_3$$

First, I checked assumptions of normality, homoscedasticity, and visual inspection of a histogram, probability plot, and scatterplots and concluded that the model met the assumptions. The SPSS results for a triadic regression model in Table 17 showed the null hypotheses could not be rejected since the multiple regression analysis did not meet significance criteria of $p < 0.05$ in the overall F-test.

Table 17

Results for Multiple Linear Regression with Three Predictors for Preparation

Regression Statistics	
Multiple R	0.249
R Square	0.062
Adjusted R Square	0.030
Standard Error	0.985
Observations	92

ANOVA	*df*	*SS*	*MS*	*F*	*Sig. F*
Regression	3	5.661	1.887	1.946	0.128
Residual	88	85.339	0.970		
Total	91	91.000			

	Coefficients	Std Error	*t-Stat*	*p-value*
Intercept	-0.009	0.103	-0.091	0.928
Skills	-0.009	0.144	-0.062	0.951
Knowledge	-0.030	0.116	-0.261	0.795
Practices	0.281	0.143	1.959	0.053

Note. SPSS 21 output of regression results for standardized triadic variables, skills, knowledge, and practices.

By comparing five-predictor and three-predictor models, I found the removal of class level resulted in the *p*-value change from 0.127 to 0.128 indicating class level as a control variable had little or no influential impact on student assessment. Notwithstanding the lack of significance in the triadic model, the practices variable, X_3 still approached

significance with a marginal reduction in a *p*-value at 0.053 in Table 17 as compared to the five-predictor model where $p = 0.054$ in Table 15. Since the *p*-value for the practices variable, X_3 approached the threshold of significance criteria $p < 0.05$, I further explored with simple linear regression to see if the practices variable and other predictor variables individually influenced preparation.

Hypothesis Testing: Individual Variables–Simple Linear Regression (LR)

The research question and hypotheses prompted a look at each independent variable X_j to explore individual effects, if any, related to *Y*. To address the research question, a series of linear regressions examined each independent variable X_j to determine if any approached significance to predict or influence preparation as the dependent variable *Y*. Multicollinearity was not at issue in simple linear regression. I evaluated each variable $X_{1...3}$ individually for relationship, if any, to the *Y* variable using separate data analyses to explore effects of individual predictors including the composite variable. My intent was to examine whether or not any change occurred in a bivariate versus multivariate analysis. With simple linear regression analysis, I also assessed if the *p*-value of 0.053 for the practices variable X_3 approached significance in a bivariate analysis. The analysis of each variable is discussed next.

Skills. Prior to my analysis of the skills variable, X_2 in a simple linear regression, I assessed the assumptions of normality and homoscedasticity through visual inspection of the scatterplots and histogram. The results indicated no violations of the assumptions as shown in Figures 9-11.

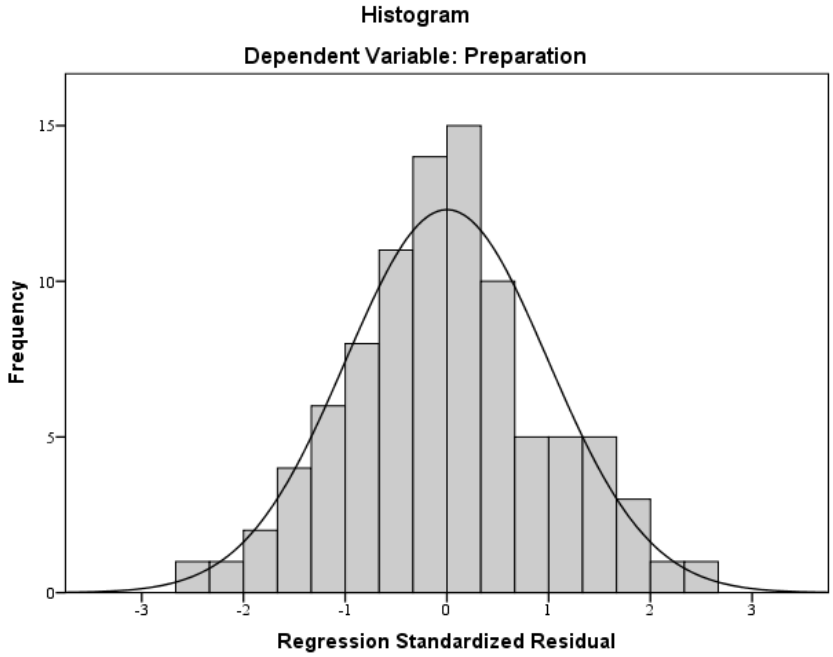

Figure 9. Histogram for standardized residuals for Skills predicting Preparation.

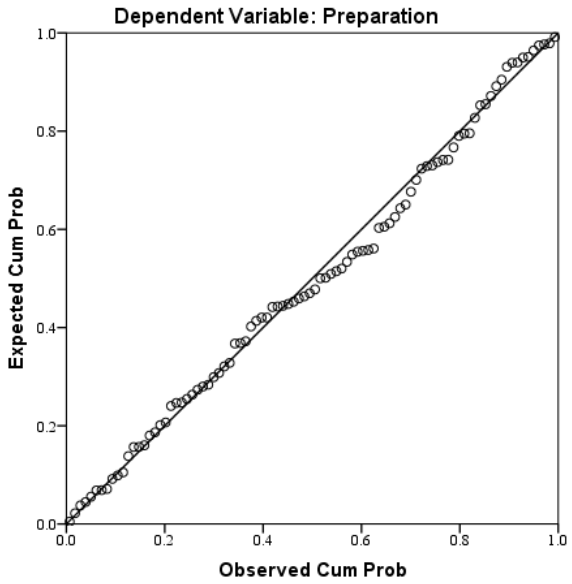

Figure 10. Normal probability plot of regression standardized residuals, Skills.

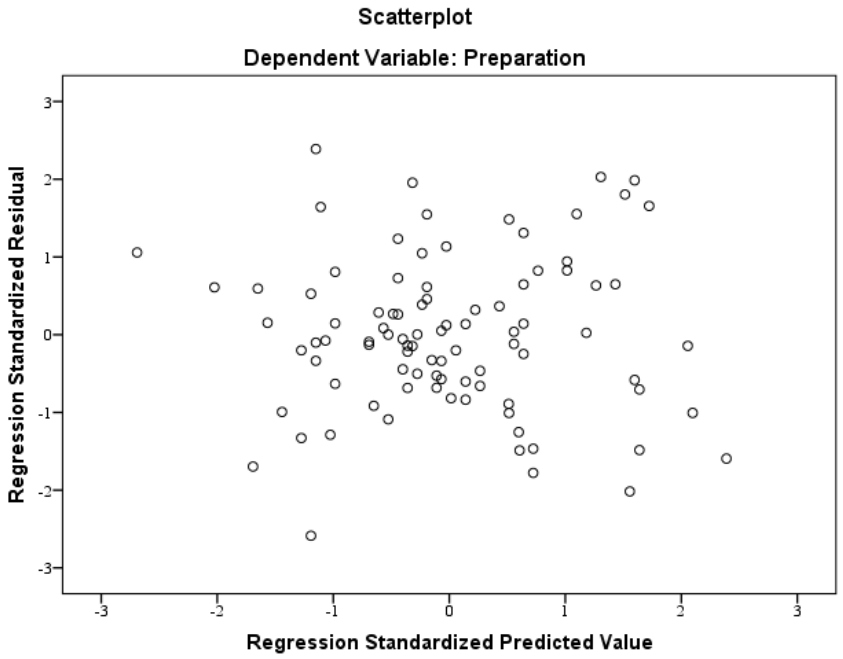

Figure 11. Plot of regression residuals against predicted values, Skills.

In SPSS 21, simple linear regression produced an ANOVA output that showed the skills variable, X_2 did not significantly predict preparation as dependent variable, *Y*. As shown in Table 18, the *F*-*t*est results showed $F(1, 90) = 1.95$, $p = 0.166$ to indicate that a null hypothesis could not be rejected. Additionally, the r^2 value of *0.02* and the adjusted r^2 of *0.01* indicated that little or no variance in preparation scores could be accounted for by students' skill scores.

Table 18

Simple Linear Regression for F-test of Skills Predicting Preparation

ANOVA	*SS*	*Df*	*MS*	*F*	*p*	r^2
Regression	1.932	1	1.932	1.952	0.166	0.021
Residual	89.068	90	.990	-	-	-
	B	*SE*	β		*t*	*p*
Skills	0.153	0.109	0.146		1.397	0.166

Note. $F(1, 90) = 1.95$, $p = 0.166$, $r^2 = 0.02$, adj $r^2 = 0.01$.

Practices. Next, I conducted simple linear regression to examine if the practices variable X_3 predicted preparation as dependent variable *Y*. Prior to analysis, the assessment of normality and homoscedasticity, as graphically depicted in histogram, normal probability plot and scatterplot, shown in Figure 12-14, indicated no violations of the assumptions.

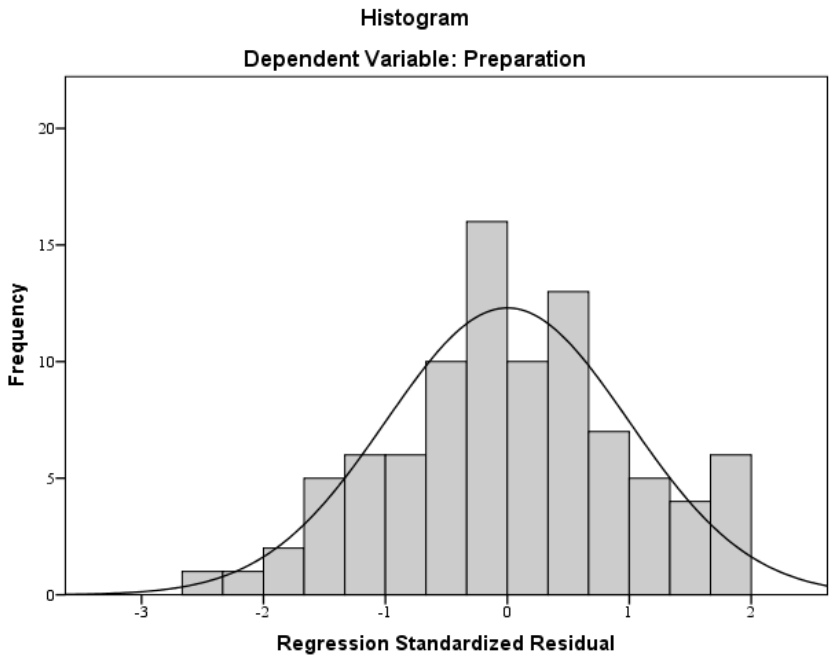

Figure 12. Histogram for standardized residuals for Practices predicting Preparation.

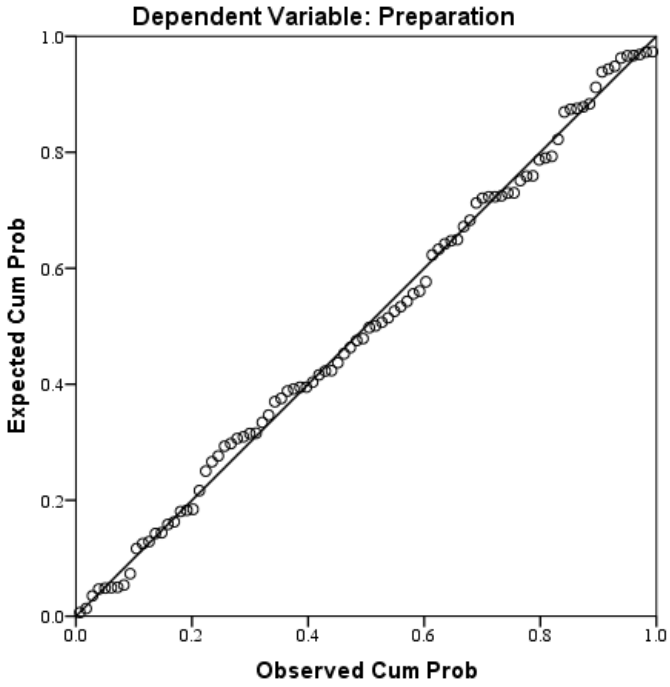

Figure 13. Normal probability plot of regression standardized residuals, Practices.

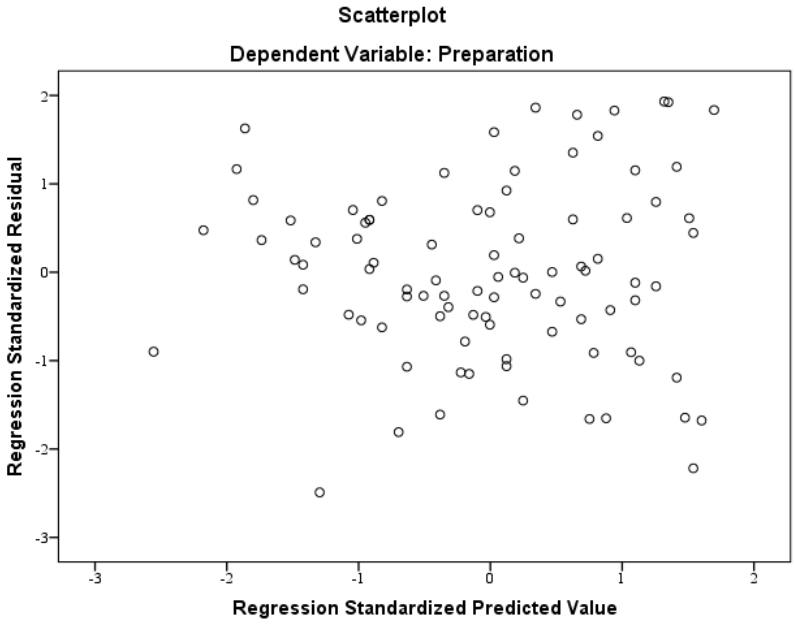

Figure 14. Plot of regression residuals against predicted values, Practices.

Linear regression analysis with practices predicting preparation fell within the *F*-test criteria of $p = < 0.05$ to show significance; at $F(1, 90) = 5.88$ and $p = 0.017$ indicated

that practices as an individual variable X_3 might be a significant predictor of preparation.

Although the five-predictor and three-predictor models did not meet criteria that were statistically predictive, the predictive ability of practices on preparation scores might suggest that the null hypothesis could not be entirely rejected. The SPSS 21 regression ANOVA table indicated results of practices and preparation as in Table 19.

Table 19

Simple Linear Regression for F-tests of Practices Predicting Preparation

ANOVA	*SS*	*df*	*MS*	*F*	*p*	r^2
Regression	5.579	1	5.579	5.878	0.017	0.061
Residual	85.421	90	.949	-	-	-
	B	*SE*	β		*t*	*p*
Practices	0.262	0.108	0.248		2.424	0.017

Note. $r^2 = 0.06$, adj $r^2 = 0.05$.

Pertaining to the sample of GTU students, a low r^2 coefficient of *0.06* and adjusted r^2 value of *0.05* as coefficients of determination indicate that only about 6% of the variation in *Y* is attributed to practices. Such low coefficients of determination meant a limited fit of values along the regression line, less impact on *Y,* and evidence that there are, perhaps, other explanatory variables not accounted for in the model.

To better understand the strength of association between the practices variable X_3 and adequacy of preparation as the dependent variable *Y*, I compared the mean values of each itemized scale to examine scoring patterns of the *X,Y* data points. In Figure 15, my comparative analysis using a SPSS function visually graphed values along the *X,Y* regression line that confirmed the lack of tight fit and a mostly randomized relationship

of the scores; however, student responses to itemized scales revealed mean scoring patterns in the *X,Y* plot of respondent datasets that visually highlighted response associations between X_3 and *Y*. For example, the itemized scores for adequacy of preparation at a mean score of 6.00 or below were plotted across computed means for itemized practices. A practices item self-rated at a mean score of 8.5 had a corresponding adequacy of preparation mean score of 4.76. A few cases showed high mean scores for practices above *8.5* that also had preparation scores of 8.00 or higher, found in the upper right quadrant of the *X,Y* plot.

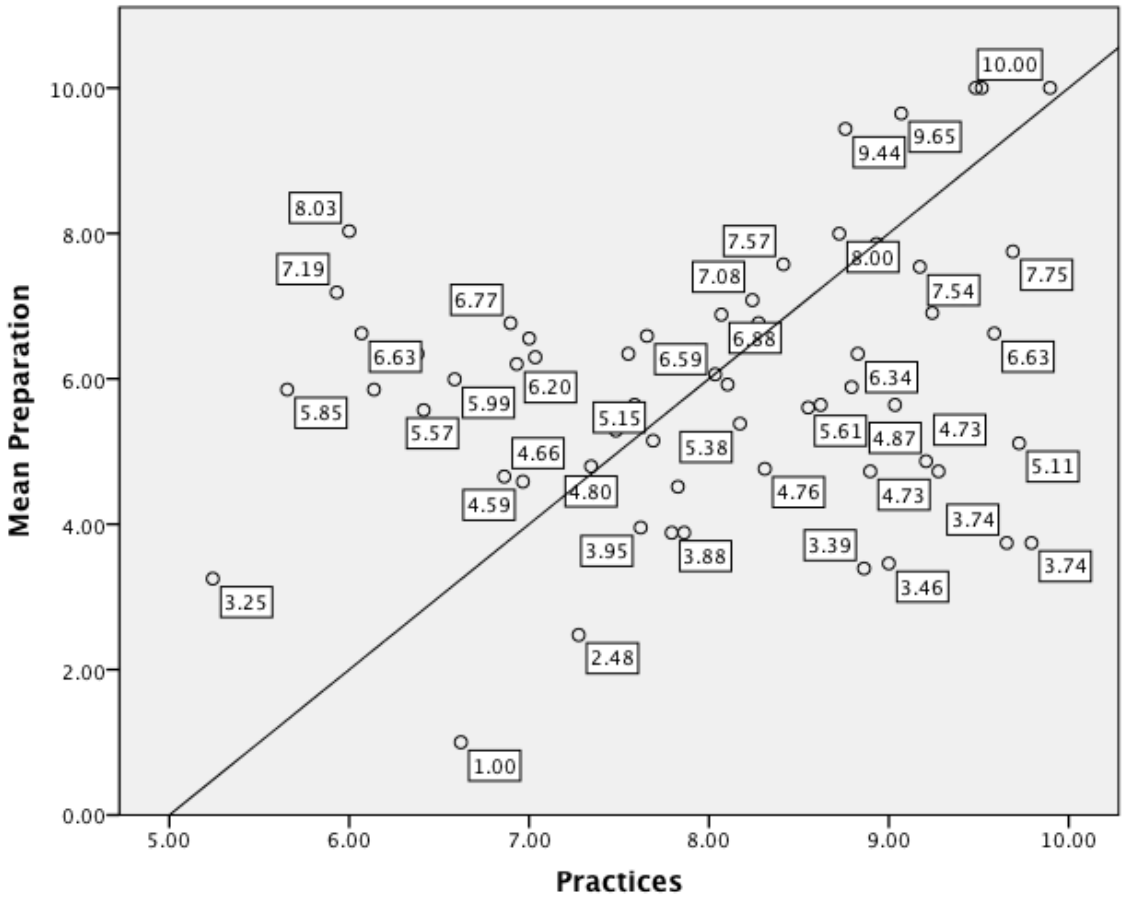

Figure 15. X,Y plot of itemized mean values between practices and preparation scores.

Further discussion of the implications of the itemized mean scores and labeled dataset patterns appear in Chapter 5 where potential uses of the data were considered.

Knowledge. Next, a simple linear regression explored knowledge and preparation. Prior assessment of normality and homoscedasticity with visual inspection of the histogram, probability plot, and scatterplot had no violations as shown in Figures 16-18.

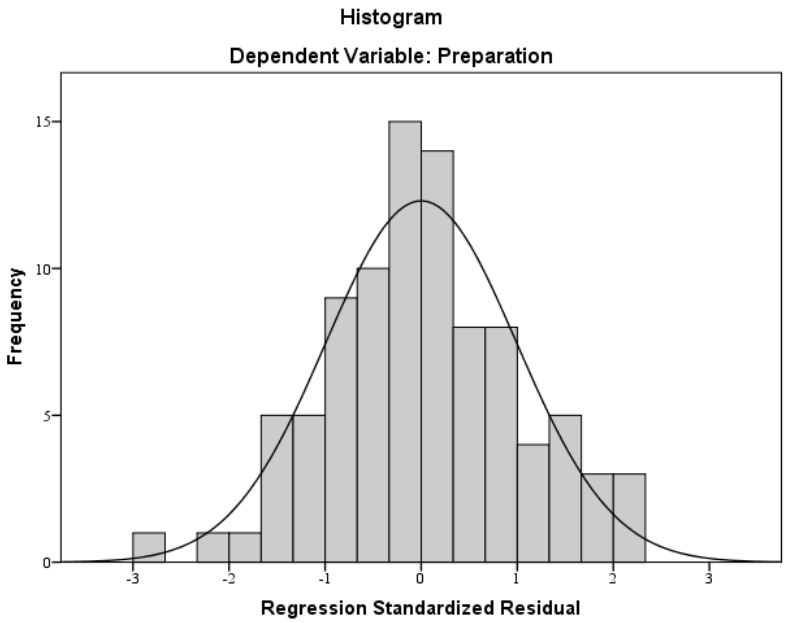

Figure 16. Histogram for standardized residuals for Knowledge predicting Preparation.

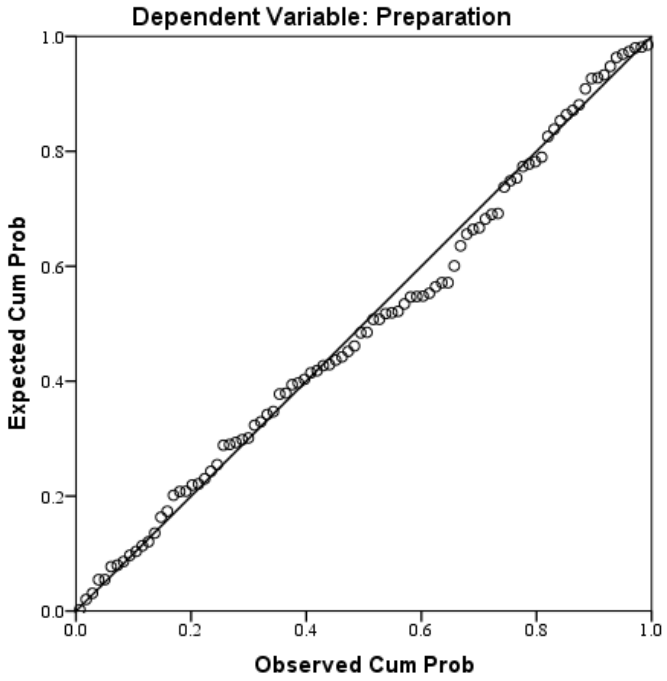

Figure 17. Normal probability plot of regression standardized residuals, Knowledge.

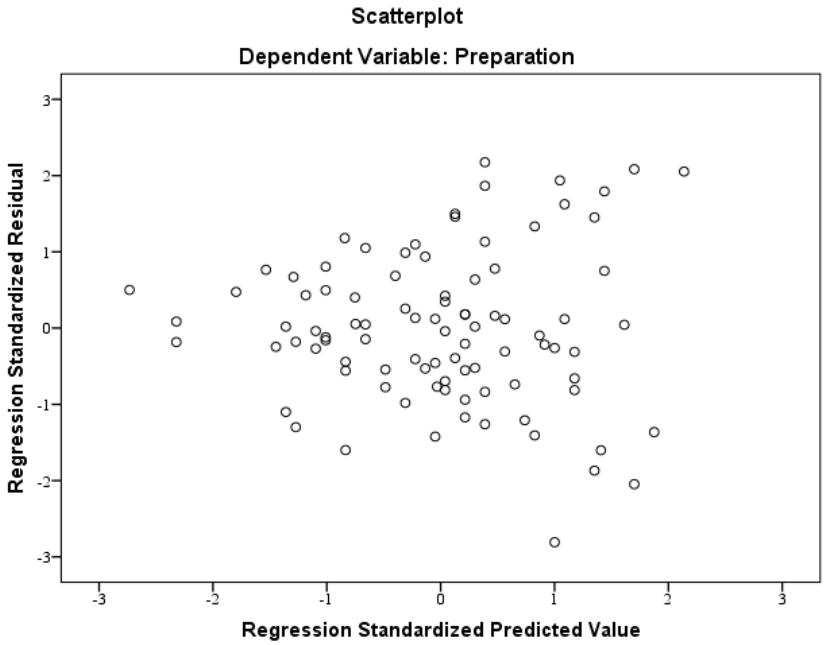

Figure 18. Plot of regression residuals against predicted values, Knowledge.

Results of the regression analysis presented in Table 20 did not meet significance, $F(1, 90) = 0.44$, $p = 0.508$, and indicated that knowledge did not significantly predict preparation. Negligible r^2 and adj r^2 values below 0.01 meant that variance in preparation scores was not attributed to knowledge.

Table 20

Simple Linear Regression for F-test of Knowledge Predicting Preparation

ANOVA	*SS*	*df*	*MS*	*F*	*p*	r^2
Regression	.445	1	.445	0.442	.508	.005
Residual	90.555	90	1.006	-	-	-
	B	*SE*	β		*t*	*p*
Knowledge	0.70	0.106	.070		0.665	.508

Note. $r^2 = 0.005$, adj $r^2 = -0.006$.

Composite. As detailed earlier in Chapter 4, prior multiple regression of the composite X_4 with three operational variables plus class level comprised the initial model followed by analysis of the composite X_4 plus class level. Neither model yielded predictive influences on preparation as the dependent variable *Y*, although the composite X_4 had an individually significant *p*-value in the model with class level as the predictor variables. However, I used simple linear regression in this case to explore if a composite of the triadic competencies as variable X_4 solely showed predictive influence on preparation. As before, assumptions of normality and homoscedasticity were not violated in visual inspection of the histogram and scatterplots as shown in Figures 19-21.

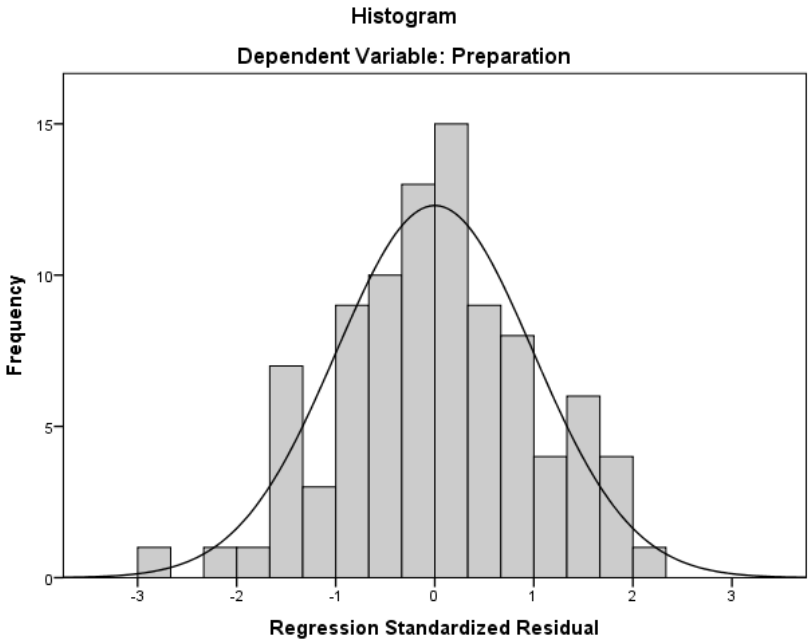

Figure 19. Histogram for standardized residuals of Composite predicting Preparation.

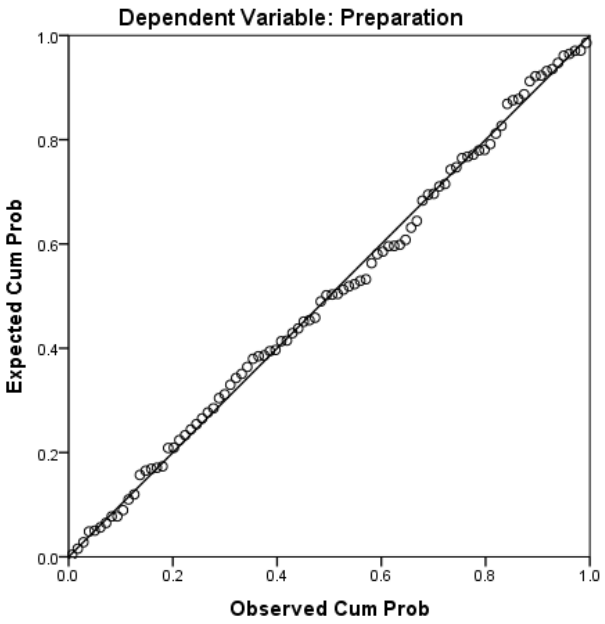

Figure 20. Normal probability plot of regression standardized residuals, Composite.

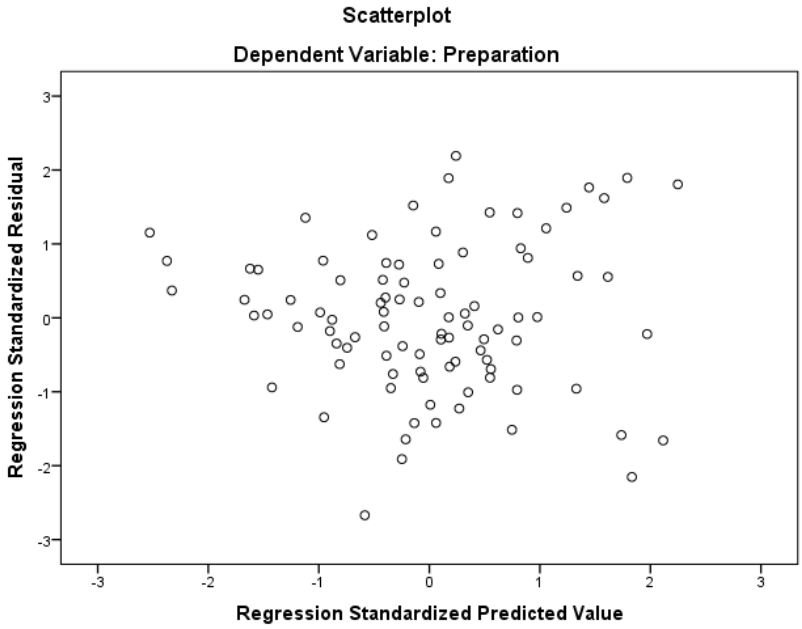

Figure 21. Plot of regression residuals against predicted values, Composite.

As presented in Table 21, the composite variable X_4 alone did not meet significance criteria as a predictor of preparation. The *F*-test showed $F(1, 90) = 3.34$ and $p = 0.071$, thereby not meeting the significance criteria of $p = <0.05$.

Table 21

Simple Linear Regression for F-test of Composite Predicting Preparation

ANOVA	*SS*	*df*	*MS*	*F*	*p*	r^2
Regression	3.258	1	3.258	3.34	.071	.036
Residual	87.742	90	.975	-	-	-
	B	*SE*	β		*t*	*p*
Composite	0.243	0.133	.189		1.828	.071

Note. $F(1, 90) = 3.34$, $p = 0.071$, $r^2 = 0.04$, adj $r^2 = 0.03$.

Nevertheless, the *p*-value at 0.071 for composite X_4 and *t*-statistic at 1.83 appear to approach significance criteria moreso than either statistic for the knowledge or skills variables, as did the composite X_4 in a multiple regression model discussed earlier. Since

researchers asserted that *p*-value tests for significance and the *t*-statistic improved in larger data samples (Lui, 2013), a logical expectation that a larger sample might reach significance warrants further consideration of other implications in Chapter 5.

Ancillary Data Exploration: Competency Interest Areas

In the final section of the surveygizmo.com web-based survey tool, students selected three areas in which they wanted to obtain more seminary education or training emphasis. Students did not rank nor did I code the items for inclusion in multiple regression analysis, but I explored what students' viewed as desired competencies to enhance their learning needs. In Table 22, six italicized areas were most frequently selected. Of those six areas, *leadership and influence* as one category and *managing conflict* as the other tied as the top selections. The next two most frequent selections, *creativity-innovation-change* as one category and *problem solving-analytic*, were the third and fourth highest scored areas, respectively. V*isioning* as an emphasis area and the category of *planning and organizing* tied for fifth and sixth highest student selected areas.

Table 22

Selected Leadership Skills as Competency Interest Areas for More Training

Learning Interest Areas	Student Count	Percent	Itemized X_2 mean score per category	Itemized Score Range
Learning skills	4	4.3%	7.74	7.11-8.36
Listening skills	6	6.5%	8.03	7.73-8.34
Problem solving-Analytic	25	27.0%	***7.90***	7.75-8.48
Interpersonal skills	8	8.6%	8.03	7.48-8.53
Oral Communication skills	7	7.5%	8.22	8.14-8.34
Personal Organization-Time management	18	19.5%	7.61	7.24-7.97
Personal Strengths	3	3.2%	7.69	6.87-8.85
Written communication skills	6	6.5%	8.31	8.31 (1 item)
Creativity-Innovation-Change	27	29.0%	***7.56***	7.48-7.73
Coordinating skills	12	12.9%	7.29	7.29 (1 item)
Decision-making skills	17	18.3%	7.28	6.94-7.58
Leadership and influence	37	40.0%	***7.35***	6.89-7.68
Managing conflict	37	40.0%	***7.10***	6.94-7.26
Planning and organizing	24	26.0%	***7.08***	6.48-7.53
Ability to conceptualize	5	5.4%	7.60	7.33-7.85
Risk-taking	18	19.5%	7.31	6.98-7.65
Visioning	24	26.0%	***7.48***	7.23-7.90

Note. Students selected three areas (unranked) in which they wanted more seminary education/training emphasis (n = 92); corresponding variable mean scores are in boldface.

As indicated in Table 22, I compared the categorized interest areas to scaled items of skills variable X_2 originally assigned to the categories by Evers et al. (1998). I summed the itemized responses, divided by the number of respondents, and then by the items in each interest area to produce a mean score for the category. In the last column, I showed

the range of scores comprising each category. Generally, students' self-selected areas in which they desired more education and training interest also showed consistency with modest self-rated scores on items of the skill assessment variable X_2. For example, the top two interest areas, *leadership* and *managing conflict*, had mean values for each category of 7.35 and 7.10 respectively, while student self-rated scores on the skills variable items had lower ranges of 6.89 and 6.94 respectively. The next highest interest area categorized as *creativity-innovation-change* had a mean value of 7.90 for items comprising the category, while student self-rated scores ranged from 7.75- 8.48. As noted earlier, students self-rated their skills most critically in the survey variable X_2. In Chapter 5, I considered beneficial uses of supplemental data for comparison to students' self-rated survey assessment.

Summary

A web-based survey and regression analysis provided data to explore students' self-assessment of their leadership competencies as knowledge, skills, and practices for associations, if any, with their assessed adequacy of preparation in those competencies while in seminary. The research question included aggregate and individual variables to evaluate to what extent, if any, were student leadership self-assessment and preparation associated. The null hypotheses stated that no linear relationship existed among the independent or predictor variables and the dependent variable.

Ninety-two completed surveys qualified for analysis. Distribution among gender, age, and class level were fairly even with slightly more females and slightly more students in class level 3. With multiple regression, I analyzed if students' class level impacted the aggregate and individual variable components that comprised leadership

competencies to examine if any of the factors influenced the students' scores evaluating their preparation while in seminary. A six-predictor model included a normalized composite score of the three main variables and revealed issues of multicollinearity.

Analysis of revised regression models showed the null hypotheses could not be rejected since the multiple linear regression analysis of a five and three-predictor model did not meet *p*-value criteria for significance ($p = < 0.05$) to influence the dependent variable. The results also did not indicate that students' class level influenced or impacted their self-assessment of leadership competencies or the assessed adequacy of preparation.

Theoretically, the composite variable X_4 combined knowledge, skills, and practices–the three independent variables self-assessed by students–to represent student aptitude in assessing leadership competencies. Regression analysis of the composite variable demonstrated a stronger predictive relationship to preparation than any of the three variables separately, but the overall regression model still lacked statistical significance in the regression analyses that prevented definitive conclusions.

Nevertheless, in the five, then three-predictor models, the practice variable, X_3 approached significance criteria for a *p*-value and *t*-statistic in the multiple regression results to warrant further investigation using simple linear regressions for bivariate analysis. Simple linear regression results indicated significance ($p = 0.017$) of the practices variable X_3 in relation to the preparation variable Y; however, the r^2 and adjusted r^2 coefficients of determination indicated low fit to impact the strength of influence practices had on preparation. A scatterplot of the data sets (X,Y) along the regression line confirmed a high randomization rather than tight fit to the line, yet characterized student mean scores to glean response patterns. It is unknown whether or

not significance or fit of the variable associations would change had size of the respondent sample been larger, but Type II errors are more likely in small samples.

Generally, students' positively rated their leadership competencies above the midpoint of 5 on a 10-point scale and 5.5 on a rescaled 5-point scale. The rescaling only occurred in the values coding of exported variables to SPSS for consistent computation of the descriptive data. The mean self-scores for the operational variables knowledge, skills, and practices comprising leadership competencies had a point range of 7.33-8.31 out of a possible 10-point score, while preparation scores ranged 5.72-6.35 out of a possible 10-point score. Students also selected three competency emphasis areas of interest to obtain more preparation. Comparison to itemized scores in the skills variable X_2 confirmed the emphasis areas as student identified learning needs with opportunities for additional training preparation.

In Chapter 5, my discussion of implications for further research includes potential uses of a composite variable in ongoing assessment analysis. I also compare students' scale scores to discuss other findings as well as research limitations and recommendations for future study.

Chapter 5: Summary of Findings, Conclusions, and Recommendations

Overview

This chapter contains a summary of findings and the interpretation of data from the exploratory quantitative study of Graduate Theological Union (GTU) students' self-assessed leadership competencies. Students self-assessed knowledge, skills, and practices in order to assess the adequacy of their preparation while in seminary. I discuss these findings and consider how the value of the response data could be understood and utilized despite my inability to reject the null hypotheses except in one case. In that one case, a statistical relationship of practices to preparation prompted further review of students' itemized responses. Second, I examined results from itemized skills scales and compared with ancillary data from survey-reported interest areas for further learning. The review of students' itemized knowledge assessment scores in relation to adequacy of preparation scores revealed differentials or potential learning gaps that were not apparent in regression analysis, and might explain a lack of predictive relationship.

My research on GTU students in graduate-level seminary preparation was inspired by prior multidisciplinary research detailed in Chapter 2 on leadership assessment in varied organizational contexts. This research supported my exploration of student self-assessment. In a later section, I discuss social change implications of leadership competencies self-assessment as a learning tool in educational and training contexts. Finally, my review of study limitations provides a basis to recommend areas for future research.

Summary of the Study

My research focused on all masters-level students enrolled at the GTU in

Berkeley, California. I utilized a web-based survey with regression analysis to explore if students' self-assessment of their leadership competencies related to their assessed adequacy of preparation in those competencies while in seminary. Of 457 enrolled student census at the GTU Masters level during the period of the study, 154 students accessed the survey, but only 94 students completed the survey. One late student response received after the official survey close deadline, and one other data set eliminated as an outlier, resulted in a final pool of 92 responses. The resulting data showed that students discriminately self-assessed their leadership competencies based on indexed mean scores that rated highest at 8.17 for knowledge, 8.04 for practices, and 7.62 for skills on a 10-point scale. However, student-assessed preparation as the dependent variable to measure adequacy of preparation while in seminary had a substantively lower indexed mean score of 5.99 on a 10-point scale.

A quantitative method of multiple regression was used to analyze variables for relationships in the study. The statistical inability to reject the null hypotheses, however, provided no feasible conclusion that GTU students' self-assessed ratings of leadership capabilities directly related or correlated to ratings of leadership preparation while in seminary. For example, based on cross-sectional results from sample participants, inferences could not be made to associate a student's high score on a self-rated leadership variable with a strong likelihood that the student also highly scored his or her preparation in the competency. Conversely, a reduced self-score in a competency indicator did not necessarily predict that a low or high score was attributed to adequacy of preparation.

The calculated power analysis in Chapter 3 estimated a larger survey sample of respondents for stronger statistical associations. In the results chapter, I recalculated and

included a power analysis in Table 7 for a smaller sample. Still, it is not known if a larger survey sample of respondents would have altered the distribution of response ratings or improved the strength of statistical significance among the variable associations. Also it is possible that the assessment design is not conducive to regression. I conducted multiple regression analyses on a given number of respondents and examined the response data for other insights revealed in students' self-assessment of their leadership and preparation.

Research Question and Hypotheses Revisited

As detailed in the Chapter 4 multiple regression analysis, I began with a six-predictor model of leadership competencies that included scaled measures of knowledge (X_1), skills (X_2), and practices (X_3); a normalized composite of those three variables (X_4) to measure aptitude; and two categorical variables as class level ($X_{5,6}$) to explore if any predicted or impacted student ratings on their adequacy of preparation as the dependent variable *Y*. I selected two class levels, *CL* 2 and *CL* 3 as dummy variables to compare in an aggregate model with other variables comprising leadership competencies and examined if class level influenced the outcomes.

The research question pertained to students' responses to self-reported items selected as their leadership competencies in relation to student assessment of the adequacy of preparation in those competencies while in seminary:

> To what extent, if any, is adequacy of preparation related to, affected by, or influenced by student-rated leadership aptitude or competencies when compared individually, in the aggregate, and by class level?

As detailed in Chapter 4, the aggregate analysis of predictors initially had a six-variable multiple regression equation:

$$Y = b_0 + b_1X_1 + b_2 X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6$$

Thereafter, regression of a five independent variable model omitted the composite variable to address issues of multicollinearity. Analysis of the sole composite variable, X_4 and class level control variables X_5, X_6 resolved collinearity issues while exploring for predictive influences on preparation as the dependent variable, Y. In this model, the singular composite variable X_4 showed statistical significance, yet overall model did not meet F-test significance criteria to reject the null hypothesis. The removal of class level variables, X_5, X_6 from the regression equation enabled analysis of three independent variables, knowledge, skills, and practices as operational variables X_1, X_2, X_3, for a triadic model of leadership competencies. Each analysis addressed a portion of the research question to consider if either the composite or class level were influential factors in the regression relationships. All of the multiple regression analyses tested the null and alternative hypotheses as restated here:

H_0: There is no linear relationship between the dependent variable and the independent variables.

$$\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$$

H_a: There is a linear relationship between the dependent variable and at least one of the independent variables.

At least one $\beta_j \neq 0$

As detailed in Chapter 4, evaluations of the composite model, the five-predictor and three-predictor models showed that neither model met the F-test significance criteria, $p = < 0.05$ to validate a relationship; therefore, the null hypotheses could not be rejected. However, regression of the composite X_4 and class level showed the composite variable

met significance criteria to reject the null hypothesis for the individual independent variable, but not for the overall model. In each multiple regression model, the practices variable X_3 also approached significance but the null hypothesis was not rejected. Class level did not significantly impact students' self-assessment of their competencies in relation to assessed adequacy of preparation. However, my bivariate analyses further responded to the research question by exploring if either predictor variable influenced preparation as the *Y* variable. Simple linear regression of individual variables–knowledge, skills, practices, then composite–allowed me to analyze if significance criteria improved to show any relationships as well as impact on preparation as the dependent variable. Also, the *t*-statistic tested the slope (coefficient) of each independent variable for effects of *X* on *Y* in order to test the following null and alternate hypotheses:

H_0: $\beta_j = 0$

H_a: $\beta_j \neq 0$

for each independent variable, X_j.

In the simple linear regressions, the practices variable X_3 showed a relationship to preparation as the dependent variable. The *t*-statistic at 2.42 exceeded minimum criteria of 1.96. In the *F*-test, the *p*-value = 0.017 met significance criteria ($p = <0.05$). Therefore, the null hypothesis: H_0: $\beta_j = 0$ for each independent variable, X_j was partially rejected. In contrast, the sample $r^2 = 0.06$ and adjusted $r^2 = 0.05$ as coefficients of determination, still indicated a weak fit of X_3 and *Y* data points along the regression line. It is unknown if larger sample sizes in this case might improve coefficients of determination for tighter fit in a multiple regression model as well as in the simple linear regression results.

Findings

To interpret the findings, I compared regression results by reviewing the mean values of student responses on the itemized scales to discover if the data yielded helpful indicators that explained or supplemented the regression analysis.

Lack of Significance

Inconclusive results from multiple and simple linear regressions raised an opportunity to explore whether or not the lack of significant relationship between adequacy of preparation and predictor variables–knowledge, skills, and practices–signaled other factors in the scoring. As I reviewed itemized response data from individual and collective assessment surveys, I sought to ascertain what a lack of statistical significance in the multiple regression analysis might otherwise reveal. As a result, descriptive data revealed that students' mean scores for the three operational competency variables–knowledge, skills, and practices–had ratings 2 to 3 points higher than mean scores for preparation, which prompted my query: Is the lack of significance all bad? What did the lack of statistical significance in the multiple regressions indicate? One reply might be–it depends on what we're looking for.

In this case, I examined students' self-rated assessment for scoring differentials to gain insight from student perspectives on their current competencies and learning needs while in seminary. According to prior studies in my literature review, differentials in scoring not only indicated differences in perspectives (Nale, 2000; Welch, 2003), but revealed student-assessed gaps between certain competencies and preparation that warranted further consideration in a learning environment (Berdrow & Evers, 2010; Robinson & Garton, 2008). From my review of learning gap assessments in Chapter 2, I

recalled that Nale et al. (2000) contended that competency-adequacy scoring "weren't quite as predictable" (p. 142). Moreover, Nale et al. evaluated mean scores of independent and dependent variables to identify differentials that represented potential learning gaps between rated importance of an attribute and performance in that attribute.

In the literature, Romano et al. (2009) surveyed student-assessed competencies to compare mean scores of students' self-rated response rather than evaluate competency variables solely for associations or relationships of influence on a dependent variable. The Romano study posed a similar survey probe: "To what extent has your current graduate education helped you develop each of these competencies?" (p. 318). From the results, Romano et al. surmised that not all students felt well prepared in specific leadership competencies despite high collective scores of student-rated competencies as required or important for effective leadership roles (p. 319). Robinson and Garton (2008) utilized the Evers et al. (1998) BOC instrument to compare self-responses evaluating importance to the mean scores of student-assessed skills as leadership competencies. They also calculated gaps as score differentials, citing what other research termed "skills gaps" (p. 97), and categorized what they termed as "discrepancy scores" (p. 101).

In my comparative analysis, I examined students' responses to scaled items for scoring differentials in the instruments I used to measure the variables. I found GTU students usually self-assessed leadership competencies with relatively high mean scores, at 7.00 to 9.22 on a 10-point scale. As one exception, self-rated items comprising the skills variable X_2 had a slightly lower range of scores from 6.94 to 8.50 with a majority of scores in the 7.07 to 7.85 range. Conversely, students rated adequacy of preparation while in seminary at a lower range of scores from 4.64 to 7.33 that averaged 5.99 as the mean

of the summed indexed scores for preparation per Table 9 in Chapter 4. Notably, the response accuracy represented by the high reliability alpha rating of the preparation scale at *0.98* indicated that students were fairly cohesive in their overall responses.

Using the SPSS frequency function, I found the response data showed that students more frequently chose scoring parameters other than a neutral mid-point to self-rate competencies; whereas, for the preparation variable, a larger portion of students chose a neutral score point rather than to select one of the following parameters: strongly disagree (SD), disagree (D), or conversely, strongly agree (SA), or agree (A). Higher standard deviations for itemized scores occurred in the preparation scale than for other itemized competency scales, perhaps a result of students' neutral selection in greater frequency to assess adequacy of preparation rather than critique their school. According to Coelho and Esteves (2007), an issue with neutral point choices is that respondents tend to select if noncommittal or uncertain about the item, rather than for response avoidance. A respondent positively inclined to agree, usually answers affirmatively; for researchers, neutral scoring signals noncommittal tendencies that in turn increase response variance especially on 5-point scales where neutral midpoints are common (p. 322).

For each scaled instrument selected to measure each variable, I examined itemized responses to compare the mean values used to measure the variable. Essentially, students' high scores on scaled leadership competency items did not signal any corollary likelihood of high scores in preparation; perhaps the lack of related effect or inability to predict scoring tendencies were among the reasons the regression associations did not meet significance criteria to reject the null hypotheses. In actuality, student ratings exhibited a confidence or efficacy in the higher self-scores on interpersonal or behavioral

practices (X_3), and knowledge as required for leadership effectiveness (X_1) at the upper quadrant of the scales. Students also did not overstate competencies, but rated moderately where they felt less certain of their skills competencies (X_2) as demonstrated in a scoring average of 7.62. Overall, students rated adequacy of preparation at an average to below average scores that were at least 1.5 points below to 2.5 points above the *5.5* mid-point.

Essentially, I conducted supplemental analysis with a practical aim to explore still valuable data albeit from a relatively small sample of GTU students. I also sought to utilize alternative modes of approaching the data for use in the GTU context. I examined the data for differentials with diagrams, tables, and figures to apply the findings for visual comparisons of quantitative data. I then could adapt and translate strategic comparisons to leadership education and training contexts such as faith-based institutions that do not regularly employ analytical mathematics of multiple regression statistics.

Comparing Practices Scores to Preparation

Students rated items from the LPI-self for the practices variable X_3, as the only variable that approached significance in results of the five and three-predictor multiple regression models, and reached statistical significance in the simple linear regression results. According to Kouzes and Posner (2009, 2010), the LPI-self was a behavioral practices instrument designed in 1993, then rescaled and retested in 2007. Notably, the 10-point scale had no neutral label; the midpoint label, *sometimes*, had a value of *5.00*, but students often selected above that mid-point.

Overall, scaled items had low to moderate scores that averaged a mean value of 5.99 for adequacy of preparation, *Y* while in seminary. However, as detailed in Figure 15 of Chapter 4, the plotted *X,Y* mean scores indicated that students rated competencies

composing the practices variable X_3 with moderate to high mean scores and favorably rated their seminary preparation in interpersonal practices. For example, the summed index of scores from GTU student responses showed a mean value of $M = 8.04$ on a 10-point scale, indicating that GTU students resonated with interpersonal and ethical behaviors itemized in the LPI-self and taught in seminary. My closer examination of itemized mean scores on the practices variable X_3 revealed that students self-rated in the 9.00 range on two items; in the 8.00 range on ten items; and in the 7.00 range for 11 items. Standard deviations for each item ranged from 0.919 to 1.93 with only two items at 2.1 and 2.03, indicating the spread of the data clustered closely around mean scores was representative of the respondent group (Trochim, 2007). Still, Figure 15 showed numerous *X,Y* data points where highly rated practices fell below 5.99 for preparation indicating that apart from their own strong competency rating, a view remained that preparation could be improved.

Comparing Skills to Preparation and Interest Areas as Learning Gap Indicators

In general, GTU students self-rated lower on the itemized skills variable, X_2 at $M = 7.62$ than the other leadership competency variables. According to Berdrow and Evers (2010), the BOC self-assessment instrument resulted from models in a longitudinal study designed for comparative progress mapping of undergrad student rating differentials as they progressed across class levels to graduation. The 5-point scale parameters labeled from *very low, low, average, high* and *very high.* In my study among graduate students, scoring occurred most frequently in the *average* to *high* range rather than extreme points; differences did not markedly change by class level; scores in *CL*1 showed slightly lower at $M = 7.33$, in *CL*2 at $M = 7.86$ and *CL*3 at $M = 7.68$, as listed in Table 10 of Chapter 4.

In the final section of the survey, I asked students to select three leadership areas in which they had interest to obtain more learning while in seminary. These areas had no coded values assigned for multiple regression analysis, but offered a view to compare what students viewed as competencies important to address their learning needs. The competency areas listed were categorical headings for itemized components as organized in the original BOC instrument developed by Evers et al. (1998, 2009). The list of competency areas provided in Chapter 4 as Table 23 aligned mean scores with groupings of scaled items in the survey that measured the skills variable, X_2.

In SPSS, I examined descriptive data for itemized scale scores and charted the student-rated items in the BOC to the students' choices of competency interest areas in which they had interest to learn more. For example, of the skills competency areas examined in Table 23 of Chapter 4, the category *planning and organizing* as selected had a consistently lower range of student scores on those survey items comprising the skills variable X_2. Conversely, the competency areas of least interest per student selection also corresponded to higher self-scores on the survey items comprising the interest category under the skills variable X_2.

Notable for the purpose of my study in a GTU learning context, my comparison of student-selected competency interest areas to the itemized mean scores in the skills variable X_2 showed that the self-rated scores were consistent enough to view the selected interest areas as student-identified learning needs. Selected interest areas emphasized possible opportunities to focus additional training preparation. Supplemental assessment enabled students to add clarity within a quantitative survey assessment while providing the researcher and potentially the educational institution with a process to cross-reference

the data results. Although the multiple and linear regressions lacked statistical significance to indicate that skills ratings predicted or influenced adequacy of preparation ratings, a closer look at itemized scores showed markedly consistent scoring distinctions or differentials between rated competencies and preparation that were informative.

Comparing Knowledge and Preparation for Differentials

The knowledge variable also had scoring differentials that warranted attention, although the multiple regression results were not statistically significant in relationship to preparation. As I detailed in Chapters 2 and 3, the ACD instrument (Welch, 2003) had separate scales in a dual-scaled assessment instrument that the author designed and used to measure knowledge and adequacy of preparation. The ACD as used in my survey provided a separate scale of items measuring the competency variable, Knowledge, under the heading: "Effective ministry requires knowledge in this competency" (Welch, 2003, p. 210). The 5-point Likert-type response parameters ranged from strongly agree to strongly disagree. The separate scale measuring knowledge appeared second in my survey sequence of three independent competency variables.

The ACD instrument also had a separate scale for preparation that I used as the dependent variable with a heading at the top of each Likert scale that read: "The seminary experience adequately prepared me in this competency" (Welch, 2003, p. 210). The 5-point Likert-type response parameters ranged from strongly agree to strongly disagree. The ACD scale measuring preparation appeared last in my web-based survey to place attention on scaled items separately in the web-based survey.

Students did not rank scores; rather, they rated each scale item as part of a summed index to comprise a mean score for knowledge as competency variable X_1.

Using SPSS descriptive function, I obtained indexed mean scores for items that comprised the knowledge variable. The itemized mean scores of GTU students ranged from 6.63 to 9.22 for knowledge and ranged 4.64 to 7.33 for preparation. I tallied student responses using SPSS descriptive mean scores, standard deviations, and frequency data, and presented my findings in the upcoming tables and figures.

To obtain the results shown in Tables 23-25, I consolidated data, identified mean scores in bold type that fell below the mid-point score of 5.5, and computed the score differential in student-rated items using Robinson and Garton's (2008) reported mathematical method in their research on competency-importance comparisons. To compute the differential, they subtracted the student-rated importance score (independent variable) from a competence performance score (dependent variable) in their earlier study.

In my study, I subtracted student-rated scores for knowledge competency (independent variable) from student-rated adequacy of preparation (dependent variable). In the last column, differentials were gaps between student recognition of knowledge competencies required for effectiveness and the rated adequacy preparation while in seminary. Six knowledge competencies in Table 23 had mean scores of nine or larger on a 10-point scale as students highly scored items as knowledge required for effectiveness (Welch (2003). Preparation scores appear in the next column at a range of 6.65 to 7.33.

Table 23

Highest Scores of Knowledge Required and Rated Adequacy of Preparation

Scale Items	Knowledge		Preparation		Differential
	M	SD	M	SD	
Making key decisions and resolving conflict	9.22	1.17	6.58	2.37	- 2.64*
Legal and ethical issues that impact ministry	9.12	1.1	7.33	2.18	- 1.79
Looking ahead to estimate opportunities and challenges for the future	9.06	1.26	6.58	2.53	- 2.48*
Providing an environment that inspires and encourages proper actions to accomplish goals, objectives, and results	9.05	1.26	7.04	2.18	- 2.01
Promoting intrateam dialogue and cooperation	9.02	1.17	6.80	2.16	- 2.22
Recognizing achievement to assure that good work continues and improves	9.00	1.47	6.65	2.32	- 2.35

Note. $n = 92$. Differentials (*) exceed 2.5-point gap.

In Table 24, 14 knowledge competencies with mean scores of 8 or larger on a 10-point scale showed that students strongly rated these items as required knowledge for effectiveness; adequacy of preparation scores below 5.5 midpoint have bold font.

Table 24

Moderate Scores of Knowledge Required and Rated Adequacy of Preparation

Scale Items	Knowledge		Preparation		Differential
	M	SD	M	SD	
Effective leadership principles for ministry	8.97	1.22	7.29	2.37	- 1.68
Entrusting responsibility and authority in others while establishing accountability for results	8.97	1.26	6.18	2.30	- 2.79*
Informing team members on all matters affecting their work and listening for feedback	8.84	1.31	6.16	2.37	- 2.68*
Procedures promoting financial accountability	8.78	1.54	**4.67**	2.68	**- 4.11**
Improving knowledge, skill, and attitude of team	8.73	1.26	5.87	2.45	- 2.86*
Assuring all members of the team are aware of operational policies, procedures, goals, objectives	8.70	1.26	**5.43**	2.39	**- 3.27**
Defining the structure of the organization and interrelationships	8.64	1.33	5.84	2.35	- 2.80*
Steps for organizing and staffing a ministry	8.58	1.36	**4.86**	2.43	**- 3.72**
Allocating resources for the needs of the organization	8.46	1.66	5.67	2.36	- 2.76*
Determining and documenting the purpose of the organization	8.36	1.70	6.92	2.33	- 1.44
Spelling out in specific terms the goals of the organization	8.31	1.65	6.64	2.34	- 1.67
Elements of the strategic planning process	8.21	1.55	5.67	2.50	- 2.54*
Methods for assessing and reporting ministry effectiveness	8.24	1.48	**5.23**	2.49	**- 3.01**
Methods for integrating technology and ministry	8.02	1.53	5.67	2.5	- 2.54*

Note. *n* = 92. Boldface scores below 5.5 mid-point. Differentials (*) exceed 2.5-point gap

In Table 25, students rated nine competency items with average scores of 7.00 to 7.90 on a 10-point scale, viewing certain knowledge items as moderately required for effectiveness. Preparation scores fell as low as 4.64 for facilities management, and below midpoint in competencies on accountability procedures.

Table 25

Least Rated Scores of Knowledge Required and Rated Adequacy of Preparation

Scale Items (rated in 7-point range)	Knowledge		Preparation		Differential
	M	SD	M	SD	
Evaluating actual individual performance in light of requirements, standards, and objectives	7.90	1.76	5.77	2.56	- 2.13
Promoting conditions that result in effective teamwork	7.90	2.74	6.77	2.34	- 1.13
Documenting decisions applicable to repetitive questions or procedures	7.90	1.60	**5.16**	2.40	**- 2.74**
Correcting variances from standards or objectives promptly to assure results are improved	7.80	1.66	**5.40**	2.31	**- 2.40**
Staffing the organization with competent people	7.80	2.85	5.77	2.55	- 2.03
Documenting methods by which work is accomplished	7.75	1.67	**5.30**	2.37	**- 2.45**
Effective facilities management procedures	7.65	1.91	**4.64**	2.68	**- 3.01**
Contemporary management and leadership theory	7.63	1.81	6.04	2.57	- 1.59
Determining specific actions, objectives required to achieve goals, including timeliness and responsibilities to complete actions	7.00	2.56	5.92	2.49	- 1.08
Scale Items (rated below 7-point range)					
Biblical modes of administration and leadership	6.92	2.23	6.14	2.50	- 0.78
Initiating required action of a team	6.63	2.50	6.06	2.37	- 0.57

Note. $n = 92$. Boldface mean preparation scores below the mid point (5.5) of the scales.

Students also rated only two items below 7.00 on a 10-point scale, placing least emphasis on these two items as knowledge required for effectiveness. As also shown in Table 25, one item concerned biblical modes of administration and the other, initiating actions of a team. In the context of the GTU, the item mentioning the Bible should not be misconstrued to indicate that knowledge of the Bible was not viewed as required or important; rather, the survey and responses focused specifically on rating its required use for models of administration and leadership. Notably, this item was rated highest in the original 2003 Welch study. As reviewed in Chapter 2, and later in my social change section, I discussed shifts in perspectives valuing interpersonal behavior, changing organizational cultures and systems, as well as dynamic regional environments that all contributed to current shifting emphasis on expectations for transportable core leadership competencies from the ten-year span between Welch's study and the present.

Viewing Score Differentials as Potential Indicators of Gaps

The prior tables showed sizable gaps between mean scores for competencies and those for preparation. The differential is knowledge subtracted from preparation (Robinson & Garton, 2008). Gap differentials in excess of 2.5 points signal learning need priorities (Welch, 2003; Romano et al., 2009). To interpret the data in the GTU context of ratings as grading levels, I compared the competency and preparation items from highest rated to least rated. No consistent directional relationship occurred between students' scoring of the knowledge and preparation scales; rather, the gap differentials varied based on the itemized mean scores of students' ratings, perhaps another reason for weak regression coefficients and predictability performance in the regression models.

Rather than weight the differentials as discrepancy scores for purposes of ranking

competencies as in the Robinson and Garton's (2008) procedures, I instead adapted the methodology used by Nale et al. (2000) in their importance–performance analysis to convert the means scores to standardized values and graphically produce an action grid to visually analyze and strategize learning opportunities in the assessment results (p. 140). Nale et al. computed standardized scores by subtracting the averaged mean ratings from the summed mean scores and dividing by the standard deviation to obtain a z-score rating that "depict differences from the average rating in units of standard deviations" (p. 141).

In SPSS, I standardized the summed mean scores to construct independent and dependent variables computed as standardized variables for the regression models; therefore, I had the z-score data stored in SPSS to map the *X,Y* datasets in a quadrant scatter-dot matrix to develop an action grid. The results in Figure 22 displayed the findings on an action grid, comparing respondent *X,Y* ratings as centered z-scores that inform an institutional assessment of participant cases and scoring results.

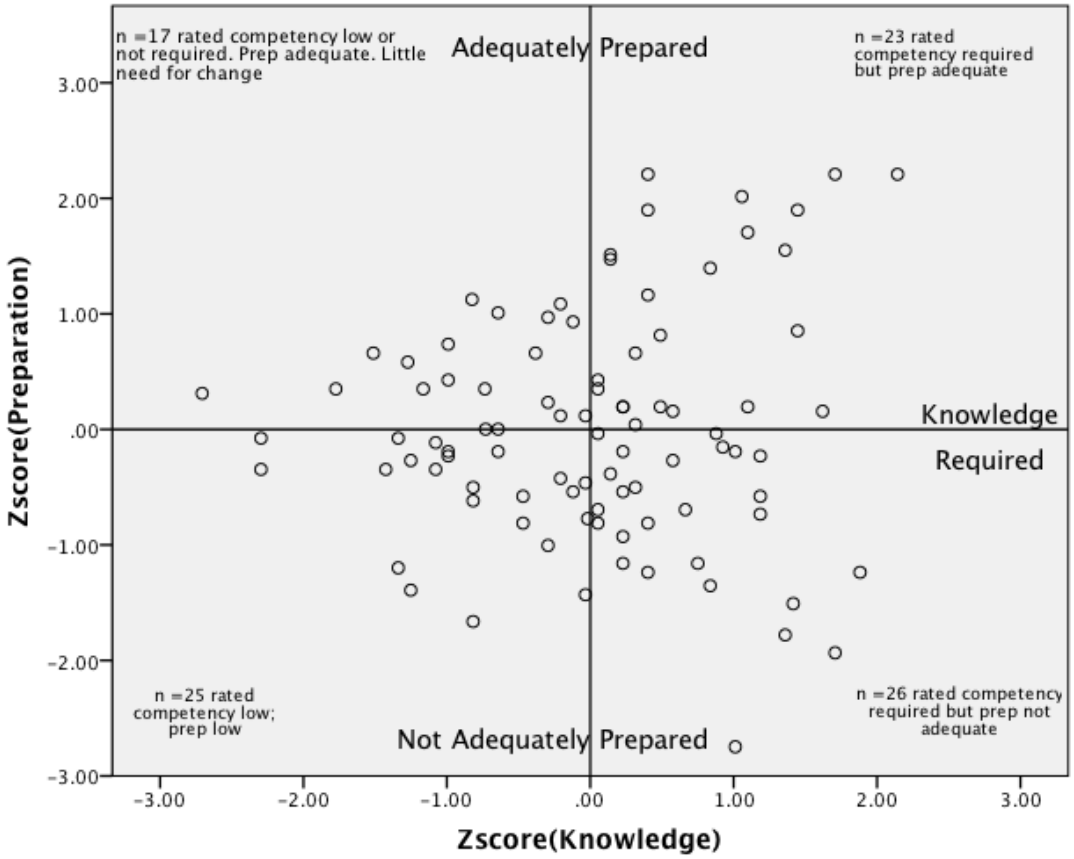

Figure 22. Action grid to compare *X,Y* data responses standardized as z-scores.

Similar to the Nale et al. (2000) format, the action grid of the GTU student respondents has four quadrants of standardized knowledge $X_{1,}$ preparation *Y* datasets that show student frequencies for competency and preparation mean scores. The top right quadrant identified student ratings of knowledge competency items as required for effectiveness along with rated adequacy of preparation in those items as sufficient. In the bottom right quadrant, students that scored knowledge competency items required for effectiveness rated their adequacy of preparation low, indicating preparation was not adequate; hence, this quadrant represented priority of opportunity for further training. In the lower left quadrant, students rated knowledge competencies as less required for

effectiveness, but also rated their preparation low. Scores in this quadrant signaled opportunities for further learning in competency areas upon further assessment. Finally, the top left quadrant showed students did not view itemized competencies as required; further, preparation was adequate. While those competency areas might not be priority, the frequency action grid showed the least number of students in this category. In reviewing response frequencies for the knowledge and preparation scales, I did not find that class level impacted scoring differences, just as the multiple regression analysis revealed that class level was not a significant predictor of relationship among the variables.

Welch (2003) did not utilize these comparative methods or regression analysis to analyze the knowledge competency scores for relationship to adequacy of preparation scores, but instead used correlation analyses and score ranking. My multiple regression analyses produced correlation data as Welch primarily used for comparative analysis in his original assessment survey and findings with the ACD instrument. A recommendation for future use of his instrument was to apply other modes of analysis, as I attempted to do here.

Essentially, GTU students demonstrated ability to differentiate their self-ratings of assessed knowledge competencies and the adequacy of preparation while in seminary. In the GTU context, the implications of engaging students in a leadership self-assessment process suggest positive social change benefits for leadership development strategies and curricular integration planning once sufficient numbers of students participate for an ongoing assessment process.

Observations, Interpretation, and Conclusions

My exploration of student self-assessment yielded valuable and informative data, although the results from multiple linear regression analysis did not indicate a significant relationship between GTU students' self-assessed leadership competencies, class level, and their assessed adequacy of preparation. Notably, the composite aptitude variable X_4 met statistical significance criteria as an individual factor in a multiple regression model along with class level as predictor variables; however, neither the overall model nor my bivariate analysis met *F*-test criteria to reject the null hypothesis. In bivariate analysis with simple linear regression, I found a statistically significant relationship between practices as a single variable predictor and adequacy of preparation. Still, a plausible explanation for the predictability of practices over knowledge or skills as part of the triadic model requires further exploration. I recommend a factor analysis of specific scaled items in future studies if the GTU schools develop a customized assessment tool. For example, I acknowledge that my sample size was smaller than anticipated; a larger sample size might produce different regression outcomes to reject the hypotheses fully or partially. I also note that testing for factor interactions among itemized scales of the three instruments used in the survey might produce a better predictive model.

Pertinent to my study, the practices variable X_3 measured by the LPI instrument (Kouzes & Posner, 2010) included scaled items pertaining to best practices for ethical relational behavior. Descriptive data revealed that GTU students self-rated their practices as second highest of the variables, and rated scaled items concerning the knowledge required for effective ministry at the highest overall scores. Conversely, the GTU student-practitioners rated the adequacy of their preparation at a much lower indexed average

only slightly above the scale's midpoint of 5.5 with several scaled items scoring well below the mid-point of 5.5. As shown in Figure 15 of Chapter 4, the labeled mean values for numerous *X,Y* datasets reveal that GTU students critically scored their seminary preparation. The results were informative for the sizable differentials or gaps between student-rated competency assessment and student-rated adequacy of preparation. GTU students were able to self-identify specific leadership competency areas needing further institutional attention to provide opportunities that strengthen students' preparation while in seminary.

As discussed in the literature review, self-assessment is a common training tool for leadership development in business, health, and educational settings to strengthen leadership competencies and to identify areas where more development is needed. The survey results reflect that GTU students have a sense of their leadership capabilities and a perspective on the adequacy of their preparation for leadership roles. Self-assessment of scaled competencies provided indicators of leadership potential through demonstrated aptitude and self-awareness of capabilities. For example, student ratings of specific skill-sets had lesser scores overall, which showed that students differentiated between what they perceived as strengths or not in certain leadership competencies, evidenced by the range of scores. Not only did student-rated scores indicate confidence levels in one's capabilities that were consistent with behavioral research on leadership efficacy, the ratings also indicated what students considered to be important or required competencies for effective leadership. The indication that adequacy of preparation was not viewed as positively or strongly represent opportunities for GTU students and faculty advisors to address areas of focus for enhanced learning.

Implications for Social Change

Use of leadership assessment has important implications for positive social change in educational settings where graduate student-practitioners, upon graduation from the GTU, often apply for or are recruited to leadership positions in venues with expectations of certain competencies that students may or may not feel prepared for adequately. Articulated earlier in Chapter 1 as part of my problem statement, a critical issue of leadership preparation arises because student-practitioners in seminary are presumed capable for leadership roles; however, no consistent diagnostic is utilized to assess leadership aptitude or capabilities and to address learning and experiential training needs while in seminary. Without assessment of students' knowledge, skills, and practices as leadership competencies, it also is not known whether student-practitioners' leadership preparation needs are addressed adequately while in seminary.

Additionally, as detailed in Chapter 2, organizational climate and leadership demands increased in complexity over recent years. The increased expectations for effective leadership also require proficiencies in core leadership competencies whether the role is ecclesial or secular. More recently, articles and studies focused on vocational shifts for full-time pastors, dubbed as an endangered species that are challenged by the shrinking size of congregational memberships and the fiscal inability of many congregations to pay wages and benefits (Wheeler, 2014; see also Cohall & Cooper, 2010). As I discussed in Chapter 2, growing accountability of seminary preparation to develop or enhance core leadership competencies is a consequence of limited ecclesial placement, and the developing trend among seminary graduates to seek leadership positions in other venues either as bi-vocational employment, or as full-time leadership

roles in alternate venues and professions (Wheeler, 2014). Limited assessment of students' leadership competencies in turn limits opportunities to actualize their theological sense of vocational calling in purposeful yet possibly secular pursuits. The social change impact on seminary preparation warrants attention and urgent action to integrate leadership assessment as greater numbers of practitioners are critical of their seminary leadership preparation in hindsight after graduating and working. According to Cohall and Cooper (2010), results of their surveying 240 practicing pastors in the American Baptist denomination showed that 71% indicated seminary did not adequately prepare them as administrative leaders (p. 50).

Essentially, benefits of exploring student self-assessment and careful analysis of results include (a) the opportunities for increased student awareness of core leadership competencies, and their own capabilities; (b) the opportunities to evaluate for relationships, if any, between leadership competencies and adequacy of preparation while in seminary; (c) the opportunities for students and faculty advisors to evaluate learning needs through periodic utilization of an assessment tool with itemized leadership competency indices; and (d) the opportunities for institutional review data to strategically assess preparation emphasis areas based on periodic consolidation of anonymous student self-assessment data. Incorporation of leadership self-assessment periodically in the student learning process could provide immediate feedback of results to students for self-reflective use and for curricular planning use with faculty advisors. At the same time, assessment results provide anonymous data to institutions for strategic focus on areas to incorporate leadership development in course curriculum and training opportunities.

Ultimately, the greatest social change impact occurs when graduate students

matriculate with increased efficacy in their capabilities, and the faith-based training institutions in turn document production of higher caliber preparation. Meanwhile, expectant work venues hire graduates who effectively bring adaptive competencies for leader roles to guide positive social change in those varied organizational settings. One important implication for positive social change occurs in the workplace environment as the number of secular organizational roles filled by faith-based vocationally trained graduates increase. As discussed in the literature, positive social change in the organizational workplace occurs when staff and effective leaders recognize and share a bridging language that connects ethical values and sensitivities to interpersonal behavior and authentic engagement for mutual wellbeing of persons as integral part of the systems within the organization (Reave, 2005; Bacha & Walker, 2013).

I contend there will be greater demand and opportunities for placement of graduating seminarians, particularly those with a penchant for leadership roles in clinical chaplaincy; community non-profit or private foundation leadership; in socially conscious business management and entrepreneurship; in faith-based community organizing; and roles in growing numbers of socially responsible B-hybrid corporations (Fry et al., 2010). For example, increasing numbers of corporate and service organizations such as Tyson Foods, YMCA, Ben & Jerry's, Starbucks, Southwest, and Tomasso Foods utilize a bridging language of ethics and spirituality embodied in a stated strategic mission of shared well-being and social responsibility for the greater good (Fry, 2005; Fry et al., 2010; see also Reave, 2005). The hybrid of faith-based social entrepreneurship and community non-profit organizational expansion offer other alternatives for leadership placement (Pinnington, 2011).

Students who recognize and strengthen their core set of leadership competencies will be strategically able to integrate their faith tenets into the roles and venues they enter. These are factors already discussed in the literature on organizational culture (Boyatzis, 2012) with heightened emphasis on social responsibility (Fry et al., 2010), and attention to value systems in public as well as private sectors (Pinnington, 2011). For this reason, I tried to address some of these implications for positive social change by intentionally designing a survey usable with faith-based students, yet not focused on religion or doctrine. Rather, I focused on core leadership competencies that are portable to any organizational workplace where needs and livelihood of the staff, customers, and other stakeholders are approached and respected as sacred (Fry & Cohen, 2009). However, to supplement anecdotal interviews and the valuable qualitative methods often used in faith-based research, a body of empirically quantitative research still needs to examine further what extent and in what areas future leaders need preparation whether in seminary or in business managerial schools wherever a higher consciousness for positive social change is espoused (Ingols & Shapiro, 2014).

Student Assessment and Efficacy Perceptions

My research provided insightful feedback on student efficacy perceptions toward their own leadership competencies and preparation. Although the recruited students and respondents were anonymous to me and virtually impossible to link to web-based responses, I was easily accessible to them on the other hand, in light of my contact information in the survey and campus email as a faculty member. A few took proactive steps to volunteer feedback that provided me with some anecdotal yet valuable information on benefits of their survey participation to self-reflect on their leadership

competencies as intentional and relational interactions. In Chapter 2, I reviewed prior research on the importance of efficacy perceptions to learning, training, and application of leadership competencies with effective results in the developmental process and in the actual workplace. As confirmed anecdotally by a few students, and found in the literature, the potential for an assessment tool tailored for periodic institutional use was positively viewed as a means to allow students to compare their competencies when they entered, during studies, and at the end of their seminary learning and training experience. The strengthening of student efficacy through preparation impacts their readiness to apply their leadership competencies to innovative opportunities with positive implications for social change.

Limitations and Tradeoffs

Consideration of Study Limitations

Essentially, my intent to offer a web-based survey format for self-assessment also provided students an easily accessible resource for access and response. I hoped that the results would demonstrate how feasibly educational institutions could utilize a customizable resource to evaluate student leadership competencies, compare by class level, and to shift focus on students' leadership learning needs as part of graduate training curriculum while in seminary. My choice of a web-based survey engine provided enrolled students' access to a URL that linked directly to the designated study at survey gizmo.com for participation at any time and from any locale. Although documented that the survey method produced the lowest respondent rates of the quantitative reporting modes (Fowler, 2008; Massey & Tourangeau, 2013; Singleton & Straits, 1999), I chose a web-based survey for the opportunity to collect cross-sectional data from a diverse and

widespread target population (Dillman, 2008; see also Millar & Dillman, 2011).

Potentially adverse factors impacted the data collection protocols. Among them was the fact that survey commencement occurred late in the 2013 fall semester when student focus on course completion requirements and exams competed with survey response rates and negatively impacted completion rates. Email transmission was a common mode of communication at the GTU; however, the unpredictable use of school issued email addresses on the listserv possibly resulted in a relatively high rate of unopened email or unused address rejection and substantially less distribution to active students. Anonymous web-based access randomized student response from the Master's level student census enrolled in any of the eight schools. However, the data collection depended solely on students' election to respond to the multi-step method for recruitment and collection despite phased recruitment communication intended to keep the survey opportunity actively transmitted to a census population of students. Anonymous recruitment, unlike an experimental design or interview process with controlled access directly to students, had no such controls. Recruitment to a census enrollment of students for data collection not only required students' random, voluntary response, but also removed control or certainty that distributed transmissions would be read or acted upon by students to participate.

In my opinion, another adverse factor in the data collection protocols was the IRB required removal of an initially proposed response incentive intended to motivate GTU students to complete the survey in support of school spirit to increase their school's level of participation in the study. In this case, no offer of individual monetary incentives or gifts, but a recognition of the institutional culture at the GTU; however, IRB restrictions

against award of an ice cream social as school recognition prevented an important but intangible means of stimulating student support within each school for positive potential of participation in the GTU context. These adverse factors were reported in Chapter 4, data collection process and I address these in my recommendations for future research.

Collection Challenges: Recruitment Fallout and Survey Completion Rates

The period to administer the survey bridged the last two months of the 2013 Fall semester from the November pre-Thanksgiving holiday period through a course-optional holiday period at the GTU known as Intercession, and continued into the 2014 Spring semester, totaling six months. Although use of electronic transmissions provided ongoing opportunities for students' access, the challenges of survey method, timing, and competing demands for student attention during the six-month data collection period impacted student response. Of 154 persons linked to the web-based survey, four were denied access as discussed in Chapter 4; of the 457 enrolled student census, 93 comprised a completion rate of 20.4%. Ultimately, I analyzed data for 92 respondents.

The most evident fallout in the survey method and collection process was a lower than desired completion rate. For example, when recruitment commenced November 2013, the web-based tracker showed 114 students accessed by February 2014. Of those, only 66 completed the survey. The web-based tracker confirmed student access during the GTU Intersession period, yet low completions indicated a longer time allotment for recruitment was advisable. I notified students in a third phase electronic recruitment announcement that survey access remained open for an extended period through the end of Spring 2014 and urged completion of the survey. As the end of spring semester neared, final exams and graduation competed for student attention and increased likelihood of

diminished student survey activity or risk of incomplete surveys as experienced near end of fall semester. I stopped collection on May 10, 2014, one week prior to graduation.

An unforeseeable glitch also occurred during the extended period when Survey Gizmo experienced a web-based server outage that rendered the site inaccessible due to an Internet denial of service (DOS) malware virus attack. Survey Gizmo notified business and research users that recent malware attacks were increasingly common with intent to block service providers and attempt to extort payment for removal; therefore, a reality of risk for web-based survey research cannot be ignored.

Survey Gizmo management asserted they had no breach of Internet service data, and eventually reengineered secure access measures. I understood from Survey Gizmo that the malware attack and outage did not affect the encrypted security of my collected data or impact security of student respondents from the GTU schools. Still, the extent of accessibility challenges over a nearly three-week period and negative impact on student respondent access is unknown. My communication on the third phase occurred just prior to the malware virus attack on Survey Gizmo; therefore, I kept survey access open rather than unduly alarm the schools or students with alerts that might be misunderstood either as a virus danger for institutional or personal systems, or might preclude further student participation. To comply with IRB anonymity and confidentiality protocols, neither the schools nor I had means to track student access attempts, identities, or potential response loss once Survey Gizmo circumvented the outage.

Incomplete surveys impacted data. Completion, as defined by Survey Gizmo, continued response on the progress meter to the last screen of thanks at the end of the survey. Incomplete surveys were saved but not reported in Survey Gizmo summary data;

however, my manual review confirmed that the unfinished surveys should be omitted with response data insufficient to include or weight for data analysis. For example, 25 of the 59 incomplete surveys included demographic profile data, responses to all or part of the skills variable (X_2) in the first third of the survey, but little data for the remaining independent variables and the dependent variable. As a result, I exported data for 93 completed surveys to SPSS 21 for multiple regression analysis. I checked IP addresses for duplicate respondents and found none. Nevertheless, I had to accept that reduced power with a smaller sample might increase the probability of Type II errors. The examples of the composite aptitude variable and practices variable as predictors that approached significance in the regression models have implications for potential tests of the hypothesis with a larger sample and power setting.

In spite of non-response risks in low survey completion rates, I noted positive benefits of Internet use for web-based survey and electronic recruitment to afford GTU enrolled students from varied schools with equitable opportunities to respond during the phased recruitment. Phased recruitment had potential to capture attention and motivate action with repetitious promotions (Millar & Dillman, 2011). Individual identities were unknown; however, Survey Gizmo's explorer geographic software tracked satellite Internet IP access to document that respondents accessed the survey from as far as South Africa, Pacific Isles, and the northeastern United States region with the majority located in California and the northwestern region of the United States. The positive potential for global accessibility to collect data responses revealed another benefit of a web-based survey for enrolled students in varied and diverse locales during term internships or overseas study travel.

Nevertheless, examining factors attributing to fallout of respondent completions might impact data collection protocols. In the GTU context for example, recruitment fallout related to institutional reliance on GTU issued emails by the schools and used to standardize the student listserv operated by GTU Consortium Informational Technology Services. A GTU student could opt to link their GTU assigned email address to forward to his or her personal email services, but it is unknown how sizable the numbers of students that do or do not utilize school issued email in order to gauge survey recruitment opportunities. Accuracy of email addresses impacted student receipt of the recruitment material if students used personal email addresses more frequently.

The number of incomplete surveys also might indicate retention issues with password access. Once students initially accessed the survey, they could opt to pause and return later; however, the required school access code was password. Students could not return to the survey if they forgot the password access or if email reminders transmitted to a lesser used address. In reality, other adverse factors include individual student's lack of interest, motivation, or aversion to surveys; a student's personal preference for paper versus online surveys; and bona fide demands that competed for student attention for academic or other work requirements–all response detractors of fallout with negative impact on initial participation or respondent completion.

Finally, I did not conduct official GTU sponsored institutional research project with design controls and completion requirements that might or might not result in higher response rates (Massey & Tourangeau, 2013, p. 227). In the absence of sample controls, student priority to participate decreases unless viewed as obligatory; moreover, respondent exhaustion might contribute to greater incompletes if the estimated thirty-

minute response time negatively impacted student interest to continue (Massey & Tourangeau, 2013, pp. 7-8).

Generalizability of Self-Assessment Methodology to Other Graduate Settings

My research study specifically targeted students at the Masters degree level in the GTU in Berkeley, an ecumenically diverse consortium of faith-based and Christian seminaries, divinity, or theological schools. My school selection required that males and females comprised each student body for similar preparation in education courses and access to training experiences. Leadership and leadership roles did not necessarily constrict to a narrow definition of a priestly or pastoral role as leader; rather, students self-rated as leaders for whatever roles they anticipated or currently held.

Each student self-rated characteristics that uniquely conveyed individual's self-perception and efficacy about his or her capabilities in the survey of itemized leadership competencies. I also did not compare males to females since my focus was not gender difference, but collective self-reflection on competencies generally considered core for effective leadership. As a consequence, I cannot generalize the results from a relatively small census population of GTU masters students to other schools in different geographical locations, or to larger and more homogenous settings. Further, the limited number of completed student surveys substantively affected the sample size of my study and possibly the resulting statistical analysis. In any event, my findings and conclusions are unique to the GTU student context to hopefully provide a basis for future research.

Recommendations for Future Study

The following recommendations focus on design and collection processes. My earlier estimate to obtain 123 student respondents out of an enrollment census of 600

students reflected a 20% response rate as I projected in Chapter 3. My challenges to obtain 20.4% response rate prompted several considerations for future study. In prior studies, methodologists warned that survey response rates historically were lower than other research design methods (Millar & Dillman, 2011), sometimes ranging as low as 15-20% as reported by Creswell (2003), Fowler (2008), and others. As Internet use and web-based survey popularity increased, Millar and Dillman (2011) also noted potential risks of technology such as link failures and other blocking issues such as spam mail settings when large emailed notices were sent. They found response rates improved only slightly when offered a last phase postal option for a mailed hard copy survey.

Increased Sample Size: Geographic Population Groups or Time Comparisons

To increase the overall sample and compare for consistency of results, a repeat of the study, say three to four graduating classes into the future with a different enrollment census of masters students at the GTU, yields assessment data as a time comparison of student self-scores. Comparing the responses might alter or support results when time compared to the present data and increase the overall sample to produce further data for regression analysis to evaluate for relationships between groups. The extent that students' similarly rate their competencies and rate the adequacy of preparation as done in the present study might expand results as a longitudinal study or for a simultaneous comparison at multiple schools. Factors requiring attention include the demographics at other graduate theological schools; the campus venue for technology and use of web-based surveys; and the attention to data collection processes as discussed earlier.

Refine Multiple Regression Analysis Parameters

Greater attention to the attributes measured by multiple regression analysis is

advisable to evaluate if probability exists for retrievable evidence of a causal or relational association. If future research undertakes institutional development of an assessment tool, intended outcomes of multiple regression or alternate modes of analytical evaluation should be considered. Analysis of a composite variable also merits further consideration to evaluate its statistical performance as an aptitude variable but with a larger sample of participants. The normalized composite score of variables in the multiple regression analysis lacked consistent results since two of the three operational variables lacked individual influence or significance on preparation; however, selection of specific scaled items from the three instruments might perform better than the entire instrument.

A learning assessment instrument tailored to the desired institutional measures could provide an ongoing leadership assessment tool offered to entering masters level students at the beginning and close of each school year. The ability to track students' perception of their progress also provides institutional feedback to compare seminary curriculum most useful for leadership competency development. Another possibility for future study involves longitudinal assessment two to three years after student placement in workplace leadership roles to obtain useful evaluation of specific competencies used. Comparison to earlier perceptions of learning gaps between leadership competencies and adequacy of preparation presents additional opportunities to evaluate and refine existing assessment measures and procedures.

Accessibility and Direct Controls

Accessibility to students' postal addresses or direct email hindered recruiting options available for this survey, but in the future, conducting institutionally controlled assessments might increase response. For example, in prior studies with controlled

sampling and other collection controls, the impact on participation varied. Response rates reached 89% of invited attendees surveyed while at a military leadership training (Boyce, Zaccaro, & Wisecarver, 2010), and an in-classroom survey reached a 51% response completion rate (Watson, Williams, & Derby, 2005). In a leadership development survey with a defined group such as seminary alumni, Tilstra (2007) directly accessed institutional mailing lists of 619 alumni from participating schools with 291 surveys returned at a 47% response rate. In contrast, a random survey within a single company had a 39% response (Wickramasinghe & DeZoyza, 2009), and only a 30% response rate in a random survey of professional association members (Smith & Wolverton, 2010).

My collection process resembled Hillman's (2008) reported recruitment for an earlier 2006 dissertation survey. In a faith-based educational setting on a single campus, a census of 1,254 on-campus students returned of only 330 completed at a 26% response rate of hard-copy surveys. In the GTU setting, I utilized an uncontrolled recruitment process intended to obtain random, anonymous response from a census population. In the future, a purposeful sample such as assigned classes or groups of students might present a feasible option if class sizes capture sufficient student participation in a few designated settings. Normal class ranges at the GTU have less than 15 students up to 25 in largest groups. A consortium of multiple schools improved my access to larger pools of students for a random participant response; however, I did not request GTU faculty to designate class time for survey administration to avoid concerns of coercion since the research was not institutionally sponsored. Still, I used a strategy cited by Millar and Dillman (2011) and utilized by Hunter (2012) when I worked with known and trusted sources such as the academic dean or dean of students office at each school to indicate that each school was

aware and permitted my recruitment for research.

Tangible Incentives

Another recommendation for tangible incentives to motivate student participation warrant greater consideration for collection strategies in future studies. Accordingly, Millar and Dillman (2011) compared options to improve web response and found that an advance postal contact to announce the study and an advance offer of a personal incentive substantially increased student participation (pp. 258-259). As one example, a recent institutional sponsored survey of alumni at a GTU school offered a drawing for a three-night stay in the Bay Area, and returned response was 47%. In contrast, I offered no individualized incentives to comply with Walden IRB stipulations against intra-school competition. I cannot attest that incentives would yield above the present 20% voluntary participation; however, the IRB limit to offer a single consortium-wide ice cream social did not sufficiently garner student interest or support to increase overall response rates. Perhaps a non-monetary institutional incentive offers opportunities to engage a broader census.

Survey Design: Content and Recruitment Sequencing to Attract a Larger Sample

Survey design for future study should consider placement or positioning of demographic profile at the end (Hunter, 2012), as well as attention to visual cues and length. While the length of the survey allowed full use of multiple instruments conducive for research as separate variables, results might improve with shorter length and careful selection of representative scale items. I conducted my study as a web-based survey rather than offer an option of paper copies; it is unknown if results change with optional hard copies. Web-based survey researchers such as Paraschiv (2013) argued that among

generations increased Internet use and decreased fear of technology trend toward a methods preference for online versions (see also Hunter, 2012; Millar & Dillman, 2011). From my experience, a challenge will be respondent retention to complete the scales.

With design factors, timing for recruitment administration warrants more attention in future studies (Massey & Tourangeau, 2013, pp. 18-19). For example, at one GTU seminary only three students responded in an enrollment census of 75 masters students and only one completed the survey. Since the school site was one of three where initial recruitment letters were delivered to onsite school mailboxes, the low student response raised questions on mode of recruitment and administration of email protocols. Since staff confirmed use of an email listserv, was recruitment noticing accurate? Did mail-slot distribution or reliance on newsletter announcements impact reach to students? Is a longer period for administering the survey with periodic notices more effective than shorter survey time preceded by longer period of promotion? Is personalized promotion directed to students by name more effective? These are questions that warrant pre-investigation in future studies to improve notification opportunities to students.

Greater Awareness of Cultural Distinctions and Participation

A final area for consideration in future research is closer attention to cultural distinctions that might impact participation. Cultural characteristics of the GTU student profile might be a possible cause of recruitment fallout that I did not anticipate. Since I did not probe for cultural or ethnic criteria, I did not detect recruitment response patterns as students completed surveys. Still, an experienced colleague in student services at the GTU consortium schools surmised after the study that students might not participate voluntarily unless a survey instrument was translated in their language, especially if not

proficient in English as a primary language or if American leadership indices did not address their primary context.

At the GTU, study visa international students, also defined as immigrant students, study in the United States on student F-1 visas and for whom English is a secondary language. For example, in my seminary workplace, the ratio of study visa internationals comprised almost 33.5% of the enrolled student census in masters programs during Fall 2013 semester. Each school tracks students enrolled in Master degree programs for federal homeland security compliance; therefore, at the GTU consortium level, I did not access consolidated data on study visa international student enrollment within regulatory and privacy restrictions. Among the students, Koreans appear a predominant segment of study visa students with access to bilingual faculty or ESL tutoring assistance; response impact occurs if a considerable segment of the student census opt out of completing the survey. In other studies like Hillman (2006, 2008), and Welch (2003), the demographics of the population and sample were fairly homogenous. In light of my study design to protect student anonymity, I did not request participant ethnicity and any language proficiency among respondents was not documentable for the purposes of this data collection analysis. Therefore, if the GTU conducts further student self-assessment, the mode for recruitment and survey delivery as well as the offering of multilingual options warrant further consideration in future assessment efforts.

Conclusion

My research explored student self-assessment to increase awareness of leadership competencies related to adequacy of preparation by conducting the first such quantitative research of masters level students at the GTU in Berkeley, California. In the research, I

utilized multiple assessment parameters for leadership knowledge, skills, and practices to investigate students' aptitude for relational and ethical core competencies. My purpose was to explore what relational links might exist between student-ratings of their personal leadership competencies and their perspectives on the adequacy of preparation in those competencies while in seminary. The discovery of sizable scoring differentials confirmed that student self-assessment offered a valuable opportunity to identify learning gaps in leadership competency areas that need to be addressed while the students are in seminary. Ultimately, self-assessment of leadership competencies increases student awareness of capabilities and learning needs while providing the institution with input for updating curriculum and training opportunities.

My rationale also was to investigate whether theoretical constructs of leadership competency theory can be used to assess basic capability indicators apart from heavily religious or ideological overtones of a faith tradition that might divert focus from student efficacy ratings of proficiency in perceived leadership competencies. As organizational systems and strategic paradigms shift, examination of those leadership dynamics will impact training for leadership roles in secular and traditional faith-based venues. The demand for effective leaders with competencies portable to varied venues heightens an urgency to prepare students adequately for leadership roles that impact positive social change in organizational environments.

As more seminary graduates enter the workplace to fulfill their sense of purpose and contribute to the vitality of organizational mission, the trend toward placement in non-congregational venues or bi-vocational employment has ramifications for greater attention to leadership competency assessment, updated curriculum, and multidisciplinary

training options to enhance students' leadership development while in seminary. Finally, as assessment tools are researched and refined for analysis, the potential value of the data has promising implications for positive social change within faith-based graduate school programs and within the workplace where prepared students utilize their leadership competencies effectively. More research is needed to explore assessment methods and outcomes for leadership development in the faith-based context.

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