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Changes in leadership self-efficacy, leader identity, capacity for socially responsible leadership, and curiosity due to a structured leader development program

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DEDICATION PAGE

This dissertation is dedicated to the inspirational and resilient sponsor of the leader development program that was the subject of this research, who in spite of a breast cancer diagnosis and surgery, insisted that this research project continue. Her love for college student development and each individual young adult in the program outshines the shadows of illness.

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ABSTRACT

As the study of leadership evolves, it is vital to consider adult development; specifically student leadership development. This study examined changes over time in undergraduate students' leadership self-efficacy, leader identity, and socially responsible leadership capacity. As a component of motivation to learn, curiosity breadth and depth were included to explore how the "positive approach to new information" relates to individual leader growth. This research helps explain how leader identity fits into a student leader development model as an outcome and as a contributor to future leader identity growth and engagement with leadership tasks.

A combination of longitudinal and cross-sectional designs was used to study student leadership capacity development due to participation in a structured semester-long leadership development program that was based on student-specific theoretical models. Participants in the program and a control group of similarly-aged students from a mid-sized comprehensive university completed surveys at three time points over a six-month period. Past participants in the program and a senior-level control group completed a single survey approximately two years following the past participants' completion of the leadership development program.

The extent to which students describe themselves as leaders and the certainty with which they perceive themselves as leaders contributed the most to their growth over time. Students who enter college with a higher level of leader identity may have a tendency to grow at a higher rate in that identity throughout college. Citizenship and depth of curiosity may play a role in leader identity development. Students higher in consciousness of self, citizenship, and breadth of curiosity are more inclined to engage in personal leadership tasks.

Recent and past program participants showed greater differences in levels of leadership self-efficacy, leadership self-identity, and leader identity stage than the control groups.

Results partially supported existing research that leadership development programs produce growth in students' leadership capacity and leadership self-efficacy. In addition, results indicated that early development of leader identity is an integral part of the overall picture of leadership capacity, adding specificity to the body of literature related to college student leadership development. New paths of inquiry were provided for practitioners and scholars.

Chapter 1

INTRODUCTION

Importance of Studying Leadership

Nineteenth century English writer Charles Caleb Colton is credited with the quote, "imitation is the sincerest of flattery." Or, as my four-year-old niece articulates the same idea during play time, "La-La, you just did what I did…you must like what I'm doing." Writer Nicholas Delbanco (2002) expanded on this idea in an essay where he asked his fellow writers to remember that "imitation is deep-rooted as a mode of cultural transmission" (p.1) and a "willing admission that others have gone this way before" (p. 2). Although these quotes may seem quite simple, consider that great leaders observe and emulate others they admire who came before them, that their imitation of their predecessors is the sincerest of flattery, and that they had a model to follow to become exceptional leaders. The essence of these quotes is one reason scholars and practitioners study leadership: humans want to experience great leadership and many want to develop within themselves the capacity to lead. As leadership scholar James MacGregor Burns quotes Maslow, "people have the need to reach the 'full stature of which they are capable'" (2003, p. 240). To better understand the path to leadership for oneself and others is to examine the developmental components that are the foundation for leadership.

Context for the Study

Workplace-centered research about leader development usually focuses on measuring the ingredients of leader effectiveness, including follower evaluations of leaders' traits, behaviors, and results, changes in leaders' knowledge, attitudes, or behaviors; organizational impacts such as increased sales or employee retention rates; or other measures

of overall performance and satisfaction. However, relatively little empirical attention has been given to leadership development methods and outcomes *before* individuals begin their professional careers, such as in college.

Most leadership theories and models of development such as transformational, charismatic, and authentic, are challenging to apply to college student leadership development, especially in terms of measurement. Most widely-used leader and leadership measurement instruments focus on the dyadic leader/follower model (for example, the Least Preferred Coworker Scale, Fiedler & Chemers, 1974) where positional leadership is assumed and followers can readily participate in an evaluation of the leader, such as the Authentic Leadership Questionnaire (Avolio, Gardner, & Walumbwa, 2007). The leader/follower model is often not possible to observe, much less measure in the college setting because students are not yet employed or part of an organization where a positional role is likely or where followers could be identified.

In the past twenty years as an answer to this challenge to the lack of college student leadership development theories, a few leader development models have been adapted for or created to use specifically with students: Kouzes and Posner's Five Leadership Practices (2008), Astin and HERIs (1996) Social Change Model, and Komives, Lucas, and McMahon's (1998, 2007) Relational Leadership Model. These post-industrial models (Rost & Barker, 2000) made leadership development palatable and understandable in a way that can be used in the college setting where opportunities for leadership vary from an academic project team to a student organization president to peer-to-peer interactions.

Student Affairs practitioners working in higher education settings are encouraged to employ theoretical or practical models on which to build a leadership development program framework (Council for the Advancement of Standards in Higher Education, 2009).

Numerous U.S. universities employ one or more of these models (Komives, Dugan, Owen, Slack, Wagner, & Associates, 2011). The adoption of widely-used models in concert with the overall call for accountability in higher education created the need for evaluation of leader development programs. Researchers began considering how these models contribute to college student leader development and the associated constructs that form students' capacity for leadership, such as leadership self-efficacy (Owen, 2008), self-concept, and more recently, leader identity (Komives, Owen, Longerbeam, Mainella, & Osteen, 2005).

Self-report instruments were developed to measure the tenets of the Five Leadership Practices model (Student Leadership Practices Inventory, Kouzes & Posner, 2008) and the Social Change Model (Socially Responsible Leadership Scale, Tyree, 1988). However, these practice-based models and measurement instruments do not necessarily inform "how" development occurs across the constructs that comprise overall leadership capacity. For example, does socially responsible leadership capacity help explain leader identity development? Or is the Social Change Model underlying this useful as a practical framework, but perhaps does not lend itself being measured as a component of overall leadership development? Do these student-specific leadership development models accurately represent the capacities necessary to lead? These and other related questions help frame this study.

Research Questions

In contribution to the emerging literature on college student leadership development, leader identity, leadership self-efficacy, and a few other related variables, this study addressed several research questions:

1. In what areas of leader capacity are leader development program participants growing and how do these variables interact: leadership self-efficacy, leader

identity, socially responsible leadership capacity, and curiosity breadth and depth?

2. What are the differences over time in leadership capacity (leadership self-efficacy, socially responsible leadership values, and leader self-identity) between college students who participate in a semester-long leader development program and those who do not?
3. Do some components of leadership capacity (leadership self-efficacy; leader values such as consciousness of self, commitment, collaboration, common purpose, and citizenship; curiosity) and pre-college leadership involvement predict the frequency of performing leadership tasks or leader identity?
4. Do college students who have participated in a leader development program report greater frequencies of leader task performance than students who have not?
5. Do leadership program students perceive themselves as their peer leaders do in terms of the congruence between their beliefs and actions and their commitment to others or the group?

Answers to these questions are relevant for individual institutions, for higher education, for K-12 schools and programs, and for larger society. As educational institutions, colleges are often expected to help develop leadership skills. Given the multitude and expanding number of student leader development programs (Cress, Astin, Zimmerman-Oster, & Burkhardt, 2001; Owen, 2008), it is important for institutions to know if the program aligns with the institutional mission, if it is meeting goals, and if the program is a proper and useful appropriation of finances. For any higher education student leader development program, it is vital to understand how the components of leadership capacity

work together, or not, to produce the greatest gains. These outcomes will inform Student Affairs professionals and university administrators as they make decisions about their mission, programming, and goals.

A related issue is how to better understand who is attracted to leader development programs in college so that programs can either target these individuals or determine means of recruiting atypical students for these programs. If it is expected that we seek to grow in areas for which we already have a proclivity (Hess & Winston, 1995), then are other students missing opportunities because they had less exposure prior to college? Or is it simply a matter of aptitude?

Study Summary and Significance

This study informs the understanding of constructs related to student leadership development. Specifically, the study examines changes over time in students' leadership self-efficacy, leader identity, and socially responsible leadership capacity. Curiosity, posited to be a driver in lifelong learning, is an indicator of the likelihood that interest in leader development will continue throughout the individual's life. As a component of motivation to learn, curiosity variables of breadth and depth have been added to this research to explore how the "positive approach to new information" relates to individual leader growth. Additionally, this research will help explain how leader identity fits into a student leader development model as an outcome and as a contributor to future leader identity growth and engagement with leadership tasks.

The leadership program that is the subject of this research is a semester-long program with weekly focused topics structured around the Relational Leadership Model (Komives et al., 2007) with some shared components of the Social Change Model (HERI, 1996; Astin, 1996) and The Five Practices of Exemplary Leadership® model (Kouzes &

Posner, 1987/2008). The goal of this 12-year-old program is to prepare freshmen and sophomore students for "authentic involvement" by teaching them about personal values, organizational values, diversity, service, and leadership that is "inclusive, empowering, purposeful, ethical, and process-oriented" as Komives' Relational Leadership Model poses.

This research informs the program director and university administrators on several levels: who the students are that choose to participate in the program; how these individuals change in their leader capacity over the course of the program; and if and how these changes differ from similar students who did not participate in the program. In addition, a study including previous participants in the program provides insight into the potential long-term differences in students' leadership identity, leadership self-efficacy, overall leadership capacity, and frequency of performing leadership tasks.

The format of this paper has been developed in order to best provide context and detail about the components of student leadership development. In Chapter 2, literature on leadership theory and leadership models is discussed as well as empirical studies using the constructs that comprise an overall concept of leadership capacity including leadership self-efficacy, leader self-identity, capacity for socially responsible leadership, and curiosity. The methods, including a description of the participants, study design, and measures are described in Chapter 3. In Chapter 4, the results of the study are presented, and in Chapter 5, a discussion of the implications of this research and suggestions for future study are offered. Together, these chapters offer a contribution to the leadership body of literature.

Chapter 2

LITERATURE REVIEW

Defining Leadership

For the purpose of clarifying the present research study, it is necessary to first define leadership, leader development, and also the related concept of leadership development. Practitioners and scholars alike have difficulty identifying a single definition of leadership and often fail to do so in their work (Komives, 2011). Bass (1990) identifies multiple definitions of leadership including leadership as "personality and its effects," "an act or behavior," "the art of inducing compliance," "an emerging effect of interaction," and "an instrument of goal achievement," among others (as cited in Pierce & Newstrom, 2008, p. 8-9). A more recent definition reflective of the move away from leader-centric theory, Day and Halpin (2004) define leadership as an outcome of relationships, commitments, and social processes, and Uhl-Bien (2006) suggests that leadership is a social influence process that produces change in attitudes, values, and behaviors in combination with "emergent coordination," or an evolving social order (p. 655). To summarize dozens of approaches to and definitions of leadership: it is an act, a trait, a means to an end, an outcome, and a process, perhaps simultaneously. For the purposes of this research, leadership is being defined as a positive means of influencing one another, regardless of positions of authority or power.

How we develop leadership ability in ourselves and others is the focus of many employers, colleges, and industry organizations. Development in general is "an analysis and integration of the intellectual and the emotional capabilities of an individual which result in self-motivation, self-direction, and self-identity" (Rost & Barker, 2000, p. 9). Initiatives that teach, promote, or accelerate the integration of intellectual and emotional *leadership*

capabilities aim to increase leadership capacity (Day, 2001), which is a person's "enacted leadership beliefs, styles, and approach" (Komives et al., 2011).

Leader development and leadership development are two different concepts in their educational aims and outcomes; however, they are greatly interdependent in practice. Day (2001) outlines the differences in terms of capital type (human or social), competence base (intrapersonal or interpersonal), leadership model (individual or relational), and skills. *Leader* development concentrates on developing the individual, by creating human capital and an intrapersonal competence base including skills such as self-awareness, personal responsibility, and commitment. Based on a relational leadership model, *leadership* development focuses on creating social capital in an interpersonal context by building competencies such as empathy, political awareness, conflict management, and a service orientation. Leadership development aims to expand the "collective capacity of organizational members to engage effectively in leadership roles and processes" regardless of formal authority (McCauley, as cited in Day, 2001, p. 582).

Though different, these two developmental endeavors work in tandem for overall effectiveness. A leader without an organization, relationships, or interactions is not given the context in which to apply newly acquired skills and abilities. A team or organization without well-prepared individual leaders encompassing the knowledge and capacity to perform leadership tasks is less advantaged. The development program that is the subject of this research encompasses elements of both types of development. Because the ultimate goal of the program is leadership application across settings, the program will be described as a leadership development program for the remainder of this paper.

Contributions and Challenges of Traditional Leadership Theory

As with most scholarly subject areas, the state of leadership development practices and models today is the result of numerous empirical studies and evolution in conceptual understanding. At the base of leadership development theory is leadership theory, and therefore, a brief review of the progression of leadership theory is presented. The first recognized leadership theory in the nineteenth and early twentieth centuries, the "great man" theory suggested that "leadership qualities were inherited, especially by people from the upper class" (Kirkpatrick & Locke, 1991, p.74). The next significant evolution in leadership theory came in the early part of the twentieth century with trait theories that considered what traits, regardless of whether innate or learned, leaders possessed and non-leaders did not (Pierce & Newstrom, 2008).

Stogdill's 1948 review of the leadership literature led him to challenge a traits-only approach. He categorized the traits found in the literature into physical traits such as chronological age, height, weight, appearance, and physique; cognitive traits such as intelligence, fluency of speech, and knowledge; and traits similar to those found in more recent trait-based theories including judgment, insight, adaptability, introversion and extraversion, dominance, persistence, integrity, self-confidence, and cooperativeness (Stogdill, 1948). In this domain-changing work, he added that, in addition to traits, relationships and the situation in which a leader functions also contributes to success, "evidence suggests that leadership is a relation that exists between persons in a social situation, and that persons who are leaders in one situation may not necessarily be leaders in other situations" (Stogdill, 1948, p. 65). The concepts of leadership as a relationship between leaders and followers, leadership as a function of a social situation, and the variability of

leadership across situations is foundational to most theories that emerged since that time and help inform approaches to leader development.

For example, Hollander and Julian (1969), talked about leadership as a social influence process rather than a fixed state, as illustrated by his idea of idiosyncrasy credits, a two-way process of influence where followers' perceptions of leaders may result in their ability to influence (or not). The emphasis on reciprocity and bilateral influence is a valuable contribution to leader development theory. Fiedler's (1972) contingency theory suggests that leader effectiveness is a matter of matching a "manager's" personality to the situation, what motivates the leader, and how much power and influence the situation afforded the leader.

The focal point shifts to the follower and follower readiness in Hersey and Blanchard's (1988) Situational Leadership model that follows a prescriptive approach where leaders base their style on their followers' willingness and ability to complete a task or their level of maturity. Also concentrating on the follower, the path-goal theory of leadership is rooted in expectancy theory of motivation (House & Mitchell, 1974). House and Mitchell suggest that followers are motivated by the degree to which their job or behavior will lead to certain outcomes (expectancy) and if those things are highly valued (satisfying). For leader development theorists, these 20th century theories point to the importance of developing of a leader's sensitivity to differences among all people, learning more about what motivates group members to perform effectively, and how to engage and inspire others through a process of influence. However, none of the theories focused on early leadership development and were conceptualized with the dyadic leader/follower in mind.

The Leader-Member Exchange theory shifted the focus from the leader-centric domain to the relationship domain. It describes the nature of the relationship between leaders and followers as an exchange that develops over time (Pierce & Newstrom, 2008)

and that a high-quality relationship is the link to positive leader effectiveness outcomes (Graen & Uhl-Bien, 1995). The evolution of LMX theory resulted in a more expansive view of work relationships, spanning across the usual boundaries of departments and divisions and managers and subordinates to include relationships among team members and peers (Graen & Uhl-Bien, 1995). This expansion past boundaries to peers is translated as non-positional leadership in more recent leadership theories and is applicable to college student leadership development.

Burns (1978) is credited with distinguishing between transactional and transforming leadership (as cited in Pierce & Newstrom, 2008). Many of the earlier theories assume an exchange or transactional relationship between leaders and followers, whereas Burns (2003) describes how leaders can spawn systemic changes and metamorphoses in organizations rather than limiting their scope only to motivating followers to perform tasks. Eventually called transformational leadership, the theory also addresses leaders' ability to influence follower motivation in a way that is empowering with the goal of engaging followers to their full potential, ending with collective group efficacy and even happiness. Burns equates followers' craving of this sense of empowerment and fulfillment to Abraham Maslow's hierarchy of needs model. Transformational leadership theory altered the landscape of the way people thought about leadership via traditional theories, planting the seed of humanity in the process of leadership and accentuating the positive role leaders can play in creating changes in people and organizations. This theory connects leadership with self-efficacy, a component of leadership development. However, this theory discusses self-efficacy in the context of the how the leader can develop self-efficacy and group efficacy in followers rather than how leaders' self-efficacy is connected to their own leadership capacity. Nonetheless,

transformational leadership theory helps lay the foundation for the combined study of these interrelated concepts as part of leader development.

The theories and models discussed thus far are but a few of more than a century's worth of scholarship and research about leadership and leaders. However, theories of leadership development have not necessarily kept up with the evolution of leadership theory as it becomes more inclusive and collaborative in nature (Day & Harrison, 2007). As evidenced by this brief history, most of the earlier theories focus on what a leader can do to followers and occasionally in cooperation with followers in certain situations. Up to this point, the theory application was limited in scope with no focus on early leadership development in general, or college student leadership development in particular.

Post-Industrial Theories of Leadership

With an eye toward leadership development for college students, Rost and Barker (2000) suggest that an approach to leadership needs to be more collaborative and shift away from outcomes focused on profits and efficiency, as assumed by earlier "industrial" leadership theories. The authors believe industrial theories can be limiting and that they incorrectly assume a linear relationship between leaders and followers. Rost and Barker (2000) appeal to leadership scholars to adopt a more expansive view: a new way of envisioning leadership that did not limit the ability to describe leadership or act as a leader only in terms of a supervisory role or a power dichotomy between managers and their employees. Day and Halpin (2004) also describe the limiting belief of leadership as only a visionary or direction-setting function that characterizes those in leadership positions. The authors emphasize the value and importance of leadership beyond positions of authority to those in the organization who "work effectively with others, derive consensus, take initiative, question, and propose" (Day & Halpin, 2004, p. 11).

Generally, theories labeled as "post-industrial" give researchers and practitioners the liberty to conceptualize leadership outside the realm of formal authority, which is a significant milestone, especially for student leadership development as a practice and also for individuals who may have influence, but lack an acknowledged position. This area of incongruence is where industrial, workplace-centric leadership theories fail to put forth models that apply to early adult leadership development in the college setting. Traditional-age students may be just beginning to explore their identities as independent adults, unsure of their interests, and not ready for or confident enough to take on leadership positions. Though they are often used in leadership research studies where findings purportedly generalize to the workplace, it is misguided to consider the leadership development needs of college students in the same realm as those of the active workforce.

It is vital to begin building the foundation of leader capacity and behavior during the college years. According to Zenger (2012), not until age 42, on average, do managers get their first leadership training, which may be up to ten years after taking on a supervisory role. Although it is not in the scope of this research to address the effects of the time gap between leadership development and job-specific training experiences, it should be noted that this is a potential area of variability and focus in long-term leadership development outcomes.

Student Leadership Development Approaches

A few leadership development models have been offered as a solution to the lack of fit of industrial leadership theories with college student leadership development: Kouzes and Posner's (1987) The Five Leadership Practices, HERI and Astin's (1996) Social Change Model, and Komives, Lucas, and McMahon's (1998) Relational Leadership Model. Originally conceived for the workforce, Kouzes and Posner (2008) adapted their transformational

leadership-based Five Leadership Practices to apply to college students. Following interviews with everyday people (not top executives of companies) and college students asked to describe their extraordinary leadership experiences, Kouzes and Posner (2008, 2012) identified patterns in their personal stories. Five practices evolved out of these patterns and include: Model the Way, Inspire a Shared Vision, Challenge the Process, Enable Others to Act, and Encourage the Heart. Kouzes and Posner developed a general and a student-specific measurement instrument based on the five practices, the Leadership Practices Inventory (2008). The model has been criticized for its prescriptiveness (Northouse , 2010), its leader centricity, and its inability to delineate between capacities needed for levels of interactions (Komives et al., 2011). However, Komives et al., (2011) highlights that the model encourages a common language among students, which is an important foundation for leadership development.

Spurred by a desire to develop "a new generation of leaders," Helen and Alexander Astin, along with colleagues from the Higher Education Research Institute (HERI), requested funding from the U.S. Department of Education in 1992 to work on a leadership development model with the intended outcome of social change (Astin, 1996, p. 4). Using the principle of inclusiveness as its cornerstone, this model classifies all students as potential leaders and views service as the primary means to develop this potential. This Social Change Model (SCM) of leadership development suggests that by working on a service project for campus or the community, students may learn and practice seven interconnected values of social change grouped according to level of focus: individual values of consciousness of self, congruence, and commitment; group values of collaboration, common purpose, and controversy with civility; and the societal and community value of citizenship (see Figure 1).

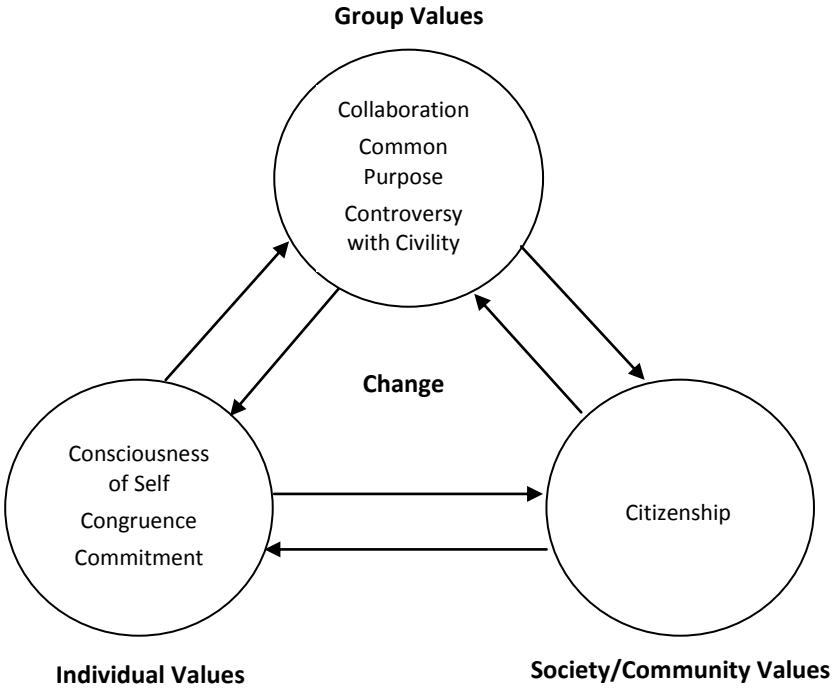

Figure 1. The Social Change Model of leadership development (Astin/HERI, 1996). This figure illustrates the interconnections or feedback loops between the seven values with change as the hub.

The individual-level values are a necessary in the model because it is assumed that these practices are foundational to the group level and society-level practices. Akin to the concept of self-awareness, consciousness of self means to know and observe one's own attitudes, beliefs, and emotions. The value of congruence can be defined as the agreement between ones beliefs and actions or consistency and authenticity toward others. Commitment is described as the investment of oneself in activities or ideas and the "energy that drives the collective effort" (Astin, 1996, p. 6). Group level values are the elements that comprise group leadership activities. Collaboration is the model's link to relational leadership as it focuses on common goals achieved through shared responsibility. Common purpose ties together collaboration with a shared vision. Controversy with civility describes one's

respect for open dialogue during disagreement while aiming for resolution. The final value, citizenship, represents the societal level and implies civic responsibility demonstrated by the connection between the individual and the community (HERI, 1996). SCM has been criticized for excluding context from the analysis for understanding how leadership works (Komives et al., 2011); however the model is used more than any other by college student leadership development programs (Owen, 2008). Tyree (1998) developed an instrument, the Socially Responsible Leadership Scale (SRLS), to measure the seven values, plus the eighth culminating value of change. The SRLS is widely used in research and program evaluation at colleges (Buschlen & Dvorak, 2011; Dugan & Komives, 2007; Dugan & Komives, 2010; Haber & Komives, 2009; Ricketts & Bruce, 2008)

The Relational Leadership Model emphasizes that leadership is a "relational and ethical process of people together attempting to accomplish positive change" (p. 74). This aspirational model is intended to serve as a framework to use in leadership development programs and, similar to the SCM, also rests on the idea that knowing oneself is fundamental to working with others effectively toward a common purpose. Figure 2 illustrates the five key components comprising this model: purposefulness, inclusiveness, empowerment, ethical practices, and a process orientation (Komives et al., 2007/2011).

When leadership is purposeful, it means that the individual has a commitment to a shared vision and is willing to help facilitate positive change. Bennis and Goldsmith say that, "vision … transforms purpose into action" (as cited in Komives et al., 2007, p. 81-82). Inclusive leadership denotes awareness and understanding of the different perspectives of others and going one step further to help develop other members of a group. Leadership that is empowering is characterized by a group environment where members remove barriers to development, such as fear, and who expect to be involved. The model's definition of

leadership stresses the ethical part of the process. This is evidenced by the congruence between behavior and values and knowledge of ethical decision making. Lastly, relational leadership is a process whereby individuals and the group understand the larger systems view of the group process and work together for positive change (Komives et al., 2007). Similar to the Five Leadership Practices and Social Change Model, the Relational Leadership is descriptive and inspirational, but individuals may possess or practice the tenets of the models and still not have the capacity, confidence, desire, or opportunity to lead or be an effective leader.

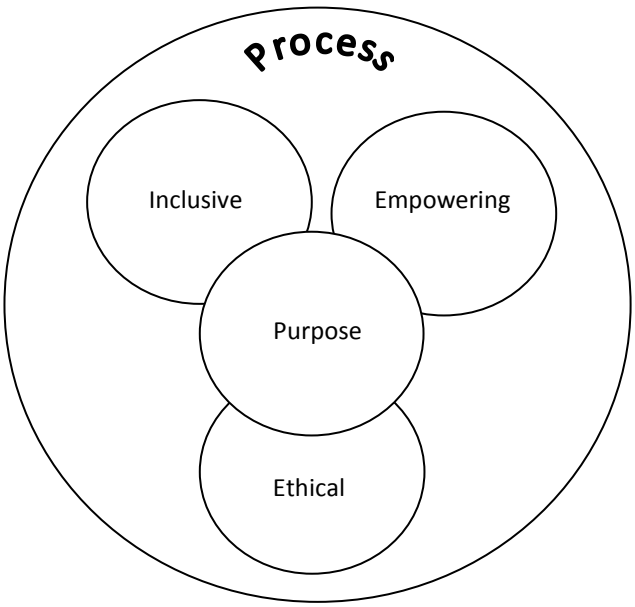

Figure 2. The Relational Leadership Model (Komives et al., 2007). This figure shows the overlapping nature of the four components surrounded by the larger process of leadership.

There are many overlapping concepts between SCM and the relational leadership model. Both models are based on an outcome of positive change; focus on self-awareness, commitment, collaboration, civil dialogue, authenticity, and citizenship though each uses

slightly different terminology; emphasize the individual leader's role in group processes; and assert that leadership is non-positional. The intention behind this model was to expand the SCM beyond the sole purpose of social change and to hone in on the importance of ethical practices in leadership (Komives, 2011). An instrument specific to measuring changes in relational leadership has not yet been developed; however the overlap in conceptual foci may allow for measurement of a leadership development program based on the RLM using the SRLS.

Though SCM and the relational leadership model are still relatively young, many studies have been conducted in the past 15 years using the Socially Responsible Leadership Scale (SRLS). This research has helped scholars and practitioners better understand how college students score in the eight value areas of the SCM and determine how these values develop relative to other components of leadership, such as leadership self-efficacy, leader identity, and prior leadership experience or extracurricular involvement. One limitation of existing research is that some of these studies have been cross-sectional or have asked participants to report their perceptions of their leader capacity at a previous time (Dugan & Komives, 2007; Dugan & Komives, 2010).

Most developmental models, whether within the leadership domain or others, consistently discuss the need for cognitive dissonance or disequilibrium to occur to force individuals into a period of growth. Much of leader development inquiry focuses on developmental experiences as the stimuli for accelerated growth. For traditional age undergraduate students, these experiences may include participation in leader development experiences for various lengths of time and with varying foci (e.g. week-long intensive program for leaders of student organizations, one-day workshops, semester-long model-based programs, academic and honors classes). In the postsecondary setting, where

education is the principal purpose, it is particularly important to study useful interventions and experiences that contribute to students' intellectual and personal development.

Components of Leadership Development

Komives et al., (2007) categorized four ways leadership has been defined and measured in the literature: 1) no definition has been provided, which severely limits the generalizability of the findings; 2) a positional definition meaning that a leadership position equals being a leader; 3) defined as leadership capacity indicating "knowledge, skills, and behavior" (p. 61); and as leader efficacy, an internal belief in one's ability to complete certain tasks (Bandura, 2007).

Leadership self-efficacy. Leadership self-efficacy has been studied alongside student leadership development both as a vital predictor of leader behavior and effectiveness (Dugan & Komives, 2010; Murphy & Reichard, 2011), and also as an outcome of leader development (Dugan & Komives, 2007). Bandura (1994/1997) defines self-efficacy as individuals' "beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (as cited in Pascarella & Terenzini, 2005, p. 223). Specific to *leadership* capabilities, leadership self efficacy is the degree of "confidence in the knowledge, skills, and abilities associated with leading others" (Hannah, Avolio, Luthans, & Harms, 2008, p. 669). This is an important consideration for leadership development as efficacy affects the nature of people's thoughts, whether they are self-enhancing or self-debilitating (Hannah et al., 2008). Efficacy relates to self-awareness and other components of leadership capacity. The positive belief of one's ability to lead others contributes to their readiness to develop (Hannah et al., 2008), their motivation to lead (Murphy & Reichard, 2011), and perhaps to their pace of growth. As a contributing variable to leadership capacity, leadership self-efficacy is a significant positive predictor of the eight

values in the social change model, explaining between 8% and 12% of the variance in the model (Dugan & Komives, 2010). Because confidence in one's ability to lead is related to the likelihood of engaging in leadership tasks or positions throughout the developmental life span, leadership self-efficacy is an important component of leadership development.

Leader identity. In the past 20 years, foundational research has also begun on a closely-related construct, leader identity. For leadership and leader development scholars, exploring how leader self-identity fits into a student leadership development model along with other related constructs may add to the relatively recent and limited literature on the construct and measurement tools used to assess it. Bosma & Kunnen (2001) suggest that how development experiences end contributes to identity development.

While leadership self-efficacy describes how leaders perceive their ability to lead others, leader identity can be expressed as the way they "think of themselves and their role in the world" or as the "culmination of an individual's attributes, values, knowledge, experiences, and self-perceptions" (Day, Harrison, & Halpin, 2009, p. 55/57). Using only 13 college students practicing the Relational Leadership Model, Komives and colleagues (2005) conducted a study to better understand the process a student goes through when creating a leadership identity (p. 594). The resulting grounded theory in leader identity describes six stages of development ranging from a narrow view of leadership as position or a hierarchical view to more of an interdependent, systemic view where leadership can be non-positional (Komives, 2011). The index names of the stages from least developed to most developed identity are: awareness, exploration/engagement, leader identified, leadership differentiated, generativity, and integration/synthesis.

Komives (2011) suggests that most students arrive at college in the leader identified stage, which is characterized by beliefs in the leader/follower dyad and the idea that

leadership is positional. A student at this stage is described as being highly involved in organizations, and when transitioning into the leadership differentiated stage, becomes more interdependent and differentiates between positions and leadership. The final three stages of the model correspond to the five areas of practice in the RLM: purposefulness, inclusiveness, empowerment, ethical, and a process orientation (Komives, Longerbeam, Owen, & Mainella, 2006). This model is still in its infancy and lacks confirmatory empirical evidence; however it may be useful for practitioners planning or revamping leadership development experiences.

Based on a similar idea of how individuals perceive themselves as leaders, Hiller (2005) considers "leadership self-identity" via schemas or cognitive structures that help people interpret the world. His premise is that these schema or interpretive frameworks can be applied to individuals' thoughts about themselves and thereby influence behavior. This idea ties directly to efficacy because as Hiller (2005) suggests, "schematic individuals also interpret events according the lens of their schema, believe they are capable in that domain, and will seek out opportunities that allow them to demonstrate their self-view" (p. 3). To apply to the student leadership domain, if students perceive themselves as leaders, they will most likely believe they are capable (leader self-efficacy) and will look for experiences to lead or to further develop this self-perception. Measuring self-schema ought to take into account three ways leaders may view themselves in terms of descriptiveness, importance, and certainty because if students perceives that the term, "leader" describes them, yet that description is not important to them, nor do they feel certain about it, then the level of self-identity may be debatable (Hiller, 2005).

Stephen, Fraser, and Marcia (1992) looked at identity development over the lifespan and suggest the importance of two personality variables (orientation and reasoning system)

in the developmental process. Someone with an instrumental orientation is goal-seeking and achievement oriented whereas someone with an experiential orientation is curious, receptive, and seeks meaning. They discuss two reasoning systems based on the worldview: formistic reasoning is associated with dualistic thinking and dialectical thinking is associated with more relativistic thinking. The experiential orientation and the dialectical reasoning system are more likely "to stimulate ongoing and disequilibriating identity exploration" (Bosma & Kunnen, 2001, p. 47).

Extracurricular involvement. A third component of leadership development is extracurricular involvement, including both pre-college and college involvement, which are often used as predictor or moderating variables (e.g., Cress, et al., 2001; Dugan & Komives, 2007; Haber & Komives, 2009) and have been established as positive predictors of leadership capacity (Kezar & Moriarty, 2000; Komives et al., 2011; Smart, Ethington, Riggs, & Thompson, 2002) and of educational attainment (Rouse, 2012). Extracurricular involvement is a broad, yet widely used concept when studying leadership development. To the researcher's knowledge, there is not a single agreed upon method to classify and include extracurricular or leadership involvement in empirical research.

Often in research, questions posed to students about their extracurricular involvement ask them to identify their level of participation as well as the activities in which they were involved. Level of participation may mean position, number of years, number of activities, or may be classified in other ways. Depending on how the resulting data is structured, issues of multicollinearity can arise if students report both participation in an activity and holding a leadership position in the same activity (Dugan & Komives, 2010).

Cress et al., (2001) controlled for pre-college leadership ability in a study that compared participants in leadership activities to non-participants on five dependent

variables: leadership skills, multicultural awareness, leadership understanding and commitment, civic responsibility, and personal and societal values. Using longitudinal data from the HERI's Cooperative Institutional Research Program (CIRP), Cress et al., (2001) analyzed data collected for 875 students from 10 institutions during their freshman year and again during their senior years and found that participants in leadership activities showed stronger growth on the five dependent factors than non-participants, though all reported growth.

Particular types of college involvement have been studied to determine their relationship to leadership capacity. Ryan (1989) found that intercollegiate athletics was a moderate, but statistically significant predictor of leadership ability. In an analysis of gender and race differences on a self-rating of leadership ability and leadership-related qualities like self confidence, Kezar and Moriarty (2000) found that holding an office was the strongest predictor of leadership ability for Caucasian men. Taking a leadership class was a significant predictor of leadership self-rating for all genders and Caucasians and African Americans. Positional leadership experiences were not a significant predictor of leadership skill development for African American men and women, and Caucasian women. Volunteer work was also a significant predictor of self-rated leadership ability for Caucasian men and women and African American men.

Curiosity. As Hiller's (2005) Leadership Self-Identity self-schema description notes, individuals who believe they are capable in a certain domain will seek opportunities to enhance or confirm that capability. Part of the motivation to seek these opportunities could be deemed curiosity, or as Bosma and Kunnen (2001) described, an "experiential orientation." Curiosity has been described as a motivational variable that can initiate exploratory behavior (Ainley, 1985) and as the positive approach to new information

categorized according to breadth and depth of curiosity (Fulcher & Erwin, 2005). If students identify themselves as leaders or see themselves as capable within the leadership domain, and they are curious, perhaps curiosity could be an indicator of the desire for lifelong leadership development.

The literature review summarized the evolution of leadership theory from industrial, workplace centric theories to more recent post-industrial theories and models that offer college student development a few applicable frameworks. However, even these frameworks are limited in their ability to empirically tie together the components of student leadership development and relate them to future leadership capacity. Though progress has been made, there continue to be underdeveloped areas of knowledge about student leadership development. The following hypotheses attempt to contribute to this knowledge base.

Leadership Development over Time

Due to previous empirical findings related to leadership development and its components, it is expected that positive differences in leadership capacity and its components exist for students who participated in a semester-long leader development program based somewhat on the Relational Leadership Model. The conceptual overlap between the Social Change Model and the Relational Leadership Model should allow for a sound evaluation of socially responsible leadership capacity in students. Few longitudinal studies have been completed, nor has growth in student leader identity been fully investigated to date, especially how it relates to leadership self-efficacy and pre-college leadership involvement.

Hypothesis 1

Participants in a semester-long, conceptually-based student leader development program will show greater gains in socially responsible leadership capacity, leadership

self-efficacy, and leader identity than the control group, moderated by pre-college leadership involvement.

Frequency of Leader Task Performance

As an indirect measure of student learning in leadership, behavioral outcomes, such as frequency of volunteerism, can give meaningful information regarding the effectiveness of leader development programs, according to Goertzen (2009). The purpose of leadership development programs is to produce students who consequently exhibit positive leadership behaviors in their remaining time on campus. Students who learned about leadership, especially non-positional leadership, in a leadership development program should gain confidence (efficacy) in their leadership ability and enhance their leadership identity, therefore motivating them to perform leader tasks in their academic and co-curricular settings.

Hypothesis 2

Participants in a semester-long, conceptually-based student leader development program will report greater frequency of performing leader tasks than the control group twelve weeks after the conclusion of the program.

Explaining Leadership Self-Identity and Leadership Task Frequency

Lord and Hall (2005) suggest that adequate self-confidence and identification with the leader role are important as a pre-condition to participating in leadership development activities. In some colleges, there is an assumption that students will seek to improve themselves in areas that they perceive require development, however a correlational study performed by Hess and Winston (1995) indicated that students seek activities with which they already are well-developed, rather than those needing attention. Perhaps it depends on the structure and intended audience of the development experience. Nonetheless, it is

valuable to examine the predictive ability of pre-college leadership involvement and beginning leadership self-efficacy, leader self-identity, socially responsible leadership variables, and curiosity breadth and depth in determining a future level of leader identity.

Hypothesis 3a

Pre-College Leadership Involvement, Group, and Time 1 Leadership Self-Efficacy, Leader Self-Identity, Consciousness of Self, Congruence, Commitment, Common Purpose, Collaboration, Controversy with Civility, Citizenship, Change, and Breadth and Depth of Curiosity will explain Leader Self-Identity at Time 3.

Though hypothesis 2 inquires about the differences between groups on leader task performance after some have completed a leadership development program, what may lead to those potential differences or contribute to the likelihood of a student performing leadership tasks is not established. What pre-existing qualities and states may contribute to the frequency with which students perform leadership tasks?

Hypothesis 3b

Pre-College Leadership Involvement, Group, and Time 1 Leadership Self-Efficacy, Leader Self-Identity, Consciousness of Self, Congruence, Commitment, Common Purpose, Collaboration, Controversy with Civility, Citizenship, Change, and Breadth and Depth of Curiosity predict Personal Leadership Task Frequency at Time 3.

Agreement between Self- And Observer-Ratings

Feedback is an essential component of a leadership development program and of continuing development of one's skills (Ayman, Adams, Fisher, & Hartman, 2003). As part of the leadership development program, peer leadership counselors facilitated group discussions and activities following each weekly session. They had opportunities to observe participants in their respective groups and therefore may have additional insight into the

developmental progress of the participant, much like managers observe and evaluate their employees. In an effort to inform the value of including 360 degree feedback for future cohorts in the program, a preliminary glimpse at how peer leaders' observations agree with or differ from participants' self-perception would be helpful as a supplement to self-ratings.

In the field of leader development, researchers and practitioners are interested in the lack of agreement between ratings from multiple sources, rather than only the intuitive desire to reduce this lack (Fleenor, Smither, Atwater, Braddy, & Sturm, 2010). Often, "self-other" rating agreement is examined as an indicator of self-awareness and as a variable related to outcomes, such as leader effectiveness (Fleenor, et al., 2010). Additionally, in this study, self- and other-rating agreement may provide information relative to the program evaluation. If direct feedback should be incorporated into the program, what components of leadership development can peer counselors observe in enough depth to provide meaningful feedback?

Hypothesis 4

Peer leader ratings of their leadership development "council" participants will be moderately correlated to the participants' self ratings on two elements of socially responsible leadership: Congruence and Commitment.

Post-Leadership Program Differences

Changes measured immediately after participation in a leadership development program are generally anticipated due to the depth of exposure and residual effects, but there is little research that explores the longer-term impact on students' behaviors, which is, or should be, the overarching goal of leadership development. This study considers how students score on leadership capacity, leadership self-efficacy, leader identity, and curiosity depth one to two years after the experience.

The past cohort of the same development program experienced the same content and format, but these students have had time to continue in their development, to engage in other leader experiences, and to practice leader behaviors in their classes and organizations. These experiences may further develop their leadership self-efficacy, leader identity, and capacity for socially responsible leadership. Because depth of curiosity purportedly is the deep and positive approach to new information, students could develop over time to have a more focused pursuit of knowledge related to leadership and leadership practices.

Hypothesis 5

College juniors and seniors who participated in a semester-long student leadership development program during their freshman or sophomore year will report greater overall Socially Responsible Leadership Capacity, Leadership Self-Efficacy, a higher Leader Identity Stage, greater Leader Self-Identity, and greater Depth of Curiosity than recent participants in the same program and the control group, controlling for the Frequency of Leadership Task Performance.

Chapter 3

METHOD

Participants

Participants in this study included mainly traditional-age undergraduate college students at a mid-sized comprehensive university in the Mid-Atlantic United States. There were two groups of students invited to participate in the study. The primary cohort was composed of freshmen and sophomores between 18 and 22 years of age who responded to either Time 1 or Time 2 survey requests. Of the 332 respondents, 71.6% were female and 28.4% were male, compared to a 60/40 ratio for the overall university population. Seventy-one percent were freshmen, 25% were sophomores, 3% were juniors, and one senior participated. This cohort included 7.2% transfer students and 8.2% of participants were first-generation college students. The racial and ethnic identification by participants resembled the overall university population: 78.5% Caucasian, 5.4% African American/Black, 5.4% Asian American/Asian, 2.4% Hispanic, and the remaining included those who identified as multiracial or Native Hawaiian/Pacific Islander, or who indicated that the races listed did not match their own. Three cases that were statistical outliers were removed. Three other participants who reported their age as 17 were eliminated due to their inability to legally consent to participate.

The second cohort was comprised of juniors, seniors, and graduate students between the ages of 20 and 41, with a mean age of 21. This group included 104 participants who responded to a single survey request; however, only 90 responded to demographic questions. The group was similar to the primary cohort demographically: 70% were female and 30% were male; 9.9% reported they were transfer students; 12.1% were first-generation college students; the racial and ethnic composition of this cohort included 73% Caucasian, 5.8%

Asian American/Asian, 3.8% African American/Black, and Latino/Latina and multiracial individuals comprised 1.9% or less. Sixty-six participants were seniors, 23 were juniors, and 2 were graduate students.

The experimental groups consisted of students who had previously completed or were recently accepted into a semester-long leader development program sponsored by the university. Desired outcomes for the program include clarification of personal values and the connection between values and actions, understanding the connection between decision making and values, developing confidence to work actively in a group, applying what they learned in the program with their own college involvement, and building relationships with peers that serve as a foundation for future values-based leadership. There were two experimental groups: recent participants (Exp) who were invited to participate in a longitudinal study and past participants (PastExp) who were invited to participate in a cross-sectional study.

The control groups were a convenience sample of undergraduate students of a similar academic grade level to their corresponding experimental group, were studying in a broad array of majors, and reported ethnicities similar to the overall college population. Students in one control group were enrolled in general education courses offered that are taken primarily by freshman and sophomores and students in the second control group were enrolled in a senior-level course in fall 2012. There were two control groups used in different portions of this research: freshman and sophomores who were invited to participate in a longitudinal study (Control) and the upper class students who were invited to participate in a cross-sectional study (SrControl). Participation was voluntary and participants could withdraw at any time without consequences.

Study Design

Two studies were performed using data collected from the two main cohorts described, as well as another study using third-party observer ratings provided by peer counselors who facilitated the leadership development program. IRB approval was obtained for each study. The studies are delineated in Table 1 with their respective study design, primary cohort, and corresponding hypotheses. Additional details of data collection are included in the Procedures section of this chapter.

Table 1
Study and Hypotheses Summary

Study 1 Longitudinal	**Study 2** Observer Evaluation	**Study 3** Cross-sectional
Freshmen, Sophomores	Leadership Counselors	Freshmen, Sophomores, Juniors and Seniors
Hypothesis 1 Focus: Leadership development over time - Groups: 2 - Sample Size: 247 *Hypothesis 2* Focus: Group differences in frequency of leadership tasks - Groups: 2 - Sample Size: 150	*Hypothesis 4* Focus: Agreement between self rating and observer rating Sample: 18 peer leaders provided 2 ratings for subgroups of 119 leadership program participants	*Hypothesis 5* Focus: Group differences in leadership capacity - Groups: 4 - Sample Size: 230
Hypothesis 3a Focus: Predictors of Time 3 Leader Self-Identity - Groups: 1 - Sample Size: 140 *Hypothesis 3b* Focus: Predictors of Time 3 Leadership Task Frequency - Groups: 1 - Sample Size: 132		

Measures

A number of measures were used in this research. These are listed by study type (longitudinal and cross-sectional) and by Time 1, Time 2, and Time 3 in Table 2, including internal consistency reliabilities for each instrument or subscale.

Table 2
Internal Consistency Reliabilities[a] for Instruments across Studies

	Longitudinal			Cross-sectional[b]
Scale	Time 1(*n*)[c]	Time 2(*n*)	Time 3(*n*)	
Leadership Self Efficacy	.84 (333)	.91 (303)	-	.84 (103)
Curiosity Index – Breadth	.88 (329)	.85 (295)	-	.88 (90)
Curiosity Index – Depth	.83 (327)	.83 (292)	-	.88 (90)
SRLS[d] – Consciousness of Self	.80 (321)	.79 (295)	-	.80 (90)
SRLS – Congruence	.82 (325)	.84 (302)	-	.82 (92)
SRLS – Commitment	.83 (329)	.84 (299)	-	.82 (93)
SRLS – Common Purpose	.82 (322)	.87 (299)	-	.83 (91)
SRLS – Collaboration	.81 (327)	.86 (296)	-	.76 (92)
SRLS – Controversy with Civility	.75 (324)	.74 (298)	-	.76 (92)
SRLS – Citizenship	.88 (327)	.91 (300)	-	.90 (91)
SRLS – Change	.81 (321)	.83 (297)	-	.82 (93)
LSI[e] – Descriptiveness	.87 (331)	.90 (304)	.93 (157)	.89 (104)
LSI – Importance	.88 (335)	.90 (301)	.93 (157)	.83 (103)
LSI – Certainty	.86 (337)	.88 (305)	.91 (156)	.85 (103)
Leader Task Frequency	-	-	.82 (153)	.73 (102)

[a] Cronbach's alpha
[b] Cross-sectional study reliabilities shown were derived from the PastExp and SrControl combined groups
[c] *n* varies for each measure due to the unsystematic omission of items across scales
[d] SRLS – Socially Responsible Leadership Scale (Tyree, 1988)
[e] LSI – Leader Self-Identity Scale (Hiller, 2005)

Leadership Self Efficacy Scale. The Leadership Self Efficacy scale (Murphy, 1992; Ensher & Murphy, 1997) is an 8-item scale that measures participants' level of confidence in their general leadership abilities using a 4-point Likert scale ranging from strongly disagree to strongly agree. Several studies support the reliability of the measure citing Cronbach's alphas greater than .75 (Chemers, Watson, & May, 2000; Hoyt, Murphy, Halverson, & Watson, 2003; Hoyt, Johnson, Murphy, & Skinnell, 2010). An example item is "I am confident of my ability to influence a work group that I lead." Internal consistency reliabilities for this

measure at Time 1 were .84, at Time 2 were .91, and for the cross-sectional study, they were .84.

Curiosity Index (CI-4). The Curiosity Index (Fulcher & Erwin, 2005) is a 16-item self-report measure of an individual's positive approach (behaviors and attitudes) to new information using a 6-point Likert scale ranging from agree strongly to disagree strongly. Two subscales (breadth and depth) comprise the total curiosity score, a component of intrinsic motivation, and both scales have Cronbach's alpha coefficients of internal consistency in the mid .80s (Fulcher, 2008). A statement from the breadth subscale is "I like to get involved in a wide-variety of activities" and from the depth subscale is "When learning about something new, I try to find out everything I can about it." Cronbach's alpha for breadth of curiosity was .88 and .85 at Time 1 and 2, respectively, and .88 for the cross-sectional study. Depth of curiosity reliability remained consistent at .83 across Time 1 and Time 2 and was .88 for the cross-sectional study.

Socially Responsible Leadership Scale. Originally developed by Tracy Tyree in 1988, the SRLS-R2 is the second revision of the SRLS, resulting from a confirmatory factor analysis that reduced the number of items from 104 to 68. The SRLS-R2 measures the values of the Social Change Model of Leadership Development developed by Astin (1996) and HERI (1996) including Consciousness of Self, Congruence, Commitment, Common Purpose, Collaboration, Controversy with Civility, Citizenship, and Change. Table 3 contains a sample question from each subscale. Participants responded using a five-point Likert scale from strongly disagree to strongly agree. Participants receive a separate averaged score, ranging from 1 to 5, for each of the eight subscales in the SRLS. The total SRLS score also ranges from 1 to 5 and is an average of the scores for the eight subscales (NCLP, n.d.).

Table 3
Socially Responsible Leadership Scale (Tyree, 1998) Sample Items by Subscale

Scale	**Item**
Consciousness of Self	I know myself pretty well
Congruence	My behaviors are congruent with my beliefs
Commitment	I am willing to devote time and energy to the things that are important to me
Common Purpose	I support what the group is trying to accomplish
Collaboration	I am able to trust the people with whom I work
Controversy with Civility	Greater harmony can come out of disagreement
Citizenship	I work with others to make my communities better places
Change	There is energy in doing something a new way

Reliabilities for each subscale range from a Cronbach's alpha coefficient of .72 for Controversy with Civility to .89 for Citizenship in the confirmatory study (NCLP, n.d.), from .77 to .90 in another study (Ricketts & Bruce, 2008), and from .72 for Controversy with Civility to .88 for Citizenship in a third study (Gehrke, 2008). Internal consistency reliabilities for the SRLS subscales at Time 1 and Time 2 and for the cross-sectional study are summarized in Table 2 and are in the same ranges as reported in previous studies.

Leader Identity Stage. Two measures of leader identity were used in this study, each asking the participant to describe or categorize themselves in terms of their leader-related self-perception. Though Komives and colleagues developed a "grounded theory" in leader identity, there is not currently a corresponding measurement tool to ascertain stages or development of leader identity. Using the Komives et al., (2005) theory of leader identity, a single item was created to explore this construct and perhaps to provide additional information on the differences detected by the second leader identity instrument used in this study. Study participants were asked to select the description that BEST described their level of leader identity at that time. The item included six descriptive statements derived from the six stages of the leadership identity model (Komives et al., 2006), and were arranged in order of most basic to most advanced, or in terms of the model from "awareness" to "integration/synthesis."

The most basic level of identity, awareness, which Komives et al., (2006) asserts new college students surpass, is categorized by participants agreeing to the following description: "I am aware of national leaders and others in positions of authority, but I do not consider myself a leader. I am not involved in any or many activities on a regular basis, but I may be interested in becoming more involved." The highest level of identity was categorized using the following description: "I feel confident in my leadership abilities and in my ability to facilitate change as a group member or a leader. I realize I am a role model to others. I am continually striving to learn more about myself and contribute to the greater good."

Leadership Self-Identity. To provide additional information about the leader identity construct, items from Hiller's (2005) Leadership Self-Identity measure were also included, which asked participants to rate the extent to which four statements about leader self-perception applied to them in terms of Descriptiveness, Importance, And Certainty across a four-point Likert scale. For example, participants were asked to "rate the extent to which the following statements describe you: I am a leader; I see myself as a leader; If I had to describe myself to others, I would include the word 'leader'; and I prefer being seen by others as a leader." Internal consistency reliabilities are detailed across Time 1, Time 2, and Time 3 and for the cross-sectional study in Table 2. Hiller's (2005) scale was the primary leader identity measure used in these studies.

Leadership Task Performance. Both cohorts reported information about the frequency of their leadership task performance; however each at different time points. The primary cohort was asked as part of the Time 3 data collection about the frequency of leader tasks or behaviors since December 2012, which was the Time 2 data collection point. The secondary cohort of past leadership development program participants and the control group of seniors were to report the frequency of leader behaviors within the past year.

Example questions include: "I have thought about if my actions match my personal values," "I have taken on a leadership position," and "I have taken initiative in a group or project to get something done." Collectively, the frequency with which participants engaged in leader behaviors should be greater for those who experienced the leader development program. The questions encompass both positional and non-positional leader behaviors, but focus mainly on non-positional.

Pre-college Leadership Involvement. College students enter their postsecondary education often with extensive experience in leadership positions and having had opportunities to test leadership behaviors through participation in extracurricular activities. Exposure and opportunity to practice may help prepare them for future leadership activity at the college level and may be a predictor of interest in leader development programs, leadership development, or other constructs associated with leadership development. High school extracurricular activities reported by students on their university admissions application were extracted from the university student administration system. In observance of FERPA regulations, data were provided only for students who signed a consent form. Data extracted included the name of the extracurricular activity, any office held, and the number of years of potential involvement (grades 9-12).

From these data, a single variable was calculated to represent a student's *leadership* involvement in extracurricular activities as indicated by an office held in any organization, regardless of the nature of the extracurricular activity (sports, government, publications, or volunteer organizations, for example). A leadership percentage was calculated based on the total number of leadership positions reported, which may include offices such as treasurer, captain, vice president, president, and editor, relative to the total number of activities in

which they were involved. A percentage calculation helped equalize the uneven numbers of activities reported by students.

It was assumed that a high school student in a leader role spent more time being active in the group and therefore many have more opportunity to engage in and practice leader behaviors. Pre-College Leadership Involvement is hypothesized to be correlated to the dependent variables because prior research suggested that students who have experience with leadership, though defined differently in every study, prior to coming to college explains much of the variance in studies on leadership development (Dugan & Komives, 2010). Pre-College Leadership Involvement has a significant, but low correlation with Time 1 values for Leadership Self-Efficacy (r = .18), Leadership Self-Identity (r =.14), Leader Identity Stage (r = .12), and four socially responsible leadership values: Congruence, Commitment, Common Purpose, and Citizenship (between r = .12 to .16). This variable was not significantly related to Consciousness of Self, Collaboration, Controversy with Civility, or Change.

Dependent Variables. The dependent variables for this study were identified from theoretical and empirical bases (such as Ainley, 1985; Cress et al., 2001; Day et al., 2009; Dugan & Komives, 2007; Fulcher, 2004; HERI, 1996; Hiller, 2005; Komives et al., 2007) and include: Leadership Self-Efficacy, Leader Self-Identity, Leader Identity Stage, Socially Responsible Leadership Capacity as measured by the eight SRLS subscales, and Curiosity Breadth and Depth. Pre-College Leadership Involvement and Group will serve as a covariate or control variable in certain analyses.

Procedure

Study 1. This quasi-experimental study employed a repeated-measures design for participants in the fall 2012 leader development program (experimental group) and the control group. Following Institutional Review Board (IRB) approval, data were collected at three time points: near the beginning of the semester or when the leader development program began, at the end of the semester or when the program ended, and 12 weeks after the conclusion of the experience in spring 2013 (Table 2). The items from each instrument, demographic questions, and new items, were combined into a single survey that was administered via pen and paper to the fall 2012 leader development program participants during scheduled programming times and to all other participants online via Qualtrics, a survey tool. The pen-and-paper version of the survey was a replica of the online version. All participants were provided with IRB-approved informed consent information either on paper or electronically. The final data collection should not be considered an equivalent Time 3 data collection, as it focused primarily on determining the frequency of leader behaviors and changes in leader identity.

The attrition rate between Time 1 and Time 2 was approximately 18% with an overall sample of 268 students: 102 in the experimental group (leadership development program participants) and 166 in the control group. Groups were considered close enough in size with a ratio of 1.6 for robustness. At Time 3, the number of individuals who participated at all three time points totaled 155: experimental with 65 and the control group retained 90. The attrition rate between Time 2 and Time 3 was 42%.

Study 2. After receiving IRB approval and using an online survey, data were collected in late November 2102 from the peer counselors that led small groups of participants in the leadership development program throughout the semester. Peer counselors were asked to

rate the participants in their groups on 13 items from two SRLS subscales for which they had the opportunity to observe over the preceding three months.

Study 3. This cross-sectional quasi-experimental study includes Study 1 participants and two new groups: 1) 2009 or 2010 past participants of the same leadership development program and 2) a control group of upper-class students at the same university. Following Institutional Review Board approval, data were collected from the past participants and the control group via an online survey. The survey contained nearly identical questions to those included in the Study 1 survey, with additional questions related to leadership task frequency. All participants were provided with IRB-approved informed consent information in an email introduction to the research and invitation to complete the survey.

Chapter 4

RESULTS

The results in this chapter reflect the outcomes of four studies: Study 1 is a longitudinal study conducted during the fall 2012 semester and early spring 2013 at three time points with a group of freshmen and sophomores; Study 2 explores the rating agreement between peer observers of the participants in the leadership development program; Study 3 is a cross-sectional study using data from Study 1 and data gathered during fall 2012 from a control group of seniors and upperclassmen who were past participants of the same leadership development program. Study 1 addresses Hypotheses 1, 2, 3a, and 3b. Study 2 addresses Hypothesis 4, and finally Study 3 includes testing of Hypothesis 5. Sample sizes varied dependent on the statistical method chosen and variables for each hypothesis because missing data were deleted listwise. Therefore, if data were missing on any of the variables included in the analysis, the case was omitted.

Study 1

Descriptive results. Descriptive statistics including means, standard deviations, and ranges, for Study 1 are presented in Table 4. Subscale statistics are noted beneath the overarching construct or measure. Time 1 group differences were explored prior to the analysis of the hypothesis. There were statistically significant differences at Time 1 between groups where the leadership development group had consistently higher means than the control group on four dependent variables: Controversy with Civility (M = 3.91, SD = 0.38; M = 3.80, SD = 0.44); Citizenship *(*M = 4.20, SD = 0.44; M = 4.07, SD = 0.50); Leadership Self-Identity Importance (M = 3.07, SD = 0.55; M = 2.87, SD = 0.62); and Breadth of Curiosity (M = 4.93, SD = 0.65; M = 4.59, SD = 0.77). Breadth of Curiosity showed the greatest difference between groups at Time 1, $F(1, 297) = 16.63$, $p < .001$.

Table 4
Study 1 Descriptive Statistics by Group for Time 1, Time 2, and Time 3

	Time 1		Time 2		Time 3	
	Exp (*n* = 99)	Control (*n* = 148)	Exp (*n* = 99)	Control (*n* = 148)	Exp (*n* = 65)	Control (*n* = 90)
Variable	M(SD) *Min/Max*	M(SD) *Min/Max*	M(SD) *Min/Max*	M(SD) *Min/Max*	M(SD) *Min/Max*	M(SD) *Min/Max*
SRL[a] Capacity						
Consciousness of Self	3.88 (.50)	3.88 (.50)	4.07 (.49)	3.92 (.50)	--	
	2.44-4.89	*2.56-5.00*	*2.67-5.00*	*2.33-5.00*	--	
Congruence	4.24 (.50)	4.22 (.43)	4.35 (.46)	4.21 (.47)	--	
	2.57-5.00	*2.57-5.00*	*3.00-5.00*	*2.86-5.00*	--	
Commitment	4.48 (.40)	4.42 (.42)	4.47 (.42)	4.33 (.45)	--	
	3.17-5.00	*3.00-5.00*	*3.00-5.00*	*3.00-5.00*	--	
Common Purpose	4.14 (.38)	4.12 (.39)	4.32 (.41)	4.15 (.42)	--	
	3.33-5.00	*3.00-5.00*	*3.00-5.00*	*3.00-5.00*	--	
Collaboration	4.18 (.37)	4.12 (.42)	4.30 (.46)	4.14 (.44)	--	
	3.38-5.00	*2.88-5.00*	*3.00-5.00*	*2.88-5.00*	--	
Controversy w/ Civility	3.91 (.37)	3.80 (.44)	4.06 (.41)	3.85 (.44)	--	
	3.00-4.82	*2.36-4.91*	*3.18-5.00*	*2.64-5.00*	--	
Citizenship	4.20 (.44)	4.07 (.50)	4.35 (.44)	4.06 (.54)	--	
	3.00-5.00	*2.38-5.00*	*3.00-5.00*	*2.25-5.00*	--	
Change	3.81 (.43)	3.74 (.51)	3.95 (.52)	3.77 (.51)	--	
	2.80-4.80	*2.33-5.00*	*2.20-5.00*	*2.10-5.00*	--	
Leadership Self Efficacy	2.96 (.37)	3.00 (.38)	3.29 (.43)	3.06 (.39)	--	
	2.13-4.00	*2.13-4.00*	*2.38-4.00*	2.00-4.00	--	
Leadership Self-Identity						
Descriptiveness	2.93 (.53)	2.88 (.57)	3.27 (.50)	2.90 (.61)	3.21 (.68)	2.92 (.71)
	1.75-4.00	*1.50-4.00*	*2.00-4.00*	*1.25-4.00*	*1.75-4.00*	*1.00-4.00*
Importance	3.07 (.55)	2.87 (.62)	3.28 (.57)	2.92 (.60)	3.23 (.59)	2.92 (.73)
	1.00-4.00	*1.50-4.00*	*1.00-4.00*	*1.00-4.00*	*1.00-4.00*	*1.00-4.00*
Certainty	2.80 (.64)	2.76 (.59)	3.20 (.58)	2.81 (.62)	3.14 (.74)	2.91 (.66)
	1.25-4.00	*1.25-4.00*	*2.00-4.00*	*1.00-4.00*	*1.00-4.00*	*1.00-4.00*
Leadership Identity Stage	3.49 (1.47)	3.33 (1.36)	4.34 (1.42)	3.50 (1.53)	3.75 (1.50)	3.77 (1.36)
	1-6	*1-6*	*1-6*	*1-6*	*1-6*	*1-6*
Curiosity						
Breadth	4.93 (.65)	4.63 (.73)	4.84 (.76)	4.48 (.80)	--	
	3.13-6.00	*2.63-6.00*	*1.88-6.00*	*2.13-6.00*	--	
Depth	4.37 (.72)	4.36 (.70)	4.46 (.78)	4.26 (.80)	--	
	2.38-6.00	*2.88-5.88*	*2.25-5.88*	*2.13-6.00*	--	

[a]SRL – Socially Responsible Leadership

SRLS Factor Analysis. The 68 items comprising the SRLS (NCLP, n.d.) were factor analyzed in nine separate computations, as part of the instrument review process: once on the overall instrument and eight for individual subscales. A previous validity study indicated more than one eigenvalue greater than one for each subscale (NCLP, n.d.), which called into question how items differentiate within the subscale, and also as an overall scale. Though this is not a primary focus of the current study, a principal component analysis was

performed to explore the factor loadings of the 68-item Socially Responsible Leadership Scale and its eight subscales derived from the eight values of the Social Change Model.

Tabachnick and Fidell (2007) suggest using an oblique rotation and a specific number of factors as an approach to determining the appropriate type of rotation to use in principal component analysis. If the correlation matrix reveals values of .32 or above, then the oblique rotation should be considered the best option because this indicates that there is "10% (or more) overlap in variance among factors, enough variance to warrant oblique rotation" (Tabachnick & Fidell, 2007, p. 646). Based on the SRLS author's designated eight subscales (underlying the Social Change Model), eight fixed factors were specified for extraction and resulted in multiple correlations exceeding the .32 threshold, thereby confirming that an oblique rotation was appropriate and that the variables are correlated. The rotation required 72 iterations before identifying simple structure. Sixteen components with eigenvalues greater than one were identified within the overall scale.

Next, individual principal components analyses were performed for each eight subscales, which resulted in four subscales with a single component (Commitment, Collaboration, Common Purpose, and Citizenship) and four subscales with two or three eigenvalues greater than one or multiple components (Consciousness of Self, Congruence, Controversy with Civility, and Change). Table 5 shows the eigenvalues and the percentage of variance explained for each subscale.

Table 5
SRLS Principal Component Analysis Results including Eigenvalues and Percentage of Variance Explained by Each Component

SRLS Overall and Subscales	#Items	Component	Eigenvalues	% Variance Explained
Overall Scale[a]	68	16 total	1.01 to 19.11	1.48 to 28.11
Subscales				
Consciousness of Self	9	1	3.57	39.65
		2	1.13	12.60
Congruence	7	1	3.48	49.65
		2	1.05	14.97
Commitment	6	1	3.29	54.81
Collaboration	8	1	3.49	43.59
Common Purpose	9	1	3.84	42.69
Controversy w/ Civility	11	1	3.46	31.46
		2	1.48	13.46
		3	1.02	9.22
Citizenship	8	1	4.38	54.77
Change	10	1	3.68	36.82
		2	1.53	15.25

[a]Summary information only is provided for the overall scale. See the Appendix for additional information.

The lack of support for the scale's reported factor structure may be due to several possible reasons. First, the overall sample size was less than 300, a minimum number of cases suggested by Tabachnick and Fidell (2007) to conduct factor analysis (as cited in Field, 2009, p. 647). In addition, the proportion of the number of items analyzed to the sample size does not meet the recommended minimum of a sample that is five times the number of items being analyzed (Hair, Black, Babin, & Anderson, 2010). Therefore, a minimum sample size to obtain a more accurate interpretation of the SRLS factors should be at least 340 (68 items * 5). Second, the items may not represent or be constructed to match the content of each subscale. And third, it is possible that the theoretical constructs for the socially responsible leader may not be conceived appropriately. For the purposes of this research, the SRLS author's suggested eight subscales were included in the analysis as dependent variables. The discussion section addresses ideas for future research and instrument validation.

Hypothesis 1: Leadership Development over Time. A one-way repeated-measures multivariate analysis of covariance (MANCOVA) was conducted to determine if participation in a leadership development program resulted in greater increases over time in thirteen dependent variables: Socially Responsible Leadership capacity values including: Consciousness of Self, Congruence, Commitment, Collaboration, Common Purpose, Controversy with Civility, Citizenship, and Change; Leadership Self-Efficacy; Leader Self-Identity variables: Descriptiveness, Importance, and Certainty; and Leader Identity Stage. The independent variable, Group, had two levels: the experimental group and the control group. The covariate, Pre-College Leadership Involvement, was used to create a more level playing field statistically for students regardless of their exposure to leadership opportunities in high school. The experimental group and the control group did not significantly differ on the covariate, which is suggested by Field (2009) to be an ideal situation for choosing a covariate that will aid in controlling for variance unrelated to the experimental condition (the leadership development program, in this instance).

The experimental group includes 99 people and the control group includes 148 people who completed the surveys at Time 1 and Time 2, with a total sample size of 247 for this analysis. Prior to interpretation of the results, assumptions of multivariate analyses were examined. The assumption of independence of observations across Time 1 and Time 2 cases and univariate normality was met, however Levene's test was significant ($p < .05$) for dependent variable Change at Time 1 and Leadership Self-Efficacy at Time 2, suggesting that the variances between the groups are significantly different and therefore violate the assumption of homogeneity of variance. All other dependent variables at Time 1 and Time 2 had non-significant Levene's tests. Box's M test of equality of covariance matrices was also significant ($p < .01$), signaling a violation of the multivariate assumption of equality of

covariance matrices. Histograms for each dependent variable at Time 1 and Time 2 display within group normality except for Time 2 Leadership Self-Efficacy, which had two peaks at for each integer at the high end of the scale (3 and 4). Though two multivariate statistics (Pillai's trace and Hotelling's T^2) are purported to be robust to violations (Olson, 1974; Hakstian, Roed, & Lind, 1979), because of the severity of the Box's M test, results related to Change and Leadership Self-Efficacy should be interpreted with caution.

Using Pillai's trace, there was a statistically significant interaction effect between Time 1 and Time 2 across the two groups, V = .21, $F(13, 232) = 4.61$, $p < .001$, partial $\eta^2 = .21$. The covariate, Pre-College Leadership Involvement, did not have a statistically significant interaction with time, $F(13, 232) = .68$, $p = .78$. Separate univariate ANOVAs showed statistically significant differences between groups on all except the Commitment dependent variable. Table 6 summarizes the univariate results. Based on the effect sizes as measured by partial η^2, Leadership Self-Efficacy (.10), Leader Identity Descriptiveness (.12), and Leader Identity Certainty (.11) explained the largest amounts of multivariate variance among the thirteen dependent variables. However, the Leadership Self-Efficacy findings should be interpreted with caution given the multivariate assumption violation.

Table 6
Univariate ANOVA Statistics in Follow-up to Significant MANCOVA

	df	***F***	**partial η^2**	***p***
SRL Capacity				
Consciousness of Self	1, 244	8.19	.03	.005**
Congruence	1, 244	6.27	.03	.013*
Commitment	1, 244	2.04	.01	.154
Common Purpose	1, 244	8.93	.04	.003**
Collaboration	1, 244	4.35	.02	.038*
Controversy w/ Civility	1, 244	3.97	.02	.047*
Citizenship	1, 244	9.46	.04	.002**
Change	1, 244	5.14	.02	.000***
Leadership Self Efficacy	1, 244	28.29	.10	.024*
Leadership Self-Identity				
Descriptiveness	1, 244	33.51	.12	.000***
Importance	1, 244	6.54	.03	.011*
Certainty	1, 244	28.61	.11	.000***

Leadership Identity Stage	1, 244	9.35	.04	.002**

*$p < .05$, **$p < .01$, ***$p < .001$

The experimental group means on all dependent variables were consistently higher than the control group means at Time 2, regardless of Time 1 means as shown in the descriptive statistics in Table 3. For example, the experimental group ($M = 3.29$, $SD = .43$) was higher in Leadership Self-Efficacy than the control group ($M = 3.06$, $SD = .39$) at Time 2. The same is true for Citizenship at Time 2: experimental ($M = 4.34$, $SD = .44$) and control ($M = 4.06$, $SD = .54$). These sample results support Hypothesis 1 that a leadership development program contributes to students' growth in their capacity for socially responsible leadership, leadership self-efficacy, leader self-identity, and leader identity stage.

Leadership Task Factor Analysis. Eleven new items were included in the Time 3 research surveys in late February 2013 to determine how frequently study participants performed various leadership tasks. Rather than treating each item as a separate variable, a factor analysis was performed on the eleven items related to Leadership Task Frequency, then resulting factor scores were calculated as dependent variables to include in the analysis of Hypotheses 2 and 3b, and as moderating variables for Hypothesis 5.

Hair et al., (2010) recommend that the researcher has "at least five times as many observations as the number of variables to be analyzed" (p. 102) to prove the appropriateness of factor analysis. For this factor analysis, the sample included the two groups included in Study 1 and two additional groups used in Study 3: past participants in the same leader development program and a control group of seniors. The sample size for the factor analysis was 255, which exceeds the minimum requirement of 55 (11 items * 5). The data also met the suggested criteria for intercorrelation of variables: the partial correlations were in the appropriate range as measured by the anti-image correlation matrix; a statistically significant Bartlett's test of sphericity ($p<.0001$); and the Kaiser-Meyer-Olkin

(KMO) Measure of Sampling Adequacy = .85, such that values close to 1 indicate compact patterns of correlations making the data appropriate for factor analysis (Field, 2009).

Using the maximum likelihood test and a direct oblimin rotation, three factors were extracted with eigenvalues greater than 1, which explains approximately 59.8% of total variance. Hair et al., (2010) suggest examining both the practical significance and statistical significance of factor loadings when interpreting. The loadings illustrated by the pattern matrix in Table 7 shows that all items except for item 11 meet a minimum (.30 - .40) range for interpretation of structure and many loadings are .50 or greater, exceeding the level for practical significance (Hair et al., 2010). Because the sample size in this analysis is 255, the factor loading should be at least .40 to be considered statistically significant based on an alpha level = .05, according to Hair et al., (2010). The two items that loaded significantly on factor 1 asked the study participants about leadership with a higher purpose than self or group, and was named "citizen leadership." Similarly, the three items that loaded on factor 2 asked indirectly about leadership tasks one may perform within a group, and is named "group leadership." Items 6-10, which loaded on factor 3, describe "personal leadership" or tasks one may perform independent of a defined group or community cause. SPSS calculated three factor scores that were added to the data set for Study 1 and for Study 3.

Table 7
Factor Loadings[a] for Maximum Likelihood Analysis with Direct Oblimin Rotation of Leadership Task Performance

	Factors		
Leadership task performance items	1	2	3
Citizen Leadership			
1. I have worked collaboratively with others intending to effect positive change.	**.405**	.225	.123
2. I have participated in a cause or event that I care about.	**1.048**	-.028	-.084
Group Leadership			
3. I have taken on a leadership position.	.117	**.611**	.163
4. I have taken initiative in a group or project to get something done.	.051	**.816**	-.113
5. I helped create a sense of community in one of my groups.	.050	**.584**	.170
Personal Leadership			
6. I have taken time to reflect about my leadership style.	.124	.078	**.536**
7. I have thought about if my actions match my personal values.	.118	-.111	**.433**
8. I had an open conversation with my peers about a social issue.	-.065	.215	**.459**
9. I have felt empowered to lead.	.057	.360	**.516**
10. I was confronted with an ethical decision and made a choice that I feel good about.	-.075	.013	**.690**
No significant loadings			
11. I joined a new organization or club on campus.	.243	.068	.079

[a] Hair et al., (2010) suggest that most researchers report results of the pattern matrix rather than structure matrix.

Hypothesis 2: Frequency of Leadership Task Performance at Time 3. Multivariate analysis of variance (MANOVA) was calculated using these three dependent variables and the independent variable, Group. Specifically, the researcher examined the differences between the experimental and the control group's leadership task frequencies twelve weeks following the conclusion of the leadership development program, which is near the three-month minimum amount of time suggested for follow-up measurement (Cascio & Aguinis, 2005).

Only participants from Study 1 who also completed the Time 3 survey are included in this analysis, therefore the sample is smaller: experimental = 63 and control = 87 due to attrition over Times 1, 2, and 3. Given that only two items loaded on the citizen factor and three on the group factor, the variability in the responses is limited, thereby creating a challenge to obtain a normal distribution. As evidenced by histograms, the assumption of normal group distributions was violated. Field (2009) suggested that when group sizes are

roughly equal, the *F*-statistic is robust to the violation of non-normality. Observations for each group were independent of each other. Lastly, based on non-significant Levene's tests and Box's M, the homogeneity of variance assumption was upheld and further suggests that the unequal sample sizes should not create an issue.

Table 8 contains internal consistency reliabilities for each factor and descriptive statistics corresponding to this analysis. Using Cronbach's alpha, the internal consistency reliabilities were $\alpha = .71$ for Citizen Leadership, $\alpha = .82$ for Group Leadership, and $\alpha = .75$ for Personal Leadership, all which fall within the acceptable range for group research purposes (Field, 2009). The results of MANOVA showed no statistically significant difference of group membership on leadership task frequency twelve weeks following the conclusion of the leader development program. Using Pillai's trace, the results were: $V = .04$, $F(3, 146) = 1.90$, $p = .13$. Hypothesis 2 was rejected since no multivariate significance was found.

Table 8
Internal Consistency Reliabilities and Descriptive Statistics by Group for Leadership Task Performance

		Exp (*n*=63)		**Control** (*n*=87)	
Factor/Leadership Task	**α (*n*)**	M (SD)	Range	M (SD)	Range
Citizen leadership	.71 (*154*)	−0.04 (.89)	−3.04 - 0.95	−0.24 (1.14)	−3.28 - 0.95
Group leadership	.82 (*152*)	−0.09 (.95)	−3.07 - 1.13	−0.28 (1.02)	−3.28 - 1.03
Personal leadership	.75 (*154*)	0.09 (.85)	−2.13 - 1.25	−0.26 (0.94)	−2.81 - 1.19

Explaining Time 3 Leadership Self-Identity and Personal Leadership Task Scores. Means, standard deviations, and ranges for this analysis can be found in Table 9. A multiple regression analysis was conducted to determine how students' Pre-College Leadership Involvement and Group, and Time 1 Leadership Self-Efficacy, Consciousness of Self, Congruence, Commitment, Collaboration, Common Purpose, Controversy with Civility, Citizenship, Change, Overall Leader Self-Identity, Breadth of Curiosity, and Depth of

Curiosity contribute to their Overall Leader Self-Identity and Personal Leadership Task Frequency at Time 3.

Table 9
Descriptive Statistics at Time 1 and Time 3 for Combined Groups

	Time 1		Time 3	
Variable (Time 1 *n*)	M(SD)	Min/Max	M(SD)	Min/Max
Leadership Self-Identity (*n*=148)[a]	2.85 (.54)	1.67–4.00	3.02 (.64)	1.17–4.00
Personal Lead Task Freq (*n*=254)			.00 (.88)	-2.81–1.34
Pre-College Lead Inv.[b] (*n* = 145)	0.20 (.19)	0.00–1.00	-	-
SRL Capacity (*n*=148)				
Consciousness of Self	3.93 (.49)	2.33–5.00	-	-
Congruence	4.27 (.48)	2.57–5.00	-	-
Commitment	4.52 (.40)	3.17–5.00	-	-
Common Purpose	4.15 (.39)	3.33–5.00	-	-
Collaboration	4.14 (.41)	3.13–5.00	-	-
Controversy w/ Civility	3.85 (.38)	2.36–4.82	-	-
Citizenship	4.13 (.50)	2.38–5.00	-	-
Change	3.78 (.48)	2.50–5.00	-	-
Leadership Self Efficacy (*n*=148)	2.99 (.45)	1.63–4.00	-	-
Curiosity (*n*=148)				
Breadth	4.76 (.72)	3.00–6.00	-	-
Depth	4.43 (.74)	2.38–5.88	-	-

[a] Leadership Self-Identity at Time 3 mean and standard deviation are based on *n* = 157.
[b] Pre-College Leadership Involvement was reported on the participants' university admissions application (rather than Time 1) and extracted from the student record with permission from the student.

The independent variables were entered into the regression models in order of conceptual sets. In both regression analyses for Hypotheses 3a and 3b, Pre-College Leadership Involvement was entered first under the assumption that the students' early exposure to leadership will be related to the formation of a leader self-identity and future leadership task performance and should be controlled. Also in each analysis, Group was entered second to control for exposure to the leadership development program.

Hypothesis 3a: Explaining Time 3 Leadership Self-Identity Scores. To examine changes in Leadership Self Identity strength at Time 3, the next variable entered into the model was Time 1 Leader Self-Identity. Then, the Socially Responsible Leadership Capacity subscales were entered as a set: Consciousness of Self, Congruence, Commitment,

Collaboration, Common Purpose, Controversy with Civility, Citizenship, and Change. In the fifth model, Leadership Self-Efficacy was added. Breadth of Curiosity and Depth of Curiosity were entered last in the analysis to determine the explanatory value of these indicators of intrinsic motivation to learn as they relate to Leader Self-Identity.

Assumptions of multiple regression were considered in the analysis of Hypothesis 3a. The Durbin-Watson test that looks for serial correlations between errors was 2.11, which falls between the 1 to 3 range suggested by Field (2009). Multicollinearity did not appear to be a major issue given the variance inflation factor (VIF) for each predictor variable was between 1.00 and 3.31 and tolerance statistics were between .302 and .999. Bowerman and O'Connell (as cited in Field, 2009) suggest VIFs over 1 may bias the model, however Myers (as cited in Field, 2009) believes VIF values over 10 are cause for concern (as cited in Field, 2009). Tolerance statistics above .2 are acceptable, according to Field (2009). Scatterplots were done to visualize the linear nature of the relationship between Time 3 Leader Self-Identity and the predictor variables. The histogram in Figure 3 and normal probability plot in Figure 4 show normally distributed residuals.

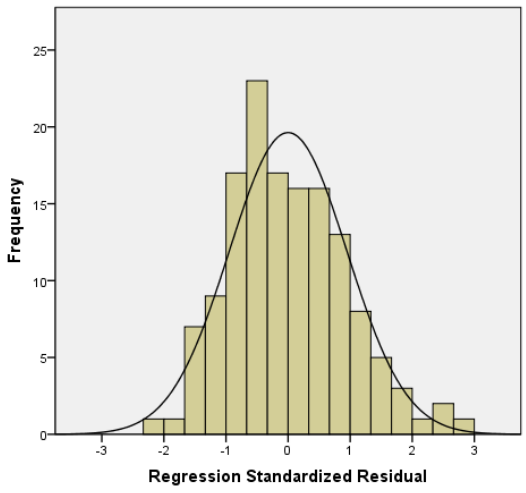

Figure 3
Histogram of regression standardized residuals for Leader Self-Identity

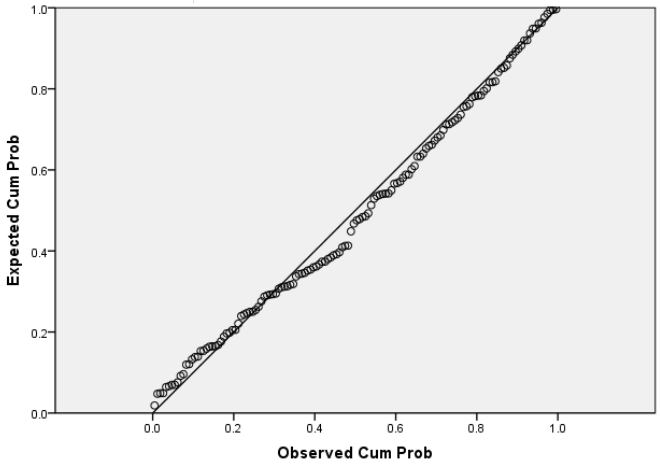

Figure 4
Normal P-P Plot of observed residuals for Time 3 Leader Self-Identity

The scatter plot in Figure 5 validates the assumption that homoscedasticity has been met because the points on the plot are randomly and somewhat evenly dispersed around zero (Field, 2009).

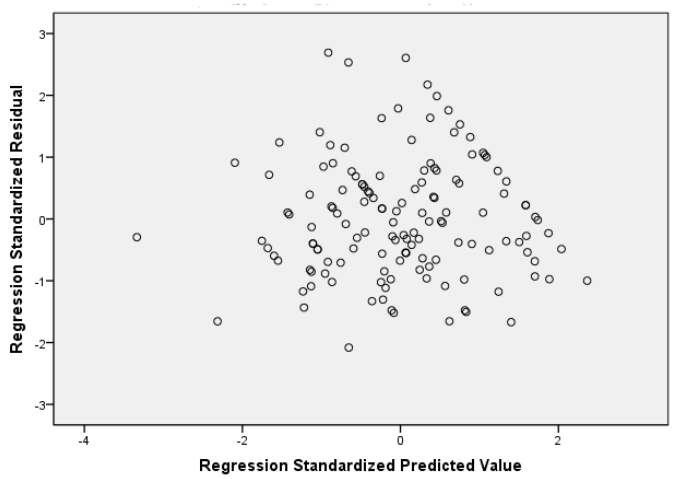

Figure 5
Scatterplot of standardized regression residuals against standardized predicted value of Time 3 Leader Self-Identity

Table 10 displays the results of the hierarchical multiple regression analysis which included six models. Each model is incremental and includes the variables from all preceding models. The final model that includes all fourteen independent variables accounted for 73.3% of the variation in Time 3 Leader Self-Identity. Based on the ANOVA results, models 2, 3, 4, and 6 resulted in statistically significant *F* values, as noted in Table 10.

In the first model, Pre-College Leadership Involvement accounted for a small, non-statistically significant amount of the Leader Self-Identity variability, $R^2_{change} = .016$, $F_{change}(1, 138) = 2.30$, $p = .13$. Model 2, which added the Group variable, explained 3.3% additional variance, $R^2_{change} = .033$, $F_{change}(1, 137) = 4.82$, $p < .05$. The third model, which produced the largest ANOVA *F* value: $F(3, 136) = 81.92$, $p < .001$, evaluated the extent to which Leadership Self-Identity at Time 1 explains Leader Self-Identity at Time 3 over and above Pre-College Leadership Involvement and Group. Time 1 Leader Self-Identity accounted for a statistically significant proportion of the variance in Time 3 Leader Self-Identity after controlling for Pre-College Leadership Involvement and Group, $R^2_{change} = .594$, $F_{change}(1, 136) = 226.75$, $p < .001$. These results suggest that students with higher Time 1 Leader Self-Identity tend to have higher Time 3 Leader Self-Identity.

Model 4 accounted for 7.0% of additional variance after adding in the eight Socially Responsible Leadership Capacity subscales, $R^2_{change} = .070$, $F_{change}(8, 128) = 3.90$, $p < .001$. In this model, Group ($t(140) = 3.47$, $p = .001$), Time 1 Leader Self-Identity ($t(140) = 13.03$, $p < .001$) and Citizenship ($t(140) = 4.69$, $p < .001$) had statistically significant positive relationships. Time 1 Commitment ($t(140) = -2.05$, $p < .05$) had a small, but statistically significant negative relationship to Time 3 Leadership Self-Identity. Model 5, which included Leadership Self-Efficacy, accounted for a small amount of additional variance (0.5%), $R^2_{change} = .005$, $F_{change}(1, 127) = 2.08$, $p = .15$. Group $t(140) = 3.33$, p = .001, Time 1 Leadership Self-

Identity $t(140) = 12.63$, $p < .001$, Consciousness of Self $t(140) = 2.13$, $p < .05$, and Citizenship $t(140) = 4.73$, $p < .001$ had statistically significant relationships in Model 5.

Model 6 explained an additional 1.4% of variance in Time 3 Leader Self-Identity when adding in Breadth and Depth of Curiosity, elements of intrinsic motivation to learn, $R^2_{change} = .014$, $F_{change}(2, 125) = 3.39$, $p < .05$. In addition to Group ($\beta = .17$), Time 1 Leader Self-Identity ($\beta = .77$), and Citizenship ($\beta = .32$), Depth of Curiosity ($\beta = .15$) was also a statistically significant positive contribution to Time 3 Leader Self-Identity, $t(140) = 3.55$, $p = .001$, $t(140) = 13.08$, $p < .001$; $t(140) = 4.44$ $p < .001$; and $t(140) = 2.55$, $p = .01$, respectively.

Overall, these results partially support Hypothesis 3a because, when combined, the fourteen variables explained 73.3% of the variance in Time 3 Leader Identity and the ANOVA *F* value was statistically significant at $p < .001$ across all models except Model 1. Of the fourteen variables, Time 1 Leader Self-Identity explained the largest proportion of variance, Citizenship the second largest, then Group and Depth of Curiosity. Aside from Citizenship, Consciousness of Self, and Common Purpose, the Socially Responsible Leadership Capacity variables were negative and non-significant contributing variables to Time 3 Leader Self-Identity, also noted in Table 10. Leadership Self-Efficacy, when combined with the other variables in these models, was also non-significant and negative.

Table 10
Models Explaining Time 3 Leader Self-Identity Using Hierarchical Multiple Regression

Independent Variable	ΔR^2	*F*	*b*	*SE b*	β
Model 1	.016[a]	2.30			
Constant			2.98	0.08	
Pre-College Leadership Involvement			0.44	0.29	.13
Model 2	.033*	3.59*			
Constant			2.88	0.09	
Pre-College Leadership Involvement			0.42	0.28	.12
Group			0.23*	0.11	.18
Model 3	.594***	81.92***			
Constant			0.33	0.18	
Pre-College Leadership Involvement			−0.12	0.18	−.04
Group			0.23	0.07	.18
Time 1 Leader Self-Identity			0.93***	0.06	.79
Model 4	.070***	28.98***			
Constant			0.32	0.42	
Pre-College Leadership Involvement			−0.15	0.17	−.04
Group			0.22***	0.06	.17
Time 1 Leader Self-Identity			0.85***	0.07	.72
Time 1 Consciousness of Self			0.16	0.09	.12
Time 1 Congruence			−0.09	0.09	−.07
Time 1 Commitment			−0.20*	0.10	−.13
Time 1 Collaboration			−0.15	0.13	−.09
Time 1 Common Purpose			0.05	0.14	.03
Time 1 Controversy w/ Civility			−0.08	0.11	−.05
Time 1 Citizenship			0.44***	0.10	.34
Time 1 Change			−0.05	0.09	−.04
Model 5	.005	26.97***			
Constant			0.30	0.42	
Pre-College Leadership Involvement			−0.13	0.17	−.04
Group			0.21***	0.06	.16
Time 1 Leader Self Identity			0.89***	0.07	.75
Time 1 Consciousness of Self			0.20	0.09	.14
Time 1 Congruence			−0.09	0.09	−.06
Time 1 Commitment			−0.18	0.10	−.12
Time 1 Collaboration			−0.14	0.13	−.09
Time 1 Common Purpose			−0.02	0.14	.01
Time 1 Controversy w/ Civility			−0.05	0.12	−.03
Time 1 Citizenship			0.45***	0.09	.34
Time 1 Change			−0.05	0.08	−.04
Time 1 Leadership Self-Efficacy			−0.14	0.10	−.10
Model 6	.014*	24.47***			
Constant			0.17	0.42	
Pre-College Leadership Involvement			−0.05	0.17	−.01
Group			0.22***	0.06	.17
Time 1 Leader Self Identity			0.91***	0.07	.77
Time 1 Consciousness of Self			0.16	0.09	.12
Time 1 Congruence			−0.12	0.09	−.09
Time 1 Commitment			−0.18	0.10	−.11
Time 1 Collaboration			−0.14	0.13	−.09
Time 1 Common Purpose			0.04	0.14	.02
Time 1 Controversy w/ Civility			−0.03	0.11	−.02
Time 1 Citizenship			0.43***	0.10	.32
Time 1 Change			−0.06	0.09	−.05
Time 1 Leadership Self Efficacy			−0.16	0.10	−.11
Time 1 Breadth of Curiosity			−0.04	0.06	−.05

Time 1 Depth of Curiosity	0.13*	0.05	.15

*$p < .05$, ***$p < .001$.

[a] This value reflects the R^2 value, which is also the change in R^2 for this model.

Hypothesis 3b: Explaining Time 3 Personal Leadership Task Scores. Of the three derived factors (Citizen, Group, and Personal), Personal Leadership Task was used as a dependent variable for this multiple regression analysis. Several independent variables were used to determine each variable's ability to explain the variance of Personal Leadership Task scores.

Table 11 illustrates the order in which independent variables were entered and summarizes the model statistics. Pre-College Leadership Involvement was entered first to control for previous leadership experiences prior to college, and then Group was entered in the second model. In Model 3, Time 1 Leadership Self-Efficacy was entered. In the fourth model, Time 1 Leader Self-Identity was added. Then, the Socially Responsible Leadership Capacity variables were entered in the fifth model: Consciousness of Self, Congruence, Commitment, Collaboration, Common Purpose, Controversy with Civility, Citizenship, and Change. In the final model, Breadth of Curiosity and Depth of Curiosity were entered to determine their explanatory value of Personal Leadership Task Scores.

Assumptions of multiple regression were satisfactory in the analysis of Hypothesis 3b. The Durbin-Watson test was 1.80 which is within range (Field, 2009). The variance inflation factor (VIF) for each predictor variable was between 1.00 and 3.22 and tolerance statistics were between .311 and .999, therefore multicollinearity did not appear to be a concern. The scatterplot, histogram, and normal probability plot were done to examine the linear nature of the relationship between Personal Leadership Task Frequency and the independent variables, and showed generally normally distributed residuals.

The final model 6 that included all fourteen independent variables accounted for 40.0% of the variance in Personal Leadership Task scores. Based on the ANOVA results, each model after the first and second models resulted in statistically significant *F* values, as noted in Table 11. In the first model, Pre-College Leadership Involvement had no relationship to Personal Leadership Task Scores, $R^2 = .008$, $F_{change}(1, 132) = 1.11$, $p = .29$. In the second model, Group also had no relationship to Personal Leadership Task scores, $R^2_{change} = .015$, $F_{change}(1, 131) = 1.97$, $p = .16$. The addition of Time 1 Leadership Self-Efficacy in model 3 produced a statistically significant model: $R^2_{change} = .082$, $F_{change}(1, 130) = 11.93$, $p = .001$. In model 4, Leader Self-Identity accounted for only an additional 3.3% of variance after controlling for Pre-College Leadership Involvement, Group, and Time 1 Leadership Self Efficacy ($t(134) = 2.24$, $p < .05$).

In model 5, when adding in the eight Socially Responsible Leadership Capacity variables, an additional 20.2% of variance was explained, mainly by Group and four Time 1 independent variables: Consciousness of Self, Commitment, Collaboration, and Citizenship that had statistically significant unstandardized beta (*b*) coefficients (see Table 11). Commitment and Collaboration have a negative predictive relationship with Personal Leadership Tasks, most likely due to the group-level focus of the statements comprising these two subscales in contrast with personally-focused tasks.

Model 6 explained an additional 5.9% of variance in Personal Leadership Tasks when adding in Breadth and Depth of Curiosity. Consciousness of Self ($\beta = .30$), Commitment ($\beta = -.34$), Collaboration ($\beta = -.30$), and Citizenship ($\beta = .31$) continued to account for a statistically significant proportion of the variance, as shown in Table 11, and Breadth of Curiosity ($\beta = .30$) emerged with a positive relationship to Personal Leadership Tasks, $t(134) = 2.98$, $p < .01$.

Overall, these results partially support Hypothesis 3b because when combined, the fourteen variables explained a low to moderate amount of the variance (40.0%) in Personal Leadership Task Scores. The ANOVA *F* values were statistically significant between $p < .01$ and $p < .001$ across the last four models.

Table 11
Models Explaining Time 3 Personal Leadership Task Scores Using Hierarchical Multiple Regression

Predictor	ΔR^2	*F*	*b*	*SE b*	β
Model 1	.008[a]	1.11			
Constant			−0.17	0.12	
Pre-College Leadership Involvement			0.44	0.42	.09
Model 2	.015	1.55			
Constant			−0.26*	0.55	
Pre-College Leadership Involvement			0.43	0.42	.09
Group			0.22	0.16	.12
Model 3	.082***	5.09**			
Constant			−2.12**	0.55	
Pre-College Leadership Involvement			0.21	0.41	.04
Group			0.27	0.15	.15
Time 1 Leadership Self-Efficacy			0.63***	0.18	.29
Model 4	.033*	5.19***			
Constant			−2.42***	0.56	
Pre-College Leadership Involvement			0.09	0.40	.02
Group			0.27	0.15	.15
Time 1 Leadership Self-Efficacy			0.38	0.21	.18
Time 1 Leader Self-Identity			0.38*	0.17	.22
Model 5	.202***	5.22***			
Constant			−2.25*	0.94	
Pre-College Leadership Involvement			0.13	0.37	.03
Group			0.29	0.14	.16
Time 1 Leadership Self-Efficacy			0.22	0.22	.10
Time 1 Leader Self-Identity			0.23	0.16	.13
Time 1 Consciousness of Self			0.56**	0.20	.28
Time 1 Congruence			0.05	0.20	.02
Time 1 Commitment			−0.69**	0.22	−.30
Time 1 Collaboration			−0.63*	0.29	−.28
Time 1 Common Purpose			0.21	0.32	.09
Time 1 Controversy w/ Civility			−0.09	0.26	−.04
Time 1 Citizenship			0.79***	0.21	.42
Time 1 Change			0.06	0.19	.03
Model 6	.059**	5.67***			
Constant			−2.63**	0.91	
Pre-College Leadership Involvement			−0.05	0.37	−.01
Group			0.26	0.13	.14
Time 1 Leadership Self-Efficacy			0.17	0.22	.08
Time 1 Leader Self Identity			0.30	0.16	.18
Time 1 Consciousness of Self			0.59**	0.20	.30
Time 1 Congruence			0.05	0.20	.03
Time 1 Commitment			−0.78***	0.21	−.34
Time 1 Collaboration			−0.67*	0.28	−.30
Time 1 Common Purpose			0.33	0.31	.14
Time 1 Controversy w/ Civility			−0.12	0.25	−.05
Time 1 Citizenship			0.57**	0.21	.31
Time 1 Change			−0.07	0.18	−.04
Breadth of Curiosity			0.39**	0.13	.30
Depth of Curiosity			−0.01	0.12	−.01

*$p < .05$, **$p < .01$, ***$p < .001$
[a] This value reflects the R^2 value, which is also the change in R^2 for this model.

Study 2

To begin the analysis of agreement between self-ratings and peer (or observer) ratings, it was important to calculate the level of agreement between the observer ratings. Inter-rating correlations on the individual items of the Congruence and Commitment subscales of the Socially Responsible Leadership Scale were done initially. Each item had two ratings recorded by multiple raters for 119 participants in a leadership development program. Table 12 shows the inter-rating correlations on the Congruence subscale and Table 13 shows the same for the Commitment subscale. After closer review of the items and the resulting low correlations between ratings, it was clear that several of these items would be difficult to observe because they are internal states. The items with the highest correlations were determined to be those that could be observed: for Congruence, items 1 and 6 and for Commitment, items 1 and 4, as noted in bold in Tables 12 and 13.

Table 12
Inter-rating Pearson's Correlations for Rating 1 and Rating 2 on Congruence Subscale Items

SRLS[a] Congruence Subscale Item	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 This person's behaviors are congruent with his/her beliefs	**.46**						
2 It is important to this person to act on his/her beliefs		.31					
3 This person's actions are consistent with his/her values			.27				
4 It is important to this person to be seen as a person of integrity				.12			
5 This person's behaviors reflect his/her beliefs					.25		
6 This person is genuine						**.56**	
7 It is easy for this person to be truthful							.38

[a]SRLS – Socially Responsible Leadership Scale

Table 13
Inter-rating Pearson's Correlations for Rating 1 and Rating 2 on Commitment Subscale Items

SRLS[a] Commitment Subscale Item	1	2	3	4	5	6
1 This person is willing to devote time and energy to things that are important to him/her	**.49**					
2 This person sticks with others through the difficult times		.19				
3 This person is focused on his/her responsibilities			.25			
4 This person can be counted on to do his/her part				**.52**		
5 This person follows through on his/her promises					.26	
6 This person holds himself/herself accountable for responsibilities he/she agreed to						.35

[a]SRLS – Socially Responsible Leadership Scale

Hypothesis 4: Agreement between peer and self-ratings. It was hypothesized that peer leader ratings of their leadership development "council" participants will be moderately correlated to the participants' self ratings on two elements of socially responsible leadership: Congruence and Commitment.

To explore the agreement between ratings on only the observable items, a new variable was computed for each rating for each subscale (Rating 1 Observable Congruence, Rating 2 Observable Congruence, Rating 1 Observable Commitment, and Rating 2 Observable Commitment). For each subscale, the two items with the highest correlation of rating agreement were summed, and then correlated with the other summed ratings for that subscale. The agreement between ratings was moderate: Observable Congruence was $r = .59$ and Observable Commitment correlated at $r = .60$.

The rating mean for Observable Congruence and Commitment was correlated with 119 participants' self-ratings on the same subscales to determine the level of agreement between the self-rating and the observer rating. Hypothesis 4 was not supported as evidenced by Pearson's correlation that resulted in no significant findings and low agreement between the self-rating and observer rating: Congruence $r = .13$ and Commitment $r = .12$.

Study 3

In study 3, a cross-sectional design was used to examine the post-leadership program differences among four groups, two of which were part of study 1, "Exp" and "Control" and two new groups: "PastExp" or past participants in the same leadership development program as the Exp group and "SrControl," a new control group of juniors and seniors to test hypothesis 5. Data were collected for the PastExp and SrControl groups at one time point in late November 2012, approximately two years following completion of the leadership development program for the PastExp group. Data that reflect a similar point in time for the Exp and Control groups were Time 2 data for all dependent variables and Time 3 data for leadership task frequency. It should be noted that the Exp group answered questions about leadership task performance 12 weeks after the conclusion of the leadership development program (Time 3) as compared to the nearly two years for the PastExp group.

Hypothesis 5: Cross-sectional post-leadership program differences. Hypothesis 5 stated that past participants (PastExp) were postulated to report greater Socially Responsible Leadership Capacity, Leadership Self-Efficacy, a higher stage of leader identity, higher Leader Self-Identity, and greater Depth of Curiosity than recent participants in the leadership development program ("Exp") and the two control groups (Control and SrControl). The reported frequency of task performance was hypothesized to moderate this relationship because the PastExp and SrControl groups have simply had more time to engage in leadership activity in college. The three Leadership Task Performance factors were positively correlated (ranging from $r = .08$ to $r = .43$) with the dependent variables, indicating they would serve as appropriate covariates. However, *t*-tests revealed that the groups differ on the leadership task factors and, therefore, would not be effective covariates as they would contain some of the variance from the group (Field, 2009). Because of this

finding, the covariates were removed from the analysis. Table 14 shows descriptive statistics, including subscales, by group with group sizes. One outlier case was removed due to extreme answers on multiple measures. The total sample size was 230 using listwise deletion.

Table 14
Study 3 Descriptive Statistics for All Dependent Variables by Group

	Group			
	Exp [a] (*n*=59)	**Control** [a] (*n*=83)	**SrControl** (*n*=38)	**PastExp** (*n*=50)
Variable	M (SD) *Range*	M (SD) *Range*	M (SD) *Range*	M (SD) *Range*
Leadership Self Efficacy	3.36(.45) *2.50-4.00*	3.03 (.39) *2.25-4.00*	3.06 (.40) *2.00-3.75*	3.12 (.34) *2.50-4.00*
Depth of Curiosity	4.55 (.79) *2.25-6.00*	4.37 (.77) *2.50-5.75*	4.37 (.89) *1.88-5.88*	4.20 (.62) *2.50-6.00*
Leadership Self-Identity				
Descriptiveness	3.26 (.51) *2.25-4.00*	2.86 (.64) *1.25-4.00*	2.84 (.70) *1.00-4.00*	3.14 (.57) *2.00-4.00*
Importance	3.24 (.50) *1.75-4.00*	2.86 (.69) *1.75-4.00*	2.75 (.62) *1.00-4.00*	3.05 (.54) *1.00-4.00*
Certainty	3.15 (.58) *2.00-4.00*	2.83 (.62) *1.00-4.00*	2.77 (.55) *2.00-3.75*	3.06 (.57) *2.00-4.00*
Leadership Identity Stage	4.20 (1.56) *1-6*	3.49 (1.45) *1-6*	3.76 (1.44) *1-6*	4.52 (1.34) *1-6*
SRL[b] **Capacity - Overall**	4.26 (.34) *3.71-5.00*	4.09 (.35) *3.51-4.98*	4.11 (.33) *3.42-4.82*	4.15 (.29) *3.74-4.85*
Leadership Tasks[c]				
Citizen leadership	-.06 (.86) *-3.04 to .95*	-.28 (1.14) *-3.28 to .95*	.06 (1.04) *-3.03 to .94*	.31 (.76) *-1.82 to .95*
Group leadership	-.12 (.94) *-3.07 to 1.13*	-.28 (1.02) *-3.28 to 1.03*	.30 (.64) *-1.17 to .99*	.27 (.71) *-2.45 to 1.07*
Personal leadership	.06 (.82) *-2.13 to 1.25*	-.28 (.93) *-2.81 to 1.19*	.04 (.86) *-1.86 to 1.16*	.17 (.76) *-2.26 to 1.34*

[a] Time 2 descriptive statistics are shown for Exp and Control and include Leadership Self-Efficacy, Depth of Curiosity, Leader Self-Identity, Leader Identity Stage, and Socially Responsible Leadership Capacity.
[b] SRL = Socially Responsible Leadership
[c] Leadership Task performance data were collected at Time 3 for Exp and Control groups. PastExp and SrControl data were collected during the single administration in November 2012.

A one-way multivariate analysis of variance was conducted to examine post-leadership possible differences among four groups: Exp, Control, SrControl, and PastExp on seven dependent variables associated with leadership development: Leadership Self-Efficacy, Socially Responsible Leadership Capacity, Leader Self-Identity (using the three subscales Descriptiveness, Importance, and Certainty), Leader Identity Stage, and Depth of

Curiosity. The homogeneity of variance assumption was upheld with one exception. Levene's test on all dependent variables was non-statistically significant except for Leadership Self-Efficacy, $F(3, 233) = 3.13$, $p = .03$, suggesting that any results related to this variable should be interpreted with caution.

Connected to this finding is the non-normal distribution for Leadership Self-Efficacy. The Exp group distribution had peaks at "3" and "4" on the four-point scale and had a significant kurtosis, z-score = 2.17, $p < .05$. The Control and PastExp groups have significant positive skewness, z-scores = 2.11 and 2.37, respectively, both at $p < .05$. Field (2009) suggests that in large samples, these skewed scores are less important than the distribution shape. Other group distributions appear normal across dependent variables. The homogeneity of covariance matrices was also upheld as evidenced by a statistically non-significant Box's M test.

Statistically significant differences were found among the groups on the dependent variable composite: Using Pillai's trace, V = .21, $F(21,687) = 2.51$, $p < .001$. The multivariate statistic for Group was small, partial $\eta^2 = 0.71$, suggesting that 7.1% of the variance can be explained by Group. The MANOVA was followed up with discriminant analysis, which revealed three discriminant functions. The first function explained 63.8% of the variance, canonical $R^2 = .13$. The second function explained 31.3% of the variance, canonical $R^2 = .07$, and the third function explained 4.9% of the variance, canonical $R^2 = .01$. The three discriminant functions differentiated the four groups, $\Lambda = .80$, $\chi^2 (21) = 52.17$, $p < .001$. However, removing the first function indicated that the second and third functions did not differentiate the groups, $\Lambda = .92$, $\chi^2 (12) = 19.35$, $p = .08$, nor did the third function alone, $\Lambda = .99$, $\chi^2 (5) = 2.68$, $p = .75$.

The structure matrix in Table 15, which indicates the correlations between the predictor variables and the discriminant functions, showed various positive and negative correlations. Leadership Self-Efficacy demonstrated the strongest relationship with all three functions, whereas the certainty with which one viewed oneself as a leader (LSI Certainty) had a consistently negative relationship with the three functions. LSI Importance had a positive relationship with Functions 1 and 2, but a strong negative relationship with Function 3.

Table 15
Structure Matrix or Correlations between Predictor Variables and Discriminant Functions in Discriminant Analysis Follow-up to Significant MANOVA

	Function		
	1	**2**	**3**
Leader Identity Stage	.30	− .74	.34
SRL[a] Capacity	−.05	−.19	.24
Leadership Self-Efficacy	.51	.61	.70
LSI[b] Descriptiveness	.21	−.12	.30
LSI Importance	.44	.39	−.88
LSI Certainty	−.11	−.37	−.57
Depth of Curiosity	−.06	.59	−.05

[a] SRL - Socially Responsible Leadership
[b] LSI - Leadership Self-Identity

Based on the positive correlations with Leader Identity Category, Leadership Self-Efficacy, LSI Descriptiveness, and LSI Importance, Function 1 may be discriminating between individuals who identify themselves as leaders, feel confident in their ability to lead, and have made it a priority in their lives. The Exp group had the highest mean on Function 1 (M = .56), the PastExp had the next highest mean (M = .19), while the Control (M = −.35) and SrControl (M = −.35) groups had the lowest means.

Individuals that may fall into the group discriminated by Function 2 may not view themselves as leaders based on the negative correlations with Leader Identity Category, LSI Descriptiveness, and LSI Certainty, yet they find it important and have some degree of

confidence in their leadership ability. People that would classify into Function 2 seek information more deeply than the other two classifications. Again, the Exp group had the highest mean on Function 2 (M = .25) and the similarly-aged Control group had the second highest mean (M = .12). The SrControl (M = −.01) and PastExp (M = −.50) had the lowest means on Function 2.

The positive correlations between Function 3 and Leader Identity Stage, SRL Capacity, Leadership Self-Efficacy, and LSI Descriptiveness, paired with the strong negative correlations with LSI Importance and LSI Certainty suggest Function 3 may classify individuals who identify as leaders and feel confident in their abilities, but leadership may not be a priority for them. The SrControl group had the highest mean (M = .22), while the remaining groups had lower means on Function 3: Exp (M = .02), Control (M = −.09), and PastExp (M = −.03).

When attempting to accurately predict the group, 44.7% of the original sample were accurately classified. The bolded diagonal figures in Table 16 show the count and percentage of cases that were classified correctly in the discriminant analysis. The analysis classified correctly 74.4% of the Control group, the best among the four groups. Forty-one percent of the Exp group and 34% of the PastExp groups were correctly classified, though none of those from the SrControl group, the smallest group, were correctly classified.

Table 16
Classification Statistics from Follow-up Discriminant Analysis

		Predicted Group Membership				
Original		Exp	Control	SrControl	PastExp	Total
Count	Exp	**25**	25	0	11	61
	Control	16	**64**	0	6	86
	SrControl	4	28	**0**	8	40
	PastExp	11	22	0	**17**	50
Percentage	Exp	**41.0**	41.0	.0	18.0	100
	Control	18.6	**74.4**	.0	7.0	100
	SrControl	10.0	70.0	**.0**	20.0	100
	PastExp	22.0	44.0	.0	**34.0**	100

Chapter 5

DISCUSSION

The current research study contributed to the knowledge base of student leadership development and its components including leadership self-efficacy, leader self-identity, and leadership task frequency. In particular, an additive contribution was made due to the longitudinal nature of this study, the focus on growth in leader identity over time due to a leadership development program, and the exploration of post-leadership program differences.

The results for Hypothesis 1 supported previous cross-sectional research on the positive difference student leadership development programs make in socially responsible leadership capacity and leadership self-efficacy (Dugan & Komives, 2007; Dugan & Komives, 2010). Specifically, after controlling for pre-college leadership involvement, the increases found for leadership self-efficacy, leadership self-identity, leader identity stage, consciousness of self, congruence, common purpose, collaboration, controversy with civility, citizenship, and change were significantly higher for the participants in the leadership development program than for a control group not participating in a leadership development program. The only area in which groups did not differ was commitment.

In total, these results are notable because they help create a picture of how these components of leadership development contribute to student growth as a composite variable and also individually. Two of the three components of leader self-identity explained the most variance, meaning that the extent to which students describe themselves as leaders and the certainty with which they perceive themselves as leaders contributed the most to their growth over the course of the program. Students in the program also had a stronger belief in their leadership ability after the program, as evidenced by the leadership self-efficacy scores

and low, but practically significant effect size. Of the socially responsible leadership variables, students in the leadership development program showed the largest difference in citizenship, a community-level value that represents the belief in the interdependency between individuals and their community (NCLP, n.d.).

It should be noted that prior to the start of the leadership development program, those who chose to participate were higher in a few leadership areas: their breadth of curiosity, or the extent to which they pursued information broadly; their citizenship values or the extent to which they believed in a "process whereby an individual and/or a group become responsibly connected to the community and to society through some activity" (NCLP, n.d.); their ability to approach controversy through civil and creative viewpoints; and the importance that they placed on their perceptions of themselves as leaders. For practical alignment between mission and outcomes, the leadership development program facilitators may wish to examine if these pre-program qualities match the targeted students desired in the program. For all leadership programs, it is important to consider if and how the program content and structure aligns with the target audience and intended outcomes.

The results did not support Hypothesis 2 that explored participant differences in leadership task performance 12 weeks following the conclusion of the leadership development program. Though three months was suggested as the minimum amount of time to wait before evaluating post-program changes (Cascio & Aguinis, 2005), students may not have had sufficient time to engage in leadership activity when considering that the time 3 data collection was in late February, the latter part of the academic year and student organization recruitment lifecycles.

New items written to measure the frequency of leadership tasks were found to have three related factors called citizen leadership, group leadership, and personal leadership.

These factors are closely aligned with the three levels of the Social Change Model (personal, group, and societal) and attempted to determine non-positional leadership activities. For leadership development programs to be able to link their efforts and mission with positive reports of post-program leadership activities would be extremely valuable, especially when the mission is to increase leadership capacity and encourage leadership behaviors.

In partial support of Hypothesis 3a, several of the components of leadership development were strong contributors to predicting students' leader self-identity at the time 3 data collection in late February of 2013. How students perceived themselves in the leadership domain at the beginning of the fall semester in 2012 provided the best explanation of their future perceptions. Also, students' belief in their role as a community member (citizenship) played an important part in explaining their leader identity at a later point. Participation in a semester-long leadership development program helped explain leadership identity twelve weeks after the program conclusion. Additionally, students who spend time thoroughly investigating information and have a desire to learn more about a specific area or topic are also more likely to develop a higher leadership self-identity over time. These results are notable for a few reasons.

First, because students who enter college with a higher level of leader identity are likely to grow at a higher rate in that identity throughout the college experience, the results suggest that leader identity development is important prior to college. K-12 schools and programs serving younger generations may find the results useful in understanding the building blocks of leader development and how they may facilitate early leader identity formation and development. High school leadership opportunities, which have been linked to higher levels of educational attainment (Rouse, 2012) and higher wages in the workplace (Kuhn & Weinberger, 2005), are one area that may help in leader identity development

before college. Though this study found no relationship between pre-college leadership activity and many leadership capacity outcomes, this may be due to the method of calculating the pre-college leadership variable rather than a true lack of relationship. For example, perhaps each activity such as athletics and community should not receive equal weighting. Schools and programs may want to examine their current leadership opportunities, how they build leadership self-efficacy, and how they can help shape leader identity at an early age. Consistent tracking and measurement of high school leadership activities is addressed later.

These findings are also important for college student leadership development programs that have the potential to recruit students with varying levels of leadership identity. It is important that these program facilitators recognize the students self-selecting in leadership programs, their incoming levels of leadership identity, and how to potentially target the development of that identity. Leadership identity is a foundational component of overall adult leadership development (Day, et al., 2009) and may be considered as a new outcome for college-level academic and Student Affairs leadership programs.

The idea that deeply curious individuals, or those who pursue information in a more focused way, and those who feel a connection and responsibility to community show an inclination to develop a stronger leader identity is an important concept for lifelong leader development. If continuing education providers, employers, and leadership development program providers emphasize deep curiosity, then perhaps greater outcomes regarding curiosity and leader identity development may be found.

Interestingly, leadership self-efficacy and most of the other socially responsible leadership values had a low, negative or no relationship with time 3 leader self-identity. This finding may be due to the large number of variables used in the analysis where only the

strongest emerged. Additionally, the leader development program studied did not exclusively emphasize socially responsible leadership values as specific outcomes.

Results also partially supported Hypothesis 3b. The amount of variance of Personal Leadership Task activity accounted for by fourteen independent variables was moderate. It is logical that students' commitment score had a negative relationship to performing leadership tasks because commitment means having a "significant investment in an idea or person, both in terms of intensity and duration" (NCLP, n.d.). If students were not invested in leading or in a particular group, then the likelihood of their taking action is low. However, another interesting result was the strong negative relationship between collaboration and personal leadership task performance. This could be due to a conceptual mismatch: the collaboration value focuses on working with others, whereas the personal leadership tasks are mostly about oneself rather than working with or leading others. Participation in a leadership development program was not related to Personal Leadership Task activity, which also may be attributed to the short amount of time between finishing the program and the time 3 data collection (12 weeks).

Students higher in consciousness of self, citizenship, and breadth of curiosity had a slight tendency to engage in personal leadership tasks. This result is notable for those college and high school leadership development programs that emphasize self-awareness of beliefs and attitudes and the connection of community as part of development. The creators of the Social Change Model suggest that consciousness of self is the foundational value upon which the other values build and interact (HERI, 1996). Students with a stronger breadth of curiosity, which is the propensity to seek a variety of stimuli and a wide variety of information, may simply be more outwardly focused or engaged, in general. Therefore, they may report a higher frequency of doing most tasks, regardless if the focus was leadership.

No support was found for Hypothesis 4, which examined the agreement between observer and self-ratings, mostly due to the incorrect inference that the congruence and commitment items that were intended to measure internal states could translate into observer ratings. Regardless of the findings, it remains important that college leadership development programs consider the value of peer feedback as a contributor to the leadership development process. However, it is vital that this be done in a supportive environment.

Results from Hypothesis 5 demonstrated that students in a recent and past leadership development program show higher differences in levels of leadership self-efficacy, leadership self-identity, and leader identity stage. The recent and past experimental/participant groups had consistently higher means than the two control groups of non-participants on all of these variables. The recent experimental/participant group was higher than the past experimental/participant group in their leadership self-efficacy, leader self-identity, and socially responsible leadership capacity. This finding could be attributed to a recency effect where motivation and engagement were higher immediately after a program. For instance, seniors do not have leadership development experiences as recent as sophomore participants; either seniors retreated in their development or were not as high following the conclusion of their involvement with the development program as compared to recent participants. This supports Bosma & Kunnen's (2001) suggestion that how development experiences end contributes to identity development.

The follow up analysis yielded three discriminatory factors that could be described in terms of leader identity stages as posed by Komives et al., (2006). This is an important comparison because no instrument exists that measures leader identity as defined by the Komives' et al., (2006) model. The "leader identified" stage, or stage 3, is characterized by individuals' belief that those in leadership positions are leaders and that followers are

supporters. According to Komives et al., (2006), most entering college students are in stage 3. The theory suggests that there are two philosophical phases within this stage: emerging and immersion. Function 2 may best describe students in the emerging phase, or when they begin to engage as leaders and as followers. Function 2 describes individuals who find leadership important and have some degree of confidence in their leadership ability, yet they may not view themselves as leaders based on the negative correlations with leader identity stage, leader self-identity descriptiveness, and leader self-identity certainty. The recent experimental/participants and younger control group had higher means associated with this function.

Function 1 may classify those students who are in the immersion phase of stage 3 where they "were able to function as both leader or follower and practiced different skills" (Komives, 2011, p. 283). They identify themselves as leaders, feel confident in their ability to lead, and may have made it a priority in their lives. Recent and past participants in the leadership development program had higher means than the non-participants on function 1. Function 1 was the only function that truly differentiated groups.

Those classified by function 3 may bridge two stages described in Komives model. Individuals in the "leadership differentiated" stage recognize non-positional leadership and seek to facilitate and practice leadership (Komives, 2011). An individual in one of the later stages, "generativity," can be described as someone who feels responsible to serve the organization and may be less focused on leadership as a position. Both stage descriptions could describe the members of the group classified by function 3 who may score high in their leader identity stage, capacity for socially responsible leadership, leadership self-efficacy, and in how they describe themselves as a leader. However, based on the negative relationship with the importance of the leader identity and the certainty with which they felt

like leaders suggest that leadership as a role may not be a priority. Only the older control group had positive means associated with this function, however. The discriminant analysis did a poor job of correctly classifying this control group of seniors and function 3 explained a small amount of variance, therefore it should be interpreted cautiously. In summary, this comparison provides insight into what components of leadership development may characterize the stages of leader identity.

Implications for Further Research and Practice

This research provided valuable information about student leader identity across time using Hiller's (2005) scale, which is based on self-schema or how one views oneself as a leader. There are few existing options for leader identity measurement and those that are available, such as those in this study, need further modification to serve as outcome variables in evaluation.

Methods of defining and analyzing pre-college leadership activity vary study to study. The method selected for this study was a percentage of leadership positions reported relative to the total number of activities reported. A consistent definition of what comprises pre-college leadership activity and suggestions for repeatable ways of calculating this activity would add to the strength of research being conducted within the field of student leadership development. It would also provide a stable variable that could be used to better understand components of leadership capacity, such as leadership self-efficacy and leader identity.

Preliminary findings in this study related to the relationship between early leader identity and future leader identity should be viewed tentatively and additional research might explore a longer time span. A study of adolescents' leader identity from the beginning of their high school years through college or into the workforce would provide information related to at what age or developmental timeframe does leader development begin to

increase leader identity. Also, what else contributes to leader identity development besides formal training experiences? How do self-concept, motivation to lead, developmental readiness, and participation in sports and community service, for example, relate to leadership identity?

Given the differences between recent leadership program completers and past program completers in this study, additional research could examine the influence of a booster or refresher workshop (or other format) to consider the relationship of continued leadership development following program completion as a means of priming students. Would seniors' scores rise to the level of recent program participants? To what extent does a yearly or bi-yearly refresher workshop create subsequent growth in leadership capacity and leadership task performance?

A confirmatory factor analysis of the Socially Responsible Leadership Scale should be conducted with a large sample to validate the factors and how it should be scored. The composition of the eight subscales is questionable at present; this study pointed to greater complexity. The SRLS scale was factor analyzed only within each subscale rather examining the total instrument simultaneously with confirmatory factor analysis. The differentiation between subscale variables is questionable that they may be measuring different constructs. Nonetheless, even within the subscales, SRLS authors found multiple factors as reported in the SRLS guide (NCLP, n.d.; Dugan, 2006).

Regarding the new scale used in this study to measure leadership task activity, additional item creation and testing could be done to further define a measure of leadership behavior that makes sense for college students who may display leadership in non-positional ways. Translating the effects of a program into actions can be powerful support for leadership program continuance and funding. In the construction of new items or a scale,

perhaps a different conceptualization of frequency or measure of magnitude would be useful.

At the university level, these findings provide preliminary support for the leadership development program that was the basis for this research. Data suggest that the program is helping to develop students' leadership capacities, leader identity, and leadership self-efficacy, but perhaps greater changes might be found if program goals were more closely aligned with the measures. This study selected the "best" available instruments rather than tailoring instruments to the program. These outcomes can provide meaningful insight into the growth the program is helping to facilitate.

Limitations

This study has some limitations that should be considered. First, because the sample was from a single university and study participants were not randomly selected, generalizability of the results may be limited. Additionally, the experimental/participant group had exposure to only one of the many leadership development programs at the university; therefore comparisons to other programs within or outside of the university may be incongruous. The study was slightly unbalanced by gender as the sample was not reflective of the larger university student body or higher education institutions so generalizability may be limited.

Self-report methods of assessment are regarded as a useful means to determine the value added by a program or experience (Goertzen, 2009), and are often the only means to gather information on non-cognitive outcomes. Regardless, self-report measures can be prone to response bias, which may not provide an accurate picture. Similarly, Study 1 was longitudinal; the time period between the first two data collections was two-and-a-half months, which may result in some test-retest bias.

The violations of the homogeneity assumptions related to leadership self-efficacy homogeneity of variances issue could be related to using a four-point Likert scale rather than the traditionally used five-point scale. The narrow range could constrict variability and constrain results.

Using altered self-rating statements to collect observer ratings was a study limitation. Internal states that were difficult to observe or rate in someone else should not be the subject of future observer ratings; however, providing feedback to leadership development program participants should still be considered.

Conclusion

This study was an attempt to connect the components of college student leadership development and examine their relationship as variables, as well as their contribution to developmental outcomes, such as leader identity and leadership task frequency. Results partially supported existing research that leadership development programs produce growth in students' leadership capacity and leadership self-efficacy. In addition, results indicated that early development of leader identity is an integral part of the overall picture of leadership capacity, adding specificity to the body of literature related to college student leadership development. New paths of inquiry were provided for practitioners and scholars.

APPENDIX

Results of a Principal Component Analysis of the overall Socially Responsible Leadership Scale (Tyree, 1988) are detailed in the table below. The scale was developed based on eight leadership values of the Social Change Model (Astin, 1996; HERI, 1996). The PCA yielded 16 components with eigenvalues greater than one.

Component	Eigenvalues	% Variance Explained
1	19.11	28.11
2	3.54	5.21
3	3.15	4.63
4	2.86	4.20
5	1.85	2.73
6	1.68	2.47
7	1.58	2.32
8	1.56	2.29
9	1.42	2.08
10	1.33	1.96
11	1.25	1.83
12	1.16	1.70
13	1.13	1.66
14	1.05	1.54
15	1.03	1.52
16	1.01	1.48

GLOSSARY

Change
Summary leadership value of the Social Change Model embodied by someone who believes individuals, groups, and communities can create change (NCLP, n.d.).

Citizenship
Social Change Model community-level value that is represented by a belief in the process that through an activity, often a service activity, individuals and groups grow connections to the community and to society (NCLP, n.d.)

Collaboration
Group-level value of the Social Change Model, which describes someone who works with others in a common effort where responsibility is shared and individual talents are utilized (NCLP, n.d.).

Commitment
Social Change Model individual value displayed by someone who puts energy into an idea, person, or group with some degree of intensity and for a significant amount of time (NCLP, n.d.).

Common Purpose
Social Change Model group-level value describes someone who has shared values and goals with others and includes these people in building a common vision (NCLP, n.d.).

Congruence
Social Change Model individual value describing a person whose actions are consistent with their beliefs; who is consistent, genuine, authentic, and honest in their interactions with others (NCLP, n.d.).

Consciousness of Self
Social Change Model individual value described as being aware of the beliefs, values, attitudes, and emotions that motivate a person to take action (NCLP, n.d.).

Controversy with Civility
Group-level value of the Social Change Model described as the recognition that group differences will arise when working together and that respectful, open dialogue about those differences is necessary (NCLP, n.d.)

Curiosity – Breadth
Breadth of curiosity describes a person who may search for and/or superficially engage with a wide variety of information and from an expanse of resources. This person will also have a desire to experience a variety of stimuli (Fulcher & Erwin, 2005).

Curiosity – Depth
Depth of curiosity describes someone who will take time to thoroughly investigate information and follow-up. The person will want to learn more about and to search deeper on a specific area or topic in order to gain a fuller understanding about it (Fulcher & Erwin, 2005).

Development
An "analysis and integration of the intellectual and the emotional capabilities of an individual which result in self-motivation, self-direction, and self-identity" (Rost & Barker, 2000, p. 9).

Leader Capacity
The outcome of developmental efforts to enhance leadership p. 299 Day, Harrison, and Halpin (2009)

Leader Development
Efforts that concentrate on developing the individual, by creating human capital and an intrapersonal competence base including skills such as self-awareness, personal responsibility, and commitment (Day, 2001).

Leader Identity
How one thinks about oneself as a leader; a subcomponent of identity or self-concept (Day, Harrison, & Halpin, 2009, p. 299).

Leadership
A positive means of influencing one another, regardless of positions of authority or power.

Leadership Development
Effort that aims to expand the "collective capacity of organizational members to engage effectively in leadership roles and processes" regardless of formal authority (McCauley, as cited in Day, 2001, p. 582).

Leadership Self-efficacy
Derived from Bandura's overall concept of self-efficacy, leadership self-efficacy is an individual's beliefs about his or her general ability to lead (Murphy, 1992).

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