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Leader self-efficacy in youth leader development: A mixed methods study

Christopher J. Rehm
James Madison University

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Leader Self-Efficacy in Youth Leader Development: A Mixed Methods Study

Christopher J. Rehm

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FACULTY COMMITTEE:

Committee Chair: Dr. Karen Ford

Committee Members:

Dr. Margaret Sloan

Dr. Renee Staton

Dr. Micela Leis

Dr. Benjamin Selznick

Dedication

To a future leader who might not have been.

Acknowledgements

I would like to express my deep appreciation to the many individuals who contributed to this work and to my development along my personal leadership journey. Specifically, I offer my most sincere thanks to:

Sasha, my wonderful wife, who modeled the way, supported the long process, and saw me through many difficult moments,

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Abstract

Leader self-efficacy (LSE) is a construct studied in adults and college students which is associated with leader emergence, individual performance, and group performance. This mixed methods dissertation examines LSE in an eighth grade student population to determine if it can be impacted by a leader development intervention during this sensitive period of human growth. Both quantitative and qualitative methods demonstrate the effectiveness of the programming in impacting youth LSE. This holds significant implications for future educational practice, research, and the development of the next generation of leaders. A five item youth LSE scale was created which can aid in further research of this construct.

Keywords: leadership, youth, leader development, youth development, leader self-efficacy

Introduction

Trends in Leader Development

While the field of leader development has been heavily studied in the professional and collegiate worlds, significantly less research exists on the formation of leadership competencies during the school-age years (Murphy & Johnson, 2011). Leadership is cited as a desirable trait by college admission officers and workplace professionals. Additionally, high school leadership exposure is correlated with increased adult earning (Kuhn & Wienberger, 2005). In the workplace, individual leader development is essential to the process of organizational leadership development which in turn is important to organizational success (Day & Harrison, 2007). Therefore, as various studies focus on followership, culture, and shared goals, which are essential to effective leadership, this study evaluates the effectiveness of early training to help inculcate essential beliefs about ability in order to create more leaders for future generations.

Summary of the Issue

Although investment in leadership development for adults and college students has been extensive, research on youth leader development is still in its infancy (Murphy & Johnson, 2011). Leader development for youth provides an opportunity to "expand the leadership equation" by making leader development accessible to earlier ages (Van Velsor & Wright, 2012, p. 1). Among other outcomes, leader development can increase civic engagement, leadership skills, multicultural awareness, assertiveness and confidence in opinions, personal and societal values, and understanding of group dynamics, (Zimmerman-Oster & Burkhardt, 2000; Reichard et al., 2011). Furthermore, by using specific leader development training to focus on key constructs during sensitive periods

in youth development, educators can increase students' beliefs, willingness, and capacity to lead, thus increasing the pipeline of available leaders to the workplace and society.

Purpose of the Study

This dissertation expands the understanding of factors that influence youth leader development by measuring leader self-efficacy in eighth grade students before and after leadership development interventions. Implemented and studied in partnership with the Center for Creative Leadership and a leading private school in North Carolina, this research is the beginning of a multi-year project to affect cultural change with an emphasis on leader development. At the beginning and end of the 2016-17 school year, the eighth grade students, all of whom participated in the leadership development pilot study, were surveyed to determine potential changes in the measured leader self-efficacy construct. Additionally, researchers collected qualitative data from all eighth grade students through open ended survey questions. A mixed method approach provides a robust perspective to potential changes in this leadership construct. The purpose of this study is to investigate if interventions can impact youth leader self-efficacy by specifically studying potential changes in the leader self-efficacy of students' engaged in the eighth grade pilot leadership development program through their private school. Eighth graders were chosen for this work because it represents a significant time of growth, and impacting youth leader self-efficacy at this early stage could have implications for high school leadership and beyond.

The Private School Setting

The private school in North Carolina serves students in transitional kindergarten through twelfth grade. Approximately 1,400 students are enrolled each school year. It is an independent, coeducational, non-sectarian, college-preparatory day school.

The Center for Creative Leadership

The Center for Creative Leadership (CCL) is a top-ranked, global provider of executive education. Their mission is to develop better leaders through a focus on leadership education steeped in extensive research. Over the past 40 years, they have worked with tens of thousands of diverse organizations in more than 130 countries across 6 continents, helping more than a million leaders at all levels.

The CCL and School Partnership

The private school is interested in better understanding leadership at their school and infusing leadership development into different aspects of their programs. They approached the CCL for help with this project. The focus of this dissertation relates specifically to youth leader development, however, the scope of this entire project between CCL and the school extends well beyond this.

Through their Societal Advancement initiative, an arm of the CCL that caters to bringing leadership development to typically underserved populations, the CCL is partnering with this school to understand the current needs, strengths, and goals related to leadership among students, parents, teachers, and administrators within their community. The project team is gathering information about leadership from the perspectives of students, teachers, and families in order to facilitate reflection and decision-making. The ultimate goal of this project is to support the school community in efforts to eventually

create a common leadership language and positive leadership experiences for students,

teachers, and community members while also contributing to the generalizable

knowledge of youth leader development.

Over the next several years CCL and the school will be working together to enact

system-wide cultural change at the school through the Leading with Honor (LwH)

Initiative. The primary goal of LwH is to develop a shared language and culture around

leadership practices and competencies for everyone in the school community. This is a

multi-year intervention and the evaluation aims to serve continuous program

improvement in addition to exploring whether language about leadership, leadership

competencies, and beliefs about leadership abilities are changing over time. This

dissertation focuses on one specific aspect of youth leader development, leader self-

efficacy, through an examination of the eighth grade class who were exposed to the pilot

program within the larger project scope of the CCL and school partnership. The pilot

program rotated the entire eighth grade through leadership development training

throughout the 2016-17 school year.

Definition of Terms

Several key terms must be defined for clarity throughout this dissertation. These

terms include leadership, youth, leader development, and leader self-efficacy. Although

multiple definitions can be found for these terms, the chosen definitions provide a lens

through which to interpret the results of this study. The first term defined, leadership, has

perhaps the most definitions of any. In the context of this paper, Northouse's (2013)

definition of leadership as "a process whereby an individual influences a group of

individuals to achieve a common goal" will be used because it draws on the essential

understanding of influence which is consistent in many definitions of leadership (p. 5).

The Merriam-Webster online dictionary defines the term youth as "the time of life

when one is young; especially the period between childhood and maturity" and "the early

period of existence, growth, or development" (Youth, n.d.) For this sake of this

dissertation, youth is used to refer to the school age years of Kindergarten to 12th grade.

Specifically, this study examines eighth grade students who could all be classified in the

periods of early or late adolescence, spanning the age ranges of 10 to 14 and 15 to 19

respectively, depending on the student's age (Santrock, 2009).

Although leadership development can be defined to encompass leader

development, Day, Fleenor, Atwater, Sturm, and McKee (2014) parse the difference

between leader development and leadership development in their review of the past 25

years of research and theory advancing leader and leadership development: "Leader

development focuses on developing individual leaders whereas leadership development

focuses on a process of development that inherently involves multiple individuals (e.g.,

leaders and followers or among peers in a self-managed work team)" (p. 64). In this way,

this dissertation will focus on the individual leader development of the students involved

in the study.

Lastly, leader self-efficacy is the key construct evaluated in the research for this

dissertation. Ultimately, a variant of Bandura's (1986) definition of self-efficacy is used

within this paper to define leader self-efficacy as a leader's judgments of their capabilities

to organize and execute courses of action required to attain designated types of leadership

outcomes. Since this concept's emergence and research is relatively new, the

understanding and interpretation are still evolving. Therefore, a more thorough

description of this concept, its development, and varying definitions are explored in the

literature review.

Literature Review

Leadership development has primarily been focused on adults specifically for business and career tracks. Recent years have witnessed an increase in the number of programs available for college-age students as universities devote more resources towards leadership preparation of their graduates (Diallo & Gerhardt, 2017). However, explicit programs focused on primary and secondary educational environments remain the exception rather than the rule. Kuhn and Wienberger (2005) discuss the increased focus by college admission offices on leadership roles, leadership as a desirable workplace skill, and evidence linking high school leadership with increased adult earning potential. Additionally, there is a growing call to incorporate more youth leaders into decision making and authority driven processes that could benefit from their diversity of perspective (Mortensen et al., 2014; MacNeil, 2006). Therefore, it behooves schools to focus on key constructs which can affect the leader development and ability of their students.

Developmental Considerations

In contrast to the peer reviewed research on youth leadership development, literature regarding youth and adolescent development is extremely prevalent, yet less so when linked to leader development. Murphy and Johnson (2011) argue that "early points in life represent a sensitive period for development… when skills are more easily and rapidly developed" (p. 460).   This concept is based on the work of Bornstein (1989) who defines sensitive periods as unique phases "that during select times in the life cycle many structures and functions become especially susceptible to specific experiences (or to the absence of those experiences) in a way that alters some future instantiation of that (or a

related) structure or function" (p. 179). According to Bornstein these sensitive periods have the potential to exert a distinct influence over future history.

In particular, adolescence is a unique time of growth which may offer unique opportunity to influence leader development. This growth period is characterized as a time of complex mental, physical, and social change. Additionally, this developmental stage can include higher levels of risk-taking but also offers the opportunity for positive transformations (Curran & Wexler, 2017). In particular, the development of self-conceptions is heavily linked with the transition from childhood to adolescence as youth create more sophisticated views of themselves which may differ across contexts (Steinberg & Morris, 2001). Scholars call for researchers to explore these early developmental periods in youth as precursors for influencing future leadership potential and also the educational processes that impact leader development (Murphy & Johnson, 2011; Whitehead, 2009; Matthews, 2004; Brungardt, 1997). Schools have vast traditions of instructing students as they develop to best prepare them for life. Student leader development has a limited tradition but has garnered more attention in recent years.

Leader Development in Schools

Leader and leadership development within schools can be traced back several centuries. Early models of prefecture existed at Eton College, a secondary school in England, wherein students were given limited authority over other students to help govern the school (Curtis & Boultwood, 1964). The roles of prefects vary depending on the school but the concept of leadership among a select group of students remains the same. Lilley (2010) notes that "any system which incorporates an elite group as its student leadership model, per se has to have a selection process and criteria" (p. 16). This

is in sharp contrast to another view of student leadership first pioneered nearly a century ago.

Founded in 1921, Summerhill School, a small elementary and secondary school in England, sought to democratize the educational process by including all children in the leadership of the school. By viewing leadership as the right of all students and not just a select group, Summerhill's expectation is that meetings of all children and adults where everyone has an equal vote are held regularly to discuss the pertinent issues of the community. Varying forms of this model of leadership are now advocated by other schools who seek to engage children in the governance and processes of change within the school (Lilley, 2010).

With opposing traditions of student leadership opportunity models to draw on, new leadership development programs are emerging around the country (Rehm, 2014). In order to be effective in preparing students for current and future leadership roles, "it is not enough for students to be given leadership opportunities and then be expected to absorb the skills by some sort of experiential osmosis" (Lilley, 2010, p. 19). Intentionality of the desired attitudes, beliefs, and skills is essential for leader development programs to achieve their desired outcomes. Several models exist to inform the intentional design of such programs.

Leader Development Models Pertinent to Youth and Youth Development

Literature, curricula, and program models often use the terms "youth development" and "youth leadership" interchangeably although youth development is a larger field encompassing youth leadership characterized by equipping young people to successfully meet challenges (Edelman, Gill, Comerford, Larson, & Hare, 2004). This

creates confusion because leadership development is often conflated with all positive developmental experiences for youth and limits the potential of programs designed specifically for increasing the leadership potential at an early age (Kress, 2006). Despite this widespread ambiguity, several models are applicable to the study of youth and the effects of programmatic intervention on their leader development.

In 2001, McCormick wrote that "leadership training designers have not yet focused on the leadership self-efficacy construct" (p. 31). This remains true in certain segments of the industry, however, since that time several researchers have begun to incorporate this concept into their work. While models for youth leader development exist that do not explicitly address this important construct (Ricketts & Rudd, 2002; Van Linden & Fertman, 1998), the following three models, with their own specific lens and context for understanding the influences of leadership, are relatively recent contributions to the field of leadership studies and explore both youth leader development and leader self-efficacy. Therefore, each model will be examined relative to its contributions towards understanding youth leader development: Komives, Longerbeam, Owen, Mainella and Osteen's (2006) "Leadership Identity Development Model," Murphy and Johnson's (2011) "Life Span Approach to Leader Development," and Rehm's (2014) – "Practitioners' Model for High School Student Leadership Development."

In their grounded theory study (Komives, Owen, Longerbeam, Mainella, & Osteen, 2005) and the subsequent leadership identity development (LID) model (Komives et al., 2006), the authors describe a process through which college students pass through six stages in each of five categories to develop their leadership identity. The six stages of development are awareness, exploration/engagement, leader identified,

leadership differentiated, generativity, and integration/synthesis. These stages occur

across the categories of developmental influences, developing self, group influences,

students' changing view of self with others, and students' broadening view of leadership.

Of this process, Komives et al. (2006) state "connecting self-awareness with intentional

strategies to build self-efficacy for leadership is a central aspect of developing a confident

leadership identity" (p. 414-15). To help increase student self-awareness and self-

efficacy they recommend assessment, advisors/mentors, and utilizing the entire group in

dialogue, along with many specific stage-based recommendations to help students

transition and grow their leadership identity. Day, Harrison, and Halpin (2012) argue that

identity development spirals and develop over time. By examining the effectiveness of

leadership interventions in promoting leader self-efficacy, this study can contribute to our

understanding of this development in youth.

Murphy and Johnson's (2011) *Life Span Approach to Leader Development* also

draws attention to the interaction of self-efficacy and leader identity and its impact on

leader development. This model emphasizes both sensitive periods in leader

development and leader development as a self-reinforcing process. To clarify the self-

reinforcing concept, Murphy and Johnson use the example of "a snowball effect, small

developmental experiences at an early age (when the snowball is small) can have a

profound impact on future development outcomes, given the reinforcing nature of leader

development" (p. 460). To this end, their "framework of leader development... can help

us develop better leaders by beginning earlier in the developmental process" (p. 467).

This study seeks to answer one of the research calls to explore their lifespan approach,

specifically by seeking "to understand which developmental experiences shape young

leaders' identities and self-regulatory capabilities at a young age" (p. 468). By further exploring the ability of school programs to shape LSE in all youth, we can learn more about educators' ability to influence this self-reinforcing concept at an early age.

Similarly, in Rehm's *Practitioners' Model for High School Student Leadership Development* (2014), LSE is key component of developing youth leadership capacity. He advocates for schools' focus on this beyond of their standard curriculum through the use of youth leadership stories or other examples pertinent to the age span being addressed. This study seeks to ascertain if student LSE can be advanced through school interventions and by such, offer better understanding of how educators can utilize techniques to develop this in all students. The following sections explore the construct of leader self-efficacy and its relationship to leadership.

Leader Efficacy and Leadership Efficacy

While some researchers differentiate between leader and leadership when referring to efficacy or self-efficacy, others use the terms interchangeably. For example McCormick, Tanguma and López-Forment (2002) use both leader self-efficacy and leadership self-efficacy interchangeably. These authors use both terms to describe the same concept and as such define leader/leadership self-efficacy as follows: "Leadership self-efficacy, which is proposed as the central cognitive variable in the model, is defined as one's self-perceived capability to perform the cognitive and behavioral functions necessary to regulate group process in relation to goal achievement. Put another way, it is a person's confidence in his or her ability to successfully lead a group" (McCormick, 2001, p. 30). Although both concepts have been abbreviated as LSE, leader development

has more recently been parsed as a focus on the individual while leadership development

focuses on collective forces both beyond and including the leader (Day, 2001).

Hannah, Avolio, Luthans, and Harms (2008) extend a clear distinction between

the use of the words leader and leadership and suggest that "there is potentially great

value in building a more comprehensive understanding of the contribution of leader

efficacy in building collective leadership efficacy" (Hannah et al., 2008, p. 670). They

view leader efficacy as the efficacy affecting an individual while leadership efficacy is

the dynamic interplay of the leader, follower, and collective efficacies that affect the

entire group. In this way, leader efficacy impacts leadership efficacy but stands as a

unique component related to specific individuals. This distinction is evident in their

framework for leader efficacy and leadership efficacy, see Figure 1.
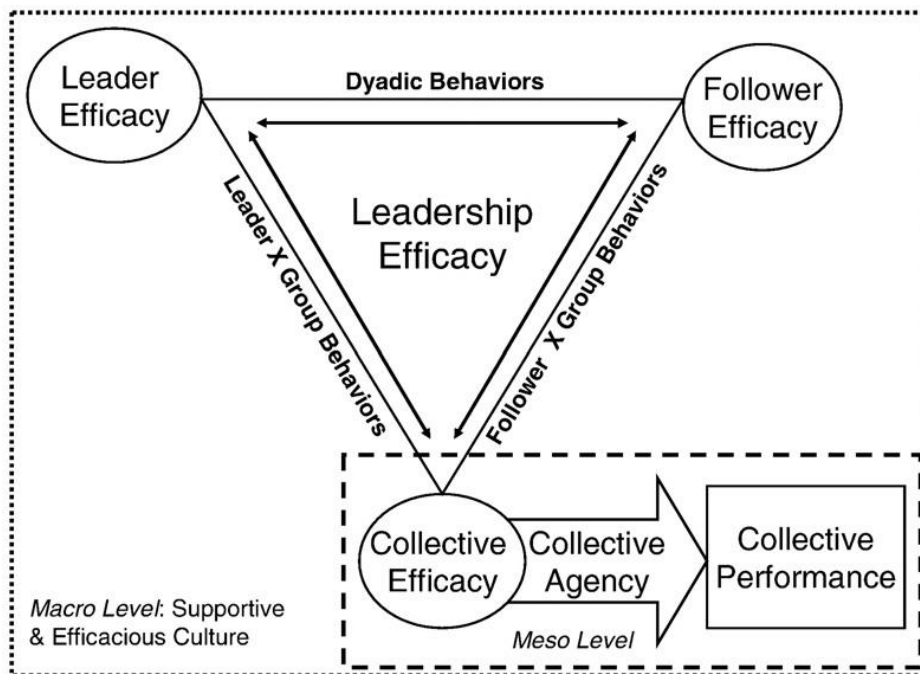
Figure 1. Framework for Leader Efficacy and Leadership Efficacy. Taken from Hannah et al. (2008, p. 671)

Furthermore, leader efficacy has multiple subcomponents which can be linked to various leadership outcomes, and similarly, a distinction is drawn between efficacy and self-efficacy.

Efficacy and Self-Efficacy

While efficacy is defined as the power to produce an effect (efficacy, 2011), self-efficacy in psychology is a concept that refers to a category of beliefs about a human's ability of their individual action to affect various situations and life events (Bandura, 1982). In education, self-efficacy is shaped by past experience, persuasion by others, vicarious experience, and physiological responses (Greene, 2017). Hannah et al. (2008) theorize that generalized leader efficacy is comprised of the components of leader efficacy for thought, action, self-motivation, and means. They draw on the work of Eden (2001) to suggest that these components are comprised of both internal and external elements: "One's internal resources include perceptions of such things as knowledge, experience, skills, and endurance, which we have referred to above as constituting self-efficacy" (p. 677). While thought, action, and self-motivation comprise leader self-efficacy, means efficacy consists of external resources such as "implements (e.g., equipment and computers), other persons (e.g., coworkers, followers, and supervisors), or bureaucratic means for accomplishing work (e.g., procedures and processes)" (p. 677). Furthermore, Hannah, Avolio, Walumbwa, and Chan (2012) have created a multidimensional measure of Leader Self and Means Efficacy (LSME) which is a combination of these constructs. So while leader self-efficacy is a critical component of leader efficacy, it is not the only contribution to this construct. However, while means efficacy is validated as a measure, this study focuses on self-efficacy as a more relevant

construct since the subjects are youth with less exposure and access to the external

resources of adults.

Leader Self-Efficacy

For the sake of this dissertation, leader self-efficacy is defined as a modified

version of Bandura's (1986) definition of self-efficacy: a leader's judgments of their

capabilities to organize and execute courses of action required to attain designated types

of leadership outcomes (p. 391). In this dissertation, leader self-efficacy will be used

exclusively to refer to the construct being measured in this study, however, other cited

research may use alternate terms (e.g. leadership self-efficacy) to describe the same

concept.

Hannah et al. (2008) review of leader efficacy literature resulted in the

observation that "although leader self-efficacy (LSE) has only become a focus of

empirical research very recently, there is growing evidence demonstrating its capacity to

predict relevant work outcomes" (p 674). While general self-efficacy can be linked to

positive leadership outcomes (Fitzgerald, & Schutte, 2010), LSE is specifically linked to

both the improved performance of individual leaders and the performance of groups

(Chemers, Watson & May, 2000; Hannah et al., 2008; Anderson, Krajewski, Goffin &

Jackson, 2008; Paglis, 2010). Additionally, LSE serves as an antecedent to a person's

motivation to lead and is also associated with higher levels of leader emergence (Chan &

Drasgow, 2001; Key-Roberts, Halpin & Brunner, 2012; Hannah et al., 2008). Therefore,

as a positive corollary to both leader emergence, individual performance, and group

performance, LSE is a desired construct to develop in youth and thus the focus of this

dissertation. This dissertation extrapolates the research on adult LSE to youth and tests if

this construct can be effected at this early age. Research on college students indicates that it is possible to increase LSE through leader development experiences on students with initially lower LSE (McCormick & Tanguma, 2007).

Conclusion of Literature Review

Drawing on the models designed particularly for youth leader development, this study will focus on leader self-efficacy because of its impact on leader emergence, leadership outcomes, and the developmentally sensitive nature of this life period. Since both research on leader self-efficacy and leader development in schools are still not extensively researched, by examining the impact of interventions on students' LSE in school age youth, this study will contribute a new perspective to the field. In particular, because students' efficacy development is occurring during their periods of sensitive growth, a greater opportunity may exist to develop their LSE. This research will test the impact of these initiatives on LSE and provide a basis for understanding to what degree LSE can be enhanced in youth through interventions.

Methodology

This mixed methods study provides perspective on the development of youth leadership constructs within a pilot leadership development program. The one group pretest posttest design examines the construct of leader self-efficacy in youth. While primarily quantitative, qualitative data collection will allow for further insights to be garnered from subject interviews. As previously stated, the purpose of this study is investigate if interventions can impact youth LSE. The intent is to examine changes in leader self-efficacy associated with students engaged in the eighth grade pilot leadership development program at their school. A mixed methods approach was utilized in order to provide the most possible robust perspective to potential changes in LSE.

Context of Study

Through their Societal Advancement initiative, the Center for Creative Leadership is partnering with this leading private school to understand the current needs, strengths, and goals related to leadership among students, parents, teachers, and administrators within the school community. The project team gathered information about leadership from the perspectives of students, teachers, and families in order to facilitate reflection and decision-making. The ultimate goal of the overall project is to support the school community in efforts to eventually create a common leadership language and positive leadership experiences for students, teachers, and community members while also contributing to the generalizable knowledge of youth leader development.

Over the next several years the school and the Center for Creative Leadership will be working together to enact system-wide cultural change through the Leading with Honor (LwH) Initiative. The primary goal of LwH is to develop a shared language and

culture around leadership practices for everyone in the school community. This is a multi-year intervention and the evaluation aims to serve continuous program improvement in addition to exploring whether leadership competencies and beliefs about leadership are changing over time. In the 2016-2017 school year, the focus of the partnership will be conducting several pilot studies with students in different grade levels in order to explore the best way of introducing the LwH framework into the school.

This dissertation utilizes one piece of one pilot study and examines the potential change in leader self-efficacy of the eighth grade participants in a leadership development initiative. The dissertation research explores whether the pilot study relates to students' understanding and development of their LSE. This dissertation utilizes surveys collected both before and after the eighth grade pilot leadership development program which contain both quantitative and qualitative data.

Data Collection and Population Samples

All 120 eighth grade students who participated in the pilot study this year were asked to take both the baseline survey in Fall 2016 and the end of year survey in Spring 2017. Students for whom parental permission was not received were eliminated from the analysis as well as students for whom either the baseline or end of year responses are missing. Both quantitative and qualitative items were contained in both surveys and thus collected simultaneously. The pretest and posttest examined the effect of these pilot programs on the student's LSE. Content and curricula for these programs were developed as an extension of their experiential learning programs.

Eighth Grade Pilot Study Program

Eighth Grade Pilot Study Program consisted of a leadership rotation built into the Physical Education class time and curriculum. The goal of this leadership rotation was to create opportunities for the eighth graders to practice and discuss leadership and thus build their capacity for leadership. Outcomes for this program were focused on both youth leadership development through how the group interacted with each other and youth leader development in the individual students' perceptions and actions pertaining to leadership.

Students were divided by both gender and alphabetically by last name into groups of approximately 20 students who were staggered through the leadership rotation to have consistency with the instructors. The leadership rotation was 13 consecutive school days of 45 minute classes in both the fall and spring, combining to total 26 days and approximately 19.5 instructional hours devoted to leadership development for each eighth grade student. The pilot leadership development initiative was primarily group and project based in both the fall and spring. Project based group outcomes were the construction of a stable wooden fort structure in the fall and the completion of an egg drop container in the spring. These projects, as well other activities conducted during the instructional time, focused on hands on leadership experiences with opportunities for discussion and reflection. Explicit desired outcomes stated by the instructors were team work, an understanding that everyday leadership is not necessarily positional, and an understanding of the potential to lead in all students.

Summary of Mixed Methods Research Design

The overall guiding research question for the mixed methods study as well as specific research questions for both the quantitative and qualitative components, including hypothesis and variables for the quantitative research are as follows:

Guiding research question.

Will eighth grade students' participation in leadership instruction through the school's program effect their leader self-efficacy?

Quantitative research question.

Is there a difference in the LSE measure amongst eighth grade students after participation in the leadership development program?

Null hypothesis.

There is no difference in the LSE measure amongst the eighth grade students after participation in the leadership development program.

Alternative hypothesis.

There is a statistically significant difference in the LSE measure amongst the eighth grade students after participation in the leadership development program.

Variables.

Dependent Variable: Leader Self-Efficacy Score – a weighted average measure

Independent Variable: Time

Time Point #1: Immediately before the start of the leadership development program.

Time Point #2: Immediately after the conclusion of the leadership development program.

Qualitative research question.

Will the eighth grade students' perception of leadership and specifically their personal connection to their ability to be a leader change after participation in the leadership development program as indicated by their answers in the open-ended response survey questions?

Convergent parallel mixed methods research design.

Figure 2 depicts the mixed methods research design. The overall research design was convergent parallel with concurrent data collection (Creswell, 2015a). Both quantitative and qualitative data were merged to provide distinct perspectives on potential impact to LSE. In addition to providing more data, both data forms offer different insight and viewpoints on the effects of the intervention. Quantitative data provides relationships and general trends that offer the opportunity for generalization and precision while qualitative data provides personal statements and deeper meaning as to the individual perspectives of the participants (Creswell, 2015a). An initial emphasis on quantitative data followed by an exploration of the qualitative data was utilized in order to more robustly explain the statistical findings and make recommendations for the future. This mixed method approach allows the individuals' words found in the qualitative data to explain trends found in the quantitative data (Creswell, 2015a). Earlier literature referred to this type of design as Triangulation Design: Validating Quantitative Data Model (Creswell & Clark, 2007).

Quantitative data was analyzed using descriptive statistics and a paired-samples t-test through SPSS. Qualitative data was analyzed through a combination of *a priori* and

emergent coding in Dedoose. Concurrent data collection allowed the near simultaneous

collection of both quantitative and qualitative data. However, due to a researcher's

emphasis on quantitative methods, the data was given unequal weight with a quantitative

emphasis. Mixing of the data occurred by merging and validating results during

interpretation.

Timeline

| QUAN data collection: Survey/LSE Measure | Time Point #1: Fall 2016 | qual data collection: Open Ended Survey Items |

Leadership Development Program:
⟵ Winter/Spring 2016-17 ⟶

| QUAN data collection: Survey/LSE Measure | Time Point #2: May 2017 | qual data collection: Open Ended Survey Items |

QUAN data analysis

qual data analysis

QUAN results

qual results

Validate and Merge QUAN results with qual results

Interpretation QUAN + qual

Figure 2. Visual Diagram of Parallel Convergent Mixed Methods Research Design

Quantitative Scale and Item Creation

Although the greater project examines various leadership qualities and perspectives across multiple constituencies at the school, student LSE was chosen as the focus for this dissertation because of its implications for enhancing the impact on leader development (Hannah, Avolio, Luthans, & Harms, 2008). Additionally, self-efficacy is a particularly salient construct for youth that can be enhanced through activities, incentives and experiences (Bandura, 1993). Since the survey utilized with the eighth grade students was created in partnership with the Center for Creative Leadership and the school, existing questions from CCL item bank were used so that comparisons could be made in the larger student population and integrated with a greater body of work at the CCL. Measures were analyzed from previous LSE studies and ultimately categorized based on the underlying construct in two LSE scales (McCormick, Tanguma, & López, 2002; Bobbio & Manganelli, 2009). Additional questions were added to supplement underrepresented subcomponents. Table 1 displays the constructs from the two LSE scales and the applicable questions used in the Student 6-12 survey which was given to the eighth grade students.

Table 1

LSE Measures Coordinated to Previously Published LSE Concepts/Dimensions

McCormick, Tanguma, and López (2002)	Bobbio and Manganelli (2014)	Applicable Grades 6-12 Questions in Survey
Perform well as a leader across different group settings	Showing self-awareness and self-confidence	I believe I have the ability to be a leader I see myself as a leader I am aware of my own strengths (things that I'm good at) and what areas I need to develop I know how I can help make my world a better place I know how to be a leader
Motivate group members	Motivating people	I can help others work hard on a task
Build group members' confidence	Starting and leading change processes in groups	I can help others feel good about what we are doing
Develop teamwork	Gaining consensus of group members	I value working with other people in groups I work well with others and share leadership in order to solve problems effectively
"Take charge" when necessary		I can take charge when it is needed
Communicate effectively	Building and managing interpersonal relationships within the group	I can communicate well with others I think making friends and developing relationships with others can help us all to succeed
Develop effective task strategies		I look at challenges in different ways in order to find the best solution Before I act, I create a plan for achieving goals that identifies possible outcomes and consequences When I have to do something (an assignment, a task) or make a decision, I think through it first and decide what's important
Assess the strengths and weaknesses of the group	Choosing effective followers and	I understand who is better at different tasks within a group

McCormick, Tanguma, and López (2002)	Bobbio and Manganelli (2014)	Applicable Grades 6-12 Questions in Survey
	delegating responsibilities	
Additional items related to LSE included in survey by CCL		I believe that leadership can be taught Becoming a good leader takes time

Although not an exact replica of a previously utilized instrument, these items are derived from the same underlying constructs of previous scales yet are catered to the youth population involved in this project. By utilizing the strengths of prior instruments, this scale aimed to capture the key components of the LSE concept while reflecting the different audience. The goal of modifying questions to create a new instrument was to provide a robust perspective on the LSE of the eighth grade students participating in the pilot study.

Qualitative Survey Items

Qualitative data survey items were designed to elicit student views of leadership and perceptions of how this is enacted within their daily school environment (see Table 2). They were drawn from a CCL question bank. These first two open ended survey items were asked at both baseline and end of year. An additional question was added for the end of year data collection which sought to invoke student perception of leadership development on their thinking and actions.

Table 2

Qualitative Interview Questions and Data Collection Timing

Question	Data Collection Timing
What is a leader?	Baseline and End of Year
What does leadership look like in your grade?	Baseline and End of Year
How has participating in Leadership Development in PE made you think or act differently this year?	End of Year

Analyzing this information in conjunction with the quantitative items provided insight on both real and perceived changes. Initially, both sets of questions were examined by grade appropriate educators. Additionally, this researcher has been both a teacher and administrator in independent schools working in these experiences with eighth grade populations.

Statistical Analysis and Interpretation

Exploratory factor analysis was conducted to examine the validity of the different factors from the quantitative baseline data collected of all students surveyed. Since some questions were designed specifically for the school and as such had never been tested before, factor analysis helped eliminate excessive or unproductive items and evaluate if the items represented one latent factor of LSE. Means and standard deviations were examined for the quantitative data, and a paired sample t-test was used to examine significance in changes in the weighted sum score LSE variable over time. Due to the smaller sample size, effect size was also calculated. Quantitative analysis was conducted using SPSS.

Qualitative data was coded using both *a priori* and emergent coding design. *A priori* codes were based on the remaining quantitative items as well as prior research and work with youth. These codes and their related themes were reexamined and modified in

the coding process with the data. Qualitative analysis was conducted using Dedoose software. Qualitative data was used to support the quantitative findings and helped provide further understanding of the statistical results. The data was mixed by merging the results during interpretation. Quantitative data was emphasized during the validation and interpretation stages. The mixed methods approach allowed for a more robust understanding of the impact of the intervention on student LSE, particularly since this has not been previously studied in eighth grade students.

Threats to Validity

    Internal threats.

Threats to internal validity cast doubt on the confidence that the intervention produced change in the LSE variables. For this study, a one group pre-test post-test study design in an independent school community, the internal threats are history, maturation, and testing.

As a one group pretest post-test design, the history of the students cannot be distinguished from the leadership development intervention. Since the intervention occurred over the course of a school year, the prolonged time lapse provided greater opportunity for this threat. Additionally, maturation can be significant during the schooling years. The subjects matured by almost a year's growth over the course of the study which could have impacted the variables. Finally, the language in the first round of surveys could have led students to make assumptions about desired outcomes of the study and thus affected their post-test answers. This could have created a testing threat to the internal validity.

External threats.

Threats to external validity cast doubt on the confidence that the findings of the study are generalizable beyond the population studied. Since the study was conducted at a private school which contains the existing filters of monetary commitments and entrance criteria, the selection bias of these criteria limit the potential generalizability of study. Additionally, the infusion of character education into leadership development as part of the LwH initiative could create generalizability difficulties when seeking to reproduce study with only the construct of leadership.

Data Analysis

The data analysis was conducted in four stages. The first stage explored the validity and reliability of the LSE scale. The second stage examined the differences in LSE scores before and after the leadership development intervention through a paired samples t-test. The third stage analyzed the open-ended question responses. The final stage related these findings to the study's hypotheses.

LSE Scale

The LSE scale was analyzed in three phases: readability analysis, inter-item and item-total correlations, and factor analysis. These three phases were utilized to increase the reliability and validity of the scale through item reduction.

Readability analysis.

A readability analysis was conducted utilizing three tests available on the website readability.io in order to evaluate each individual item as well as the scale as a whole. From the many possible tests, the three tests chosen represent different approaches in assessing readability: the Flesch-Kincaid Grade Level (FKGL), the Gunning-Fog Score (GFS), and the Automated Readablity Index (ARI). The FKGL calculates a score using sentence length as measured through the number of words per sentence and also based on word length as measured by the number of syllables in the words. GFS incorporates word complexity as judged by a syllabic threshold in its formula as well as words per sentence (Child, 2017). ARI utilizes character count and not syllables in addition to words per sentence to measure readability (The Automated Readability Index, 2017).

If two or more of the tests for an individual scale item computed a score above eighth grade, the item was subsequently eliminated from the scale. This resulted in the

removal of five items: 5, 6, 7, 8 and 17. Scale scores were also calculated for the scale in

totality both before and after item removal. This resulted in the reduction in the grade

level scores for the entire scale.

Table 3

LSE Scale Readability Levels

	FKGL	GFS	ARI
LSE 18 Item Scale	5.7	9.2	4.1
Item 1	2.5	2.4	-3.5
Item 2	6.1	9.7	4.9
Item 3	5.2	3.2	3.8
Item 4	7.6	14.2	5.8
*Item 5	9.8	16.2	9.9
*Item 6	8.4	11.3	9.1
*Item 7	12.0	16.4	11.3
*Item 8	9.3	11.3	10.5
Item 9	1.9	4.8	-.1
Item 10	4.5	2.4	3.5
Item 11	4.0	8.5	4.3
Item 12	.6	2.8	-5.1
Item 13	6.0	8.0	-.4
Item 14	1.0	3.6	-1.8
Item 15	2.6	4.4	1.6
Item 16	4.5	9.1	2.8
*Item 17	12.3	15.7	9.8
Item 18	6.9	11.7	5.5
LSE 13 Item Scale	3.9	7.1	1.5

Notes: Numbers represent grade level equivalence.

Negative scores represent the most basic level of reading.

* indicates item removed from scale based on readability scores.

Inter-item and item-total correlations.

The remaining 13 items in the LSE scale were then analyzed using inter-item and item-total correlations. The inter-item correlation matrix showed that all values were positive except Item 1 and Item 10 which had a slightly negative correlation (see Table 4). Item-total correlations revealed that Item 10 had the smallest item-total correlation and removing this item would increase internal consistency ($\alpha = .842$) by .002 (see Table 5). Additionally, inter-item correlations for Item 10 were all less than .3 while Item 1 had four correlations over .3. Therefore, Item 10 was removed.

Table 4

Inter-Item Correlation Matrix for 13-Item LSE Scale

	Item 1	Item 2	Item 3	Item 4	Item 9	Item 10	Item 11	Item 12	Item 13	Item 14	Item 15	Item 16
Item 1												
Item 2	.25											
Item 3	.16	.18										
Item 4	.20	.21	.29									
Item 9	.29	.22	.21	.30								
Item 10	-.01	.12	.21	.23	.21							
Item 11	.17	.16	.17	.11	.28	.28						
Item 12	.50	.28	.30	.44	.58	.16	.23					
Item 13	.48	.22	.21	.38	.53	.25	.18	.77				
Item 14	.32	.20	.27	.27	.31	.21	.21	.52	.51			
Item 15	.34	.23	.42	.27	.45	.24	.31	.50	.55	.54		
Item 16	.33	.31	.12	.28	.39	.18	.13	.51	.53	.42	.30	
Item 18	.12	.27	.18	.25	.29	.22	.27	.29	.20	.34	.38	.55

Table 5

Item-Total Correlations for 13-Item LSE Scale and Cronbach's Alpha If Item Deleted

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 1	.431	.834
Item 2	.359	.838
Item 3	.373	.840
Item 4	.448	.834
Item 9	.572	.825
Item 10	.319	.844
Item 11	.341	.843
Item 12	.722	.815
Item 13	.685	.816
Item 14	.578	.825
Item 15	.648	.821
Item 16	.558	.826
Item 18	.463	.832

Inter-item and item-total correlations we then re-calculated for the new 12-item scale (see Tables 6 and 7). The inter-item correlation matrix revealed no negative correlations and all items with at least one correlation above .30. Furthermore, the item-total correlations indicated that removing two items, Item 3 and Item 11, would have improved internal consistency ($\alpha = .844$) by .001 and .006 respectively. Although, these items also had the lowest item-total correlations would have increased internal consistency slightly, the decision was made to keep these items in the scale at this stage based on their highest inter-item correlations which were .42 for Item 3 and .31 for Item 11; both of these correlations occurred with Item 15.

Table 6

Inter-Item Correlation Matrix for 12 Item LSE Scale

	Item 1	Item 2	Item 3	Item 4	Item 9	Item 11	Item 12	Item 13	Item 14	Item 15	Item 16
Item 1											
Item 2	.25										
Item 3	.16	.18									
Item 4	.20	.21	.29								
Item 9	.29	.22	.21	.30							
Item 11	.17	.16	.17	.11	.28						
Item 12	.50	.28	.30	.44	.58	.23					
Item 13	.48	.22	.21	.38	.53	.18	.77				
Item 14	.32	.20	.27	.27	.31	.21	.52	.51			
Item 15	.34	.23	.42	.27	.45	.31	.50	.55	.54		
Item 16	.33	.31	.12	.28	.39	.13	.51	.53	.42	.30	
Item 18	.12	.27	.18	.25	.29	.27	.29	.20	.34	.38	.55

Table 7

Item-Total Correlations for 12-Item LSE Scale and Cronbach's Alpha If Item Deleted

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 1	.462	.836
Item 2	.363	.842
Item 3	.361	.845
Item 4	.438	.838
Item 9	.574	.828
Item 11	.315	.850
Item 12	.746	.814
Item 13	.688	.818
Item 14	.581	.828
Item 15	.650	.823
Item 16	.565	.828
Item 18	.457	.836

Factor Analysis

The final stage of the youth LSE scale creation involved factor reduction through principal component analysis (PCA). Assumptions were first analyzed before then performing the PCA.

Assumptions for factor analysis.

Factorability of these 12 items was further examined through sampling adequacy. The Kaiser-Meyer-Olkin measure was .83, which is well above the .6 recommended threshold and classified as "meritorious" by Kaiser (1974, p. 35). The diagonals of the anti-image correlation matrix were all above .67, well above the minimum recommended of .5, and all but three were equal or above .80 which is considered ideal. Bartlett's Test of Sphericity was significant (χ^2 (66) = 367.08, $p < .01$), suggesting that the data was factorizable. These indicators all suggest that factor analysis was appropriate to conduct because of the shared common variance among the items.

However, factor analysis assumes no outliers, so a 12-item difference score was calculated and utilized for descriptive statistics. Two outlier cases were identified as shown in the boxplot and QQ plots (see Figures 3 and 4). Since the outliers juxtaposed and evaluation of these data points revealed potential for user fatigue by entering all of the same responses during one administration of the survey, these outliers were removed. This decreased the mean by less than 0.002 and decreased the standard deviation by 0.05.

Inter-item and item-total correlations we then re-calculated for the 12-item scale excluding the outliers. Item 11 was subsequently removed because its highest inter-item correlation decreased below .30. Removing this item increased the newly calculated reliability statistic ($\alpha = .836$) back to .844.
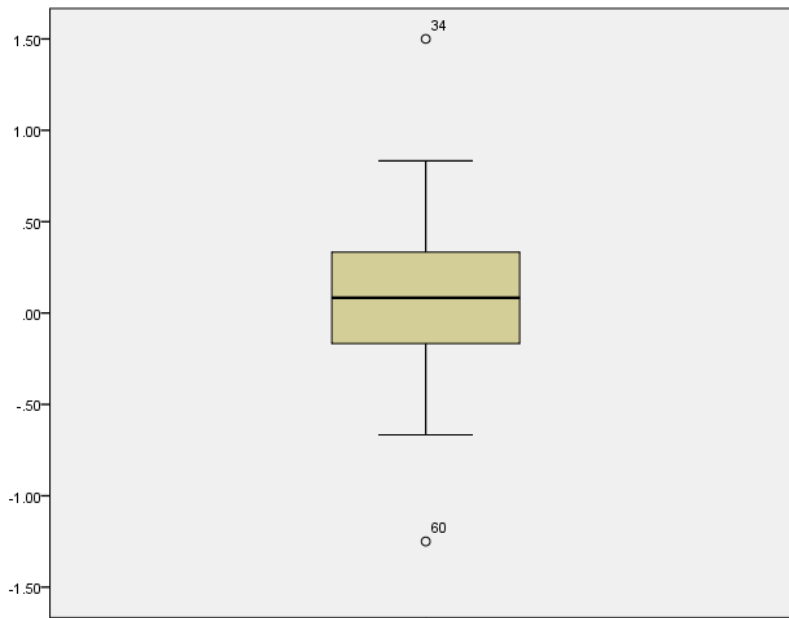
Figure 3. Outliers on 12-Item Scale Data

Principal component analysis.

Principal component analysis was then conducted on the remaining 11 items. Principal component analysis was chosen since the primary research interest was reducing the number of variables (Tabachnick & Fidell, 2013, p. 640). Since the measure targeted the specific construct of youth LSE and therefore the likelihood of correlation was high among factors, an oblique Promax rotation was preferred to allow for correlation between the factors and to clarify which variables did and did not correlate (Tabachnick & Fidell, 2013, p. 644-5). The analysis returned three factors with Eigenvalues greater than 1.0, explaining 40.4%, 10.1% and 9.6% of the variance, 60.1% in total. However, examination of the scree plot revealed the potential for a one factor solution (see Figure 4). Although multiple factor solutions and rotations were explored in search for simple structure (Thurstone, 1947), the Promax rotation with an unforced three factor solution was the most revealing. Items 18, 16, 2, 3, 15 and 4 loaded on Factors

Two and Three (see Table 8). These items were eliminated to reduce the scale to the

items loading only on the first factor.
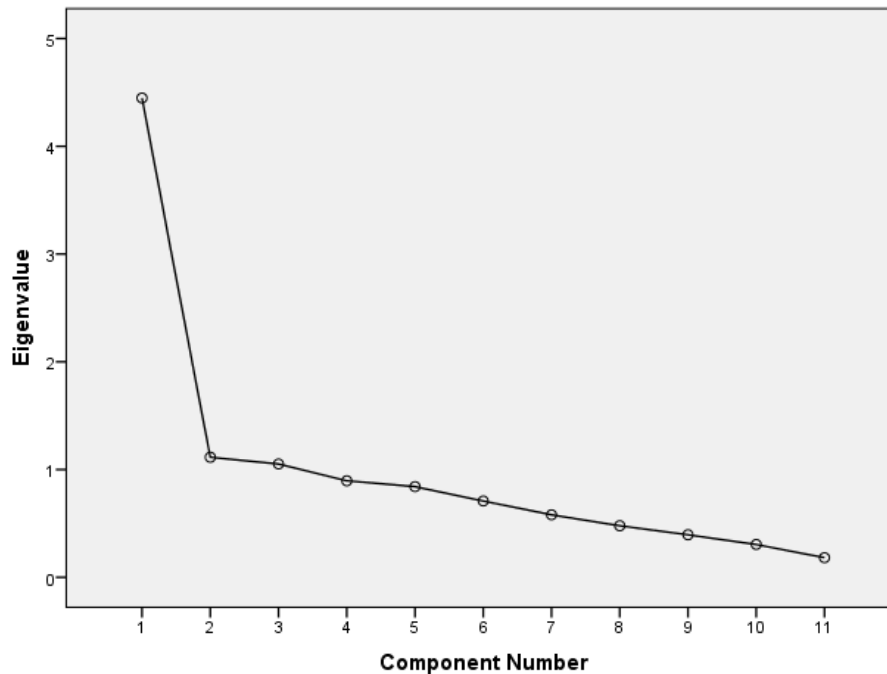
Figure 4. Scree Plot of 11-Item Scale

Table 8

Factor Loadings for 11-Item Youth LSE scale

	Factor One	Factor Two	Factor Three
Item 13	.93		
Item 12	.85		
Item 1	.82		
Item 9	.60		
Item 14	.38		
Item 18		.96	
Item 16		.70	
Item 2		.58	
Item 3			.97
Item 15			.56
Item 4			.41

Notes. Factor loadings < .38 are repressed
Based on a principal component analysis with a Promax rotation (Pattern Matrix)

Table 9

Extracted Communalities for 11-Item Youth LSE scale

*Item 1	.51
Item 2	.34
Item 3	.80
Item 4	.33
*Item 9	.45
*Item 12	.78
*Item 13	.80
*Item 14	.46
Item 15	.62
Item 16	.75
Item 18	.78

Notes. * indicated item retained to form youth LSE scale
Based on a principal component analysis with a Promax rotation

Items 1, 9, 12, 13 and 14 all loaded on Factor One on the Pattern Matrix and all had communalities above .45 (see Tables 8 and 9) with an average of .60. Ideally all communalities would have been above .60 with an average above .70 for a sample size less than 100 (Tabachnick & Fidell, 2013, p. 618). Additionally, the loadings were also acceptable with three in excess of .71 which is considered excellent, an additional item in excess of .55 which is considered good, and the last item above .32 which is considered poor (Tabachnick & Fidell, 2013, p. 654).

The quantitative research question explores LSE through a weighted average measure, and exploratory factor analysis sought to derive the optimal factor to measure this dependent variable. Of all the factors, Factor One items were most strongly linked to existing definitions of LSE (see Table 10). Therefore, after consultation with the theoretical framework and item text, these five items were retained to form the youth LSE scale.

A weighted sum score was utilized in order to balance the uneven loadings of the items on the factor (DiStefano, Zhu, & Mindrila, 2009). The weight was created using the percentage of the item factor loading in relation to the sum of the factor loadings; the proportion of the factor loadings was maintained in the weighting but the total was recalibrated to 100%. In this way, pretest, posttest, and difference item scores were calculated for the five-item weighted youth LSE scale. Item numbers, their corresponding questions, and factor loadings are shown on Table 10.

Table 10

Item Numbers, Questions, and Item Loadings for Youth LSE Factor (α = .826)

	Corresponding Question	Factor Loading
Item 13	I believe I have the ability to be a leader.	.93
Item 12	I know how to be a leader.	.85
Item 1	I see myself as a leader.	.82
Item 9	I know how I can help make my world a better place.	.60
Item 14	I can help others work hard on a task.	.38

Paired Samples T-Test

A paired samples t-test was used to determine whether there was a statistically significant difference between the five-item weighted youth LSE scale score before and after the leadership development intervention. With outliers filtered previously in the data analysis, one additional outlier was discovered upon re-analysis that was more than 1.5 box lengths from the edge of the bloxplot. Inspection of the value did not reveal it to be extreme and further inspection of the student data for this record did not reveal any abnormalities, therefore, it was decided to retain this outlier (see Figure 5). Additionally, the assumption of normality was not violated, as judged by Shapiro-Wilk's test (p = .370).
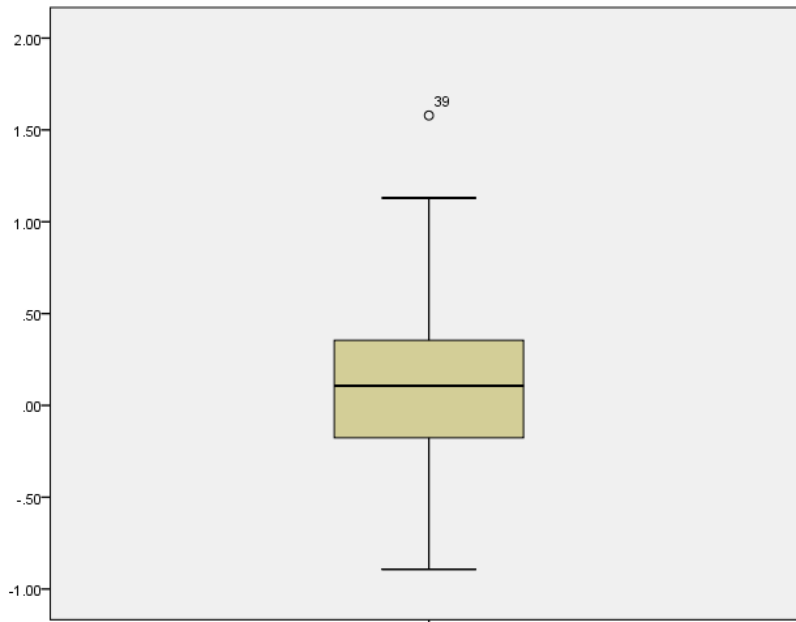
Figure 5. Outliers on Five-Item Weighted Youth LSE Scale

The results from the paired samples t-test showed that the mean difference was statistically significantly different from zero, and therefore the null hypothesis could be rejected. The school's eighth grade students scored higher on the five-item weighted youth LSE measure after participation in the six month leadership development program (M = 3.987, SD = 0.518) than they did on the pretest prior to the program (M = 3.881, SD = 0.596), a statistically significant increase of 0.106, 95% CI [0.004, 0.209], t(79) = 2.059, p = .043, d = 0.260.

Qualitative Analysis of Open Ended Questions

Qualitative analysis of the open-ended questions was conducted using Dedoose software with a blended design of both *a priori* and emergent coding. Comparisons were made of the two question sets that were surveyed both at baseline and end of year: "What is a leader?" and "What does leadership look like in your grade?" Separate analysis was

conducted of the question asked only at end of year: "How has participating in

Leadership Development in PE made you think or act differently this year?"

Coding process.

Initial *a priori* codes were developed based on categories and codes from the final

quantitative questions forming the weighted LSE scale. These were then combined with

potentially applicable codes from prior qualitative work with the CCL and youth (see

Appendix A). Throughout subsequent rounds of coding, the coding scheme was revised

and modified to better fit the themes found in the student responses (see Appendix B for

modified themes and descriptions). Analysis of the results after five rounds of coding

provided additional insights on the findings of the quantitative data. Since each excerpt

could only be coded once with each appropriate code, percentages comparing code count

amounts per question to total responses per question were used to chart the amount of

change in the number of times the code was recorded. When assessing increases or

decreases in percentage comparisons, changes less than plus or minus 1.3 % were not

considered whereas they represented the input of only one individual.

Overall, the emergent themes provided further categorization as compared the *a*

priori themes. The category structure remained intact but the category names changed

slightly to better reflect the embedded themes. Similarly, anticipated codes received

further definition or child codes to parse out differences. An example of this includes the

Processes and Actions" code which received the child-codes of "Steps Up, Task Decision

Making, and Outcome Oriented." Within these expanded explanations which provided

further clarity to the codes, the themes agreed with the *a priori* understanding with the

exception of the unexpectedly high "Steps Up" code. Defined through language

referencing "takes charge, takes responsibility, takes control, speaking up" or similar

concepts, this code was present in approximately half of all responses, although less at

end of year compared to baseline. Student responses in the category suggested that a

large component of leadership as perceived by this population involves assertion of

viewpoint or in behavior. This was not necessarily perceived negatively by the students,

and this response was not anticipated in the *a priori* codes.

Pretest, posttest questions.

The comparison of responses for the question "What does leadership look like in

your grade?" had an increase greater than 1.3% in seven codes and a decrease of at least -

1.3% in 11 codes. Similarly, the comparison of responses for the question "What is a

leader?" had an increase greater than 1.3% for four codes and a decrease of at least -1.3%

in 12 codes. Appendix C includes the code counts and student responses per question

while Appendix D contains the percentages of code counts to student responses. Overall,

from baseline and end of year, the child code counts for these two questions decreased

from 343 to 270, a 21.3% decrease, while the number of respondents decreased by six, a

3.4% decrease. Similarly, character count and word count also decreased suggesting that

student response rates were not as thorough at posttest as compared to the beginning of

the year (see Table 11).

Table 11

Total Two Question Counts at Baseline and End of Year

	BL Total	EOY Total	Percent Change
Character Count	12,532	10,692	-14.7%
Word Count	2,862	2,327	-18.7%
Child Code Count	343	270	-21.3%
Student Responses	177	171	-3.4%

Additionally, students were not always positive about the leadership they saw in their grade. References to negative leadership or absent leadership in their grade increased by one student response at end of year to represent 5.9% of the total responses. One of the more potentially explanatory observations from these categories came at the end of the year: "Leadership in my grade looks like someone else helping somebody be more successful. I do not see leadership too often in my grade as people mainly try to blend in with the rest of the crowd." While the bulk of the answers to regarding leadership were not coded as positive, negative, or absent but were instead explanatory, explicitly positive references to leadership remained stable at the year's end at 8.2%. Overall, these mixed results provided inconclusive evidence to answer the portion of the qualitative research question targeting the eighth grade students' perception of leadership at both baseline and end of year.

Leadership development impact.

While the pretest, posttest questions did not provide conclusive insights to answer the research question, the end of year only question "How has participating in Leadership Development in PE made you think or act differently this year?" was much more illuminating. Almost all (96.4%) of the respondents for this question had responses which were coded in the category of intervention impact with 67.5% reporting a positive change (e.g. "I've become more of a leader") and 28.9% reporting no change (e.g. "It has done nothing for me but it's fun") in their thinking or actions as a result of the intervention. Additionally, 38.6% noted some form of change in leader self-efficacy in

their response to the intervention impact without this topic being specifically elicited.

Three representative examples of this are:

- "It changed my definition of leadership and taught me that everyone can be a leader."
- "It showed me my inner self. And in a difficult situation, I can be a leader."
- "I realized all the qualities that a leader has and realized that at times I was a leader."

Overall, 57.1% of students who answered positively towards the impact of the leadership development initiative made an unsolicited reference to a positive impact on their LSE as defined through the lens of the five-item youth LSE scale.

In general, in their responses to the leadership development impact assessment question, participants most discussed an increase in understanding of "Working with Others" with 31.3% commenting on the intervention impact in this way. An example of this read: "It made me think about others feelings before my own. I try to get to know others better and try to help them as much as possible." Within this category, "Collaboration" was the highest code with 21.7% of overall students referencing it in some form. These responses encompassed being inclusive, having influence or connections with others, collaborative communication with others, awareness of working with and interacting with others, and general references to positive interactions with others. A representative example of this dealt with listening: "Made me actively think about listening to opinions of others because mine is not most important. I try to be a leader and can recognize leaders around me." Another highly referenced parent code was "processes and actions" with 10.8% of responding students citing increased awareness of these leadership aspects. These responses encompassed references to many leadership tasks such as delegation, motivating, setting plans, taking charge, takes risks, and related

topics. An example of this included "It has taught me to make plans before I act." While the first two question responses did not provide conclusive evidence to support the research hypothesis, the responses to the leadership development impact question indicated an increase in the students' personal connection to their ability to be a leader.

Discussion

Both quantitative and qualitative data from this study indicate students witnessed changes in their LSE over the course of their eighth grade year. While the effect size calculated from the paired samples t-test is interpreted as small according to Cohen's d = 0.260 (Sawilowsky, 2009), the mean difference between the baseline and end of year results for the youth five-item LSE scale was significant. Therefore, we can accept the alternative hypothesis that there is a statistically significant difference in the LSE measure amongst the eighth grade students after participation in the leadership development program. Additionally, the first portion of the qualitative research question could not be ascertained i.e. the open-ended questions did not clearly indicate if students' perception of leadership changed significantly. However, substantial qualitative data indicated that the students' personal connection to their ability to be a leader was impacted as a result of the intervention. Overall, the findings from this study suggest that interventions for youth can have an impact on their LSE.

The mixed methods study allowed for three main advantages over a straight quantitative or qualitative study. First, it provided more data to analyze which was particularly valuable given the smaller number (120) of participants in the study which was subsequently reduced in the data set by permissions, missing data, and outliers to 80 students for the quantitative portion of the study. Secondly, it provided different

perspectives and thus a more comprehensive view on the perceived changes in LSE between the survey time points. The quantitative data allowed the examination of general trends and the qualitative data allowed the participants to voice their thoughts in their own words. Finally, this approach allowed the qualitative data of the students' voices to help explain the quantitative data of numbers and thus allowed a more thorough understanding of the trends unearthed.

Table 12 compares the final quantitative items with key qualitative themes. The quantitative items are the five that remained after the readability, outlier, and factor analyses. The key qualitative themes emerged from the end of year question relating to the impact of the leadership development program on students thoughts and actions and were discussed by at least five students who responded to this question. There were three categories that could offer explanation of potential commonality between these final results of the qualitative and quantitative processes. These categories are personal leadership beliefs, direction oriented action, and working with others. While these categories are theoretical, they do align with existing leadership qualities.

Table 13 compares the findings of both the quantitative and qualitative data and demonstrates how the qualitative data supports the quantitative findings. While the two questions asked at both beginning and end of year did not provide conclusive results, the end of year question relating to the intervention impact was extremely supportive of the quantitative results.

Table 12

Comparison of Final Quantitative Items and Key Qualitative Themes

Quantitative Items	Potential Commonality	Key Qualitative Themes
I believe I have the ability to be a leader. I know how to be a leader. I see myself as a leader.	Personal Leadership Beliefs	I am a leader
I know how I can help make my world a better place.	Direction Oriented Action	Processes and Actions: Stepping Up to Leadership and Making the Right Task Decisions
I can help others work hard on a task.	Working with Others	Helping/Caring for others Collaboration Listening

Notes. Key Qualitative Themes were expressed by five or more participants in response to the EOY question asking how participating in the Leadership Development program led to different thinking or action.

Table 12

Integration of Quantitative and Qualitative Results

Quantitative Results	Qualitative Results Explaining Quantitative Results	How Qualitative Findings Helped Explain Quantitative Results
Eighth grade students scored statically significantly higher on the five-item weighted youth LSE measure after participation in the six month leadership development program	67.5% of responding students reported a positive change in their thinking or actions as a result of the intervention, and 57.1% of these students made an unsolicited reference to a positive impact on their LSE	Qualitative findings support the quantitative results that students' personal connection to their ability to be a leader was impacted as a result of the intervention specifically as students cite the intervention as the source of positive impact

This mixed methods approach further probed the impact of the intervention and provided greater clarity in the results. The small effect size of quantitative results are strengthened by the findings in the qualitative data. Qualitative findings support the quantitative results that many students' personal connection to their ability to be a leader was impacted as a result of the intervention. The majority of students cited the intervention as the source of the positive impact, and in the majority of these responses, students specifically cited a positive impact on their LSE. Creating even a small effect on a large group of students makes the impact much greater and underscores the significance of these findings.

Conclusions

While varying student leadership models have a storied tradition within schools (Curtis & Boultwood, 1964), research over the past century has advanced the understanding of leader development. The creation of assessments and models at the adult level have increased our understanding of the various facets involved in enhancing leadership capacity. The construct of leader self-efficacy is a relative recent addition to empirical research but has been linked to leader emergence and performance (Hannah et al., 2008). Current research has studied LSE in adults but little has examined its creation in youth. The creation of the youth leadership scale through this study could represent a significant contribution to the future study of this topic. Furthermore, influencing this construct at an early age could lead to an increased pipeline of available research capacity in both college and the adult world, in addition to helping students obtain successful college admissions and increased earning potential (Kuhn & Wienberger, 2005). Attitudes, beliefs, routines, and actions regarding leadership can be influenced early in the life span with either positive or negative long term impact. Thus, positively affecting leader self-efficacy in all youth could have long term implications for who will pursue leadership opportunities (Hannah et al., 2008).

Inherent in this perspective is a distrust of the early "great man" and "trait" theories of leadership which sought to identify and distinguish leaders from the majority of the population, reserving leadership for an elite portion of society with alleged inborn qualities. While research clearly shows that some factors which contribute to leadership are beyond the control of educators (Dhuey & Lipscomb, 2008; Murphy, 2011), others factors, such as LSE, can be influenced through programs and relationships as

demonstrated in this study. More modern theories of leadership, such as situational and contingency theories, allow for potential youth leader experimentation in situations or zones where they may already feel some degree of comfort. Additional recent theories such as Leader Member Exchange better account for the role of the follower and the two way social interactions which influence every facet of school life. While adult theories are not perfectly aligned with youth perspective on leadership (Mortensen et al., 2014), current research and theory seeks to address the needs and potential of youth leader development in ways previously not possible through older conceptions of both leader development and leadership.

Limitations

While this study examined a relatively new construct in a previously unstudied population, as demonstrated in Murphy and Johnson's (2011) Life Span Approach to Leader Development model, ultimately there are many factors that influence leader development across all age ranges. Some of these factors are beyond the control of educators yet still may influence leader development e.g. genetics, gender, parenting, and temperament. These factors were not covered in this research due to data collection limitations and the accessibility of this information. Relatedly, the history of the students, their maturation over the course of the year, the clientele of the school with both monetary obligations and entrance criteria, potentially limit the generalizability of this study.

Additionally, it is unclear how this eighth grade population at a private school may be different from general eighth grade population at large. Although students and family situations are varied in all schools, students at this school as a whole have greater

financial means than the average eighth grade student in the United States. It is possible that this socioeconomic status could influence the transfer of the study's findings into alternate contexts.

Implications

This study aimed to establish if the eighth grade students' participation in leadership instruction could impact their leader self-efficacy. Quantitative results showed that there was a statistically significant difference in the LSE measure amongst the eighth grade students after participation in the leadership development program with a small effect size. Qualitative data also strongly supported the idea that students felt an increase in their personal connection to their ability to be a leader, and the majority felt that the leadership development program had a positive impact on either their thinking or actions. These results suggest that the leadership development initiative had an impact on the students and particularly on their LSE. The small effect size of the quantitative data was strengthened by the qualitative research which together make a powerful case that LSE can be effected by intervention during the eighth grade year. Additionally, a small change across the population of an entire class is a significant impact.

This conclusion has implications for potential educational initiatives. Since it seems possible to impact LSE at an early age, programs could be tailored towards increasing this construct in youth who might lack high levels of this valuable component of leadership. In specific, many private schools tout leader development as an educational outcome but often lack empirical understanding of the underlying constructs and how they are developed. Vast potential exists for private schools to intentionally craft and measure learning experiences to prepare all of their students more fully for

future leadership opportunities. This study demonstrates one benefit of student leader development interventions that target a broader student base than merely student council, sport captains, prefects, and other elite positions.

Additionally, youth development organizations including after school programs could benefit from deliberately seeking to test and develop the LSE of youth involved in their programming. This provides the opportunity to impact more students and increase their belief in their ability to lead thus hopefully widening the future leadership pool for future business, education, and civic leaders. Some public and charter schools are also now seeking to address leadership as an outcome for their students, and this scale could increase their understanding of the programs that they implement to better prepare all youth. Interventions impacting LSE are feasible both within and beyond differing academic environments thus making these types of programs accessible to all students through a variety of settings. Finally, education at large and youth in every setting could benefit from programs focused on developing their LSE and utilizing this scale as an outcome measure could make these programs more targeted and efficient.

Leaders, particularly in educational settings, should strive to develop this construct in their students in order to prepare them for the best possible future. This in turn could increase the potential leadership pipeline for organizations and communities. By expanding the leadership equation beyond the traditional path of high talent identification and training, researchers and educators can empower more individuals to address both local and global challenges (Van Velsor & Wright, 2012).

Future Research

The results of this research demonstrate the effectiveness of engaging young people earlier in the leadership process and offers numerous future research possibilities since this area lacks significant empirical emphasis in the field. This current study generates many legitimate questions to further verify and focus future research. One critical question to study is the impact of LSE in youth on their motivation to lead and how this impacts their acceptance of leadership opportunities. This study has demonstrated the effectiveness of intervention during the end of middle school; future longitudinal studies could examine how these interventions impact student leadership trajectory through high school and beyond. Is this new youth LSE scale predictive of future leadership initiative and success? This could be studied in various contexts of private, public, and charter schools as well as after school and community based programs. Future studies could also collect additional student data and use regression to control for environmental factors. Utilizing the scale created through this study can make this research less cumbersome and more accessible to both academics and practitioners.

Other key questions include: Which initiatives are most effective in affecting LSE? Which activities, durations, and ages best develop this construct? What long term impacts do these initiatives have on students later in life? By answering these key questions, future exploration can capitalize on the research of this dissertation. Additionally, by learning how to best affect youth LSE and the long term impact of these efforts, researchers and educators can hopefully help prepare students for future success and in a broader scale, increase the diversity of leadership represented in the world.

Appendix A

Initial *A Priori* Categories and Codes

Category	Codes
Working with Others	Collaborative leadership e.g. references to processes/tasks involving working positively with others
	Bossy e.g. references to assertiveness over others in a non-collaborative manner reflecting leadership
	Connections with others
Personal Connections to Leadership/Self Perceptions of Leadership Potential	"I am a leader"
	"anyone can be a leader"
	positional references to leadership e.g. student council, captains, teachers, admin
	popularity references to leadership
	examples – specific names of classmates, teachers, world and sports leaders, etc.
Perceptions/Understandings of Leadership	Processes – references to any number of leadership tasks such as delegation, motivating, setting plans, etc.
	Complexities – language exhibiting two or more potentially conflicting ideas that must performed by leaders, language reflecting difficulties of leadership
	Leadership as a benefit – positive reflection on leaders/leadership (leaders make the world better, we can't move forward without leaders)
	Leadership as a drawback – negative reflection on leaders/leadership (leaders are bad)
Intervention Impact	Positive change
	Negative change
	No change
	LSE - Specific reference to impact on LSE constructs

Appendix B

Final Categories and Coding Scheme

Category	Codes and Child-Codes	Descriptions (as necessary)
Working with others	Bossy	e.g. references to assertiveness over others in a non-collaborative manner reflecting leadership
	Not Bossy	
	Standing Up for Others / to Bullying	
	Nice/Kind	treating others how you want to be treated
	Modeling	setting (or is) an example for others/Looked up to/respected/leads by example
	Listening	open to other opinions, feelings, perspectives
	Guiding Others	Helping others make good choices, be better, or do the right thing
	Followership	Is followed by others, looked to for direction, etc. Leadership explained in terms of followers giving them the authority/position/leadership
	Putting Others First	treating others as you would want to be treated, being the "bigger person"
	Collaboration	inclusive/influence/connections with others/communication, awareness of working/interacting with others and general references to positive interactions with others
	Helping/Caring for Others	thinking about or awareness of others
Personal Leadership Thoughts		personal connection to leadership/Self perceptions of leadership potential
	I am a Leader	
	Popularity	references to leadership in terms of popularity
	Examples	specific names of classmates, teachers, world and sports leaders, etc.
	Character	references to honesty, courage, hard work, good morals, etc.
	Self-Belief Action	being true to self/standing up for beliefs/not caring what others think/doing the right thing in moral terms (but not in task choice decision making terms - that is "Task Decision Making")
	Positional	e.g. student council, captains, teachers, admin, and other references to things fixed in place beyond someone's control

Category	Codes and Child-Codes	Descriptions (as necessary)
	Anyone Can be a Leader	leadership by many different people
Outward Leadership Perceptions		understandings, perceptions, opinions on what it takes and how its done
	Processes and Actions	references to any number of leadership tasks such as delegation, motivating, setting plans, taking charge, takes risks, etc. – three child codes:
	Steps Up	takes charge/takes responsibility/takes control, speaking up
	Task Decision Making	makes good decisions/choices/doing the right thing as relates to tasks/processes and not moral choices (that falls under "Self Belief Action")
	Outcome Oriented	accomplishes goal
	Complexities	language exhibiting two or more potentially conflicting ideas that must performed by leaders, language reflecting difficulties of leadership
	Reflexive definition	use of lead or leadership in definition of same
	Studious	paying attention in class, participating in class, does homework, etc.
	Grade Leadership Positive	positive reflection on leaders/leadership (leaders make the world better, we can't move forward without leaders)
	Grade Leadership Negative	negative reflection on leaders/leadership (leaders are bad)
	Grade Leadership Absent	no leaders in grade, world, etc.
Intervention Impact	Positive change	
	Negative change	
	No change	
	LSE reference	specific reference to impact on LSE based on five-item scale

Appendix C

Code Counts and Student Response Numbers per Question

	Question 1 BL	Question 1 EOY	Question 2 BL	Question 2 EOY	Question 3 EOY
Working with others	59	53	52	40	26
Followership	7	6	2	2	
Modeling	21	15	4	5	
Bossy			1	2	
Not bossy	4	1	2	2	1
Collaboration	13	11	6	4	18
Nice/kind	2	8	10	9	
Listening	6	11	4		6
Guiding others	15	9	10	7	
Putting others first	4	7	3	1	1
Standing up for others or to bullying	6	2	13	2	
Helping/caring for others	12	9	16	14	5
Personal Leadership Thoughts	35	27	34	31	7
Character	13	13	8	4	1
I am a leader			1		5
Anyone can be a leader			1	5	2
Positional	2	2	7	10	
Popularity	1	2	2	2	
Self Belief Action	24	13	16	7	
Examples	1			4	
Outward Leadership Perceptions	51	43	33	32	12
Processes and Actions	43	31	22	15	9
Outcome Oriented	11	3	2		
Steps Up	36	29	16	10	3
Task Decision Making	9	3	7	6	5
Complexities	2	2	1		3
Grade Leadership Positive	3		4	7	2
Grade Leadership Negative			2	1	
Grade Leadership Absent			2	4	
Reflexive Definition	8	9	1	4	
Studious			2	3	
Intervention Impact					80
Positive Change					56
Negative Change					
No Change					24

	Question 1 BL	Question 1 EOY	Question 2 BL	Question 2 EOY	Question 3 EOY
LSE Reference					32
Total Student Responses	89	86	88	85	83

Notes: Question 1 = What is a leader?
Question 2 = What does leadership look like in your grade?
Question 3 = How has participating in Leadership Development in PE made you think or act differently this year?
BL = Baseline
EOY = End of Year

Appendix D

Percentages of Codes to Student Reponses

	Q1 BL	Q1 EOY	Q1 Comp	Q2 BL	Q2 EOY	Q2 Comp	Q3 EOY
Working with Others	66.3	61.6	-4.7	59.1	47.1	-12.0	31.3
Followership	7.9	7.0	-.9	2.3	2.4	.1	.0
Modeling	23.6	17.4	-6.2	4.5	5.9	1.3	.0
Bossy	.0	.0	.0	1.1	2.4	1.2	.0
Not bossy	4.5	1.2	-3.3	2.3	2.4	.1	1.2
Collaboration	14.6	12.8	-1.8	6.8	4.7	-2.1	21.7
Nice/Kind	2.2	9.3	7.1	11.4	10.6	-.8	.0
Listening	6.7	12.8	6.0	4.5	.0	-4.5	7.2
Guiding Others	16.9	10.5	-6.4	11.4	8.2	-3.1	.0
Putting Others First	4.5	8.1	3.6	3.4	1.2	-2.2	1.2
Standing Up for Others / to Bullying	6.7	2.3	-4.4	14.8	2.4	-12.4	.0
Helping/Caring for Others	13.5	10.5	-3.0	18.2	16.5	-1.7	6.0
Personal Leadership Thoughts	39.3	31.4	-7.9	38.6	36.5	-2.2	8.4
Character	14.6	15.1	.5	9.1	4.7	-4.4	1.2
I am a Leader	.0	.0	.0	1.1	.0	-1.1	6.0
Anyone Can be a Leader	.0	.0	.0	1.1	5.9	4.7	2.4
Positional	2.2	2.3	.1	8.0	11.8	3.8	.0
Popularity	1.1	2.3	1.2	2.3	2.4	.1	.0
Self-Belief Action	27.0	15.1	-11.9	18.2	8.2	-9.9	.0
Examples	1.1	.0	-1.1	.0	4.7	4.7	.0
Outward Leadership Perceptions	57.3	50.0	-7.3	37.5	37.6	.1	14.5
Processes and Actions	48.3	36.0	-12.3	25.0	17.6	-7.4	10.8
Outcome Oriented	12.4	3.5	-8.9	2.3	.0	-2.3	.0
Steps Up	40.4	33.7	-6.7	18.2	11.8	-6.4	3.6
Task Decision Making	10.1	3.5	-6.6	8.0	7.1	-.9	6.0
Complexities	2.2	2.3	.1	1.1	.0	-1.1	3.6
Grade Leadership Positive	3.4	.0	-3.4	4.5	8.2	3.7	2.4
Grade Leadership Negative	.0	.0	.0	2.3	1.2	-1.1	.0

	Q1 BL	Q1 EOY	Q1 Comp	Q2 BL	Q2 EOY	Q2 Comp	Q3 EOY
Grade Leadership Absent	.0	.0	.0	2.3	4.7	2.4	.0
Reflexive Definition	9.0	10.5	1.5	1.1	4.7	3.6	.0
Studious	.0	.0	.0	2.3	3.5	1.3	.0
Intervention Impact	.0	.0	.0	.0	.0	.0	96.4
Positive Change	.0	.0	.0	.0	.0	.0	67.5
Negative Change	.0	.0	.0	.0	.0	.0	.0
No Change	.0	.0	.0	.0	.0	.0	28.9
LSE Reference	.0	.0	.0	.0	.0	.0	38.6

Notes: Q1 = What is a leader?
Q2 = What does leadership look like in your grade?
Q3 = How has participating in Leadership Development in PE made you think or act differently this year?
BL = Baseline
EOY = End of Year
Comp = Comparison

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