

EXECUTIVE MASTERS OF BUSINESS ADMINISTRATION
SIGNATURE PROJECT

DOES EVIDENCE EXIST THAT SERVICE LEARNING FACILITATES THE
DEVELOPMENT AND/OR ENHANCEMENT OF TRANSFORMATIONAL
LEADERSHIP QUALITIES IN MANAGERS?

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Title of Signature Project: Does Evidence Exist that Service Learning Facilitates the Development and/or Enhancement of Transformational Leadership Qualities in Managers?

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Table of Contents

LIST OF CHART & TABLES	vi
ABSTRACT.....	viii
SECTION I – INTRODUCTION	iii
SECTION II – LITERATURE REVIEW	4
2.1 Introduction	4
2.2 Transformational Leadership.....	4
2.3 Service Learning	6
2.4 Literature Addressing both Transformational Leadership & Service Learning.....	9
2.5 Potential of Transformational Leadership & Service Learning in the Business Field.....	10
SECTION III – STUDY SELECTION PROCESS.....	12
3.1 Inclusion Criteria	12
3.2 Literature Search Process and Results.....	12
SECTION IV – STUDY ANALYSIS	15
4.1 Study Evaluation Methodology.....	15
4.2 Individual Study Analysis.....	18
4.2.1: Study 1	18
4.2.2: Study 2	27
4.2.3: Study 3	35
4.2.3: Study 3	41
4.2.5: Study 5	47
4.2.6: Study 6	54
4.3 Study Synopsis	61
SECTION V – CONCLUSION.....	67
SECTION VI - REFERENCES.....	69

LIST OF CHART & TABLES

CHART 1.0 COMMON GROUND	10
TABLE 1.0 HOW UNDERGRADUATES ARE AFFECTED BY SERVICE PARTICIPATION	18
TABLE 1.1 SERVICE PARTICIPATION BY LOCATION OF SERVICE	24
TABLE 1.2 EFFECTS OF SERVICE PARTICIPATION ON THE DEVELOPMENT OF CIVIC RESPONSIBILITY	25
TABLE 1.3 EFFECTS OF SERVICE PARTICIPATION ON STUDENTS' ACADEMIC	26
TABLE 1.4 EFFECTS OF SERVICE PARTICIPATION ON THE DEVELOPMENT OF LIFE SKILLS	27
TABLE 2.0 FROM COMMUNITY SERVICE TO SERVICE-LEARNING LEADERSHIP: A PROGRAM PERSPECTIVE.....	28
TABLE 2.1 QUANTITATIVE RESULTS FROM THE LEARNER DIVERSITY COURSE	34
TABLE 2.2 LEARNER DIVERSITY: THEMES AND KEY PHRASES FROM 158 RESPONSES	34
TABLE 2.3 QUANTITATIVE RESULTS FROM SOCIAL METHODS COURSE	35
TABLE 2.4 SOCIAL STUDIES METHODS: THEMES AND KEY PHRASES	36
TABLE 3.0 MEASURING SOCIAL CAPITAL AS AN OUTCOME OF SERVICE LEARNING	37
TABLE 3.1 PEARSON PRODUCT MOMENT CORRELATIONS BETWEEN SELECTED SCALES AND SERVICE LEARNING	41
TABLE 3.2 PREDICTING SOCIAL CAPITAL FACTOR SCORE BASED ON SELECTED VARIABLES	42
TABLE 3.3 PREDICTING TRUST FACTOR SCORE	42
TABLE 3.4 PREDICTING NETWORKS FACTOR SCORE	43
TABLE 4.0 A TRANSNATIONAL COMPARISON OF SERVICE-LEARNING AS A TOOL FOR LEADERSHIP DEVELOPMENT	44
TABLE 4.1 SERVICE LEARNING COURSE EXPERIENCES	50
TABLE 4.2 PERSPECTIVES ON LEADERSHIP AND RELATED LEARNING OUTCOMES	50
TABLE 4.3 PERSPECTIVES ON LEADERSHIP AND THE ROLE OF EDUCATION	50
TABLE 4.4 TEACHING TECHNIQUES AND LEADERSHIP OUTCOMES.....	51
TABLE 5.0 DEVELOPING RESPONSIBLE GLOBAL LEADERS	52
TABLE 5.1 INDIVIDUAL LEARNING OUTCOMES IDENTIFIED ANALYSIS	59
TABLE 6.0 A META-ANALYSIS ON THE EFFECTS OF SERVICE-LEARNING	61

TABLE 6.1 LEARNING OUTCOMES OF SERVICE LEARNING	66
TABLE 6.2 STUDIES INCLUDED IN THE META-ANALYSIS	67
TABLE 6.3 META-ANALYTIC ESTIMATES OF THE EFFECT OF SERVICE LEARNING	68
TABLE 6.4 EXPLORATORY MODERATOR ANALYSIS	68
TABLE 7.1 INSPIRING FOLLOWERS TO COMMIT TO A SHARED VISION	69
TABLE 7.2 DEMONSTRATE INNOVATIVE PROBLEM SOLVING	71
TABLE 7.3 DEVELOP FOLLOWERS' CAPACITY	73

ABSTRACT

There is widespread agreement that transformational leadership is a model of leadership that has come of age and the qualities/characteristics of transformational leaders are greatly desired in leaders within our organizations today. However, in a time of financial restraint when organizations are cutting development training dollars they are looking for unique ways to provide this training at lower costs.

Community-based service learning is a form of experiential education where learners take part in activities that address individual and community needs with a developed curriculum designed to engage learners and promote their learning.

It would appear that the two, transformational leadership and service learning, may inherently work together to present the characteristics/qualities that organizations are looking for in their leaders while providing an opportunity to develop/enhance transformational leadership qualities in managers, take corporate social responsibility to a deeper level within the communities, and provide management development at a low-cost or even a profit in the form of goodwill.

This study investigates the following question: “Does evidence exist that service learning facilitates the development and/or enhancement of transformational leadership qualities in managers?” The paper undertakes a systematic review focussing on six studies related to the above question.

None of the studies directly address the research question; however, the studies did provide evidence that service learning develops some elements necessary for transformational leadership. While gaps remain and the question cannot yet be directly answered conclusively, evidence to date is encouraging.

Key words: Transformational leadership, service learning, critical thinking, social responsibility, integrity, leadership.

SECTION I – INTRODUCTION

I read and I forget, I see and I remember, I do and I understand.

... Confucius

Transformational leadership is seen as a model of leadership that has come of age. Current literature points to transformational leadership as a most effective leadership style where transformational leaders inspire, motivate, support, and work toward the best interests of the team (Karnes & Bean, 1996; Ross & Smyth, 1995).

The leadership characteristics embodied in this model are highly sought by organization leadership development programs. Transformational leaders can inspire followers and transform lagging organizations into extremely effective ones (Yukl, 1994; Bryman, 1998; Bass, 1998). These skills can be taught in business leadership programs and in the workplace through on-line training and in-house leadership development training sessions. However, in a time of financial restraint when organizations are cutting development training dollars they are looking for unique ways to provide this training at lower costs. One possible method is service learning. Philosophers as far back as Plato and Socrates pointed to the need for actively engaging students in learning and since their time this need has continued to appear in theories of educational reform.

From a learner's perspective, service learning engages participants in meaningful and personally relevant service; promotes self-awareness; enhances appreciation of diversity; and increases academic integrity, social responsibility, and critical thinking skills (Clayton, Ash, Bullard, Bullock, Moses, Moore, O'Steen, Stallings, & Usry, 2005). From an organizational perspective, participation in community service can enhance a businesses' image and generate profits (McAlister & Ferrell, 2002; Taneja, Taneja, & Gupta, 2011). This systematic review will examine if evidence exists that service learning facilitates the development and/or enhancement of transformational leadership qualities in managers.

In order to examine the discussion of transformational leadership and service learning as they are expressed in the literature, it is important to define both terms for the purposes of this

Review. “Transformational leadership is defined as inspiring followers to commit to a shared vision and goals for an organization or unit, challenging them to be innovative problem solvers, and developing followers’ leadership capacity via coaching, mentoring, and provision of both challenge and support” (Bass & Riggio, 2006); and service learning is defined as “service-learning programs which emphasize the accomplishment of tasks to meet human needs, in combination with conscious educational growth and increase of interpersonal development” (Kendall, 1990; Astin, Vogelgesang, Ikeda, & Yee, 2000).

Stakeholders of companies and business schools are cognizant of the urgent need for leaders in their organizations to possess or develop transformational leadership qualities at a time when unethical business practices are headlines in our daily news. But, at the same time, professional development training budgets continue to be reduced. In times of fiscal restraint, companies often cut back on funding to employee development training programs (Canada Business Network, 2012). Community service learning may provide a viable option in creating an environment rich in hands-on training opportunities where transformational leadership qualities may be acquired, training expenses minimized, organizational brands enhanced, and lives enriched.

As an approaching graduate of the University of Prince Edward Island’s Executive Masters of Business Administration Program and an adult educator, I am keenly aware that people progressing into leadership roles require leadership training. It appears to me that there is an opportunity to provide current managers and future business leaders, with transformational leadership development training. I am curious to examine if transformational leadership development education/training could be gleaned through service learning opportunities.

The literature on transformational leadership is extensive (Bass, 1998; Bass & Avolio, 1994); so too is the plethora of literature on the topic of community service learning (Allen & Hartman, 2008; Andrews, 2007). This review aims to examine the question posed above through the lens of the six studies that successfully meet the study inclusion review criteria. To maximize the attainment rate of identifying all relevant work that has been undertaken regarding the development and/or enhancement of transformational leadership qualities in leaders through community service learning, search terms were developed. These search terms were grouped into

the three major search categories relevant to this review; ‘Transformational’, ‘Leadership’, and ‘Service Learning’. These search categories were then merged to generate a literature search that contained at least one of the terms from each category. After this approach was exhausted, the search for information was then broadened by dropping one of the categories.

In addition to academic database searches for published articles and studies, websites were searched for additional resources. The majority of information on the Internet regarding this topic is based out of the United States. Using the preliminary search terms, the list of studies were eventually narrowed to six studies. These studies examined questions such as: Can international service-learning programs help managers to develop the key competencies required for responsible global leadership; What impact do service-learning programs have on social capital post-graduation; How does service learning affect students; What teaching *techniques best support students’ enhanced understanding and development of leadership skills*, Can social capital be measured quantitatively as an outcome of a service-learning program, and The effects of service-learning on the social, personal, and cognitive outcomes of learning of service-learning. A more in-depth explanation of the study selection criteria will be provided in Section III of this report.

The format of the report will proceed as follows:

- Section II – Literature Review: Literature review of transformational leadership, service learning, and supporting literature;
- Section III – Selection Process: Criteria for studies to be included in review;
- Section IV – Study Analysis: Detailed examination of the selected studies; and
- Section V – Conclusion: Overall summary and recommendations for future research.
- Section VI - References

SECTION II – LITERATURE REVIEW

2.1 Introduction

For decades research has been conducted to discover the traits and characteristics of successful leaders. Within the category of transformational leadership, we find a conceptualization of what some of these factors may be. Transformational leadership is said to happen “when one or more persons engage with others in such a way that the leaders and the followers raise one another to a higher level of motivational and morality” (Bass & Avolio, 1993), or as Tom Peters (1999) writes, “Leaders don't create followers, they create more leaders” (p.1).

Likewise, for decades many researchers, Tucker, McCarthy, Hoxmeier & Lenk (1998); Astin, Vogelgesang; Ikeda & Yee (2000); Eyler, Giles, Stenson, & Gray (2001); Moely, McFarland, Miron, Mercer, & Ilustre, (2002) have attempted to isolate the benefits of service-learning. Leadership skill enhancement is often suggested as a benefit of service learning opportunities, Stafford, Boyd, & Lindner (2003).

This review will provide a broad examination of the literature on both transformational leadership, particularly the development of this leadership style, and service learning effectiveness in enhancing leadership characteristics. The literature which combines the topics of transformational leadership and service learning will then be explored.

2.2 Transformational Leadership

James Burns first introduced the term transformational leadership in 1978 (Bass & Riggo, 2006). Burns believed that transformational leadership occurred when leaders motivate others to action by appealing to shared values and by satisfying the higher order needs in people, such as their ambitions and hopes. Burns’ theory of transformational leadership evolved in part from Maslow’s Hierarch of Needs, Kohlberg's Stages of Moral Development, and Weber's Theory of Leadership and Authority.

Bernard Bass expanded on Burns’ ideas and in 1985 theorized that transformational leaders were able to inspire people to move past their own interests and put the needs of their companies

first. He implemented ways of measuring Bass' Transformational Leadership Theory with the Multifactor Leadership Questionnaire. Within this questionnaire the following four components of transformational leadership were measured: Intellectual stimulation – encourage creativity among followers and provide environments of opportunity; Individualized consideration – keep communication open so there can be an atmosphere of sharing and recognition can be provided to the people; Inspirational motivation – possess a clear vision and articulate it in a way that builds the same motivation in others; and Idealized influence – serve as a trusted and respected role model.

Transformational leadership is built on the foundation of mutual empowerment, in which all parties are allowed to work together to the best of their ability to achieve a shared goal. It is important to note that, in the process of this journey, both the leader and the follower are thought to be transformed (Plas, 1996). The focus of transformational leadership is the promotion of innovation and change. According to transformational leadership theory, followers are thought to need a sense of mission. Leaders must inspire in their followers a sense of purpose that goes far beyond the development of interpersonal relationships or an appropriate extrinsic reward for a job well done (Bass and Avolio, 1993). To choose to follow, people must feel that they are endeavouring to do something that is worthwhile and important. Benjamin Wright (1999) stresses that the right kind of leadership is “fundamentally about nurturing a better quality of humanity” (p. 26). “Leadership is about seeking to clarify what is most good, most true and most worthwhile and why it is such and then of seeking to create that environment of discipline, order, ritual, tradition and trust which will best enable noble action to follow noble thought or ideal” (Wright, 1999, p. 26). While not using the term transformational leadership, Wright identifies the characteristics and traits recognized as being those of transformational leaders.

Transformational Leadership is defined for the purpose of this review as inspiring followers to commit to a shared vision and goals for an organization or unit, challenging them to be innovative problem solvers, and developing followers' leadership capacity via coaching, mentoring, and provision of both challenge and support (Bass & Riggio, 2006).

Findings in literature regarding transformational leaders and transformational leadership identify that these leaders:

- Can have profound impacts on people by causing shifts in thinking, beliefs, and even values (Kuhnert & Lewis, 1987);
- Are successful in reaching the goals of the organization, increasing the commitment to the organization and strengthening processes (Den Hartog, Van Muijen, & Koopman, 1997);
- Are experts at transforming people from followers to leaders (Van Linden & Fertman, 1998); and
- Are proactive, raise follower awareness for the greater collective interest, and motivate followers to achieve what were once thought to be out of range goals (Antonakis, Avolio, & Sivasubramaniam, 2003).

While what transformational leaders ‘do’ is identified in the material above, how transformational leadership is developed is not addressed. There appears to be no conclusive evidence-based materials on whether transformational leadership is a natural trait, a set of competencies that are acquired, or a combination of both of these. There is agreement that what leaders use in conducting their business comes from experience more than formal training (LaHote & Simonetti, 1999; McCall, 2004; Thomas & Cheese, 2005). However, Kuhnert & Lewis (1987) offer that leadership development is closely tied to adult learning theory which is a process that occurs beyond formalized learning. Likewise, Northouse (2001) suggests that because transformational leadership spans such a diverse range within leadership, there are no specific steps for a manager to follow, but that becoming a transformational leader is a process.

Transformational leadership courses are being taught in post-secondary institutions: Harvard Business School, Queen’s University, University of Winnipeg, University of Florida, and Georgetown University to list but a few. It is not within the breadth of this review to discuss with accuracy if these programs are successful, but merely to note that curriculum does exist across a large educational sector to develop transformational leadership skills for students.

2.3 Service Learning

The philosophical underpinnings of service learning lay in social-reform movements of the late 1800s and the educational reform movements of the early 1900s (Titlebaum, Williamson,

Daprano, Baer, & Brahler, 2004). The term service-learning was initially introduced in 1967 by Robert Sigmon and William Ramsay (Seitsinger, 2005). They felt this term would capture the embodiment of conscious educational development and the accomplishment of tasks that met deeper human needs. Jane Kendall (1991), an authority on service learning stated that she had located at least 147 different terms used to express the concept of service learning. For the purpose of this review, the definition of service learning will be: "Service-learning programs emphasize the accomplishment of tasks which meet human needs, in combination with conscious educational growth." (Kendall, 1990, p. 40). Further to Kendall's definition, Howard (2001) posits, reflection about the service experience is an essential element of service learning and distinguishes it from internships or on-the-job training situations. Service-learning is a "course-based, credit-bearing educational experience in which students (a) participate in an organized service activity that meets identified community needs and (b) reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of personal values and civic responsibility" (Bringle, Hatcher, & McIntosh, 2006, p. 1).

Literature on service learning identifies the following aspects:

- Training, supervision, monitoring, support, recognition and evaluation to meet service and learning goals are essential components of service learning opportunities (Kendall, 1991);
- Service learning is a form of experiential education in which students take part in activities that address human needs with structured opportunity intentionally designed to promote student development (Jacoby, 1996);
- The positive emotions associated with community projects also facilitate the internalization of civic values (Corbet & Kendall, 1999; Paulins, 1999 in Steiner & Watson, 2006);
- Increases interpersonal development, the ability to work with others, and communication and leadership skills (Astin et al, 2000); and
- As a method of teaching and learning, service-learning aims to enrich the lives of students by engaging them in meaningful hands-on service to address real-life needs in the communities while also gaining valuable knowledge and skills that connect with classroom studies (Schoenfeld, 2006, p. 1).

The objectives of service learning are to provide learners ways to address needs in their communities through their service and to use their experiences to then facilitate the learning process in formalized educational settings. The Canadian Alliance for Service Learning provides

this statement to visitors to their web site: “Students, educators, and communities build partnerships to learn from each other while working together to strengthen individuals, *communities, and society*” (2012, p. 1).

Service learning can act as a medium to embed students in experiences that may become crucible moments which help develop one’s leadership abilities. Gemmel & Clayton (2009) advocate that service learning can be used in any discipline, department, program, course, or activity; whether it is appropriate to use it in any given instance is a matter of the fit between identified goals and the design process involving the integration of learning with service, not the addition of service to learning, which in turn suggests an organized, structured activity or set of activities. For those institutions implementing service learning, an assortment of objectives and standards exist for determining effective service-learning practices are contingent on which institution and services are involved. The following objectives have been found in several of the standards/policies of institutions participating in service learning. The Ontario Council of Academic Vice-Presidents (OCAV), Laurier Centre for Community Service-Learning at Wilfred Laurier University, and The Council for the Advancement of Standards in Higher Education, standards and guidelines include, but are not limited to the following:

- Meaningful Service: Engages participants in meaningful and personally relevant service;
- Link to Curriculum: Intentionally used as an instructional strategy to meet learning goals/and or content standards;
- Reflection: Incorporates multiple challenging reflection activities that are ongoing and that prompt deep thinking and analysis about oneself and one’s relationship to society;
- Diversity: Promotes an understanding of diversity and mutual respect among all participants;
- Partnerships: Collaborative, mutually beneficial, and addresses community needs; and
- Progress Monitoring: Assesses the quality of implementation toward specified goals and uses results for improvement and sustainability.

In addition, the following areas, which provide potential of student learning, include but are not limited to:

- Critical thinking and analytical skills;

- Ability to apply learning from one or more areas outside the discipline;
- Ability to evaluate the appropriateness of different approaches to solving problems;
- Ability to communicate with a range of audiences;
- An understanding of the limits of their own knowledge and of the consequences of limits;
- Ability to work effectively with others;
- Ability to identify and address own learning needs;
- Academic integrity and social responsibility;
- Ability to evaluate the appropriateness of different approaches to solving problems;
- Civic values, knowledge, and skills;
- Appreciation of diversity;
- Realistic self-appraisal; enhanced self-esteem; sense of personal efficacy;
- Increased awareness of the world; and
- Leadership development (Astin, et. al., 2000; Clayton, Ash, Bullard, Bullock, Moses, Moore, O'Steen, Stallings, & Usry, 2005).

Many higher education professionals exalt the benefits of having service learning embedded into post-secondary business programs. Studies indicate that service learning has a positive impact on students' attitudes toward community engagement and citizenship, as well as their growth in interpersonal activities, civic responsibility, problem solving skills, and development of communication and leadership skills (Zlotkowski, 1996; Eyler & Giles, 1999; Moely, McFarland, Miron, Mercer & Ilustre, 2002).

The most pronounced difference between traditional classroom instruction and service learning is the translation of student knowledge into action. While the link exists between business programs and service learning, there appears that a gap exists for employees in businesses who are not part of an educational program to acquire and enhance transformation leadership education/ training through service learning.

2.4 Literature Addressing both Transformational Leadership & Service Learning

While this paper discusses transformational leadership and service literature it is done so in isolation of each other. There are scant academic materials available in which a discussion is

held on the two topics in relation to each other, and to this researcher's knowledge, no academic studies exist that are concentrated on these areas in unison. It is however plausible that one can make general anecdotal comparisons in relation to common ground for the two areas as seen in Chart 1.0 below.

Chart 1.0 Common Ground

Transformational Leadership Characteristics	Service Learning Characteristics
Puts team before self	Promotes skills related to teamwork and community
Lead by example	Empowers participants
Uses critical thinking skills to analyze issues	Offers opportunities to engage in problem solving using critical analysis of complex situations
Listens and provides feedback	Is a dynamic and reflective process
Engender trust by doing what they say they will do	Immediately see impact of actions and decisions
Demonstrate respect and concern for others	Challenges values and provides situations to work with people from diverse backgrounds
View failures as learning opportunities	Encourages appropriate risk taking and promotes a learning environment
Possesses visionary leadership	Deeper learning is acquired as the results are uncontrived and immediate
Display a high level of moral and ethical conduct	Fosters civic responsibility

While no literature was found that exactly addresses the two concepts together, by relaxing the definitions of one or the other concepts, studies have been found that shed light on the relationship between these concepts. This paper reviews those studies.

2.5 Potential of Transformational Leadership & Service Learning in the Business Field

The list of corporate leaders who have taken part in unethical practices in this decade is long and disconcerting. The public's attitude regarding corporate business is not favourable; expectations are rising and tolerance for substandard ethics is diminishing (Callahan, 2004). The need for leaders to possess the characteristics and traits associated with transformational leaders is certainly evident if there is to be rebuilding of trust in businesses. Lynette Osiemo remarks, "It is imperative for leaders to understand the society in which they live" (2012, p. 139). But how in

this climate of cost-cutting training initiatives, are new managers going to receive leadership training? Is it possible that service learning could become the environment where this training occurs?

SECTION III – STUDY SELECTION PROCESS

To identify the relevant work that has been conducted on transformational leadership through service learning a combination of search terms were developed. The major categories became “Transformational Leadership”, “Service Learning”, “Service Learning and Transformational Leadership”, and “Transformational Leadership and Service Learning”. The author found it challenging to find data that was exactly specific to the topic and there was a lack of evidence-based material from which to draw. It was necessary to be keenly aware of inferences and generalizable concepts from the literature. As well, searches were limited to articles published in English. English language journals are predominantly published in developed countries and this may consequently limit exposure to the topics.

3.1 Inclusion Criteria

The following criteria were used to isolate materials from the plethora of information related to the above topics that would be included for analysis for this review:

- Peer-reviewed;
- Published between 1990 and 2012;
- Published in English language;
- The document includes any of the following terms:
 - “Service Learning”
 - “Transformational Leadership”; and
- Empirical studies.

3.2 Literature Search Process and Results

The following criteria were used to isolate materials suitable for review. Peer-reviewed articles, studies, and reports that appeared to discuss transformational leadership and service learning or showed a strong propensity to the two ideologies were then selected and retrieved.

An initial broad topic search on July 23, 2012 using the keywords “Transformational Leadership” was entered into Google Scholar sorting by relevance with 89,700 search results confirmed. This pool was then refined by adding the keyword “characteristics” resulting in 52,800 documents being identified. From this point the key words “service learning” were added

formulating the search on the following keywords: “Transformational Leadership and Service Learning” this search produce no article matches. A new search was then conducted using the key words “Service Learning and Transformational Leadership”, again no matches were produced.

Over the course of one week, computer searches with the keywords “Service Learning” were completed resulting in 2,500,000 matches. A query of the key words “Service Learning Studies” produced 109,000 results. A search consisting of the terms “Service Learning” in Canadian post-secondary educational business programs produced 1,470,000 results. These results were then refined to identify literature produced between years 1990-2012; as per the study inclusion criteria, using the custom time search tool available on Google Scholar, displaying 107 search results.

A search using the above noted terms was then conducted using the following databases and resources: Several databases within EBSCO such as PsycInfo, Business Source Premier, etc. Academy of Management Journal, JSTOR, Academy of Management Learning and Education, SAGE Journals, Business Education Quarterly, Journal of Business Ethics, various business and educational journals, and texts. From these sites, 142 documents were shown to meet the criteria developed for the inclusion in the review (see criteria above). As there was much duplication between the 107 matches displayed on the Google Scholar site and documents located through individual database searches, the total number of documents was reduced to 66. These documents were then downloaded, signed out, or ordered through inter-library loan from the University of Prince Edward Library or Holland College Library.

The initial sort of these 67 documents was refined to include 25 (6 quantitative and 19 qualitative) studies and 42 articles by using the inclusion criteria developed – peer reviewed, published in English language, empirical studies, transformational leadership and/or service learning focused, and written between 1990 - 2012 inclusive. A second review and sort of the above documents was completed by conducting an in-depth scan of the 67 documents for relevance to this systematic review and thus refined the pool to 10 studies and 32 articles.

These ten studies were sent to Signature Project Advisor, Professor Don Wagner, for review and potential approval. On September 9, 2012, of those ten studies, six were seen as being both comprehensive and credible by Professor Wagner and these were chosen for use in this review.

These studies are:

- 1) Pless, Maak, & Stahl (2011). Developing Responsible Global Leaders through International Service Learning Programs: The Ulysses Experience at PricewaterhouseCoopers. *Academy of Management Learning & Education*, 10 (10) 237-260;
- 2) Astin & Sax (1998). How Undergraduates Are Affected by Service Participation. *Journal of College Student Development*, 39(3), May-June, 251-263;
- 3) D'Agostino (2010). Measuring Social Capital as an Outcome of Service Learning. *Innovative Higher Education*, May, doi:10.1007/s10755-010-9149-5;
- 4) Yorio & Ye (2012). A Meta-Analysis on the Effects of Service-Learning on the Social, Personal, and Cognitive Outcomes. *Academy of Management Learning & Education*, 11 (1), 9-27;
Note: The individual papers in this meta-analysis are not in the list of papers that are being analyzed due to scope and time constraints but the overall meta-analysis is being used as it provides substantial data from forty individual studies.
- 5) Colby, Bercaw, Clark, & Galiardi (2009). From community service to service-learning leadership: a program perspective. *New Horizons in Education*, 57(3) December; and
- 6) Cress, Yamashita, Durate, & Burns (2010). A transnational comparison of service-learning as a tool for leadership development. *International Journal of Organizational Analysis*, 18(2), pp. 228-244.

SECTION IV – STUDY ANALYSIS

4.1 Study Evaluation Methodology

An analysis of the six studies used in this systematic review will undergo a detailed quality assessment using a checklist for each of the six studies. Ordinarily, the evaluations would be completed by a panel of field experts; however, as that would be beyond the scope of this project I will be undertaking the evaluations. This checklist will consist of the following components and will be offered up in table format:

- **Research Question:** The first component of the table identifies the research question(s) for that study.
- **Research Method(s):** The following component in the table describes the research methodology employed in that particular study.
- **Sample:** The third component of the table provides information on the sample, including the sample size, demographics, type of participants, and how the participants were recruited.
- **Intervention: Using Service Learning:** The objective of this component in the table is to provide an evaluate whether the service learning used in the study matches the attributes of service learning as it is described in the literature. This evaluation will be undertaken by determining if the service learning described in the study has the following three traits as taken from Jacoby's (1996) and Howard's (2001) definition:
 - A form of experiential education in which students engage in activities that address human and community needs;
 - Structured opportunities intentionally designed to promote student learning and development; and
 - A reflection about service experience.
- **Construct Validity: Measurements of Leadership Development:** The objective of this element is to evaluate the degree to which the collected data actually measures the development of transformational leadership traits. As none of the six studies explicitly

focuses on transformational leadership, but rather on leadership in a more general sense, this evaluation will be done in two stages.

- The first stage will focus on the degree to which the data collected measures what the authors intended. As with most studies in the social sciences, collected data from humans normally carries risks of biases and distortions. These potential biases will be identified.
- The second stage will focus on the degree to which the collected data reflects the traits of transformational leadership. This will be done by considering the extent to which the collected data provides evidence on Bass and Riggo's transformational leadership traits, as follows:
 - Inspire followers to commit to a shared vision and goals for an organization or unit;
 - Demonstrate innovative problem solving;
 - Develop followers' leadership capacity via coaching, mentoring, and provision of both challenge and support (Bass & Riggo, 2006).

Causation: The fact that a statistical relationship exists between service learning and the development of transformational leadership traits does not explicitly imply that the service learning caused the development of those leadership traits. This is an important consideration in the social sciences, where controlled experiments cannot be done as easily as they are done in the “natural” sciences.

In principle there are three potential casual relationships where correlation is observed:

- (1) Hypothesized causation: In each study in this systematic review it is hypothesized that service learning causes, or enhances, the development of leadership traits. In the analyses that follow, I will identify points that support the idea that causation is as hypothesized.
- (2) Reverse causation: In some empirical studies, researchers need to consider the possibility that causation works in the reverse direction. In studies examined by this systematic review, reversed causation would be where development of leadership traits causes the service learning. In these six studies it is difficult to imagine plausible stories on how that could happen, so this theoretical possibility is not addressed in these tables.

(3) Third factor causation: Another possibility is that ‘third factors’ cause both service learning and the observed outcomes. I will identify some possible ‘third factors’ that could be influencing the results.

- **Generalizability:** Section seven of the table will address the extent to which research findings and conclusions from a study conducted on a sample population can be applied to the population at large.
- **Empirical Results:** In the final section of the table the measured results of the study will be reported (usually by way of a reference to an accompanying table). As well, an interpretation of actual study results as provided by the researchers will be offered.

4.2 Individual Study Analysis

4.2.1: Study 1

This is the first study of four from which the data collected was from student subjects. “Based on entering freshman and follow-up data collected from 3,450 students attending 42 institutions with federally funded community service programs, the impact of community service participation on undergraduate student development was examined” (Astin & Sax, 1998, p. 251).

Table 1.0: Study1 – How Undergraduates Are Affected by Service Participation, by Alexander Astin, & Linda Sax (1998).

Research Question	“How will the student’s educational and personal development be affected by participating in volunteer service programs?” (1998, p. 251).
Research Method	<p>A multivariate analysis of the longitudinal survey was used in this study. According to Rencher (2002), “Using multivariate analysis, the variables can be examined simultaneously in order to access the key features of the process that produces them. Enabling us to (1) explore the joint performance of the variables and (2) determine the effect of each variable in the presence of the others” (p. xv). Voluntary follow-up mail surveys were used in the collection of data.</p> <p>“The 35 dependent variables analyzed in this study were classified into three domains of development: (a) civic responsibility (12 measures), (b) academic development (10 measures), and (c) life skills (13 measures)” (2009, p. 253).</p> <p>“The independent variables were categorized into the following six blocks:</p> <ul style="list-style-type: none"> A) Input characteristics (race, ethnicity, sex), a set of service propensity variables from the freshman survey that were found to predict college service participation. By controlling for the individual characteristics that led students to become involved in service, the researchers found they were better able to estimate the independent effects of participation; B) Student’s major and structural characteristics of the institutions (size, type, selectivity); C) Forty-one yes or no variables, each representing a single National Service’s Learn and Serve America Higher Education institution, accounting for aspects of student development that might be uniquely attributable to the specific institution attended; D) Generic service variable indicating whether the student engaged in service; E) Six interaction terms to test for possible interactions between either service and sex or service and race and ethnicity; and F) Twenty measures of service participation (e.g. duration, sponsorship, and location of service involvement) were utilized. These variables were included to test whether the specific type, location, sponsorship, and duration of service participation has an impact on student development above and beyond the effects of the generic service participation variable” (1998, p. 253).
Sample	<p>Sample Size: 3,450 (Longitudinal study)</p> <p>The data was “collected for this study as part of the Cooperative Institutional Research</p>

	<p>Program (CIRP), drawn from five consecutive administrations of the CIRP Freshman Survey (1990 – 1994) and through a follow-up survey, the 1995 College Student Survey (CSS), which was sent to selected students from all five cohorts. Additional data included Scholastic Aptitude Test scores, American College Testing Program scores, and enrollment information from the U.S. Department of Education, and the National Service’s Learn and Serve America Higher Education (LSAHE). A total of 3,450 students (2,287 women and 1,163 men) were included in the data collection process. The study was limited to 42 undergraduate institutions receiving LSAHE grants that had also participated in the CIRP Freshman Survey between 1990 - 1994. Of this group of 3,450 students 2,309 were participants during the 1994-95 academic year and 1,141 nonparticipants who constituted the control group” (1998, p. 252).</p>
Intervention: Using Service Learning	<p>“The percentage of the service participants involved in each service type was: education (73.1%), human needs (64.5%), environment (53.3%), and public safety (22.1%). These percentages exceed 100 as many of the participants performed more than one kind of service” (1998, p. 254). Table 1.2 (below) shows a specific breakdown of service participation by service activity location. The study authors note that an “issue of concern for this study is that the independent variable of central interest in this study – service participation – may also be partially confounded with college environmental variables: Some individual colleges, or certain types of colleges (e.g., highly selective), may operate service programs that are more or less effective than the typical program” (1998, p. 252).</p> <p>Following is an analysis of how well the service learning in the Astin & Sax study corresponds with my working definition of service learning.</p> <ul style="list-style-type: none"> • Students engage in activities that address human and community needs: The LSAHE programs were designed to encourage undergraduate involvement in four types of service: education, human needs, environment, and public safety (p. 254). This criterion has been met in this study. • Structured opportunities intentionally designed to promote student learning and development: Only 29% of the participants performed their service work as part of a course (p. 254). This criterion was partially met. • Reflection about service experience: This study did not specifically collect data on this trait. Of the 29% of participants involved in service courses, there may or may not have been a component of reflection on the service experience, but there was no information provided on this aspect within the study data. Any service work done outside of course-work almost certainly would contain no formal reflection process. This criterion has not been met. <p>In conclusion, service learning as treated in the Astin & Sax study showed that participants were moderately engaged in the activities of the working definition.</p>
Construct Validity – Measurements of Leadership Development	<p><u>Variables Used to Measure Leadership Development</u> Tables 1.2 to 1.4 list the variables used to measure learning outcomes.</p> <p><u>Does the Collected Data Measure what was Intended?</u> Due to the method of data collection, there is a risk that the data may be biased for some of the following reasons:</p>

	<ol style="list-style-type: none"> 1. Self-reported subjective data: Almost all of the data collected was self-reported survey data that may be affected by inaccurate or biased memories of the event(s). However, data collected from the subjects themselves is still usually considered a valuable tool in measuring leadership development (Ross, 2006). 2. Social desirability bias: The social desirability bias is a common problem in the measurement of knowledge, skills, attitudes, and behaviours. The difficulty surfaces when the behaviours and attitudes that the researchers want to measure are “socially desirable” (e.g. civic-mindedness, social responsibility) and participants are inclined to make themselves look better when they present their responses. Crowne and Marlowe (1964) consider social desirability to be a person’s need for approval that results in a response bias. 3. Non-response bias: The relatively low response rate to the follow-up survey is cause for concern as the possibility exists that researchers have not completely adjusted for all biases in variables. <p>However, this study does have a relatively large and diverse sample size and captures data from 42 institutions over a four-year time period (1998, p. 251). As well the researchers do address several potential study biases: “Weighting procedures ‘address low survey response rate (21%)’; examined the effects of service participation only after controlling for effects of student input characteristics; and controlled for the effects of the college environmental characteristics (central interest) before examining possible effects” (1998, p. 252).</p> <p><u>Transformational Leadership Traits</u></p> <p>Below is an analysis of how well the traits of transformational learning are identified within this study.</p> <ol style="list-style-type: none"> 1. Inspire followers to commit to a shared vision and goals for an organization or unit: To directly measure this trait the subjects would be required to be in a leadership position and as this study, and the next three, use students as subjects the best that can be accomplished for the purpose of this paper is to identify abilities to inspire followers. Within the context of the data captured in Table 1.2 section Students’ Commitment it is a plausible assumption that a component of the trait has been recognized in the following: <ul style="list-style-type: none"> Influence social values; and Influence political structures. <p>The above are closely compatible to shared vision and goals for a unit (in this case community). This criterion can be said to have been partially met.</p> 2. Challenge followers to be innovative problem solvers: As identified in Table 1.4 section Life Skills Outcomes: <ul style="list-style-type: none"> Ability to think critically is increased through service participation. While critical thinking skills may not be thought of as innovative problem solving, there is literature suggesting that the two constructs are inseparable and cannot be seen to its full potential without the other. “Critical skills go hand in hand with creative ones” (Scriven, 1979, p. 37). This criterion has been partially met. 3. <i>Develop followers’ leadership capacity via coaching, mentoring, and provision of both challenge and support:</i> This data can be located within the findings related to Table 1.4 section Life Skills Outcomes: <ul style="list-style-type: none"> Leadership ability; Social self-confidence; and Ability to work cooperatively with others.
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	<p>These characteristics would not be the only factors involved with the trait, but would certainly be ideal aspects of the trait. This criterion has been partially met.</p> <p>All three transformational leadership traits identified in this study partially meet the working criteria of transformational leadership.</p>
Causation	<p><u>Hypothesized Causation</u></p> <p>The hypothesized causation in this study is that participation in service during undergraduate years substantially enhances the student's academic development, life skill development, and sense of civic responsibility. The following points support the hypothesized causation:</p> <ul style="list-style-type: none"> • The participants perceive that service caused the development of the above noted traits as noted in Table 1.3 (e.g. increase in general knowledge); and Table 1.4 (e.g. ability to think critically, conflict resolution skills, and understanding of problems facing community). • The study has a control, though it is not a randomized control group. • The hypothesized causation is consistent with the theory on service learning outcomes. <p><u>Causation from Third Factors</u></p> <p>In this study, a possible cause for the development of leadership traits includes:</p> <ul style="list-style-type: none"> • Self-selection bias may be a factor within this study. Only 29% of the participants chose to experience service learning through an academic course whereas 71% choose to volunteer instead. An individual choosing to take part in a service learning activity during their undergraduate years may already possess leadership traits.
Generalizability	<p>There could be moderate risk due to the sample not being representative of the population; however, these same researchers along with two others, released another study in 2000 from the Higher Education Research Institution at UCLA and reported that longitudinal changes in students who completed community service and/or service learning courses. Findings of the second study show that service learning positively affects student's attitudes about activism, racial understanding, and choice of service careers (on-going community involvement). The findings of these two studies provide generalizability evidence that a service learning course promotes student development which in past could be dismissed as anecdotal (Gelmon & Billig, 2007).</p>
Empirical Results	<p>Tables 1.2 – 1.4 (below) provide detailed study results.</p> <p>Focusing on the data most closely tied to transformational leadership, the results are as follows:</p> <ul style="list-style-type: none"> • Influence social values (Table 1.2): <ul style="list-style-type: none"> ○ For all four service learning categories, (Education/Human needs/Public Safety/Environment) service learning has a positive coefficient in predicting students' increased commitment to influence social values; ○ An inherent component required to inspire followers to commit to a shared vision and goals for an organization or unit and to develop followers' leadership capacity via coaching, mentoring, and provision of

	<p>both challenge and support; and</p> <ul style="list-style-type: none"> ○ Is statistically significant at the 0.1% level. • Influence political structures (Table 1.2): <ul style="list-style-type: none"> ○ For all four service learning categories, (Education/Human needs/Public Safety/Environment) service learning has a positive coefficient in predicting students' increased commitment to influence political structures; ○ Possessing an understanding and ability to influence political structures would be a component that would be required to inspire followers to commit to a shared vision and goals for an organization or unit; and ○ Is statistically significant at the 0.1% level. • Leadership ability (Table 1.4): <ul style="list-style-type: none"> ○ For all four service learning categories, (Education/Human needs/Public Safety/Environment) service learning has a positive coefficient in predicting students' increased leadership outcomes; ○ This question was directly addressed in this survey; and ○ Is statistically significant at the 0.1% level. • Social self-confidence (Table 1.4): <ul style="list-style-type: none"> ○ For all four service learning categories, (Education/Human needs/Public Safety/Environment) service learning has a positive coefficient in students' reported self-confidence outcomes; ○ Possessing this trait would be a component that would be valuable in innovative problem solving and developing followers' leadership capacity via coaching, mentoring, and provision of both challenge and support; and ○ Is statistically significant at the 0.1% level. • Ability to work cooperatively with others (Table 1.4): <ul style="list-style-type: none"> ○ For all four service learning categories, (Education/Human needs/Public Safety/Environment) service learning has a positive coefficient in predicting students' reported ability to work cooperatively with others; ○ Possessing this trait would be a component that would be valuable in innovative problem solving and developing followers' leadership capacity via coaching, mentoring, and provision of both challenge and support; and ○ Is statistically significant at the 0.1% level. <p>These findings are subject to risks in data collection identified in the 'construct validity' section above.</p>
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Table 1.1: Service participation by location of service (N = 2,309)

Location of service	%
College or university	51.8
Elementary or secondary school	38.5
Church or other religious organization	36.7
Social or welfare organization	28.8
Hospital or other health organization	25.9
Community center	22.5
Park or other outdoor area	20.3
Other private organization	17.0
Sport or recreational organization	14.1
Other public organization	12.8
Local service center	12.0
Political organization ^a	5.6

Note. Percentages exceed 100 because many respondents marked more than one category.

^a Learn and Serve America Higher Education students citing involvement in political organizations also cited involvement in other service locations. These results do not suggest that Corporation for National Service funds were used to support participation in political organizations.

(Alexander Astin, & Linda Sax, 1998)

Table 1.2: Effects of service participation on the development of civic responsibility

Civic Responsibility Outcomes	Type of Service			
	Education	Human Needs	Public Safety	Environment
Students' Commitment to:				
Participate in a community action program	.32**	.33**	.24**	.30**
Help others who are in difficulty	.17**	.24**	.16**	.13**
Help promote racial understanding	.18**	.21**	.18**	.20**
Become involved in programs to help clean-up the environment	.07*	.07*	.04	.25**
Influence social values	.13**	.16**	.15**	.13**
Influence the political structure	.09*	.10**	.19**	.09**
Serve community	.41**	.41**	.32**	.28**
Plans for fall 1995:				
Do volunteer work	.17**	.16**	.10**	.13**
Work for a nonprofit organization	.04**	.04**	.03*	.03**
Participate in a community service organization	.06**	.05**	.06**	.06**
Students' Opinions:				
Disagree: "Realistically an individual can				
do little to bring about changes				
in our society"				
	.14**	.14**	.17**	.19**
Satisfied with college opportunities for				
community service				
	.70**	.57**	.40**	.51**

^a Shows nonstandard regression coefficient that variable would receive if entered at the next step (after controlling for inputs and environments).

^b Self-estimate of change during college.

*p < .01. **p < .001.

(Alexander Astin, & Linda Sax, 1998)

Table 1.3: Effects of service participation on students' academic development

Academic Outcomes	Type of Service			
	Education	Human Needs	Public Safety	Environment
College grade point average	.20**	.10*	.03	.03
Persistence in college (retention)	.01	.01	.03*	.00
Aspirations for educational degrees	.20**	.21**	.19**	.10*
Increase in general knowledge ^b	.08**	.07**	.08**	.05
Increase in field or discipline knowledge ^b	.10**	.03	.09**	.06*
Preparation for graduate or professional school ^b	.17**	.11**	.16**	.10**
Academic self-concept ^c	.45**	.18	.25	.11
Time devoted to studying or homework	.21**	.13	.08	.11
Extra work done for courses	.12**	.09**	.08*	.05
Amount of contact with faculty	.37**	.22**	.32**	.25**

^a Shows nonstandard regression coefficient that variable would receive if entered at the next step (after controlling for inputs and environments).

^b Self-estimate of change during college.

^c Composite of five self-rating measures: academic ability, drive to achieve, mathematical ability, intellectual self-confidence, and writing ability.

*p < .01. **p < .001.

(Alexander Astin, & Linda Sax, 1998)

Table 1.4: Effects of service participation on the development of life skills

Life Skills Outcomes	Type of Service			
	Education	Human Needs	Public Safety	Environment
Leadership ability ^b	.18**	.16**	.25**	.17**
Social self-confidence ^b	.10**	.09**	.15**	.09*
Change ^c during college in:				
Ability to think critically	.14**	.09**	.15**	.03
Interpersonal skills	.12**	.12**	.20**	.09**
Conflict resolution skills	.14**	.15**	.28**	.12**
Ability to work cooperatively	.14**	.10**	.21**	.09**
Knowledge of people of different races and cultures	.17**	.15**	.23**	.09*
Ability to get along with people of different races and cultures	.17**	.14**	.22**	.10*
Understanding of problems facing community	.22**	.22**	.18**	.15**
Understanding of problems facing nation	.17**	.17**	.13**	.11**
Satisfaction with college's:				
Leadership opportunities	.40**	.30**	.42**	.32**
Preparation for future career	.16**	.11**	.14**	.10**
Relevance of coursework to everyday life	.17**	.11**	.13*	.09**

^a Shows nonstandard regression coefficient that variable would receive if entered at the next step (after controlling for inputs and environments).

^b Self-rating.

^c Self-estimate of change during college.

* $p < .01$. ** $p < .001$.

(Alexander Astin, & Linda Sax, 1998)

4.2 Individual Study Analysis

4.2.2: Study 2

Utilizing qualitative and quantitative this study explores how one education program addresses the challenge of what, if any, changes can be affected in the short time frame, fifteen weeks, of a college course (Colby, Bercaw, Clark, and Galiardi, 2009, p. 20).

Table 2.0: Study 2 – From community service to service-learning leadership: a program perspective, by Susan Colby, Lynne Bercaw, Ann Clark, & Shari Galiardi (2009).

Research Question	“Do prospective teachers demonstrate growth in cultural understanding and content knowledge through a credential program which has community service/service learning component that develops over three years?” (Colby et. al., 2009, p. 20).
Research Method	<p>“This study examines one education program, The 20/20 Program: Bringing community Issues into Focus. The aim of this program is to prepare student teachers to be active participants in the life of their school and community by seeking to empower future teachers to work toward social justice through an ethic of caring, commitment, and conscience” (Colby et. al., 2009, p. 22). Each student of the program is required to participate in at least one experiential learning program for which service learning is an option.</p> <p>“To better prepare teachers for civic engagement, elementary majors are first required (Phase I) to complete twenty hours of community service (volunteerism) in two, self-selected agencies during their sophomore year. This is implemented to assist students in creating awareness for complex issues and the diverse service agencies available. (Phase II) consists of the service learning component which occurs in two consecutive required courses. In their junior year, they participate in the Learner Diversity course and senior year they participate in the Social Studies in the Elementary Classroom course where they teach courses involving service learning” (Colby et. al., 2009, p. 23).</p> <p>“Qualitative and quantitative data were collected and analyzed for the years 2004-2005 to 2006- 2007. At the conclusion of the two courses noted above, students responded to electronic surveys, which were one-two pages in length. The questions on the two surveys were different and were based on the goals and service learning experience connected to each course” (Colby et. al, 2009, p. 25).</p>
Sample	<p>Sample Size: 413 (Quantitative & Qualitative)</p> <p>“Over a three year period, 413 United States elementary education majors responded to surveys about their service learning experiences” (Colby et. al., 2009, p. 20).</p>

	<p>Response rate from both courses varied over the years based on faculty participation and student enrollment with approximately 174 respondents in the first year; 145 respondents in the second year; and 94 respondents in the third year.</p> <p>Information regarding respondents' age, or gender were not made available in the study.</p>
Intervention: Using Service Learning	<p>"The aim of this program is to prepare student teachers to be active participants in the life of their school and community by seeking to empower future teachers to work toward social justice through an ethic of caring, commitment, and conscience" (Colby, et. al, 2000, p. 22).</p> <p>Below is an analysis of how well the service learning in the Colby, Bercaw, Clark & Galiardi study corresponds with my working definition of service learning:</p> <ul style="list-style-type: none"> • Students engage in activities that address human and community <i>needs</i>: "Participants are provided with the opportunity to be an active citizen, invested in, and connect to, others with whom they may not otherwise cross paths. They participate with local organizations such as food distribution agencies, homeless shelters, battered and abused women's shelters, and programs for migrant workers and their families" (2009, p.23). This criterion has been clearly met. • Structured opportunities intentionally designed to promote <i>student learning and development</i>: "Students recognize the needs of communities, respond to those needs, and help apply the pedagogy of service learning in the classroom. Essential in this program is the integration of course content, field experiences, and leadership" (2009, p.22). "Learning is rigorous, sound, and appropriate" (2009, p. 22). "Working on this service learning project has significantly increased knowledge about issues/concepts presented in class" (2009, p. 25). This criterion has been met. • Reflection about service is an essential element of the learning experience: Individuals taking part in this study were provided with opportunities for reflection during their service work (22). "Generally, participants write three reflections about their service learning experience: (a) an anticipatory reflection outlining their expectations and feelings; (b) a reflection mid-semester in which challenges are discussed; and (c) a final reflection in which they may reveal changes in their views of those who are culturally and linguistically diverse (23). Students may also use poetry as a form of reflection on their service learning experiences" (2009, p. 24). This criterion has been met. <p>In conclusion, service learning as treated in this study corresponds well with my working definition of service learning.</p>
Construct Validity –	<u>Variables Used to Measure Leadership Development</u>

<p>Measurements of Leadership Development</p>	<p>Quantitative and qualitative data were collected with the primary source being a 1-2 page electronic survey. “For the quantitative data, responses for each survey question were compiled and reported. Responses in the “strongly agree” and “agree” categories were grouped to determine the effectiveness of the learning experiences in relation to each item. For the qualitative data, Creswell’s (2002) process for analyzing and interpreting qualitative data was used. The data were analyzed to identify emerging themes using the four-phase process of: coding the data; developing themes for the data; defining themes based on the findings; and connecting and interrelating themes” (Colby et. al, 2009, p. 25).</p> <p><u>Does the Collected Data Measure what was Intended?</u></p> <p>While asking participants what their opinion is on their levels of growth, there are potential difficulties and biases embedded in this strategy as the data is based solely on the participants’ self-perception and can have associated risks.</p> <ol style="list-style-type: none"> 1. Social desirability bias: This bias is a common problem in the measurement of knowledge, skills, attitudes, and behaviours. The difficulty surfaces when the behaviours and attitudes that the researchers want to measure are “socially desirable” (e.g. As a result of the course, I feel a greater sense of responsibility to my community) and participants, future teachers, are inclined to make themselves look better when they present their responses. Crowne and Marlowe (1964) consider social desirability to be a person’s need for approval that results in a response bias. 2. Self-reported subjective data: The measurement tool for this study is a self-report (survey) that may be affected by inaccurate or biased memories of the event(s). However, data collected from the subjects themselves is still usually considered a valuable tool in measuring leadership development (Ross, 2006). 3. Lack of pre-service learning data: All data for this study was collected at the completion of the program and as noted by the authors it would be beneficial to gather pre/post data that could identify changes in philosophy and/or practice over the course of the program and cumulative effects of participating in the program (p. 29). <p><u>Transformational Leadership Traits</u></p> <p>Following is an analysis of how well the traits of transformational learning are identified within the Colby, Bercaw, Clark, and Galiardi study.</p> <ol style="list-style-type: none"> 1. Inspire followers to commit to a shared vision and goals for an organization or unit: The subjects were asked to respond to the following open-ended question: “In your opinion, what were the most important things the students learned?”. Eleven of the sixty-four subjects noted the development of good citizenship – “children learned the importance of community responsibility ; the importance of the democratic process; the responsibilities of a good citizen; how to become better citizens.”
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	<p>It is important to remember that these subjects are student teachers and the people that they are attempting to inspire are children.</p> <p>This criterion has been partially met albeit the people being inspired are children and the context is not an organization, but the community.</p> <ol style="list-style-type: none"> 2. Challenge followers to be innovative problem solvers: This trait is not evident within this study. In response to the open-ended questions this trait was not identified to the level to be included in this study. This criterion has not been met. 3. <i>Develop followers' leadership capacity via coaching, mentoring, and provision of both challenge and support:</i> The responses to the open-ended questions did not address the subjects' ability to develop follower's leadership capacity via coaching, mentoring or provision of challenge and support. The subjects did say that they felt they were well prepared to use service learning in their classrooms as a pedagogical tool, however this is a special case, since students were specifically learning to use service learning as a pedagogical tool. This criterion has not been met. <p>The specific traits of transformational learning identified within my working definition have been partially met in this study with the exception of demonstrate innovative problem solving which has not been met.</p>
Causation	<p><u>Hypothesized Causation</u></p> <p>The hypothesized causation in this study is that service learning causes the demonstrated growth in cultural understanding and content knowledge through a credential program which has a community service/service learning component that develops over three years.</p> <ul style="list-style-type: none"> • Participants report that as a result of their involvement in a service learning project they perceive that they have learned (see Table 2.1). • The hypothesized causation, of what service learning is supposed to achieve, is consistent with theory. <p><u>Causation from Third Factors</u></p> <p>In this study, some other plausible causes of the development of leadership traits include the following:</p> <ul style="list-style-type: none"> • There is no control group used within this study making it difficult to establish with certainty that a group not involved with service/service learning might not undergo the same learning in a different environment. • The data was collected at the end of the students' programs and their answers could be skewed by the fact that the students are leaving the institution. • The participants are elementary education majors, thus may already have the propensity to be service oriented, work toward social justice, and possess an ethic of caring.
Generalizability	As the data for this study was collected from participants involved in one

	<p>specific program there would need to be data collection replicated over a variety of programs and disciplines. The participants that took part in this study are education majors, so the sample could be skewed as these participants may already have possessed many of the traits (e.g. social awareness and caring ethic) prior to undertaking the fifteen-week service learning program. However, while a more all-encompassing sample of data should be collected, the findings of this study are similar to findings of other studies in relation to the qualities of transformational leadership and service learning.</p>
Empirical Results	<p>Tables 2.1 – 2.4 (below) provide the results of the study.</p> <p>Focusing on the data most closely tied to transformational leadership; the results are as follows:</p> <ul style="list-style-type: none"> • Service learning can teach children a great deal about citizenship and communities; service learning gives children the opportunity to learn the true meaning of service (Table 2.4): <ul style="list-style-type: none"> ○ Being capable of inspire followers to commit to a shared vision and goals for an organization or unit would require the ability to model this trait; and ○ Seven of fifty-eight respondents specifically identified that this resulted as a service learning outcome. • Helping Others/Community: The importance of helping others (Table 2.4): <ul style="list-style-type: none"> ○ This would be an component of the trait required to develop followers' leadership capacity via coaching, mentoring, and provision of both challenge and support; and ○ Fifteen of sixty-four respondents of participants specifically identified that this resulted as an outcome of service learning. <p>The results of this study suggest that completion of service learning participation through the 20/20 Program has been beneficial to the students enrolled in this program. These results are subject to the risks in data collection identified in the 'construct validity' section above.</p>

Table 2.1: Quantitative results from the learner diversity course

Quantitative Results from the Learner Diversity Course			
Survey Question	2004-2005 (n=106)	2005-2006 (n=54)	2006-2007 (n=60)
(Number denotes percentage of students that responded “ <i>Strongly Agree</i> ” or “ <i>Agree</i> ”)			
Working on this service-learning project has significantly increased my knowledge about issues/concepts presented in my class.	72.6	81.3	86.6
My service-learning project has broadened my understanding of social issues that affect my community.	87.7	88.8	98.3
This course caused me to question my own views about people who are different than me and/or live a different lifestyle than I do.	49.9	64.7	78.4
As a result of this course, I feel a greater sense of responsibility toward my community.	58.4	66.6	83.3
Working on this service-learning project has allowed me to acquire/practice other skills that will be useful in my career.	86.7	92.5	93.3

(Colby, Bercaw, Clark, & Galiardi 2009)

Table 2.2: Learner diversity: Themes and key phrases from 158 responses

Learner Diversity: Themes and Key Phrases from Responses	
<i>What was the most important thing you learned from this service learning project?</i>	
<i>Diversity/Differences:</i> The importance of respecting diversity; backgrounds differ; our stories are similar in many ways; there is much to be learned from others, a realization of how privileged one can be	n=32
<i>Helping Others/Community:</i> The importance of helping others; there is important work to be done in a community; communities care about persons less fortunate	n=25
<i>Working with Children:</i> All kids are teachable even if they have a disability; children need to be listened to, cared for, and loved; enjoyment in working with children	n=20
<i>Self-Improvement:</i> The importance of examining stereotypes; serving people shifts the focus from self to others; the importance of selflessness, flexibility, patience, open-mindedness, and accountability to others	n=20
<i>Impact on Others:</i> One person can make a difference; small things make the most difference; the importance of doing what you can	n=19
<i>Interactions with Others:</i> Communication is the key to understanding; communicating with others is difficult but rewarding; how to work with people from different backgrounds; how to work in a group; how to compromise	n=14
<i>Fair Treatment/Equality</i>	n=14
Every person is of equal value; regardless of background, people should be treated the same; person before disability; income and material goods don't matter; don't judge people on first impression; everyone deserves a chance	
<i>Miscellaneous</i>	n=14

(Colby, Bercaw, Clark, & Galiardi 2009)

Table 2.3: Quantitative results from social studies methods course

Quantitative Results from Social Studies Methods Course			
Survey Question	2004-2005	2005-2006	2006-2007
(Number denotes percentage of students that responded “ <i>Strongly Agree</i> ” or “ <i>Agree</i> ”)	(<i>n</i> =68)	(<i>n</i> =91)	(<i>n</i> =34)
My sponsoring teacher was supportive of this SL project.	98.5	99.9	97
My students willingly participated in the SL project.	98.5	99.9	100
My students learned new concepts from their involvement in the project.	89.6	90	90.9
I felt well prepared to use SL in my classroom this semester.	80.8	90	94.1
After this experience, I am much more comfortable using SL in my elementary classroom.	92.5	95.5	100
Within the next 3 years, I plan to use SL in the elementary classes I teach.	88.2	94.5	100

(Colby, Bercaw, Clark, & Galiardi 2009)

Table 2.4: Social studies methods: Themes and key phrases per two set of questions (set #1 = 58 participants & set #2 = 64 participants)

Social Studies Methods: Themes and Key Phrases Per Questions	
<i>Overall, what did you learn from using service learning as a pedagogical tool?</i>	
<i>Helping Others/Community</i>	<i>n=22</i>
Children are willing to pull together to help someone in need; SL teaches children to look past their own world and into someone else's world; even young children are capable of SL projects; it's important to be involved in the community to build a sense of unity; children feel a sense of pride when helping others	
<i>Effectiveness as a Teaching Method</i>	<i>n=14</i>
SL is easily integrated into the classroom; effective SL is an extension of a lesson- not a separate event; SL is a great way to teach a variety of subject areas while benefitting society; SL allows children to be involved both in and outside of school; SL can be a lot of fun	
<i>Aware of Impact on Others</i>	<i>n=10</i>
Children learned that anyone can have an impact on those around them; children learned that they are an important part of their community; children became aware of the effect people have on each other; children learned the importance of giving back	
<i>Developing Good Citizenship</i>	<i>n=7</i>
SL can teach children a great deal about citizenship and communities; SL gives children the opportunity to learn the true meaning of service; children can learn some of attributes of character education; SL instills empathy in children	
<i>Importance of Engagement</i>	<i>n=5</i>
SL is a great motivational tool for children; children work together and take ownership; children need the actual experience of SL to truly get meaning from it; children learn a lot more with hands on activities such as collecting and distributing food	
<i>In your opinion, what were the most important things the students learned?</i>	
<i>Moving Beyond Self</i>	<i>n=22</i>
Children learned they don't always have to do things to get a reward- when they help the community they feel good about themselves; how to be empathetic to others; the importance of supporting our fellow human beings; that giving is more important than receiving; about meeting a need that was greater than anything they have ever known	
<i>Helping Others/Community</i>	<i>n=15</i>
Children learned the importance of community service; to be active in their community; how important it is to help others in need; the closeness of the community they live in; how valuable it is to have neighbors that care about you	
<i>Developing Good Citizenship</i>	<i>n=11</i>
Children learned community responsibility; the importance of the democratic process; the responsibilities of a good citizen; how to become better citizens	
<i>Content Area Knowledge</i>	<i>n=11</i>
Children learned how to write a letter; revising and editing skills; about the electoral process; the importance of voting; about war and conflict; about the world; about current issues	
<i>Miscellaneous</i>	<i>n=5</i>

(Colby, Bercaw, Clark, & Galiardi 2009)

4.2 Individual Study Analysis

4.2.3: Study 3

“This study used quantitative analysis to measure the effect of university service-learning programs on social capital” (D’Agostino, p. 317).

Table 3.0: Study 3 - Measuring social capital as an outcome of service learning, by Maria D’Agostino (2010)

Research Question	“What is the impact of service-learning programs on building social capital?” (D’Agostino, 2010, p. 317).
Research Method	<p>From a sample of students, some subjects who had participated in service learning and others who had not. Subjects completed a Likert Scale questionnaire survey. Based on the students’ responses, the researcher then developed scores for the following categories: Social capital factor score, trust factor score, and networking factor score.</p> <p>Based on this data, D’Agostino performed two sets of statistical tests: 1) she computed the correlation between participation in service learning and the three factor scores; and 2) after adding control variables, she checked whether service learning was a significant predictor of the three scores.</p>
Sample	<p>Sample Size: 363 (Quantitative analysis)</p> <p>Two groups of participants were involved in this study; a service-learning (n=189) and non-service-learning (n=174) group.</p> <p>“Group One: (experimental group) was labeled “service-learning” as these students were undergraduates from the classes of 2002 through 2005 who had completed at least one service learning course during their undergraduate studies. All participants came from the Citizenship and Service Education (CASE) program at Rutgers. This program encompasses fifty difference courses in varied disciplines at the University, which may be mandatory or optional courses. The sampling frame for this group was obtained from the CASE offices, providing 1,200 participants. After excluding non-graduates and duplicates, 950 names were left. Because of the limited population, random sampling was not adopted. Instead, the survey was mailed to all 950 students. Fifty-two surveys were returned with undeliverable addresses. The sample population for this group consisted of 189 participants” (D’Agostino, 2010, p. 317).</p> <p>“Group Two: (non-service-learning group) was the non-equivalent comparison group and consisted of students who had not taken a service learning course. Neither had these students taken all the same university courses. The sampling frame for this group was obtained from the University’s Alumni Office, which created a random list of 3,000 undergraduates. In order to keep the two groups similar, 950 names were randomly selected. This list was then updated using the university alumni database. Eighty surveys were either undeliverable or unusable. The sample population for this group consisted of 174 participants” (D’Agostino, 2010, p. 318).</p>

	<p>“Of the 1,178 participants, a total of 363 (20%) responded. The responses consisted of 21% from the service-learning group and 20% from the non-service-learning group. This similar return rate for both groups support that the internal validity of the sample was sustained” (D’Agostino, 2010, p. 320).</p>
Intervention: Using Service Learning	<p>Below is an analysis of how well the service learning analyzed within the D’Agostino study corresponds with my working definition of service learning:</p> <ul style="list-style-type: none"> • Students engage in activities that address human and community needs: The participants are encouraged to participate as active and effective citizens in a democratic society and to teach a lifelong service ethic (317). There is a lack of data in the study regarding the actual activities the participants took part in; however, I believe it is plausible that these activities would be community-based and address human need as this was a civic engagement-type program. This criterion has been met. • Structured opportunities intentionally designed to promote student learning and development: The faculty members were expected to inform students about how the Citizenship and Service Education (CASE), the undergraduate service learning program at Rutgers worked and to connect classroom theory with on-site practice work. (318). This criterion has been met. • Reflection about service experience: Believing reflection is a very significant part of service learning pedagogy, CASE provides the faculty members with examples of how to incorporate reflection into the classroom, including journaling and writing reflective papers (318). This criterion has been met. <p>In conclusion, service learning as treated in the D’Agostino study corresponds well with my working definition of service learning.</p>
Construct Validity – Measurements of Leadership Development	<p><u>Variables Used to Measure Leadership Development</u></p> <p>Survey instrument used in this study was a self-report rating of mixed statements and questions on a 7-point Likert scale. “In this study control variables were used as proxies to assess the similarities between two groups and to account for pre-selection bias: pre-existing social capital control variables (i.e., those that attempt to account for selection bias and act as proxies) and general control variables” (2010, p. 319). Social capital was used as the dependent variable and the independent variable is service learning.</p> <p><u>Does the Collected Data Measure what was Intended?</u></p> <p>Due to the method of data collection, there is a risk that the data may be biased for some of the following reasons:</p> <ol style="list-style-type: none"> 1. Self-reported subjective data: (See Study 1). 2. Social desirability bias: The validity of Likert Scale attitude measurement can be compromised due to the social desirability bias. Where participants may answer in a manner to put themselves in the most positive light. Paulhus (1984) established that when participants are asked to write their names, addresses, and/or telephone numbers on a questionnaire they are more likely to answer more positively than when they are told not to identify themselves. While the researcher sent these questionnaires to specific individual’s homes, it is not known if they were returned anonymously or not. <p><u>Transformational Leadership Traits</u></p>

	<p>Below is an analysis of how well the traits of transformational learning are identified within the D'Agostino study.</p> <ol style="list-style-type: none"> 1. Inspire followers to commit to a shared vision and goals for an organization or unit: We do not have access to the questions and are unable to identify what traits were specifically asked about in the survey. However, it is plausible that Tables 3.4 and 3.5 addressing trust and networking would be important components of the above trait. This criterion has been partially met. 2. Challenge followers to be innovative problem solvers: This study did not specifically collect data on this trait. 3. <i>Develop followers' leadership capacity via coaching, mentoring,</i> and provision of both challenge and support: See Tables 3.4 and 3.5 as again, while not specifically addressed, these points would be important components of this trait. This criterion has been partially met. <p>Two of the three transformational leadership traits identified in this study partially meet the working criteria of transformational leadership.</p>
Causation	<p><u>Hypothesized Causation</u></p> <p>The hypothesized causation in this study is that participation in a service learning course will enhance the participants' social capital. The following points support the hypothesized causation:</p> <ul style="list-style-type: none"> • The hypothesized causation, the theory of what service learning is supposed to achieve, is consistent with the theory. • There is a control group. <p><u>Causation from Third Factors</u></p> <p>In this study, some other plausible causes of the development of leadership traits include the following:</p> <ul style="list-style-type: none"> • Self-selection bias may be a factor within this study. An individual choosing to take part in a service learning activity during their undergraduate years may already possess leadership traits to a greater degree than those who choose not to take part. Although there was a control group for this study it was not a randomized control group. • As only post-testing was undertaken with these participants it is impossible to know if or how many of these subjects might have already had these traits before the service learning began. <p>Pre-selection bias is noted by the authors of this study (p. 319). However, control variables were used as proxies to assess the similarities between the two groups and to account for pre-selection bias and may reduce some of the self-selection bias.</p>
Generalizability	<p>While all participants did come from the Citizenship and Service Education (CASE) program at Rutgers; this program does consist of fifty different types of mandatory and optional courses over a variety of disciplines at the University giving it a wide breadth of scope and good generalizability.</p> <p>Generalizability is enhanced when the sample of participants is heterogeneous (e.g., age, type or type of service learning, or type of institution. It is possible that this sample could be skewed as these participants are all graduates of Rutgers University. Thus, results</p>

	from a sample with different skill sets and capabilities may prove unlike findings for this study.
Empirical Research	<p>Tables 3.1 – 3.4 provide the results of the study. Table 3.1 shows that service learning is correlated with all three scores (social capital, trust factor, and network factor). P values are all .005 or less.</p> <p>Tables 3.2 – 3.4 add control variables. With control variables, service learning is a statistical significant predictor for the social capital score and the network score, but not for the trust factor score.</p> <p>As noted in the ‘construct validity’ section above, pre-selection bias is noted as a concern by the authors of this study. While control variables were used as proxies to assess the similarities between the two groups and to account for pre-selection bias these findings are subject to the risks in data collection identified in the ‘construct validity’ section above.</p>

Table 3.1: Pearson product moment correlations between selected scales and service learning

Variable (n=363)	Q30: Took Service Learning ^a
Social capital factor score	.25**
Trust factor score	.16*
Networks factor score	.26**

* $p < .005$, ** $p < .001$

^a Point-biserial correlation: 0 = *Didn't take course*, 1 = *Took course*

(D'Agostino, 2010)

Table 3.2: Predicting social capital factor score based on selected variables. Backward elimination regression (n = 363).

Variable	<i>B</i>	<i>SE</i>	β	<i>p</i>	<i>sr</i>	<i>sr</i> ²
Intercept	-3.74	0.27		.001		
Took service learning ^a	0.16	0.08	.08	.051	.08	.01
Provided study aids ^a	0.39	0.18	.09	.025	.09	.01
Preexisting high school social capital scale	0.16	0.04	.18	.001	.15	.02
Preexisting college social capital scale	0.44	0.04	.47	.001	.39	.15
High school: worked part-time ^a (HS)	-0.22	0.10	-.09	.026	-.09	.01
College: co-op or work-study ^a *****	0.36	0.09	.17	.001	.16	.03
College: political campaign ^a	0.33	0.10	.12	.002	.12	.01
Caucasian student ^a	0.28	0.08	.14	.001	.13	.02

Final model: $F(8, 354) = 40.82, p < .001, R^2 = .480$

^a Dummy coding: 0 = *no*, 1 = *yes*

sr = Semipartial (part) correlation

(D'Agostino, 2010)

Table 3.3: Predicting trust factor score based on selected variables. Backward elimination regression (n = 363).

Variable	<i>B</i>	<i>SE</i>	β	<i>p</i>	<i>sr</i>	<i>sr</i> ²
Intercept	-2.78	0.26		.001		
Preexisting high school social capital scale	0.12	0.05	.13	.014	.11	.01
Preexisting college social capital scale	0.41	0.05	.44	.001	.37	.14
High school: worked part-time ^a	-0.34	0.11	-.14	.003	-.13	.02
High school: student government ^a	-0.27	0.10	-.12	.007	-.12	.01
College: co-op or work-study ^a	0.23	0.10	.11	.019	.10	.01
Caucasian student ^a	0.47	0.09	.23	.001	.22	.05

Final model: $F(6, 356) = 27.15, p < .001, R^2 = .314$

^a Dummy coding: 0 = *no*, 1 = *yes*

sr = Semipartial (part) correlation

(D'Agostino, 2010)

Table 3.4: Predicting networks factor score based on selected variables. Backward elimination regression (n = 363).

Variable	<i>B</i>	<i>SE</i>	β	<i>p</i>	<i>sr</i>	<i>sr</i> ²
Intercept	-3.15	0.42		.001		
Q30 Took service-learning ^a	0.29	0.09	.15	.001	.13	.02
Provided study aids ^a	0.40	0.19	.09	.033	.09	.01
Cultural capital scale	0.15	0.08	.08	.049	.08	.01
Safe high school ^a	-0.41	0.20	-.09	.039	-.08	.01
Elementary friends attended college ^a	-0.30	0.11	-.12	.005	-.11	.01
Preexisting high school social capital	0.16	0.04	.18	.001	.15	.02
Preexisting college social capital	0.32	0.05	.34	.001	.29	.08
High school: Political campaign ^a	0.31	0.15	.09	.038	.08	.01
College: co-op or work study ^a	0.33	0.09	.16	.001	.15	.02
College: political campaign ^a	0.43	0.12	.16	.001	.14	.02
Age	0.02	0.01	.10	.022	.09	.01

Final Model: $F(11, 351) = 24.35, p < .001. R^2 = .433$

^a Dummy coding: 0 = *no*, 1 = *yes*

sr = Semipartial (part) correlation

(D'Agostino, 2010)

4.3 Individual Study Analysis

4.2.3: Study 3

“This investigation sought to identify learning outcomes for undergraduate students at a US college enrolled in community-based learning courses” (2010, p. 228).

Table 4.0: Study 4 – A transnational comparison of service-learning as a tool for leadership development, by Christine Cress, Miki Yamashita, Rebecca Duarte & Heather Burns (2010).

Research Questions	<p>The following three questions were explored in this study:</p> <ol style="list-style-type: none"> 1) “How do international and American students compare in their views of leadership?” (2010, p. 231). 2) “How do international and American students compare in their learning experiences via their service learning course?” (2010, p. 231). 3) “What teaching techniques best support students’ enhanced understanding and development of leadership skills?” (2010, p. 231).
Research Method	<p>Data was collected from undergraduate college students enrolled at a large urban U.S. university with enrolments of over 1,700 international students each year from over 110 countries, in 150 senior level service learning courses using pre and post-test surveys before and after the community service experience (2010, p. 232).</p> <p>US and non-US student leadership and learning outcomes were cross-tabulated with instructional techniques to analyze for statistically significant differences. Common items on the pre and post surveys included demographic data (age, gender, race/ethnicity, national citizenship). Students were asked to self-rate their abilities on a number of factors including leadership ability. The term ‘leadership’ was not explicitly defined (2010, p. 232).</p> <p>“On the post survey students were asked to indicate the type of course, design strategies used by the instructor and to indicate their level of agreement with a number of service learning statements (e.g. the community work I did helped me to better understand the readings and lectures in the course). These data were then divided into two groups based on national citizenship survey responses that represented over thirty countries: international (n = 92) and American (n = 1,137) students. The decision to compare these two groups was based on findings from Thomas and Althens that international students tend to share certain characteristics, despite their diverse cultural, social, religious, and political backgrounds such as needing to learn educational and cultural norms, and the historical, social, and economic dimensions of communities” (2010, p. 232).</p>
Sample	<p>Sample Size: 1229 (Pre-and-post surveys prior to and following the community service experience).</p> <p>Data was collected from undergraduate students (1137 American students and 92 International students), representing thirty countries, enrolled in their senior year in over 150 service learning courses at a large urban U.S. university. Fifty-nine percent of the international student group originated from Asian countries (China, Japan, Korea), 26 percent European countries, with the remaining from countries on each continent. The American group included a majority (83 percent) of white students. Otherwise the data</p>

	sets were very similar regarding gender (63 percent female both groups) and age (60 percent under 25 years of age for American students; 58 percent for International students) (2010, p. 232).
Intervention: Using Service Learning	<p>The participants of this study all participated in interdisciplinary, community project-focused courses. The study involved 150 different courses each structured with their own form of service learning.</p> <p>Below is an analysis of how well the service learning in this study corresponds with my working definition of service learning:</p> <ul style="list-style-type: none"> • Students engage in activities that address human and community needs: As stated within the paper, “All senior capstone SL courses are required by the university to address: critical thinking; communication; diversity of human experience; and ethics and social responsibility” (2010, p. 232). This criterion is clearly met. • Structured opportunities intentionally designed to promote student learning and development: These courses were designed using traditional and transformational techniques. “All senior capstone SL courses are required by the university to address: critical thinking; communication; diversity of human experience; and ethics and social responsibility” (2010, p. 232). This criterion has been met. • Reflection about service experience: This study specifically tested whether reflective journaling was deemed valuable to participants (see Table 4.4). It was found that courses taught using transformational teaching techniques (e.g. student-selected topics, racial/ethnic reading, reflective journal writing) were significantly positively correlated (2010, p. 236). This criterion has been met. <p>In conclusion, service learning as treated in the Cress, Yamashita, Duarte, & Burns’ study corresponds well with the working definition of service learning and with service learning literature.</p>
Construct Validity: Measurements of Leadership Development	<p><u>Variables Used to Measure Leadership Development</u> Surveyed students were asked about:</p> <ol style="list-style-type: none"> 1) Their perceptions on the outcomes of the service learning courses (see Table 4.1 for the specific survey questions); 2) Their perception on leadership learning outcomes (see Table 4.2); and 3) Their views on leadership (see Table 4.3). <p>Table 4.1 (below) identifies identifying service learning course experiences which are correlated to transformational leadership traits.</p> <p><u>Does the Collected Data Measure what was Intended?</u> This study involves self-reporting measures and although useful and certainly used extensively in both service learning and transformational leadership studies, they can have associated risks. As was the case in Study 1, some risks include:</p> <ol style="list-style-type: none"> 1. Social desirability bias. 2. Self-reported subjective data. <p><u>Transformational Leadership Traits</u> Below is an analysis of how well the traits of transformational learning are identified</p>

	<p>within the Transnational comparison study.</p> <ol style="list-style-type: none"> 1. Inspire followers to commit to a shared vision and goals for an organization or unit: As the participants of this study are students it is difficult, if not impossible, to find evidence that their ability to inspire followers has been addressed within this study as the study did not directly or indirectly collect data on this trait. This criterion has not been met. 2. Challenge followers to be innovative problem solvers: While the study captured data on ability to discuss and negotiate controversial issues this cannot be assumed to be directly related to innovative problem solving (p. 233). The data can be partially gleaned through themes which appear in Table 4.2 sections: <ul style="list-style-type: none"> #2: understanding of self; #4: tolerance of others with different beliefs; and #6: sense of personal ethics. <p>While these three traits are not the only factors to be considered when considering innovative problem solving, without the combination of these three traits the subjects' ability to problem solve innovatively would be lessened. This study partially collected data on this trait. This criterion has been partially met.</p> 3. <i>Develop followers' leadership capacity via coaching, mentoring, and provision</i> of both challenge and support: This data can be located within the findings related to Table 4.2 section #10: interest in developing leadership ability in others. This study did collect data on this trait. This criterion has been met.
Causation	<p><u>Hypothesized Causation</u></p> <p>The hypothesized causation in this study is that the teaching methodology of service learning impacts students' learning outcomes and that service learning develops students' understanding and leadership skills. The following points support these hypotheses:</p> <ul style="list-style-type: none"> • All of the responses to the questions in the survey provided evidence for the hypothesized causation. • The hypothesized causations are consistent with the theory of what service learning is expected to achieve. <p><u>Causation from Third Factors</u></p> <p>In this study, some other possible causes for the development of leadership traits include:</p> <ul style="list-style-type: none"> • No control group was used when determining whether service learning develops leadership skills, but the study does have a control group when determining whether certain teaching methodologies outperform other methodologies in developing leadership skills. • The type of instructional techniques which are used within a service learning course (traditional versus transformational) are identified as having an impact on students' gains in leadership development. The authors found that traditional teaching techniques such as multiple choice exams and extensive lecturing were not significantly related to the leadership learning outcomes or were negatively related to students' perceptions of learning. Transformational teaching techniques such as reflective journal writing and specific topic related readings were significantly and positively related to students' perceived learning (See Table 4.4 below). These findings further support the premise that leadership skill development is a function of using transformational rather than traditional

	classroom teaching practices.
Generalizability	<p>“Because of the small number of international students (n = 92), regression analyses could not be performed to account for other differences such as country of origin, academic program, English language proficiency, first generation status, etc. and their potential variable statistical impact on outcomes. This data represents a single US institution and are not triangulated with other data points such as instructor assessment of student development. As well, the study finds that while the American group reports the development of leadership qualities the international students show a higher gain. Thus, results from a sample with different characteristics may prove unlike findings for this study. It is important to note however that the study does involve many disciplines and may be generalizable across American students” (2010, p. 239).</p>
Empirical Results	<p>Tables 4.1 – 4.4 (below) provide the results of the study.</p> <p>Focusing on the data most closely tied to transformational leadership, the results are as follows:</p> <ul style="list-style-type: none"> • Understanding self (Table 4.2 #2): <ul style="list-style-type: none"> ○ Sixty percent of US students and seventy-seven percent of International students identified development in this area; ○ Being able to understand self would be a necessary skill required for innovative problem solving; and ○ A clear majority of participants believe service learning contributed to this trait. • Tolerance of others with different beliefs (Table 4.2 #4): <ul style="list-style-type: none"> ○ Fifty-four percent of US students and seventy-nine percent of International students identified growth in this area; ○ Having tolerance of others would be a necessary component of effective innovative problem solving; and ○ I would conclude that there is moderately strong evidence that service learning enhances this trait. • Sense of personal ethics (Table 4.2 #6): <ul style="list-style-type: none"> ○ Fifty percent of US students and seventy-five percent of International students noted growth in this area; ○ Possessing personal ethics would be a component of the overall skill of innovative problem solving; and ○ I would conclude once again that there is moderately strong evidence that service learning enhances this trait. • Interest in developing leadership abilities in others (Table 4.2 #10): <ul style="list-style-type: none"> ○ Forty-five percent of US students note a stronger interest in developing leadership abilities in others and sixty-six percent of international students note a stronger interest in this area; ○ This would be a requirement for developing followers’ leadership capacity via coaching, mentoring, and provision of both challenge and support; and ○ I would conclude that there is a moderate to weak evidence that service learning increases this trait. <p>These findings are subject to the risks in data collection identified in the ‘construct validity’ section above.</p>

Table 4.1: Service learning course experiences

Learning experiences (percentage agree/strongly agree as result of SL course)	US students	International students
1 I feel that the community work that I did through this course benefited the community	81	81
2 The goals and objectives of this course and its connection to the community work I did were reflected in the course syllabus	80	76
3 I felt a personal responsibility to meet the needs of the community partner of this course	76	78
4 My participation in this course helped me to connect what I learned to real life situations	70	76
5 I now have a better understanding of how to make a difference in my community	70	74

(Cress, Yamashita Duarte Burns, 2010)

Table 4.2: Perspectives on leadership and related learning outcomes

Self-ratings (percentage stronger/much stronger as result of SL course)	US students	International students
1 Knowledge of people from different races/cultures	64	82 ^{***}
2 Understanding of self	60	77 ^{***}
3 Ability to work cooperatively	65	84 ^{***}
4 Tolerance of others with different beliefs	54	79 ^{***}
5 Clarity of personal values	48	73 ^{***}
6 Sense of personal ethics	50	75 ^{***}
7 Awareness of own biases and prejudices	59	73 [*]
8 Openness to having my views challenged	52	79 ^{***}
9 Ability to discuss and negotiate controversial issues	53	74 ^{***}
10 Interest in developing leadership abilities in others	45	66 ^{***}
11 Leadership ability	57	71 [*]
12 Commitment to civic responsibility	61	70
13 Desire to promote social justice and equity	56	63
14 View of myself as an active citizen	57	60
15 Desire to become a community leader	67	63

Note: Significant at: ^{*} $p < 0.05$, ^{**} $p < 0.01$, and ^{***} $p < 0.001$

(Cress, Yamashita Duarte Burns, 2010)

Table 4.3: Perspectives on leadership and the role of education

Opinions (percentage agree/strongly agree as result of SL course)	US students	International students
1 Realistically, an individual can bring about changes in society	83	55 ^{***}
2 Colleges have a responsibility to prepare graduates to become engaged community members	84	81
3 SL courses help students prepare for the “real world”	80	82
4 Colleges should require students to volunteer in the community as a part of graduation requirements	33	36

Note: Significant at: ^{*} $p < 0.05$, ^{**} $p < 0.01$, and ^{***} $p < 0.001$

(Cress, Yamashita Duarte Burns, 2010)

Table 4.4: Teaching techniques and leadership outcomes

	Leadership ability	Commitment to civic responsibility	View of self as active citizen	Desire to become community leader	Understand how to make a difference
Reflective journals		US	US	US	US
Collaborative projects	US				
Racial/ethnic readings		US	US international		US
Women/gender readings	International	US	US	International	US
Group decision making	US				
Civic responsibility readings		US	US	International US	US
Student presentations	International				
Local political discussions		US	US international		US
Civic responsibility discussions		US			US
Social issues discussions	US	US	US		
Student selected topics	US				
Student developed activities	US international	US	US	International	US US international

Note: χ^2 analysis statistically significant for each student group

(Cress, Yamashita Duarte Burns, 2010)

4.2 Individual Study Analysis

4.2.5: Study 5

This study is the only one of the six whose sample consists of managers within industry; all the other studies use students as the subject. The authors' identified that "there is a lack of empirical research and conceptual models on how individuals learn to become better and more responsible global leaders based on their experiences abroad, and on what kind of competencies are developed through international service learning programs" (2011, p. 238).

Table 5.0: Study 5- Developing Responsible Global Leaders Through International Service-Learning Programs: The Ulysses Experience by Nicola Pless, Thomas Maak, and Gunter Stahl (2011).

Research Question	"Can international service-learning programs help managers to develop the key competencies required for responsible global leadership?" (2011, p. 240).
Research Method	<p>Both quantitative and qualitative methods were used in this study. Promising partners in local PricewaterhouseCooper firms are nominated by senior management to take part in a leadership development and service learning program administered by PricewaterhouseCoopers. The individuals who were selected to participate in the program were monitored by the study authors' before and after their international experiences in Asia, Latin America, Eastern Europe, and Africa.</p> <p>These participants were mandated to use their business knowledge and expertise while working in projects that were tasked with addressing environmental issues, improving health, and reducing poverty over an eight to ten week period.</p> <p>Participants were interviewed and surveyed pre and post program and the content of learning narratives that the participants were required to write were analyzed. The data was retrieved from the twenty-one team (consisting of three – four participants) taped interviews and seventy individual interviews that were completed using appreciative inquiry. The narratives that describe situations that called for or made the participants think about the necessity of change (inferring lessons for leaders) were selected and coded by two people and edited following Weiss' 1995 guidelines (Weiss, 1995).</p> <p>The survey is excluded from the analysis in this review as the researchers do not provide enough details about the survey or its results to allow for a proper analysis.</p>
Sample	<p>Sample Size: 70 (Content-analyzed qualitative interviews)</p> <p>Promising partners in local PricewaterhouseCooper firms were nominated by senior management to take part in a leadership development and service learning program administered by PricewaterhouseCoopers. The individuals who were selected to participate in the program were monitored by the study authors' before and after their international experiences in Asia, Latin America, Eastern Europe, and Africa. Seventy managers, in teams of three – four, were sent to developing countries to work within partnerships with international organizations, non-government agencies, and social entrepreneurs. There was no information available on the demographics of the partners</p>

	<p>chosen to participate in the study. Participants are nominated on the basis of their tenure status in the partner track (3-5 years), demonstrated leadership effectiveness at the local level, potential for senior leadership roles, and English language proficiency (p. 241).</p>
<p>Intervention: Using Service Learning</p>	<p>The participants in this were mandated in this service learning experience to use their business knowledge and expertise while working in projects that were tasked with addressing environmental issues, improving health, and reducing poverty over an eight to ten week period. Further details are described within the research method section.</p> <p>Below is an analysis of how well the service learning in the Ulysses program corresponds with my working definition of service learning:</p> <ul style="list-style-type: none"> • Students engage in activities that address human <i>and community needs</i>: “The participants were sent to developing countries to work full-time in cross-sector partnerships with NGOs, social entrepreneurs, or international organizations, supporting them in capacity building and in their fight against some of the world’s more pressing problems, such as diseases, poverty, and environmental degradation” (p. 241). This criterion is clearly met. • Structured opportunities intentionally designed to promote student learning and development: The program consists of six phases: nomination phase, preparation phase, induction phase, assignment phase, debriefing phase, and a networking phase. These phases correspond to the basic elements of service learning as described by Dumas (2002), preparation, service, reflection, and celebration. Ulysses’ participants work in teams but also work individually with coaches on their learning goals and development plan (p. 243). This criterion has been met. • Reflection about service experience: Individuals taking part in this study worked to make a difference in the lives of others while developing their knowledge, skills, and values. The transformation of experience into learning requires a distilling process that involves reflection, analysis of previous experiences, and discourse with others who faced similar challenges. In the Ulysses program, the process of transforming experiences into perspective-expanding and potentially life-changing encounters was facilitated by the sharing of narratives (p. 245). This criterion has been met. <p>In conclusion, service learning as treated in the Ulysses program corresponds well with my working definition of service learning.</p>
<p>Construct Validity – Measurements of Leadership Development</p>	<p><u>Variables Used to Measure Leadership Development</u></p> <p>Learning narratives were content analyzed. Table 5.2 (below) summarizes the content analysis “as they relate to individual-level learning outcomes, the percentage of participants who exhibited learning in the various areas, and the interrater reliabilities” (2011, p. 245). See Note at the bottom of Table 5.2 for further explanation.</p> <p><u>Does the Collected Data Measure what was Intended?</u></p> <p>Due to the method of data collection, there is a risk that the data may be biased for some of the following reasons:</p> <ol style="list-style-type: none"> 1. Self-reported subjective data: The data for this study based on interviews in which subjects self-report their outcomes (see Study 1 for further explanation of this bias).

	<p>2. Social desirability bias: As described in Study 1, this bias should be noted in this study.</p> <p>3. Response bias: The simplest approaches to gauge what people do, believe, and feel is to ask them. However, there are difficulties and biases embedded in this simplicity. One risk is that participants may be introduced to biases by the interviewer (age, status, gender, education level, etc.) The way in which an interview is designed and carried out (structure of questions, order of questions, voice tone, etc.) can cause errors to occur (Bringle, Phillips & Hudson, 2004, p. 8). But evidence does exist that self-assessments produce consistent results across items, tasks, and short time periods (Ross, 2006). It is important that readers realize that the evidence about the concurrent validity of self-assessments is mixed and must be considered when reviewing this study.</p> <p><u>Transformational Leadership Traits</u></p> <p>Below is an analysis of how well the traits of transformational learning are identified within the Ulysses study.</p> <ul style="list-style-type: none"> • Inspire followers to commit to a shared vision and goals for an organization or unit: One of themes discussed by the respondents was Community Building (see Table 5.2 section F1) - increased knowledge of how to identify legitimate stakeholders; how to engage them; how to assess their contributions; etc. While this is not the only skill required to engage in the above trait, it would be a necessary skill to possess in order to inspire followers with a vision as one must have goals for an organization or unit. This criterion can be said to have been partially met. • Challenge followers to be innovative problem solvers: The challenges faced by participants in the Ulysses study were “considerably more complex and demanding than those encountered in a domestic context because pressure to adapt or fit in are combined with incomplete and inaccurate understanding of the contexts in which companies operate” (2011, p. 240). However, this was not directly captured in the content analysis. Subjects were required to adapt and fit in to more complex and demanding environments, but no measurements were taken on whether this trait improved or to what extent it improved. The data that comes closest to partially doing this appears to be (see Table 5.2 section D2) - has developed integrative abilities to synthesize information from diverse sources; has developed reflexive interpretive abilities to create new and more complex understanding of the environment; etc. (see Table 5.2 below), which addresses grasping and articulating complexity. This is one of the skills that are required to solve problems innovatively but it is not the only skill necessary. Even then this point came up with only 49% of respondents. This criterion can be said to have been partially met. • <i>Develop followers’ leadership capacity via coaching, mentoring, and provision of both challenge and support:</i> “In order to be functional in the field as a diverse team, each team receives individual coaching to set team objectives, agree on relationship principles, start building a team culture, and learn how to coach each other in the field” (2011, p.241). There were not specific measurements done within this study on the degree to which the trait improved or to what extent it improved. While this data was not directly captured in the content analysis, components of this criterion have been captured in the Responsible Mind-set section, specifically, (see Table 5.2 section A2) - reflects more than before on role of business in society; on responsibilities of leaders; on sustainability of
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	<p>initiative; etc. and (see Table 5.2 section A3) - <i>feels need to “pay back” and serve others</i>; to be good steward of the environment; and within Community Building section (see Table 5.2 section F2) - has improved interpersonal and communication skills (e.g. being inclusive, empathetic, flexible, communicative, and social. These are components of developing followers’ leadership capacity via coaching, mentoring, and provision of both challenge and support, but are not all encompassing. This criterion has been partially met.</p>
Causation	<p><u>Hypothesized Causation</u> The hypothesized causation in this study is that service learning causes the development of leadership traits. The following points support this hypothesis:</p> <ul style="list-style-type: none"> • The participants themselves perceive to a slight degree that service learning caused the development of certain leadership traits as noted in Table 5.2. Terms such as “has increased knowledge”, “reflects more than before”, “has developed integrative abilities”, etc. indicate that participants feel their development was increased after the service learning event, further suggesting that the service learning caused the learning outcomes. • This study has a control group, though it is not a randomized control group. • The hypothesized causation is consistent with the theory of what service learning is supposed to achieve. <p><u>Causation from Third Factors</u> In this study, some other plausible causes of the development of leadership traits includes the following:</p> <ul style="list-style-type: none"> • Transformational leadership characteristics may have been developed through the participants’ work experiences leading up to this point in a competitive career. Consequently, the ongoing development of leadership traits might be attributable to the character and habits of these particular subjects. It is possible that these subjects would have continued developing these leadership traits regardless of what types of activities they were engaged in. • There is a high ‘coaching’ component to this program. Participants begin being coached over the telephone before they come together to meet with program coordinators. The coaching is consistent and highly-stressed before, during, and after the program. In a study where so much emphasis is placed on coaching I would question if the bond developed would in fact factor into the findings. • While it is not possible to conclude that the service learning experience caused the transformational leadership characteristics it is plausible and highly likely that the experience of being immersed for a two-month period in a part of the world they are unfamiliar with would provide participants opportunities to work and live with people and organizations of differing cultural norms, beliefs, etc. Exposure to global travel and work would provide fertile ground for participants to further develop these skills as seen in Table 5.2. It is possible that the immersion is what causes the development of leadership traits while other aspects associated with service learning (e.g. reflection) might play no role. • There is no control group used within this study making it difficult to establish with certainty that a group not involved with service learning might not undergo the same learning in a different environment.
Generalizability	<p>The authors of this study acknowledge that this was a unique case study of one leadership program in one organization with a relatively small sample size. This study would need to be replicated using a variety of leadership programs and a larger sample base. The</p>

	<p>participants who took part in this study are “promising” managers of PricewaterhouseCooper U.S. firms that were nominated to take part in the program by senior managers. It is possible that this sample could be skewed as these participants may be highly motivated, self-aware professionals prior to embarking in the service learning program. Thus, results from a sample with different skill sets and capabilities may prove unlike findings for this study.</p>
Empirical Results	<p>Table 5.2 (below) provides the results of the study.</p> <p>Focusing on the data most closely tied to transformational leadership, the results are as follows:</p> <ul style="list-style-type: none"> • Grasping and articulating complexity (D2) – Table 5.2: <ul style="list-style-type: none"> ○ This is a skill that is required for innovative problem solving; and ○ Forty-nine percent of subjects identified this outcome, and while other outcomes were raised by a higher proportion of subjects, this is still a large enough number to suggest that subjects did improve in this trait. • Reflects more than before on role of business in society; on responsibilities of leaders; on sustainability of initiative; etc. (A2) – Table 5.2: <ul style="list-style-type: none"> ○ This is a skill required for inspiring followers to commit to a shared vision and goals for an organization or unit; ○ Ninety-one percent of subjects identified an increase on this skill; an overwhelming majority of subjects identified this outcome. • <i>Feels need to “pay back” and serve others; to be good steward of the environment</i> (A3) – Table 5.2: <ul style="list-style-type: none"> ○ This is a skill required for developing followers’ leadership capacity via coaching, mentoring, and provision of both challenge and support; ○ Thirty-five percent of subjects identified an increase of this trait; I would conclude that there is moderate identification of this trait. • Has increased knowledge of how to identify legitimate stakeholders; how to engage them; how to assess their contributions; etc. (F-1) – Table 5.2: <ul style="list-style-type: none"> ○ This is a requirement to inspire followers to commit to a shared vision and goals for an organization or unit; ○ Ninety-nine percent of subjects claimed to have improved in this trait; an overwhelming majority of subjects identified this outcome. • Has improved interpersonal and communication skills (e.g., being inclusive, empathetic, flexible, communicative, social (F-2) – Table 5.2: <ul style="list-style-type: none"> ○ This is a requirement for developing followers’ leadership capacity via coaching, mentoring, and provision of both challenge and support; ○ Seventy-seven percent of subjects claimed to have improved in this trait; I would conclude that there is a moderately high identification of this trait. <p>These findings are subject to the risks in data collection identified in the ‘construct validity’ section above.</p>

Table 5.1: Individual Learning Outcomes Identified Analysis of Learning Narratives (Pless, Maak, & Stahl, 2011, p. 246).

Learning Areas	Outcome Categories ^a	Indicators	Percentages ^b		kappas ^c
Responsible Mind-set (A)	Knowledge of CSR-related issues (A1)	Has increased knowledge of environmental issues, global mind-set health, poverty, corruption, sustainability, project impact, etc.	99%	95%	1.00
	Socially responsible reflection (A2)	Reflects more than before on role of business in society; on responsibilities of leaders; on sustainability of initiatives; etc.		91%	.89
	Servant leadership attitude (A3)	Feels need to "pay back" and serve others; to be good steward of the environment		35%	.84
Ethical Literacy (B)	Moral awareness (B1)	Reflects more than before on different ethical standards and positions (e.g., when different is different and when different is wrong); on questions of social and distributive justice; etc.	85%	66%	.87
	Importance of values and virtues (B2)	Increased awareness of importance of human values and virtues, such as respect, tolerance, integrity, honesty, care for needs of others, etc.		75%	.85
Cultural Intelligence (C)	General knowledge about other cultures (C1)	Has developed understanding of dimensions on which cultures differ; on how communication styles may vary across cultures; etc.	100%	95%	.84
	Culture-specific knowledge (C2)	Has gained knowledge of host country norms and customs; has developed understanding of differences among subcultures within host country; etc.		88%	.86
	Cultural empathy and sensitivity (C3)	Listens more consciously than before to people from other cultural backgrounds; enhanced ability to understand things from other's point of view; enhanced ability to detect disagreement, (not directly expressed); etc.		79%	1.00
	Being nonjudgmental (C4)	Has developed awareness of own prejudices; has learned to suspend judgment (i.e., to think before acting); etc.		54%	.93
Global Mind-set (D)	Cosmopolitan thinking (D1)	Reflects more than before on tension and connection between global and local; the possibility to reconcile both; has developed openness and concern for our shared humanity; is more willing to explore and learn from other systems; etc.	72%	72%	.80
	Grasping and articulating complexity (D2)	Has developed integrative abilities to synthesize information from diverse sources; has developed reflexive interpretive abilities to create new and more complex understanding of the environment; etc.		49%	.90
Self-Development Development (E)	Self-awareness (E1)	Increased awareness of own limitations, failures, and personal development needs; had experiences that taught humility and humbleness; etc.	95%	43%	.93
	Perspective on life (E2)	Has developed new perspective on own life (private or professional); has found deeper purpose in life; etc.		39%	1.00
	Importance of relationships (E3)	Has become more aware of importance of social relationships; cherishes friendships more than before; etc.		82%	.90
	Work-life balance (E4)	Feels a stronger need to balance work and personal life than before; gives greater priority to needs of family than before; etc.		11%	1.00

(table continues)

Table 5.1 (continued)

Learning Areas	Outcome Categories ^a	Indicators	Percentages ^b		kappas ^c
Community Building (F)	Stakeholder engagement (F1)	Has increased knowledge of how to identify legitimate stakeholders; how to engage them; how to assess their contributions; etc.	100%	99%	.93
	Interpersonal skills (F2)	Has improved interpersonal and communication skills (e.g., being inclusive, empathetic, flexible, communicative, sociable)		77%	.72
	Relationship management (F3)	Has developed and started to practice personalized form of relationship building based on values (e.g., demonstrating respect) and/or principles (e.g., giving more space)		85%	1.00

^a The codes used in the content analysis of learning narratives are presented in parentheses; results for "others" categories are not reported.

^b Percent of individuals who exhibited learning in a specific area.

^c Cohen's kappa.

(Pless, Maak, & Stahl, 2011)

Note: The researchers employed a content-analytical approach, both inductive and deductive, based on methodological guidelines by Drippendorff (2004), Neuendorf (2002), and Webber (1990). "Emergent coding was used to establish categories following preliminary examination of the data. Then priori coding was used to establish categories prior to the analysis. The researchers then checked the reliability of the coding by independently applying the category systems to a subsample of data. In cases where the reliability was not acceptable, the researchers repeated the previous steps. Once reliability had been established, the coding was applied on a large-scale basis and the final interrater reliability was determined for each category. The coefficient used to determine the interrater reliability was Cohen's kappa, which is widely considered to be a suitable measure for categorical variables. The interrater reliability coefficients for the learning outcome categories ranged between .72 and 1.00, which suggests the coding process produced reliable data" (2011, p. 244).

4.2 Individual Study Analysis

4.2.6: Study 6

This study, the final of six, is a meta-analysis consisting of forty studies.

Table 6.1: Study 6 – A Meta-Analysis on the Effects of Service-Learning on the Social, Personal, and Cognitive Outcomes of Learning, by Patrick Yorio & Feifei Ye (2012).

Research Questions	<ol style="list-style-type: none"> 1) “What is the overall strength of service learning in terms of these learning outcomes?” 2) What factors moderate the relationship between service learning and these expected learning outcomes?” (Yorio & Ye, 2012, p. 10).
Research Method	<p>This study is a meta-analysis. Four criteria were used to identify studies to include in the analysis – “1) had to be a quantitative empirical study, 2) the characteristics of the learning context had to fit the service learning criteria proposed by the National and Community Service Act: a) students actively participate in service experiences that meet a real community need; b) the service enhances what is taught in the classroom and is integrated into the students’ academic curricula; and c) the program provides structured time for a student to think, talk, or write about what the student did and saw during the actual service activity (reflection) 3) the dependent variables used in the study had to be conceivably operationalized into one of the three learning outcomes, and 4) the participants of the study had to be students of a college or university” (Yorio & Ye, 2012, p. 15).</p> <p>“Significant differences were tested for between the subpopulations within each learning outcome” (Yorio & Ye, 2012, p.18). After examining the overall effect of service learning on each learning outcome the potential moderating effect of each proposed exploratory moderator was explored. Researchers coded for five moderators applicable to each of the three learning outcomes.</p> <p>For each study, “the authors used Cohen’s <i>d</i> to estimate and describe the effects of service-learning relative to its outcomes” (2012, p. 15). That is, they calculated each study result by subtracting the mean score on the pre-test from the mean post-test score, the difference of which was divided by the pre-test standard deviation.</p>
Sample	<p>Sample Size: 40 articles (Meta-Analysis)</p> <p>“Through an open literature search, over 200 conceptual, theoretical and empirical service learning articles were identified. Fifty-seven of these articles met the criteria for inclusion. Forty of these 57 articles contained enough statistical information to compute the effect of service learning on at least one of the three outcome variables. The final forty publications included in this sample were published between 1993 and 2010” (Yorio & Ye, 2012, p. 15). See Table 6.2 below for studies included in the Meta-Analysis.</p>
Intervention: Using Service Learning	<p>Below is an analysis of how well the service learning as defined in this study corresponds with my working definition of service learning:</p> <ul style="list-style-type: none"> • “<i>Students engage in activities that address human and community needs: One of</i>

	<p>the explicit criteria for inclusion in this meta-analysis is that participants must actively participate in service experiences that meet a real community need” (Yorio & Ye, 2012, p.15). This criterion is clearly met.</p> <ul style="list-style-type: none"> • “<i>Structured opportunities intentionally designed to promote student learning and development</i>: One of the explicit measures for inclusion in this study is that the service experience must enhance what is taught in the classroom and be integrated into the participants’ academic curricula” (Yorio & Ye, 2012, p. 15). This criterion has been met. • “<i>Reflection about service</i> is an essential element of the learning experience: Again, one of the necessary measures for inclusion is that the program must provide structured time for a student to think, talk, or write about what the student did and saw during the actual service activity” (Yorio & Ye, 2012, p.15). This criterion has been met. <p>In conclusion, service learning as defined for this meta-analysis is consistent with my working definition of service learning.</p>
Construct Validity – Measurements of Leadership Development	<p><u>Variables Used to Measure Leadership Development</u></p> <p>To capture data regarding responsibility, motivation, and commitment to engage in future service activities researchers included effect sizes for variables. Each of the studies used for this meta-analysis had its own measure of outcomes, so for the purpose of this analysis the authors chose to classify the studies into three categories:</p> <ol style="list-style-type: none"> 1. Understanding social issues; 2. Personal insight; and 3. Cognitive development. <p>See Table 6.1(below) for more description explanations of these categories.</p> <p><u>Does the Collected Data Measure what was Intended?</u></p> <p>As this is a meta-analysis, detailed information about each of the specific studies was not provided. However, the meta-analysis did explicitly test for some potential biases.</p> <ol style="list-style-type: none"> 1. Sociocognitive bias: “The authors of this study suggest, consistent with Rama and colleagues’ (2000) argument, that a student’s self-evaluation of cognitive development may be somewhat inaccurate, based either on sociocognitive biases or inherent inadequacies is self-evaluation” (2012, p. 14). The authors tested for the possibility by comparing the results of studies that used objective measures, with the results of studies that used subjective measures. Likewise, the authors also compared the results of studies that collected data through written surveys, with the results of studies that collected data through discussions. All the studies, produced statistically significant results, suggesting that sociocognitive bias is not driving the results. 2. Social desirability bias: This bias may occur when participants answer questions in a manner to put themselves in the most positive light. Again, the meta-analysis compared studies using objective versus subjective data and similar results were obtained, which suggests that the bias effect on results using this data is minimal (see Table 6.4). 3. Pooling risk: The studies use different measurements for learning outcomes. In the meta-analysis these learning outcomes were placed in three broad categories: understanding social issues; personal insight; and cognitive development. While measurements of effect sizes were standardized by computing Cohen’s d for each, the bases for measuring outcomes in the studies were in fact different. There is a risk the data may be distorted by pooling these outcome

	<p>measurements.</p> <p><u>Transformational Leadership Traits</u></p> <p>Below is an analysis of how well the traits of transformational learning are identified within the Yorio and Ye meta-analysis.</p> <ol style="list-style-type: none"> 1. <i>“Inspire followers to commit to a shared vision and goals for an organization or unit.”</i> (p. 11). This analysis did not specifically collect data on this trait. This criterion has not been met. 2. <i>“Challenge followers to be innovative problem solvers: One of the three broad categories of outcomes was cognitive development, “(management skill development; writing skills, problem-solving skills, critical-thinking skills, GPA; course performance it does not specifically speak to “innovative)”</i> (p. 11). This criterion has been met, except that it does not appear to address the “innovative” part of the criterion. 3. <i>“Develop followers’ leadership capacity via coaching, mentoring, and provision of both challenge and support:”</i> (p. 11). This analysis did not specifically collect data on this trait. <p>The study only addresses one of the three components of transformational leadership.</p>
Causation	<p><u>Hypothesized Causation</u></p> <p>The hypothesized causation in this analysis is that service learning has a positive effect on understanding of social issues.</p> <ul style="list-style-type: none"> • The studies in which a control group was included provide strong support that the causation is as hypothesized. • The hypothesized causation is consistent with the theory of what service learning is supposed to achieve. <p><u>Causation from Third Factors</u></p> <p>In most of the studies, students self-selected on whether to participate in service learning, but in some studies students were assigned, suggesting that the control groups were to some degree randomized. The results in the latter group of studies were nevertheless statistically significant. The consistently strong results in both types of studies suggests that selection bias is not significantly distorting the results of the empirical studies.</p>
Generalizability	<p>As outlined by Walker, Hernandez, and Kattan, “a meta-analysis is designed to summarize the results of multiple studies. By combining studies a meta-analysis increases the size of the sample and thus the power to study the effects of interest” (2008, p. 1). Another reason for conducting a meta-analysis is to determine if study results are generalizable.</p> <p>The findings of this study are consistent with studies done in the past in that the theoretical outcomes of service learning can be an effective pedagogy in university and college academic programs. Students who participate in a service learning experience generally demonstrate a more positive understanding of social issues, alter their personal insights, and experience gains in cognitive development (p. 25).</p> <p>Finally, most of the studies chosen for inclusion in this meta-analysis were within an education environment versus those in business programs. The authors tested whether</p>

	results differed for business programs, but point out that one potential limitation of their work is the low number of business studies included (p. 23). See Table 6.2 (below).
Empirical Results	<p>Tables 6.2 - 6.4 (below) provide the results for this meta-analysis.</p> <p>Focusing on the data most closely tied to transformational leadership, the results are as follows:</p> <ul style="list-style-type: none"> • Cognitive development – management skill development; writing skills, problem-solving skills, critical- thinking skills, GPA; course performance: <ul style="list-style-type: none"> ○ In all studies used in the sample, service learning has a positive effect on cognitive development, and in all studies it is statistically significant at least the five percent level.

Table 6.1: Learning outcomes of service learning

Learning Outcome	Definition	Sample Measures
Understanding Social Issues	An individuals' frame of reference that guides decision making in terms of complex social issues.	Diversity and cultural awareness and sensitivity; perceptions of homeless, elderly, disabled, different races or cultures; ethical and moral values and decision making; interpersonal skills; understanding of the needs of the community; understanding how to help the community; a desire to engage in future service activities in terms of both a feeling of responsibility and a commitment to do so.
Personal Insight	An individual's perception of self.	Identity; awareness of oneself in terms of strengths and weaknesses; career aspirations; self-efficacy; self-esteem; determination; persistence.
Cognitive Development	Task and skill development and academic achievement.	Management skill development; writing skills; problem-solving skills; critical-thinking skills; GPA; course performance.

Note. Bold text in Understanding Social Issues learning indicates those sample measures that were included in the Civic Responsibility outcome in the additional analysis section below.

(Yorio & Ye, 2012)

Table 6.2: Studies included in the meta-analysis (number of studies = 40)

Study	N	Course Content	Reflection Type	Assessment Method	Service-Learning (Option or Required)	Research Design	Learning Outcome(s)
Amerson (2010)	60	Human Services	Written/Individual	Subjective	Self-Selected	Pre-Experimental	Cognitive Development, Understanding Social Issues
Batchelder & Root (1994)	96, 48	Liberal Arts	Discussion	Objective	Self-Selected	Quasi-Experimental and Pre-Experimental	Cognitive Development, Understanding Social Issues, Personal Insight
Beling (2004)	21, 19	Education	Discussion	Objective	Assigned	True Experimental and Pre-Experimental	Cognitive Development
Bernacki & Jaeger (2008)	45, 25	Mixed	Discussion	Objective and Subjective	Self-Selected	Quasi-Experimental and Pre-Experimental	Cognitive Development, Understanding Social Issues, Personal Insight
Blieszner & Artale (2008)	96	Human Development	Discussion	Subjective	Self-Selected	Pre-Experimental	Cognitive Development, Understanding Social Issues
Boss (1994)	65	Ethics	Discussion	Objective	Assigned	True Experimental	Understanding of Social Issues
Bringle & Kremer (1993)	44	Human Services	Written/Individual	Subjective	Self-Selected	Quasi-Experimental	Understanding Social Issues and Personal Insight
Cohen & Kinsey (1994)	167	Mass Communication and Society	Written/Individual	Subjective	Self-Selected	Quasi-Experimental	Cognitive Development
Curran (1998)	48	Psychology	Written/Individual	Subjective	Assigned	Pre-Experimental	Understanding Social Issues
Dortman et al. (2004)	59	Human Services	Reflection Type Unclear	Objective	Self-Selected	Pre-Experimental	Understanding Social Issues and Personal Insight
Feldman et al. (2006)	32	Leadership	Written/Individual	Objective	Self-Selected	Quasi-Experimental	Cognitive Development
Fenzel & Leary (1997)	57	Philosophy	Written/Individual	Objective	Assigned	True Experimental	Understanding Social Issues
Gallini & Moely (2003)	313	Mixed	Discussion	Subjective	Self-Selected	Quasi-Experimental	Cognitive Development, Understanding Social Issues
Giles & Eyler (1994)	56	Business	Written/Individual	Subjective	Assigned	Pre-Experimental	Understanding Social Issues, Personal Insight
Gorman, Duffy, & Heffernan (1994)	41	Philosophy	Discussion	Objective	Self-Selected	Pre-Experimental	Understanding Social Issues
Govekar & Rishi (2007)	43	Business	Written/Individual	Subjective	Self-Selected	Pre-Experimental	Cognitive Development and Personal Insight
Greene (1996)	98	Human Services	Written/Individual	Objective	Assigned	Pre-Experimental	Understanding Social Issues and Personal Insight
Kendrick (1996)	88	Introduction to Sociology	Discussion	Subjective	Assigned	True Experimental	Cognitive Development, Understanding Social Issues, Personal Insight
Knapp & Stubblefield (2000)	44, 22	Human Services	Discussion	Objective	Assigned	True Experimental and Pre-Experimental	Understanding Social Issues
Lowe & Clark (2009)	12	Human Services	Written/Individual	Subjective	Self-Selected	Pre-Experimental	Cognitive Development
Lundy (2007)	75	Psychology	Written/Individual	Subjective	Self-Selected	Pre-Experimental	Cognitive Development and Understanding Social Issues
Mabry (1998)	144	Mixed	Discussion	Subjective	Assigned	Pre-Experimental	Understanding Social Issues
Markus et al. (1993)	89, 37	Political Science	Discussion	Subjective	Assigned	Quasi-Experimental and Pre-Experimental	Cognitive Development, Understanding Social Issues, Personal Insight
McCarthy & Tucker (2002)	437	Business	Discussion	Subjective	Assigned	Pre-Experimental	Understanding Social Issues
McWilliams et al. (2008)	28	Human Services	Reflection Type Unclear	Subjective	Self-Selected	Pre-Experimental	Understanding Social Issues
Miller (1997)	379	Psychology	Discussion	Subjective	Self-Selected	Pre-Experimental	Personal Insight
Moely et al. (2002)	541, 217	Mixed	Discussion	Subjective	Self-Selected	Quasi-Experimental and Pre-Experimental	Cognitive Development, Understanding Social Issues, Personal Insight
Mpofu (2007)	130, 65	Human Services	Written/Individual	Objective	Self-Selected	Quasi-Experimental and Pre-Experimental	Cognitive Development
Nnakwe (1999)	34	Human Services	Discussion	Subjective	Assigned	Pre-Experimental	Understanding Social Issues
Osborne et al. (1998)	93	Pharmacy	Written/Individual	Objective	Assigned	True Experimental	Cognitive Development, Understanding Social Issues, Personal Insight
Palmer, Goetz, & Chatterjee (2009)	66	Business	Written/Individual	Subjective	Self-Selected	Pre-Experimental	Understanding Social Issues
Parker-Gwin & Mabry (1998)	121	Sociology	Discussion	Subjective	Assigned and Self-Selected	Pre-Experimental	Cognitive Development, Understanding Social Issues, Personal Insight
Payne & Bennett (1999)	55	Unreported	Written/Individual	Objective	Self-Selected	Pre-Experimental	Understanding Social Issues
Payne (2000)	53	Unreported	Written/Individual	Objective	Self-Selected	Pre-Experimental	Understanding Social Issues
Potthoff et al. (2000)	136	Education	Written/Individual	Subjective	Self-Selected	Pre-Experimental	Cognitive Development, Understanding Social Issues, Personal Insight
Root, Callahan, & Spanski (2002)	442	Education	Written/Individual	Subjective	Self-Selected	Pre-Experimental	Understanding Social Issues, Personal Insight
Strage (2000)	475	Education	Written/Individual	Objective	Assigned	Quasi-Experimental	Cognitive Development
Wang & Jackson (2005)	250	Mixed	Reflection Type Unclear	Subjective	Self-Selected	Pre-Experimental	Understanding Social Issues
Wang & Rodgers (2006)	100	Mixed	Reflection Type Unclear	Subjective	Self-Selected	Pre-Experimental	Cognitive Development
Weber & Gilyptis (2000)	129, 96	Business	Written/Individual	Subjective	Self-Selected	Quasi-Experimental and Pre-Experimental	Understanding Social Issues

(Yorio & Ye, 2012)

Table 6.3: Meta-analytic estimates of the effect of service-learning on its learning outcomes: Hypotheses 1–3

	Number of publications	<i>N</i>	<i>k</i>	<i>Mg</i>	<i>SEMg</i>	95% Conf. Int. (fixed effects)		Est. δ (random effects)	<i>T</i> ²	<i>df</i>	χ^2
Understanding of Social issues	30	4,165	34	.37	.04	.28	.45	.34*	.05	33	225.01*
Personal Insight	13	2,521	17	.37	.06	.25	.48	.28*	.005	16	22.81
Cognitive Development	19	2,891	25	.53	.10	.36	.80	.52*	.20	24	316.23*

Note. *N* = number of subjects; *k* = number of effect sizes; *Mg* = mean corrected effect size (Hedges *G*); *SEMg* = standard error of *Mg*; 95% Conf. Int. = 95% confidence interval for *Mg*; Est. δ = random effects estimate of Hedges *g*; *T*² = variance component; *df* = degrees of freedom; χ^2 = chi-square.

* *p* < .05. ***p* < .01.

(Yorio & Ye, 2012)

Table 6.4: Exploratory moderator analysis

	<i>k</i>	<i>Mg</i>	<i>SEMg</i>	95% Conf. Int. (fixed effects)		Est. δ (random effects)	Significance Tests for Moderators			
							<i>p-value</i> <i>difference</i>	<i>T</i> ²	<i>df</i>	χ^2
<i>Understanding Social Issues</i>										
Control comparison	12	.58	.06	.45	.72	.58*	<.01	.04	32	174.26
Pre-experimental	22	.26	.04	.16	.35	.24*				
Quasi-experimental	7	.53	.08	.33	.73	.52*	.93	.02	10	12.99
True experimental	5	.50	.06	.35	.64	.51*				
Objective	9	.34	.09	.13	.56	.32*	.87	.05	32	225.51*
Subjective	25	.37	.05	.27	.46	.34*				
Assigned	15	.36	.06	.24	.50	.33*	.89	.05	32	223.21*
Self-selected	19	.37	.06	.23	.48	.34*				
Business	4	.41	.08	.18	.64	.41*	.33	.05	32	216.84*
Nonbusiness	30	.36	.04	.26	.45	.33*				
Written reflection	15	.26	.06	.13	.40	.22*	.01	.04	32	186.04*
Discussion reflection	16	.45	.05	.34	.56	.42*				
<i>Personal Insight</i>										
Control comparison	10	.56	.07	.38	.74	.42*	.02	.002	15	14.60
Pre-experimental	7	.22	.04	.13	.31	.21*				
Quasi-experimental	5	.58	.14	.14	1.01	.55*	.16	.007	5	5.82
True experimental	2	.55	.03	.44	.67	.40*				
Objective	3	.33	.09	-.07	.73	.28*	.86	.006	15	23.11
Subjective	14	.37	.06	.23	.52	.29*				
Assigned	7	.38	.07	.20	.56	.31*	.50	.005	15	22.03
Self-selected	10	.35	.08	.17	.54	.26*				
Business	2	.30	.05	-.27	.87	.28*	.99	.006	15	22.96
Nonbusiness	15	.37	.06	.24	.51	.28*				
Discussion reflection	9	.39	.08	.21	.56	.26*	.22	.004	15	21.41
Written reflection	7	.34	.08	.12	.54	.29*				
<i>Cognitive Development</i>										
Control comparison	13	.66	.13	.37	.94	.57*	.48	.20	23	306.16*
Pre-experimental	12	.51	.17	.14	.87	.50*				
Quasi-experimental	9	.70	.15	.39	1.07	.59*	.18	.02	10	23.96*
True experimental	3	.33	.10	.15	.60	.42*				
Objective	10	.88	.17	.50	1.25	.78*	.02	.16	23	230.47*
Subjective	15	.38	.11	.14	.62	.36*				
Assigned	10	.33	.14	.09	.56	.28**	.02	.17	23	252.40*
Self-selected	15	.70	.10	.43	1.07	.67*				
Discussion reflection	13	.46	.15	.15	.80	.45**	.12	.18	23	249.95*
Written reflection	11	.72	.14	.40	1.04	.67*				

Note. Control-comparison research designs = quasi-experimental + true experimental; *k* = number of effect sizes; *Mg* = mean corrected effect size (Hedges *G*); *SEMg* = standard error of *Mg*; 95% conf. int. = 95% confidence interval for *Mg*; Est. δ = random effects estimate of Hedges *g* for the moderator; *p* = the *p* value for the difference between the random effects estimates; *T*² = variance component; *df* = degrees of freedom; χ^2 = Chi-square.

* *p* < .05. ***p* < .01.

(Yorio & Ye, 2012)

4.3 Study Synopsis

Below I synthesize the evidence on the degree to which service learning affects the development of each of the three parts of my working definition of transformational leadership.

(1) Inspiring followers to commit to a shared vision and goals for an organization or unit:

The empirical papers do not directly measure whether service learning increases a person's ability to inspire followers to commit to a shared vision and goals for an organization or unit. However, some of the elements of that capability are captured in these studies. Table 7.1 (below) summarizes what elements of that capability are captured in these studies.

Table 7.1: Results for transformational learning trait #1 - Inspiring followers to commit to a shared vision and goals for an organization or unit

Trait	Study	Degree of Support	Possible Risks (measurement or causation)
Commitment to influence social values	#1- Astin & Sax	Very strong (p < .001)	<ul style="list-style-type: none"> • self-reported data • social desirability bias • non-response bias
Commitment to influence political structures	#1- Astin & Sax	Very strong (p < .001)	<ul style="list-style-type: none"> • self-reported data • social desirability bias • non-response bias
Ability to instill sense of responsible citizenship in followers (Children in this case)	#2 - Colby, Bercaw, Clark, & Galiardi	Low to moderate (identified by 17% of respondents)	<ul style="list-style-type: none"> • self-reported data • social desirability bias • lack of pre-service learning data
Develop trust	#3 - D'Agostino	Very strong (p < .005)	<ul style="list-style-type: none"> • self-reported data • social desirability bias
Socially responsible reflection	#5 – Pless, Maak, & Stahl	These themes are identified by respondents to 91% of participants exhibited learning in this area	<ul style="list-style-type: none"> • no control group • self-reported data • social desirability bias • response bias
Knowledge of CSR-related issues	#5 – Pless, Maak, & Stahl	These themes are identified by respondents to 95% of participants exhibited learning in this area	<ul style="list-style-type: none"> • no control group • self-reported data • social desirability bias • response bias

The above data summary provides a synopsis of the information gathered through study analysis. However, gaps remain. Below I analyze what we know and what we do not know about the role service learning plays on a leaders' ability to inspire followers to commit to a shared vision and goals for an organization or unit.

Commitment to Organization: In order to be able to inspire others to commit to a shared vision and goals for an organization or unit, leaders themselves must have a personal commitment to the organization. That service learning improves commitment is strongly evidenced in study #1- Astin & Sax and study #5 - Pless, Maak, & Stahl. These studies find effects on commitment to influence social values, commitment to influence political structures, and socially responsible reflection. While both of these studies do have potential risks in this data (e.g. social desirability bias) there is reason to believe those risks are low (based on study #6 by Yorio & Ye). I conclude that we have good evidence that service learning promotes commitment to one's organization.

Ethics: Transformational leaders must possess ethical values if they are to inspire others to commit to a shared vision and goals for an organization or unit. That service learning improves commitment to ethics is strongly evidenced in study #3 – D'Agostino, as well as, in study #5 – Pless, Maak, & Sahl. These studies find effects on developing trust and socially responsible reflection. Once again, the risk of skewed data is probably low. I would conclude that we have strong evidence that service learning promotes a commitment to ethical behaviour. Evidence is not provided on the subjects actually 'behaving' more ethically. This distinction is worth noting.

Ability to model desired behaviours: That service learning improves leaders' abilities to model desired behaviours is strongly evidenced in study #3 – D'Agostino. This study finds that service learning can promote one's ability to develop trust. We have strong evidence that service learning promotes an important aspect of the ability to model desired behaviours.

Persuasiveness: To inspire others to commit to a shared vision and goals for an organization or unit, a leader is required to possess the ability to persuade others to a degree. That service learning improves the ability to persuade children to commit to good citizenship has been identified in study #3 - D'Agostino. While evidenced within this study, it is necessary to point out that this study is related to children only through the process of using service learning as a pedagogical tool. Overall, the evidence on persuasiveness is not very generalizable.

Ultimately get results: To be successful, transformational leaders must be able to get the desired result of inspiring others to commit to a shared vision and goals for an organization or unit. That service learning improves the ability to do this has not been captured within the six studies reviewed.

(2) Challenge followers to be innovative problem solvers.

Table 7.2: Results on transformational learning trait #2 – Challenge followers to be innovative problem solvers.

Trait	Study	Degree of Support	Possible Risks (measurement or causation)
Ability to think critically	#1- Astin & Sax	Very strong (p < .001)	<ul style="list-style-type: none"> • self-reported data • social desirability bias • non-response bias
Understanding self	#4 - Cress, Yamashita, Duarte & Burns	Very strong (p < 0.001)	<ul style="list-style-type: none"> • self-reported data • social desirability bias
Tolerance of others with different beliefs	#4 - Cress, Yamashita, Duarte & Burns	Very strong (p < 0.001)	<ul style="list-style-type: none"> • self-reported data • social desirability bias
Sense of personal ethics	#4 - Cress, Yamashita, Duarte & Burns	Very strong (p < 0.001)	<ul style="list-style-type: none"> • self-reported data • social desirability bias
Grasping and articulating complexity	#5 - Pless, Maak, & Stahl	49% of participants identified learning in this area	<ul style="list-style-type: none"> • no control group • self-reported data • social desirability bias • response bias
Cognitive development	#6 - Yorrio & Ye	Strong (p < .05)	<ul style="list-style-type: none"> • tested for potential biases, result were robust

The above data summary provides a synopsis of the information gathered through the study analysis. Below I analyze what we know and the gaps that exist regarding the role service learning plays on challenging followers to be innovative problem solvers.

Critical Thinking Skills: To challenge followers to be innovative problem solvers, leaders must possess critical thinking skills themselves. That service learning improves critical thinking skills is strongly evidenced in study #1- Astin & Sax; study #4 – Cress, Yamashita, Duarte & Burns, and study #6 – Yorrio & Ye. These studies find effects on ability to think critically, grasping and articulating complexity, and cognitive development. While these studies do have potential risks in this data, there is reason to believe those risks are low. Hence, I conclude that we have good evidence that service learning promotes critical thinking skills.

Openness to Other's Ideas: Transformational leaders are required to be open to others' ideas when problem solving innovatively or modeling this behaviour to followers. That service learning improves openness to others' ideas is strongly evidenced in study #4 – Cress, Yamashita, Duarte & Burns. This study finds effects on tolerance of others with different beliefs. I would conclude that we have strong evidence that service learning promotes openness to other's ideas.

Creativity: Looking at problems in creative ways is an important trait in transformational leaders. That service learning improves leaders' abilities to be creative has not been captured within the six studies reviewed.

Ability to Instill in Others: Subjects' abilities to be successful in instilling this ability to followers, has not been captured within the six studies reviewed.

(3) Developing followers' leadership capacity via coaching, mentoring, and provision of challenge and support.

Table 7.3: Results on transformational learning trait #3 - *Develop followers' leadership capacity via coaching, mentoring, and provision of challenge and support.*

Trait	Study	Degree of Support	Possible Risks (measurement or causation)
Leadership ability	#1- Astin & Sax	Very strong (p < .001)	<ul style="list-style-type: none"> • self-reported data • social desirability bias • non-response bias
Social self-confidence	#1- Astin & Sax	Very strong (p < .001)	<ul style="list-style-type: none"> • self-reported data • social desirability bias • non-response bias
Ability to work cooperatively with others	#1- Astin & Sax	Very strong (p < .001)	<ul style="list-style-type: none"> • self-reported data • social desirability bias • non-response bias
Recognize the importance of helping others	#2 - Colby, Bercaw, Clark, & Galiardi	Low to moderate (identified by 12% of respondents)	<ul style="list-style-type: none"> • self-reported data • social desirability bias • lack of pre-service learning data
Develop trust	#3 - D'Agostino	Weak (with control variables, not statistically significant)	<ul style="list-style-type: none"> • self-reported data • social desirability bias
Interest in developing leadership abilities in others	#4 - Cress, Yamashita, Duarte & Burns	Very strong (p < 0.001)	<ul style="list-style-type: none"> • self-reported data • social desirability bias
Feels need to "pay back" and serve others	#5 - Pless, Maak, & Stahl	Moderate (35% of participants cited learning in this area)	<ul style="list-style-type: none"> • no control group • self-reported data • social desirability bias • response bias
Improved interpersonal and communication skills	#5 - Pless, Maak, & Stahl	77% complete	<ul style="list-style-type: none"> • no control group • self-reported data • social desirability bias • response bias

Below I analyze what we know and what gaps exist about the role service learning plays on developing followers' leadership capacity via coaching, mentoring, and provision of challenge and support.

Communication Skills: Communication skills are necessary to be able to develop followers' leadership capacity via coaching, mentoring, and provision of challenge and support. That service learning improves communication skills can be seen in studies 1, 2, 4, and 5.

Ability to Provide Feedback: Transformational leaders are tasked with providing effective feedback to followers. That service learning improves a leaders' commitment to provide feedback is strongly evidenced in study #1 - Astin & Sax; study #2 - Colby, Bercaw, Clark, & Galiardi; and study #4 – Cress,

Yamashita, Duarte & Burns. This study finds that service learning enhances leadership ability, ability to work cooperatively with others, recognizing the importance of helping others, and having an interest in developing leadership abilities in others. I would conclude that we have good evidence that service learning promotes the ability to provide feedback.

Develop Trust for Others: Creating an environment where trust is the norm requires transformational leaders to earn their followers' trust. Recognizing the importance of helping others' is one of the aspects of developing trust, and this has been captured in study #2 - Colby, Bercaw, Clark, & Galiardi. However, in study #3 – D'Agostino's research did not find support for a link between service learning and developing trust, if control variables were used in statistical analysis.

Developing Followers' Leadership Capacity: The ability to develop followers' leadership capacity is a trait of transformational leaders. That service learning develops followers' leadership capacity has been captured in study #4 - Cress, Yamashita, Duarte & Burns. However, interest in developing leadership abilities in others, this is not the same as being able to successfully do it.

SECTION V – CONCLUSION

The objective of this review was to determine if evidence exists that service learning facilitates the development and/or enhancement of transformational leadership qualities in managers. This systematic review found evidence that service learning enhances some aspects of transformational leadership qualities. However, there are some aspects of transformational leadership traits that were not tested in the studies examined in this review.

Two factors clearly placed limitations on acquiring a conclusive outcome to this review. The first was the lack of studies available on this subject. I found no study that directly tests the role of service learning on transformational leadership. Secondly, only one study could be located, The Ulysses Project, with data collected from subjects who were managers. In all other studies, the subjects were university/college students. This required the author to map out data collected on general leadership traits into transformational leadership traits.

The data in its current form does not directly address the research question; however, in all six of the studies used in this review, there is partial evidence suggesting that service learning facilitates the development and/or enhancement of certain transformational leadership qualities in managers.

At present, there exists an opportunity for educational institutions, non-profit organizations, and businesses to support and take part in future research directly targeted to this question. It is insufficient however for future research to merely demonstrate that transformational leadership qualities in managers are developed and/or enhanced through service learning engagement. What is needed is research that provides evidence on how service learning can play a role not only in

the development, but also, in the sustainability of transformational leadership characteristics in managers.

In theory, there exists strong links between the purpose of service learning and transformational leadership traits. Nevertheless, when looking at the empirical evidence we know that so far the data is incomplete, but what we do have is supportive. If additional evidence can be provided which corroborates this link – an exciting opportunity exists to develop in transformational leaders through a community-based service learning pedagogy.

SECTION VI – REFERENCES

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