Assessing Perceived Student Leadership Skill Development in an Academic Leadership Development Program

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Abstract

This research evaluated learning outcomes of a leadership development program at a large, southern land grant institution. The program is an interdisciplinary, semester-long class where experience and theory are juxtaposed to offer leadership training and development. Through an intensive research project, the program exposes students to four practical skills and four adaptive skills related to leadership development. The research outcomes of this study found that students did perceive to have gained the intended leadership skills as related to the four practical and four adaptive skills set forth by the program curriculum. As leadership programs continue to grow, these programs must be assessed and evaluated to continue to garner merit within the academic community.

Introduction

Leadership development programs, both formal and informal, abound at American colleges and universities. The university setting offers the opportunity to coalesce theory and experience in a learning environment. The emphasis on experiential learning offers students the opportunity to develop the technical skills needed for a selected occupation, as well as the chance to gain leadership skills required to function in the workplace. "Our rapidly changing society desperately needs skilled leaders who are able to address complex issues, build bridges, and heal divisions" (Astin & Astin, 2000, p. 31).

Despite this growth, leadership programs are also greatly scrutinized. As noted by Brundgardt and Crawford (1996), "Leadership educators in an era of fiscal tightness understand the importance of program justification and survival" (p. 47). In the W. K. Kellogg Foundation publication, *Leadership Reconsidered: Engaging Higher Education in Social Change*, the authors state that "the concept of leadership and the educational goals of leadership development have been given very little attention by most of our institutions of higher learning" (Astin & Astin, 2000, p. 3).

Because of such scrutiny, evaluation of leadership programs is vital. Studying the outcomes of a leadership program assists in the evaluation of the effectiveness of that program and can lead to process improvement within the program design (Brungardt & Crawford, 1996). Because there is no one proven method to acquire leadership competencies and leadership development, programs must be evaluated to discover appropriateness and positive outcomes. Brungardt and Crawford further noted assessment and evaluation of leadership programs help ground programs in the needs of students while working within the constraints of academe" (p. 37).

Conceptual Framework

One leadership development program at a large, southern land-grant institution is an interdisciplinary and experiential learning program that offers students leadership skill development on an academic level. The primary focus of the program has been leadership development through service with the program process theory being to develop and hone the practical and adaptive leadership skills of students through research service projects while working in groups. For the purpose of this study, the term *practical skills* was operationalized as those skills that can directly be taught through a systematic process, and include

problem definition, discovery of research alternatives, delegation/teamwork, and achievable challenge. The term *adaptive skills* was operationalized as the skills that are adopted only through direct experience with a closely related practical skill, and include ability to focus on an issue, direct attention to detail, management of time and resources, persistence.

Leadership development, as defined by the Center for Creative Leadership, is "the expansion of a person's capacity to be effective in leadership roles and processes. Leadership roles and processes are those that enable groups of people to work together in productive and meaningful ways" (Van Velsor, McCauley, & Moxley, 1998, p. 4). The program's primary objective has been developing leadership competencies through classroom activities and leadership skills though service projects. "Knowledge is a necessary first step, but by itself it is not sufficient for changing leadership behavior. The new knowledge must be put into action. Skills encompass the action domain of learning" (McDonald-Mann, 1998, p. 107).

Class sessions have offered students information on topics including research methods, ethics, critical thinking and problem solving, group dynamics, and leadership theory overviews. Intertwined within the coursework has been semester long research service project conducted in teams. Working in conjunction with a liaison from the cooperating organization, the teams have undertaken each project as a research proposal and have developed problem statements, reviewed literature, developed or identified questionnaires (if necessary), researched alternatives, and proposed solutions. The final product is a deliverable and a presentation to representatives of the cooperating organization both of professional quality.

Because of the experiential learning basis, the program has offered a combination of instructional activities to enrich each student's experience. Drawing from David Kolb's Experiential Learning Cycle, students are offered *abstract conceptualization* through lectures from faculty and other scholars, *active experimentation* through the development of problem statements and research outlines, *concrete experience* through data collection and evaluation, and *reflective observation* through evaluation within the interdisciplinary group process (Svinicki & Dixon, 1987; Kolb, 1984; Chickering, 1977). It has been the intent of the program that, through this learning cycle, students have learned not only how to approach, solve and report on a problem, but also have learned leadership skills and competencies which those students will continue to practice in both a professional setting as well as in a civic setting. Mumford, Zaccaro, Harding, Jacobs, and Fleishman (2000) noted that "leadership can be framed not

in terms of specific behaviors, but instead in terms of the capabilities, knowledge, and skills that make effective leadership possible" (p. 12).

Leadership Development

Day (2001) dichotomizes the concepts of leader and leadership when considering development, by expressing leader development as human capital and leadership development as social capital. "In the case of leader development, the emphasis typically is on individual-based knowledge, skills and abilities associated with formal leadership roles" (p. 584) whereas, "Leadership development can be thought of as an *integration* strategy by helping people understand how to related to others, coordinate their efforts, build commitments, and develop extended social networks by applying self-understanding to social and organizational imperatives" (p. 586).

Similarly, Hitt, and Ireland (2002) in an article for *The Journal of Leadership and Organizational Studies* stressed that it is the leadership of managing such human and social capital that offers organizations a competitive advantage. Referred to by Hitt and Ireland as strategic leadership, their concept proposed that human capital, being a person's knowledge, skills, and capabilities comprise an organization's most unique resource, and that "social capital entails a web of relationships that includes norms, values and obligations, but also yields potential opportunities for the holders of the capital" (p. 5). When strategically led, the human capital can be utilized to its maximum potential and the social capital can help to create dynamic teams and environments prepared to face the challenges of the future.

Above all, development related to leadership should stress active learning methods versus theory, since leadership is an active process (Bass, 1990). However, theory must balance active learning in all leadership development methods, models, and curriculum. "Those who wish to develop leaders must understand much more than the current state of knowledge about leadership if they are to do more than engage in the documentation of trivia. Leadership development is an important personal and social skill" (Spitzberg, 1995, p. 36).

Practical and Adaptive Skills as Related to the Program

Research studies documenting the qualities possessed by leaders have provided leadership literature a broad range of traits and skills necessary to be a leader. These traits and skills range from the unattainable or unalterable, including age, gender and height, to those a person can work to develop such as confidence, insight and knowledge (Northouse, 2001; Bass, 1990). No one list has been

developed because studies have found that "different leadership skills and traits were required in different situations" (Bass, 1990, p. 78). Despite this, some characteristics have appeared in several research studies. In addition, the Skills-Based Model conceptualized by Mumford, Zaccro, Harding, Jacobs, and Fleishman (2000), demonstrated that "skills are seen as developing as a function of the interaction between traits and experience" (p. 156).

For this program, classroom activities have focused on building four practical skills, including problem definition, discovery of research alternatives, delegation/teamwork, and achievable challenge. Through experience with the primary project, each competency can be fostered into a complimentary adaptive skill, which are ability to focus on an issue, direct attention to detail, management of time and resources (including human resources), and persistence. These practical and adaptive skills constitute leadership qualities found in several notable studies and related literature.

Problem Definition/Focusing on an Issue

In an effort to replicate previous studies related to best leadership practices, Frank Toney (1996) surveyed 1,100 chief executive officers. Toney found that one of the strongest actions related to goal attainment was the leader maintaining constant focus on the goal. Zaleznik (1998), in an article for *Harvard Business Review,* wrote that leaders "are active instead of reactive, shaping ideas instead of responding to them. Leaders adopt a personal and active attitude toward goals" (p 66). In addition, Mumford, Zaccaro, Connelly, and Marks (2000), through their review of the skills-based model of leader performance noted that "leadership within this model is based on an individual's capacity for solving the kind of novel, ill-defined problems with which people are presented in organizational leadership roles. Leaders must define significant problems, gather information, formulate ideas, and construct prototype plans for solving the problem" (p. 157). As noted by Edens (2000), many students are not equipped with such a skill during their academic career and therefore "cannot perform decision-making and problem-solving tasks associated with their profession" (p. 55).

Discovery of Research Alternatives/Direct Attention to Detail

Drawing from previous research, Kirkpatrick and Locke noted that cognitive ability is an important factor that differentiates leaders from non-leaders (cited in Northouse, 2001). Toney (1996) noted from his research with CEOs that the "most successful leaders critically analyze alternatives and opportunities" (p. 122). Similarly, Stogdill (1995), in a factor analysis of leadership traits found

scholarship to be one of the five determinates of a person in a leadership position. In addition, the second component to the skills-based model of leader performance as reviewed by Mumford, Zaccaro, Connelly, and Marks (2000) demonstrated the importance of being able to generate solutions to problems. "Viable solutions to leadership problems are those that work within the context of the organization. Thus, leaders must go outside themselves, appraising the implications of a solution within the organizational context" (p. 157). Finally, Heifetz and Laurie (1998), in their article for *Harvard Business Review* on Leadership, emphasized the need to learn by being attentive to differing points of view. These authors maintain that "People need leadership to help them maintain their focus on the tough questions. Disciplined attention is the currency of leadership" (p. 183).

Delegation and Teamwork/Management of Time and Resources

A factor analysis of leadership studies published between 1948 and 1970 showed that social and interpersonal skills were listed as an important leader quality in 16 of the 52 studies (Bass, 1990). "Evidence of interpersonal competence has included a wide variety of behaviors, such as showing understanding, caring, and consideration for others; displaying authenticity, rather than transparency; communicating easily and clearly; fostering and maintaining good relations with others; and serving to increase harmony, reduce tensions, and resolve conflicts" (p. 110). Developing the above skills takes the understanding that such skills are vital to teamwork. Zaccaro, Mumford, Connelly, Marks and Gilbert (2000) in a study assessing the problem-solving capabilities of leaders noted that "Leader problem solving takes place in a social context. Thus… effective problem solving requires social judgment skills that reflect an understanding of people and social systems. Such system skills are particularly useful and apparent in the diagnosis of mistakes and errors in complex social systems" (p. 46).

In addition, Kouzes and Posner (1995), in their research on best leadership practices noted that collaboration improves performance and increases credibility. "Shared goals bind people together in collaborative pursuits. As individuals jointly work together and recognize that they need each other in order to be successful, then become convinced that everyone should contribute and that, by cooperating, they can accomplish the task successfully" (p. 155). Such collaboration is orchestrated by what Hitt and Ireland (2002) termed strategic leadership, which is defined as "a person's ability to anticipate, envision, maintain flexibility, think strategically, and work with others to initiate changes that will create a viable future for the organization" (p. 4).

Similarly, Kotter (1997) emphasized the need to leader-managers in order to both cope with change and the complexity that comes with any large project or organization. "Managers 'organize' to create human systems that can implement plans as precisely and efficiently as possible" (p. 28). Mintzberg (1997), in his article *The Manager's Job: Folklore and Fact*, demonstrated that the role of the leader is one aspect of a manager's greater interpersonal roles and as such, the manager is responsible for the work accomplished by his unit. "The influence of managers is most clearly seen in the leader role. Formal authority vests them with great potential power; leadership determines in large part how much of it they will realize" (p. 43). Stewart and Manz (1997), while research the leadership of self-managing work teams, found that the form of leadership that best works for self-managed teams is a passive, democratic style of leadership whereas the "leader serves more as a resources and less as authority figure attempting to influence behavior" (p. 405). In addition, the Leader-Member Exchange Theory offers the important caveat that the strength of the relationship developed between leader and follower directly relates to the follower's willingness to perform beyond prescribed roles (Bauer & Green, 1996; Northouse, 2001). Therefore, well-developed leader to follower relationships improve the process of goal attainment. Delegation is one technique to assist in the development of followers and to help followers become better connected to the leader and the goal (Bauer & Green, 1996).

Achievable Challenge/Persistence

J. Thomas Wren (1995), in the Preface of the book, *The Leader's Companion*, stated that the end result of leadership should be "the achievement of mutual goals which are intended to enhance one's group, organization, or society" (p. xi). Bass (1990) wrote that achieving appropriate challenges offers a less experienced manager (or leader) the opportunity for greater development (p. 833). In his article, *The Making of Leaders: A Review of the Research in Leadership Development and Education*, Brungardt (1996) noted that "Tasks that are complex and ambiguous serve to enhance development" (p. 86). Kirkpatrick and Locke (1995) furthered this idea when they wrote that "Leaders have a relatively high desire for achievement. The need for achievement is an important motive among effective leaders… High achievers obtain satisfaction from successfully completing challenging tasks, attaining standards of excellence, and developing better ways of doing things" (p. 135).

Why a person will continue to work towards achievement is explained by Vroom's expectancy theory, which states that, "motivation is determined by two elements, the *belief* that effort will be rewarded and the *value* attached to specific

rewards" (cited in Buford & Lindner, 2002, p. 77). When an outcome is positively valued, a person's self-efficacy will lead to the needed effort (Buford & Lindner, 2002). Similarly, McClelland's Trichotomy of Needs Theory denotes three reasons for personal motivation, including the need for power, the need for drive and achievement, and the need for affiliation. People with the need for achievement are motivated by problem solving, competitiveness, and are motivated by a challenging opportunity and an accomplishment (Shriberg, Shriberg, & Lloyd, 2002). In addition, the CCL's *Handbook of Leadership Development* notes that "people with high self-esteem are less likely to be affected by various kinds of stress and more apt to work harder in response to negative feedback than people with low self-esteem. It seems reasonable to believe that self-esteem has a similar relationship to learning – that having a strong sense of self-worth and a good measure of confidence in their abilities helps people face the possibility that their familiar skills are no longer adequate to the new and challenges they face. For people with relatively high self-esteem, engaging in a new and challenging opportunity seems like less of a risk" (Van Velsor & Guthrie, 1998, p. 247). Finally, Bass (1990) summarized several historic studies relating to the need of leaders to be persistent. Dating from between 1915 and 1942, each of the nine studies found a positive correlation between stubbornness or persistence and leadership.

Population

A purposive sample (Creswell, 2005) of students who participated in the leadership development program from the fall 2000 semester to the fall 2002 semester was used. Although the leadership development program had existed since the spring of 1994, the program had not been defined with the practical and adaptive skill framework until the fall of 2000. Students from the sample were enrolled through one of the five participating colleges which included the business college, the agricultural college, the engineering college, the architecture college, and the liberal arts college.

Methodology

In order to specifically address the four adaptive skills and four practical skills, an instrument was created by compiling sections of related assessment instruments from David A. Whetten and Kim S. Cameron's (2002) book, *Developing Management Skills*. In addition, on section from the instrument created and used by Michael J. McCormick in his unpublished doctoral dissertation entitled *The Influence of Goal-Orientation and Sex-Role Identity on the Development of Leadership Self-Efficacy During a Training Intervention* was used to measure the

adaptive skill of persistence. Because each instrument section was initially weighted on a six-point Likert type scale of 1 – Strongly Disagree, 2 – Disagree, 3 – Slightly Disagree, 4 – Slightly Agree, 5 – Agree, and 6 – Strongly Agree, this scale was maintained in the final instrument. The instrument was designed in a post-then format to allow for the reflection of the participants' perceived leadership abilities prior to and after their program participation and to control for response-shift bias (Van Velsor, 1998; Rohs, 2002). In addition, an open-ended question was included at the end of the instrument to allow for the input of supporting data.

A pilot test was conducted on the instrument to identify any problematic instructions and questions and to determine face validity. Twenty-six graduate students and 48 undergraduate students participated in the pilot test and, at the time of the test, all students were enrolled in an academic leadership course. The instrument yielded consistent reliability coefficients from the test and, based on the feedback from the pilot test, surveys were modified and printed in booklet format to make the survey response as simple as possible (Dillman, 2000).

Survey packets were mailed to 297 former program participants using addresses complied from the alumni center database as well as the current student information management system. Survey packets included a coded survey, a cover letter explaining the purpose of the study and Institutional Review Board requirements, and a postage paid business reply envelope to make responding as simple as possible for respondents (Dillman, 2000). Reminder postcards were sent to all non-respondents four weeks after the initial mail-out date and a final reminder message was sent via electronic mail in August to all non-respondents for which an electronic mail address could be obtained (n = 105). As responses were received, each was systematically inventoried, quantitative data entered into SPSS, and supporting data from the open-ended question transcribed.

In his book, *Mail and Internet Surveys: The Tailored Design Method*, Dillman (2000) stated that "giving respondents reasons that a survey is being done, providing a toll-free number to call with questions and personally addressing correspondence are small, but not inconsequential ways of showing positive regard to questionnaire recipients" (p. 15). Such measures were taken into account for this study, however an electronic mail address was offered versus a toll-free number. After invalid addresses were noted through returned mail, the survey sample size was reduced to 280 possible respondents and of those, 88 surveys were returned yielding a 31.4% response rate. Of the 88 respondents, 26 (29.5%) were from the agriculture and life sciences college, 25 (28.4%) were from the engineering college, 20 (22.7%) were from the business college, 15 (17%) were

from the liberal arts college, and 2 (2.3%) were from the architecture college. Due to the low response rate from the architecture college, no conclusions were drawn from that sample cohort.

Data were tested for non-response bias by using Method I as explained by Lindner, Murphy, and Briers (2001). The data showed no statistical difference of means between surveys received early in the study (within four weeks) and those received after reminder prompts were sent indicating the findings are generalizable to the remainder of the population.

Findings and Conclusions

There were nine hypotheses tested in this study with the first being related to the program as a treatment and the subsequent eight being related to each of the practical and adaptive skills. Hypothesis One stated that "There is no difference in the perceived leadership skills as related to the program curriculum prior to and following the program." Means of all items within the eight constructs demonstrated a positively correlated, statistically significant difference from before to after the program (see Table 1). Given the findings of hypothesis one, it is concluded that the program did improve students' self-perceived leadership skills as related to the program curriculum during the time of the study.

Table 1
T-Test for Paired Means of Responses as Related to the Perceived Leadership Skills of the Leadership Development Program

	N	M**	SD	t	Significance
Leadership Skills				-14.267	.000*
Before the Program	77	4.11	.562		
After the Program	77	4.85	.513		
*Indicates a significant difference at alpha = .05 ** Scale of 1 = Strongly disagree, 2 = Disagree, 3 = Slightly disagree, 4 = Slightly agree, 5 = Agree, and 6 = Strongly agree					

The development or honing of both the practical and adaptive skills for each student, embedded in an experiential learning environment created the program impact theory. As noted by Mumford, Zaccaro, Harding, Jacobs, and Fleishman (2000), "leadership can be framed not in terms of specific behaviors, but instead in terms of the capabilities, knowledge, and skills that make effective leadership possible" (p. 12). Bass noted that "a developmental learning process occurs in which capacities and skills that are gained in one stage should prepare the adult

leader for new and bigger tasks and responsibilities in later stages" (p. 813). Above all, development related to leadership should stress active learning methods versus theory, since leadership is an active process (Bass, 1990). Chickering (1977) noted that, with experiential or active learning, students must take an active role in their learning, often increasing their motivation. Because of this, the program has been steeped in both experiential learning and teamwork. One program participant wrote "I did not appreciate participating in the program until it was over. I still find myself thinking about the class when working with others and try to overcome obstacles using the skills I learned in [the program]."

Research has shown that collaborative and cooperative learning has a positive impact on scholastic retention and satisfaction, interpersonal skills, learning attitudes, idea generation, and higher-order reasoning (Colbeck, Campbell, & Bjorklund, 2000; Cohn, 1999; Robyn, 2000). One study by Colbeck, Campbell, and Bjorklund (2000) found that "working together with other students on open-ended design projects had enhanced their [the students'] problem solving skills. The student had learned that they need not feel daunted because real world problems rarely have one right answer" (p. 76). Although little research was available on the topic of interdisciplinary learning, it is concluded that the interdisciplinary aspect of this program augments the teamwork learning process. One participant wrote "the group interaction did allow me and prepare me to perform well in a group environment composed of individuals with varying backgrounds, for the group and the personalities that I worked with during my [program] experience definitely enabled me to work well in the real world."

It should be noted that not all program participants perceived their experiences to be positive. Despite the statistically significant differences in each of the constructs, supporting open-ended data demonstrated that not all former students of the program found the curriculum beneficial. Examples of such data include, "On the whole, I did not enjoy my time in [the program]. It was a waste of time and energy…It was a free consulting job for our client" and "I believe the fundamental principles of the Eisenhower program are essential for building leadership skills, however I think the scope of the program is overwhelming for one semester. It was difficult to accomplish our goals as a team in the limited amount of time. I felt the quality of some of the work was compromised due to time constraints and rapidly approaching deadlines."

Perceived Changes as Related to Practical Skills

Collectively, the strongest difference was with the Practical Skills (see Table 2). As related to the practical skill of problem definition, Mumford, Zaccaro, Connelly, and Marks (2000) not that problem definition abilities is an important skill for leadership to have. Edens (2000) noted that not enough students are equipped with problem related skills prior to entering the workforce. Students responses supported this finding, including one participant who wrote "The research and problem solving methods have proved to be exceptionally helpful in upper-level and graduate course work."

Former program participants also perceived their discovery of research alternatives skills to be stronger after the program. As Toney (1996) noted, it is a leader's ability to analyze alternatives that can determine a leader's success. Going beyond the commonly known to gather information is a critical skill for leaders as noted by Mumford, Zaccaro, Connelly, and Marks (2000). Supporting data that affirm this finding included "As an engineer, my problem-solving methods and group dynamics exposure were totally different form what I experienced in [the program]."

Because a group is vital to the concept of leadership, the ability to work within the context of a group is therefore also vital to leaders and leadership (Northouse, 2001; Bass, 1990; Greenwood, 1996). This relates to the delegation and teamwork construct. Bass (1990) highlighted the importance of a leader's interpersonal competence. Kouzes and Posner (1995) emphasized the importance of task completion through individuals working together. In addition, the Leader-Member Exchange Theory offers the important caveat that the strength of the relationship developed between leader and follower directly relates to the followers willingness to perform beyond prescribed roles (Bauer & Green, 1996; Northouse, 2001). Therefore, well developed leader to follower relationships improve the process of goal attainment. Delegation is one technique to assist in the development of followers and to help followers become better connected to the leader and the goal (Bauer & Green, 1996).

Supporting data related to the Delegation/Teamwork construct supported the quantitative findings. For example, one participant wrote "The most significant change in my behavior before and after the [program] involves the way in which I approach team situations in general. Before I was much more aggressive and controlling in such a situation. Now I appreciate the team atmosphere and I am able to work in a more calmed manner. I feel comfortable with not taking charge

of a situation and allowing others to control certain activities." Supporting data also, however, demonstrated the importance of proper team development, which, according to the data, does not always occur. For example, one participant wrote "I mostly learned about dysfunctional groups and how to overcome the lack of effort by some group members."

Table 2
T-Test for Paired Means of Responses as Related to each Practical Skill of the Leadership Development Program

	N	M**	SD	t	Significance
Problem Definition				-12.745	.000*
Before the Program	83	3.99	.721		
After the Program	83	4.88	.598		
Discovery of Research Alternatives				-12.321	.000*
Before the Program	82	3.93	.751		
After the Program	82	4.70	.721		
Delegation/Teamwork				-11.411	.000*
Before the Program	84	4.33	.682		
After the Program	84	5.01	.561		
Achievable Challenge				-12.945	.000*
Before the Program	84	4.48	.694		
After the Program	84	5.18	.571		

*Indicates a significant difference at alpha = .05
** Scale of 1 = Strongly disagree, 2 = Disagree, 3 = Slightly disagree, 4 = Slightly agree, 5 = Agree, and 6 = Strongly agree

Perceived Changes as Related to Adaptive Skills

Because adaptive skills are adopted only through direct experience with a closely related practical skill, differences were less than those of the practical skills but nonetheless statistically significant (see Table 3). The intensive nature of the semester long project requires students to keep with the same project the entire semester, and to continuously refer back to the problem definition to ensure that the project keeps its focus. As Toney (1996) found in his research on chief executive officers, leaders must have the ability to stay focused on a goal. Zaleznik (1998) emphasized that leaders must take a proactive attitude towards

goals. As noted by Mumford, Zaccaro, Connelly, and Marks (2000) through their review of the skills-based model of leader performance "Leaders must define significant problems, gather information, formulate ideas, and construct prototype plans for solving the problem" (p. 157). The ability to focus on an issue allows a leader to properly identify and define a problem and see the solution through to fruition. One example of supportive data that affirmed this finding included "[the program] introduced me to new ways of thinking about problems and developing their solutions."

Closely related to the ability to focus on an issue is the adaptive skill of offering direct attention to detail. Heifetz and Laurie (1998), in their article for *Harvard Business Review on Leadership*, emphasized the need for leaders to learn by begin attentive to differing points of view. These authors maintain that, "People need leadership to help them maintain their focus on the tough questions. Disciplined attention is the currency of leadership" (Heifetz & Laurie, 1998, p. 183). The program curriculum design is such that the adaptive skill of direct attention to detail is learned through the application of the discovery of research alternatives practical skill. Having students explore problem solving and research possibilities beyond those commonly known to them has offered them expanded methods of scholarship and the opportunity to critically analyze a problem and the potential solutions with meticulous detail.

The next adaptive skill, managing time and resources (including human resources), is related to the practical skill of delegation/teamwork. According to Kotter (1997) and Mintzberg (1997), having the ability both to lead and manage within the context of a group allows that group to operate efficiently and effectively. While conducting research on self-managed work teams, Stewart and Manz (1997) concluded that, "Self-managing work teams with passive, democratic leaders will obtain the highest level of self-regulation; and will therefore realize the most significant long-term improvements in quality, productivity, and employee morale" (1997, p. 405). An example of supporting data that affirmed this finding included, "[The program] taught me a lot about how to delegate, work with other people on numerous issues, and coordinate group and individual efforts and thoughts into one cohesive project."

Finally, the program's curriculum design is such that, the adaptive skill of persistence is learned through the application of the achievable challenge practical skill. According to Bass (1990) and Brundgardt (1996), it is through challenge that leaders develop. Similarly, Kirkpatrick and Locke (1995) stated that leaders have a need for achievement and, according to McClelland, it is this need that keeps such people working toward achievement (cited in Schriberg, Schriberg, &

Lloyd, 2002). Finally, Bass (1990) summarized several historic studies relating to the need of leaders to be persistent. Dating from between 1915 and 1942, each of these nine studies found a positive correlation between stubbornness or persistence and leadership. Open-ended data that support this finding included, "It is such a deal because you get this task, with very little guidance and end up pulling something off you never thought you would" and "I also learned a great deal in coordinating our work with that of the other teams working on our project; that posed several challenges that were very satisfying to overcome."

Table 3
T-Test for Paired Means of Responses as Related to each Adaptive Skill of the Leadership Development Program

	N	M**	SD	t	Significance
Focusing on an Issue				-10.741	.000*
Before the Program	83	3.66	.778		
After the Program	83	4.47	.794		
Direct Attention to Detail				-12.469	.000*
Before the Program	84	3.99	.789		
After the Program	84	4.88	.730		
Managing Time and Resources				-10.958	.000*
Before the Program	84	4.02	.751		
After the Program	84	4.77	.640		
Persistence				-8.181	.000*
Before the Program	84	4.62	.593		
After the Program	84	4.97	.548		
*Indicates a significant difference at alpha = .05 ** Scale of 1 = Strongly disagree, 2 = Disagree, 3 = Slightly disagree, 4 = Slightly agree, 5 = Agree, and 6 = Strongly agree					

Discussion

At the time of this study, only three colleges were actively participating in this leadership development program. It is, however, concluded that much of the program's value comes from the interdisciplinary design of the program and that

the participation of multiple colleges strengthens the leadership learning capacity as related to the practical and adaptive skills of the program's curriculum. In addition, although this study demonstrated that, through the program's curriculum, the intended practical and adaptive leadership skills are learned, a closer tie to academic leadership theories could offer students a greater connection to the discipline and leadership studies. This connection could offer a more solid foundation for further studies within leadership.

As Brungardt (1996) noted, "Tasks that are complex and ambiguous serve to enhance development" (p. 86). However, even thought the program curriculum is designed to allow students to grapple with the research process to gain the intended practical and adaptive leadership skills, it is recommended that students are made more aware of the intentions of this process so that focus on the project is more quickly gained.

Recommendations for Further Research

The completion of this study magnifies the opportunity for additional research which includes:

- It is recommended that this study be replicated specifically with future classes of the program to validate the methodology used.
- A parallel longitudinal, qualitative study would enrich the data such that it could be discovered further how students use the perceived skills they gain while in the program and thereafter. Qualitative data could also point and contribute to more specific programmatic improvements of this and other leadership development programs.
- From the supporting data, it is concluded that the interdisciplinary nature of the program adds great value to the learning process, especially to the learning of the adaptive skills. Further research on the relation and value of the interdisciplinary design is recommended not only within this program but in other arenas as well.
- Further research on the delineation of which specific skills students from each college primarily glean would assist with curriculum development and process improvement.
- An additional study to correlate students' prior leadership experiences with their perceived benefits of the program could assist in strengthening the application process of the program.

References

Astin, A. W., Astin, H. S. (2000). *Leadership reconsidered: Engaging higher education in social change.* Battle Creek, MI: W. K. Kellogg Foundation.

Bass, B. M. (1990). *Handbook of leadership: Theory, research and managerial applications* (3rd ed.). New York: The Free Press.

Bauer, T. N., & Green, S. G. (1996). Development of a leader-member exchange: A longitudinal test. *Academy of Management Journal, 39 (6),* 1538-1567.

Brungardt, C. (1996). The making of leaders: A review of the research in leadership development education. *The Journal of Leadership Studies, 3 (3),* 81-95.

Brungardt, C., & Crawford, C. B. (1996). A comprehensive approach to assessing leadership student and programs: Preliminary findings. *The Journal of Leadership Studies, 3 (1),* 37-48.

Buford, Jr., J. A., & Lindner, J. R. (2002). *Human resource management in local government: Concepts and applications for HRM students and practitioners.* Cincinnati, OH: South-Western.

Chickering, A. W. (1977). *Experience and learning: An introduction to experiential learning.* New Rochelle, New York: Change Magazine Press.

Cohn, C. L. (1999). Cooperative learning in a macroeconomics course: A team simulation. *College Teaching, 47 (2),* 51-54.

Colbeck, C. L., Campbell, S. E., & Bjorklund, S. A. (2000). Grouping in the dark: What college students learn from group projects. *The Journal of Higher Education, 71 (1),* 60-83.

Creswell, J. W. (2005). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (2nd ed.). Upper Saddle River, NJ: Merrill Prentice Hall.

Day, D. V. (2001). Leadership development: A review in context. *The Leadership Quarterly Yearly Review of Leadership,* 11 (4), 581-613.

Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method*. (2nd ed.). New York: John Wiley & Sons, Inc.

Edens, K. M. (2000). Preparing problem solvers for the 21st century through problem-based learning. *College Teaching*, 48 (2), 55-60.

Greenwood, R. G. (1996). Leadership theory: A historical look at its evolution. *The Journal of Leadership Studies, 3 (1),* 3-16.

Heifetz, R. A., & Laurie, D. L. (1998). The work of leadership. In *Harvard Business Review on Leadership* (171-197). Boston: Harvard Business School Publishing.

Hitt, M. A., & Ireland, R. D. (2002). The essence of strategic leadership: Managing human and social capital. *The Journal of Leadership and Organizational Studies, 9 (1),* 3-14.

Kirkpatrick, S. A., & Locke, E. A. (1995). Leadership: Do traits mater? In Wren, J. T. (Ed.) *The leader's companion: Insights on leadership through the ages*. New York: The Free Press.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

Kotter, J. P. (1997). What leaders really do. In Vecchio, R. P. (Ed.) *Leadership: Understanding the dynamics of power and influence in organizations* (pp. 24-34). Notre Dame, Indiana: University of Notre Dame Press.

Kouzes, J. M., & Posner, B. Z. (1995). *The leadership challenge*. San Francisco: Jossey-Bass.

Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education, 42 (4)*, 43-52).

McCormick, M. J. (1999). *The influence of goal-orientation and sex-role identity on the development of leadership self-efficacy during a training intervention*. Unpublished doctoral dissertation. College Station, TX: Texas A&M University.

McDonald-Mann, D. G. (1998). Skill-based training. In McCauley, C. D., Moxley, R. S., & Van Velsor, E. (Eds.). *The Center for Creative Leadership handbook of leadership development* (pp. 106-126). San Francisco: Jossey-Bass.

Mintzberg, H. (1997). The manager's job: Folklore and fact. In Vecchio, R. P. (Ed.) *Leadership: Understanding the dynamics of power and influence in organizations* (pp.35-53). Notre Dame, Indiana: University of Notre Dame Press.

Mumford, M. D., Zaccaro, S. J., Connelly, M. S., & Marks, M. A. (2000). Leadership skills: Conclusions and future directions. *The Leadership Quarterly*, *11 (1),* 155-170.

Mumford, M. D., Zaccaro, S. J., Harding, F. D., Jacobs, T. O., & Fleishman, E. A. (2000). Leadership skills for a changing world: Solving complex social problems. *The Leadership Quarterly, 11 (1),* 11-35.

Northouse, P. G. (2001). *Leadership: Theory and practice* (2nd ed.). Thousand Oaks, California: Sage Publications, Inc.

Robyn, E. (2000). Creating tribes. *College Teaching*, *48 (2),* 65-68.

Rohs, F. R. (2002). Improving the evaluation of leadership programs: Control response shift. *Journal of Leadership Education, 1 (2),* 1-12.

Shriberg, A., Shriberg, D. L., & Lloyd, C. (2002). *Practicing leadership: Principles and applications* (2nd ed.). New York: John Wiley & Sons.

Spitzberg, I. J. (1995). Paths of inquiry into leadership. In Wren, J. T. (Ed.) *The leader's companion: Insights on leadership through the ages* (pp. 33-36). New York: The Free Press.

Stewart, G. L., & Manz, C. C. (1997). Leadership for self-managing work teams: A typology and integrative model. In Vecchio, R. P. (Ed.) *Leadership: Understanding the dynamics of power and influence in organizations* (pp. 396-410). Notre Dame, Indiana: University of Notre Dame Press.

Stogdill, R. M. (1995). Personal factors associated with leadership, In Wren, J. T. (Ed.). *The leader's companion: Insights on leadership through the ages* (pp. 127-132). New York: The Free Press.

Svinicki, M. D., & Dixon, N. M. (1987). The Kolb model modified for classroom activities. *College Teaching, 35 (4),* 141-146.

Toney, F. (1996). A leadership methodology: Actions, traits, and skills that result in goal achievement. *The Journal of Leadership Studies, 3 (2),* 107-127.

Van Velsor, E. (1998). Assessing the impact of development experiences, In McCauley, C. D., Moxley, R. S., & Van Velsor, E. (Eds.). *The Center for Creative Leadership handbook of leadership development* (pp. 262-287). San Francisco: Jossey-Bass.

Van Velsor, E., & Guthrie, V. A. (1998). Enhancing the ability to learn from experience. In McCauley, C. D., Moxley, R. S., & Van Velsor, E. (Eds.). *The Center for Creative Leadership handbook of leadership development* (pp. 242-260). San Francisco: Jossey-Bass.

Van Velsor, E., McCauley, C. D., & Moxley, R. S. (1998). Our view of leadership development. In McCauley, C. D., Moxley, R. S., & Van Velsor, E. (Eds.). *The Center for Creative Leadership handbook of leadership development* (pp. 1-25). San Francisco: Jossey-Bass.

Whetten, D. A., & Cameron, K. S. (2002). *Developing management skills* (5th ed.). Upper Saddle River, NJ: Prentice-Hall.

Wren, J. T. (1994). Teaching leadership: The art of the possible. *The Journal of Leadership Studies, 1 (2),* 73-93.

Zaccaro, S. J., Mumford, M. D., Connelly, M. S., Marks, M. A., & Gilbert, J. A. (2000). Assessment of leader problem-solving capabilities. *Leadership Quarterly, 11 (1),* 37-64.

Zaleznik, A. (1998). Managers and leaders: Are they different? In *Harvard Business Review on Leadership* (pp. 61- 88). Boston: Harvard Business School Publishing.