

9-2009

A Longitudinal Study Examining Changes in Students' Leadership Behavior

Barry Z. Posner

Santa Clara University, bposner@scu.edu

Follow this and additional works at: <http://scholarcommons.scu.edu/mgmt>



Part of the [Business Administration, Management, and Operations Commons](#)

Recommended Citation

Posner, Barry Z. "A Longitudinal Study Examining Changes in Students' Leadership Behavior." *Journal of College Student Development* 50.5 (2009): 551-63.

Copyright © 2009 The Johns Hopkins University Press. This article first appeared in *Journal of College Student Development* 50:5 (2009), 551-563.

Reprinted with permission by Johns Hopkins University Press.

<http://dx.doi.org/10.1353/csd.0.0091>

This Article is brought to you for free and open access by the Leavey School of Business at Scholar Commons. It has been accepted for inclusion in Management by an authorized administrator of Scholar Commons. For more information, please contact rscroggin@scu.edu.

A Longitudinal Study Examining Changes in Students' Leadership Behavior

Barry Z. Posner

This study investigated the impact of a leadership development program in students' first year with the subsequent leadership behaviors of those students in their senior year. Significant changes were reported in the frequency of engaging in leadership behaviors from freshman to senior years. No differences were found on the basis of gender. In addition, significant differences in leadership behaviors were found between seniors who had participated in the leadership development program with a control group of seniors who had not participated. Results supported the impact of a formal leadership program upon students' leadership development.

The general mission of higher education historically has been to educate students to be future leaders (Astin, 1993; Johnson, 2000; Komives, Lucas, & McMahon, 2007). Indeed, by one count there are an estimated 1,000 student leadership development programs around the country (Riggio, Ciulla, & Sorenson, 2003). These approaches include credit-bearing programs found in leadership majors or minors as well as extra- or co-curricular activities. A few years ago Crawford, Brungardt, Scott, and Gould (2002) found 37 institutions offering master's degree programs in organizational leadership and 6 at the doctoral level. More than 60% of the top 50 U.S. business schools publicize that they offer coursework in leadership (Doh, 2003). A wide variety of academic leadership research centers, institutes, and programs can

also be found around college campuses in addition to community service initiatives and leadership development programs offered by offices of student affairs (Astin & Astin, 2000; Cress, Astin, Zimmerman-Oster, & Burkhardt, 2001; Zimmerman-Oster, 2003).

Despite the plethora of leadership programs scattered across college campuses, scant empirical investigation has been conducted into the benefits of such educational efforts. Many have asserted that research examining the impact of various leadership development programs and classes, especially over time, would assist greatly in understanding just how leadership is developed (Bass, 1998; Burns, 1978; Connaughton, Lawrence, & Rubin, 2003; Cress et al., 2001; Felser, 2005; Kruger, 2003; Posner, 2004; Russon & Reinelt, 2004). Much of the current findings provide a somewhat mixed picture of this phenomenon.

LITERATURE REVIEW

Zimmerman-Oster and Burkhardt (1999) conducted an extensive study using eight different data collection techniques to assess the outcomes of 31 leadership development programs for college students. They found that students who participate in leadership education and training programs do develop knowledge and skills consistent with the programs. In a follow-up study involving

Barry Z. Posner is Dean of the Leavey School of Business and Professor of Leadership at Santa Clara University.

875 students at 10 colleges and universities, Cress et al. (2001) found that leadership development programs impact educational and personal development. They concluded that “leadership potential exists in every student, and colleges and universities can develop this potential through programs and activities” (p. 23). Further support for this conclusion comes both from Lamborghini and Dittmer’s (2002) study at Northern Essex Community College, where 95% of the respondents reported that their leadership development program improved leadership skills, and from Polley’s (2002) study of students who completed the Columbus State University Servant-Leadership Program. Garza (2000) found that 10 years after completing a college student leadership program participants perceived that the program had affected their acquisition of leadership skills and job competencies necessary for advanced leadership positions and influenced their pursuit of graduate studies. On the other hand, Felser (2005) could not find sufficient evidence to conclude that there were any strong positive relationships between the university’s leadership development program and any of the graduates’ leadership competence scores 10 years later, although in this instance the sample was rather limited in size ($n = 120$).

Endress (2000) reported that students who had completed a leadership education class had significantly higher “self-efficacy” (“I can do this leadership behavior”) than did those students with whom they were matched who had not taken the leadership course. These feelings were not mitigated by such factors as participation in co-curricular activities, on-campus employment, or gender. Similarly, being encouraged by their faculty advisor to develop their leadership skills resulted in students reporting greater *actual* engagement in various leadership behaviors (Bardou, Byrne, Pasternak, Perez, & Rainey,

2003). Somewhat related to this finding was Ervin’s (2005) study, which showed that *elected* student leaders engaged more frequently in leadership behaviors than did students who had been *appointed* to leadership positions. Rand (2004), on the other hand, found no significant differences between elected and appointed student leaders in a university’s residential housing program. However Rand was encouraged by this finding because it indicated that students within the residence elected “individuals to be leaders who report exhibiting the same leadership behaviors as student leaders selected by administration to be in leadership positions” (p. 62).

Posner and Rosenberger (1998) reported that students did not vary in their leadership practices when involved in a one-time leadership project versus a project or program lasting for an entire academic year. However, students who return for a second year in a leadership position have been shown to significantly engage in leadership behaviors more often than those who were just starting out in the same position (Levy, 1995; Posner & Rosenberger, 1998). Similarly, Baxter (2001) found that students stationed as ROTC unit instructors (typically in their 4th year of studies) had higher leadership practices scores than did other students on the campus. In another study involving ROTC students, Warren (2003) found no significant differences between the leadership practices of those cadets who had attended Summer Leadership Camp and those who had not. Arendt (2004), in comparing students, found that those who had held an official leadership position and/or taken a course in leadership reported higher leadership practices scores. Cress et al. (2001) similarly found that students who had participated in a formalized leadership program demonstrated significant growth in leadership skills.

What Kezar and Moriarty (2000) found is that involvement in various activities, such as

community service, membership in a campus organization, holding an officer position, and participation in a formal leadership program, had differential impacts on students' leadership development and that this was impacted by gender and ethnicity. Dugan (2006b) also reported that scores associated with a social change model of leadership were highest among students who were "involved" than those not similarly involved.

Mendez-Grant (2001) examined how a leadership development program might impact the retention rates of first-year students. Although differences in the hypothesized direction were found, they failed to reach statistical significance. What she did find, however, was that pre- and posttest scores were significant for those students who had participated in a leadership education program versus those who had not. Pugh (2000) reported similar findings indicating that leadership practices scores were significantly higher upon completion of a leadership program than they were prior to participation. These pre- versus postprogram results "were not explained by demographic variables: year in school, family cluster affiliation, gender, GPA, Greek affiliation, or race" (Pugh, p. 58).

Significant gains in leadership behavior were reported by Wilcox (2004) for those community college students who attended the Phi Theta Kappa Leadership Development Studies course, using pre- and posttest data. The gains were true for both males and females, across all age groups, and for students from rural (but not urban) backgrounds. These findings, Wilcox concluded, "reinforces the implementation of leadership courses that combine academic rigor, experiential learning exercises, self-reflection, and opportunities for team participation in service learning projects" (p. 68).

Walker (2001) found no significant differences in leadership behaviors following a pre- and posttest study of a leadership development

intervention. He cited conversations with the Center for Creative Leadership, which explain that leadership development is

not linear; rather leadership development will regress and progress. In the process of implementing leadership programs, the researchers at the Center found that the immediate post test often showed negative development as opposed to the pretest. This may be a result of participants increased awareness of the multiple facets of leadership as they move through leadership training. (Walker, p. 110)

Although gender was not found to explain differences in the impact of participation in leadership development programs (Endress, 2000; Pugh, 2000) or more generally to account for differences in leadership behaviors (Posner, 2004; Posner & Brodsky, 1994), others have reported that males and females respond to different leadership paradigms (Eagly & Carli, 2003; Eagly, Johannesen-Schmidt, & van Engen, 2003; Romano, 1996). Dugan (2006a), for example, found that college women scored higher than did their male counterparts across all eight of the constructs associated with a social change model of leadership (Higher Education Research Institute, 1996; Tyree, 1998).

Following these mixed results from the literature and given the fact that very few longitudinal studies of the impact of leadership development activities have been conducted, the purpose of this study was to investigate whether students completing a leadership development program would increase in their leadership behaviors over time. A related question was whether the students who had completed a leadership development program would differ in their leadership behaviors from those not completing that program. Finally, the possible impact of gender on leadership behaviors and leadership development was examined.

TABLE 1.
Sample Questions by Scale for the Student Leadership Practices Inventory
(Kouzes & Posner, 2003)

Scale	Sample questions
Modeling the Way	I set a personal example of what I expect from other people. I spend time and energy making sure that people in our organization adhere to the principals and standards we have agree upon.
Inspiring a Shared Vision	I look ahead and communicate what I believe will affect us in the future. I describe to others in our organization what we should be capable of accomplishing.
Challenging the Process	I look around for ways to develop and challenge my skills and abilities. I look for ways that others can try out new ideas and methods.
Enabling Others to Act	I foster cooperative rather than competitive relationships among the people I work with. I actively listen to diverse points of view.
Encouraging the Heart	I praise people for a job well done. I give people in our organization support and express appreciation for their contributions.

METHOD

Instrument

Leadership was assessed through the use of the Student Leadership Practices Inventory (SLPI; Kouzes & Posner, 2003; Posner, 2004). The S-LPI was designed to identify specific behaviors and actions that students report using when they are at *their personal best as leaders* (Kouzes & Posner, 2008; Posner & Brodsky, 1992). These behaviors are categorized into five leadership practices. Respondents are asked to consider how frequently they engage in each of the behaviors using five-point Likert-type scales, with 1 indicating *rarely or seldom* and 5 indicating *very frequently or almost always*. Representative statements of leadership behaviors for each leadership practice are shown in Table 1. Identified as practices common to successful leaders in corporate, government, and not-for-profit organizations, these leadership practices and behaviors have been shown to correspond well

with the developmental issues of importance for college students (Brodsky, 1988).

In developing the original version of the Leadership Practices Inventory, Kouzes and Posner (2007) collected case studies from over 1,200 managers about their “personal-best experiences” as leaders. Content analyses of these case studies suggested a pattern of behaviors used by people when they were most effective as leaders. The development of a student version of the instrument followed the same case-study approach to investigate whether the leadership behaviors of college students were comparable with those of managers (Brodsky, 1988; Posner & Brodsky, 1992).

The S-LPI consists of 30 descriptive statements about leadership behaviors, and respondents are asked to indicate how frequently they engage in each one. Six behaviors (statements) are used to measure each one of the five leadership practices, with scores ranging from a low of 6 to a high of 30. Higher scores on

the leadership practices indicate greater actual use or engagement of the leadership behaviors. Studies using the S-LPI have shown strong internal reliability across a variety of student populations, with Cronbach's alpha scores ranging from .55 to .83 (Posner, 2004). The Cronbach's alpha scores for each leadership practice in this study, using the sample of seniors, was .66 for modeling, .74 for inspiring, .63 for challenging, .72 for enabling, and .80 for encouraging. Earlier analyses of S-LPI scores with the Crown-Marlowe Social Desirability Index "confirms previous findings that indicated tests of social desirability bias were not statistically significant" (Walker, 2001, p. 58). Test-retest reliability of the S-LPI over a 10-week period was demonstrated as statistically significant ($p < .001$), with correlations exceeding 0.51 (Pugh, 2000).

The S-LPI demonstrates reasonably good validity with consistent relationships found with various measures of effectiveness, as reported across multiple constituencies, and is robust across different collegiate student populations such as fraternities, sororities, residence halls, orientation programs, and academic disciplines (Arendt, 2004; Posner, 2004). The S-LPI has demonstrated relative independence from such demographic factors as gender, age, ethnicity, GPA, year in school, or academic major (Endress, 2000; Posner, 2004; Posner & Brodsky, 1993; Posner & Rosenberger, 1997; Pugh, 2000; Wilcox, 2004).

Sample

The study was conducted at a private university located on the West Coast. The S-LPI was

TABLE 2.
Comparison of Leadership Practice Scores Between Freshmen and Seniors
(Means and Standard Deviations)

Leadership Practices	Matched Sample ($n = 169$)			
	Freshmen		Seniors	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Modeling	20.68	3.41	21.83***	3.38
Inspiring	20.64	4.21	22.57***	3.81
Challenging	23.96	2.91	25.36***	2.93
Enabling	23.02	3.46	24.79***	3.00
Encouraging	23.57	3.68	24.59***	3.38
Leadership Practices	Unmatched Sample			
	Freshmen ($n = 384$)		Seniors ($n = 294$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Modeling	20.89	3.63	22.12***	3.39
Inspiring	21.08	4.29	22.81***	3.80
Challenging	24.05	2.95	25.29***	2.94
Enabling	23.16	3.49	24.62***	3.02
Encouraging	23.61	3.73	24.55***	3.43

Note. *t* tests were used to compare mean scores, and scores in bold represent the significantly higher scores.
*** $p < .001$.

TABLE 3.
Comparison of Leadership Practice Scores Between Males in their Freshmen and Senior School Years (Means and Standard Deviations)

Leadership Practices	Matched Sample (<i>n</i> = 73)			
	Freshmen		Seniors	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Modeling	20.22	3.43	21.97**	3.49
Inspiring	20.68	3.98	22.29**	3.93
Challenging	23.53	3.01	24.85**	3.30
Enabling	22.77	3.30	24.53***	3.04
Encouraging	23.17	3.95	23.97*	3.70

Leadership Practices	Unmatched Sample			
	Freshmen (<i>n</i> = 169)		Seniors (<i>n</i> = 125)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Modeling	21.53	3.51	22.32***	3.47
Inspiring	21.43	4.05	22.62***	3.97
Challenging	23.58	3.03	25.31***	3.31
Enabling	22.98	3.32	24.75***	3.09
Encouraging	23.45	3.93	24.58**	3.72

Note. *t* tests were used to compare mean scores, and scores in bold represent the significantly higher scores.

p* < .05. *p* < .01. ****p* < .001.

administered to all first-year students majoring in business (*n* = 384) as part of a required leadership seminar. The S-LPI was completed as part of the general orientation session for the course and prior to the presentation of any content or activities. The seminar met over 2 quarters. Students in the 1st quarter were largely batched through a series of presentations and panel discussions aimed at understanding leadership and appreciating the impact of leaders. In the 2nd quarter students met in small study groups where the focus was on developing a specific set of leadership skills and their application. All responses at Time 1 were confidential with the respondents' data entry separated from the identity (names) of all respondents. Gender was the only demographic variable collected, resulting in 216 female and 169 male respondents.

Approximately 3 years later all seniors majoring in business were requested to voluntarily complete the S-LPI as part of an overall learning outcomes assessment project. The second administration, across a variety of classes, was completed by 294 students. This smaller sample size at Time 2 was the result of a variety of factors such as students graduating early, transferring out of the business school, and simply being absent from class when the survey was administered. There were 169 females and 125 males in this second administration, which was approximately the same gender proportion as the first administration. It was possible to match 169 respondents from the Time 1 and Time 2 administrations (96 females and 73 males).

In addition, S-LPI data was collected at Time 2 from a random sample of seniors at the

university who were not majoring in business ($n = 212$). These surveys were completed across a variety of classes on a voluntary basis and no respondent demographic information was collected. These nonbusiness majors had not completed the leadership development program required of all business majors in their first-year at the university. This sample comprised a quasi-control group for comparison with their counterparts within the business school who had received the treatment (i.e., the leadership development program).

RESULTS

Table 2 presents the average S-LPI scores on the five leadership practices for freshmen versus seniors in the business school for both the matched ($n = 169$) and unmatched sample of

respondents ($n = 384$ at Time 1 and $n = 294$ at Time 2). The pattern of results does not vary between these two samples. Analyses of t -test results showed that seniors reported engaging significantly ($p < .001$) more frequently in all five leadership practices—modeling, inspiring, challenging, enabling, and encouraging—than they reported engaging in as freshman students. These results support the research question proposing that the leadership practices of students who had participated in the leadership development program would increase between their freshman and senior years.

Table 3 shows that the overall differences reported in Table 1 are consistent for male respondents, and Table 4 shows the same consistency for female respondents. Comparisons of t -test results between the average leadership practice scores of male

TABLE 4.
Comparison of Leadership Practice Scores Between Females in their Freshmen and Senior School Years (Means and Standard Deviations)

Leadership Practices	Matched Sample ($n = 96$)			
	Freshmen		Seniors	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Modeling	20.27	3.60	21.72**	3.33
Inspiring	20.61	4.38	22.79***	3.66
Challenging	24.22	2.82	26.74***	2.63
Enabling	23.21	3.62	24.98***	3.04
Encouraging	23.97	3.49	24.97**	3.18

Leadership Practices	Unmatched Sample			
	Freshmen ($n = 216$)		Seniors ($n = 169$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Modeling	20.39	3.64	21.97***	3.34
Inspiring	20.80	4.46	22.95***	3.68
Challenging	24.53	2.84	25.27**	2.65
Enabling	23.31	3.63	24.51***	2.97
Encouraging	23.74	3.56	24.53**	3.22

Note. t tests were used to compare mean scores and scores in bold represent the significantly higher scores. ** $p < .01$. *** $p < .001$.

TABLE 5.
Comparison of Leadership Practice Scores Between Females and Males in their
Freshmen and Senior Years (Means and Standard Deviations)

Leadership Practices	Freshmen (Time 1)			
	Females (<i>n</i> = 216)		Males (<i>n</i> = 169)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Modeling	20.39	3.64	21.53**	3.51
Inspiring	20.80	4.46	21.43	4.05
Challenging	24.53*	2.84	23.58	3.03
Enabling	23.31	3.63	22.98	3.32
Encouraging	23.74	3.56	23.45	3.93

Leadership Practices	Seniors (Time 2)			
	Females (<i>n</i> = 169)		Males (<i>n</i> = 125)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Modeling	21.97	3.34	22.32	3.47
Inspiring	22.95	3.68	22.62	3.97
Challenging	25.27	2.65	25.31	3.31
Enabling	24.51	2.97	24.75	3.09
Encouraging	24.53	3.22	24.58	3.72

Note. *f* tests were used to compare mean scores. None of the comparisons between females and males in their senior year were statistically significant.

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

business school students in their freshman and senior years (Table 3) demonstrate that men reported engaging in each of the five leadership practices significantly ($p < .01$) more in their senior year than they did in their first year. This was true for both the matched Time 1 and Time 2 male respondents ($n = 73$) and for all males sampled in Time 1 ($n = 169$) compared with those at Time 2 ($n = 125$). Table 4 shows that the *t*-test comparisons for average female scores on the S-LPI for all five leadership practices were significantly ($p < .01$) higher for seniors than they were for freshmen. This was true for both the matched Time 1 and Time 2 female respondents ($n = 96$) and for all females sampled in Time 1 ($n = 216$) compared with those at Time 2 ($n = 169$). The results from these two analyses reveals that the frequency of use of the five leadership

practices increased significantly for both male and female students from their freshman to their senior years; that is, after completing the leadership development program. Gender did not affect this pattern.

Table 5 presents a comparison of females and males on the S-LPI by year in school. This *t*-test analysis at Time 1 revealed that female and male respondents did not generally report engaging in the five leadership practices differently when they were first-year students. This was true for the practices of inspiring, enabling and encouraging. The two exceptions were that males reported that they engaged in the leadership practice of modeling more often than did females and females reported engaging more frequently in the leadership practice of challenging more frequently than did males in their freshman year. However,

as these results also show, at Time 2 (and subsequent to participation in the leadership development program) any gender differences (between females and males) were no longer significantly different for any of the five leadership practices by the time those students were in their senior year.

Table 6 compares the average scores on the five leadership practices for seniors majoring in business (who had participated in the leadership development program) with those seniors who were not majoring in business (and who had not participated in the leadership development program). In other words, the business school sample received the “treatment” and the nonbusiness group served as the control group.

The average scores on all five leadership practices were higher in the treatment condition (for business majors) than for those in the control group (nonbusiness majors). Comparisons of *t*-test results revealed that business majors’ use of four leadership practices (inspiring, challenging, enabling, and encouraging) were significantly higher ($p < .05$) than were those of nonbusiness majors. These findings support the contention that the leadership development program did make

a major contribution to the subsequent leadership practices of students who had participated in the program versus those who had not participated.

DISCUSSION

The purpose of this study was to investigate the impact of a leadership development program over time. First-year students in the business school were required to participate in a leadership development program, and as part of this experience they completed a leadership development assessment (S-LPI) that examined the frequency to which they engaged in various leadership behaviors. Three years later (Time 2) these students were surveyed again, and the results clearly indicated significant increases from their freshman year (Time 1) in the frequency of their leadership behaviors. As seniors these students reported engaging in this set of leadership behaviors significantly more than they reported engaging in them when they were first-year students. This finding supports the contention that the leadership development program significantly affected students’ subsequent leadership behaviors.

The pattern of changes in leadership

TABLE 6.
Comparison of Leadership Practice Scores Between Nonbusiness Seniors and Business Majors Seniors (Means and Standard Deviations)

Leadership Practices	Nonbusiness Majors (<i>n</i> = 212)		Business Majors (<i>n</i> = 294)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Modeling	21.87	3.88	22.12	3.39
Inspiring	22.10	4.01	22.81*	3.80
Challenging	23.41	3.55	25.29***	2.94
Enabling	24.07	3.06	24.62*	3.02
Encouraging	23.55	3.87	24.55**	3.43

Note. *f* tests were used to compare mean scores and scores in bold represent the significantly higher scores.

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

behavior for males and females from their first year to their senior year were quite similar. Leadership behaviors were more frequently engaged in by both males and females in their senior year compared with their leadership behavior as first-year students. There were few significant differences between males and females in their first year and there were no significant differences between males and females in their leadership behaviors by the time of their senior year. In this instance, these results suggest that changes in students' leadership practices are not affected by gender.

Students who had received leadership development training did significantly increase their leadership behaviors over time as shown in a comparison with a quasi-control group (i.e., students who had not participated in the leadership development in their first year). The scores on all five leadership behaviors were higher for the seniors involved in the leadership development program with four of them at a statistically significant level. This finding lends further support to the proposition that the increases found in leadership behavior for the "treatment" group of students were due in fact to their participation in the leadership development program.

In a continuing effort to understand the impact of leadership programs on the actual development of leadership the results from this study add some clarity to the mixed picture often illustrated by the research literature. Pretest and posttest analysis showed that students participating in the leadership development program significantly increased the frequency with which they reported engaging in leadership behaviors over time. The robustness of this finding is amplified by the comparison of these same students with a group of students who had not participated in the leadership development program and whose leadership behaviors scores were significantly

lower than those of the treatment group.

Gender appeared to have little impact on the relationships found. Males and females did not report their leadership behaviors all that differently at Time 1 (freshman year) or Time 2 (senior year). The pattern of changes in leadership behavior over time was the same for men as they were for women. Gender data was not collected from the quasi-control group so it was not possible to further test the possible impact of gender between these two groups.

Limitations

Several cautions should be noted in generalizing from these findings, and several areas for further study can be pointed out. First, there may be several idiosyncratic characteristics of the setting (this particular campus environment) which influenced both the experiences and results. Second, it is possible that there are some *a priori* fundamental differences between business majors (who participated in the leadership development program) and nonbusiness majors that masks the impact of the leadership development program or accounts for the more frequent leadership behaviors of the business majors. Obviously, these results need to be validated against broader campus settings and larger, and possibly more diverse, student groups. Third, it is possible that the quasi-control sample of students, while not participating in the same leadership development as did the experimental group, did participate in other leadership development initiatives offered across the campus over their collegiate experience. Assuming that this is actually the case, however, lends further support to the strength of the leadership development program required for business majors. No information was collected from any of the students about their level of involvement in other campus leadership development activities, and this may be an important intervening variable

to investigate. Finally, as is often the case, only one measure, and a self-reported one at that, was used to assess leadership, and future studies could use other leadership assessments and incorporate more objective measures of leadership behavior.

From a practical viewpoint what this study doesn't reveal is the specific content and process of the leadership development program or how it might be similar or different to programs offered on other campuses. Further investigations are required to learn more about how specific types of formal leadership programs (e.g., service or community engagement, retreats, certification programs, academic courses, residential community-based workshops, etc.) impact the development of leaders and contribute to the acquisition of leadership skills (Dugan, 2006b).

Implications

In sum, engaging all first-year students in a leadership development program in the business school resulted in greater leadership behaviors by these students in their senior year than they reported in their first year. This was true for both men and women. Involvement in the leadership development program also resulted in greater leadership behaviors by these students than for their counterparts across the campus who had not participated in this same leadership development intervention. This finding supports the contention that the program, rather than simple maturation (that is, life experience), was responsible for the increase in leadership behaviors.

These findings give encouragement to those involved in leadership education and development efforts on college campuses. They

support a leadership development intervention aimed at students early in their collegiate career as having long-term payoffs (Nahavandi, 2006). It would be interesting to assess, if possible, how much impact this group of students might have had on the campus versus their counterparts who had not received an early dose of leadership inculcation and skill-building. Similarly, in terms of institutional learning outcome assessments, one might ponder how much "leadership" this group of students is providing 5 years, or more, after their graduation.

As evidenced by the choice of the S-LPI instrument to assess leadership in this particular school's leadership program (and to subsequently organize a curriculum around these five leadership practices), there is a bias toward "doing leadership" as opposed to simply learning about leadership. Students must learn not about simply leadership, or even about leaders, but must learn what it means to be effective leaders themselves as they practice learning about the behaviors in which leaders most frequently engage (Posner, 2009). In a similar vein, Roberts (2008) added "reflection" as one of the key components of developing leaders, so that students can be encouraged to engage in new behaviors and provided the opportunity to reflect on their experiences, and question assumptions, in order that they can recalibrate and readjust attitudes and behaviors accordingly.

Correspondence regarding this article should be sent to Barry Z. Posner, Leavey School of Business, Santa Clara University, 500 El Camino Real, Santa Clara, CA 95053; bposner@scu.edu

REFERENCES

- Arendt, S. (2004). *Leadership behaviors in undergraduate hospitality management and dietetics students*. Unpublished doctoral dissertation, Iowa State University, Ames.
- Astin, A. W. (1993). *What matters in college: Four critical years revisited*. San Francisco: Jossey-Bass.
- Astin, A. W., & Astin, H. S. (2000). *Leadership reconsidered: Engaging higher education in social change*. Battle Creek, MI: W.K. Kellogg Foundation.
- Bardou, K., Byrne, S., Pasternak, V., Perez, N., & Rainey, A. (2003). Self-efficacy and student leaders: the effects of gender, previous leadership experiences, and institutional environment. *Journal of the Indiana University Student Personnel Association*, 33-48.
- Bass, B. M. (1998). *The Bass handbook of leadership: Theory, research, and management applications* (4th ed.). New York: Free Press.
- Baxter, W. (2001). *Engineering leadership*. Unpublished master's thesis, Texas A & M University, College Station.
- Brodsky, B. (1988). *Development of a modified version of the Leadership Practices Inventory for use with college students*. Unpublished master's thesis, San Jose State University.
- Burns, J. M. (1978). *Leadership*. New York: Harper & Row.
- Connaughton, S. L., Lawrence, F. L., & Rubin, B. D. (2003). Leadership development as a systematic and multidisciplinary enterprise. *Journal of Education for Business*, 79(1), 46-51.
- Crawford, C. B., Brungardt, C. L., Scott, R. F., & Gould, L. V. (2002). Graduate programs in organizational leadership: A review of programs, faculty, costs, and delivery methods. *Journal of Leadership & Organizational Studies*, 8(4), 64-74.
- Cress, C. M., Astin, H. S., Zimmerman-Oster, K., & Burkhardt, J. C. (2001). Developmental outcomes of college students' involvement in leadership activities. *Journal of College Student Development*, 42(1), 15-27.
- Doh, J. P. (2003). Can leadership be taught? Perspectives from management educators. *Academy of Management Learning & Education*, 2(1), 54-67.
- Dugan, J. P. (2006a). Explorations using the social change model: Leadership development among college men and women. *Journal of College Student Development*, 47(2) 217-225.
- Dugan, J. P. (2006b). Involvement and leadership: A descriptive analysis of socially responsible leadership. *Journal of College Student Development*, 47(3), 335-343.
- Eagly, A. H., & Carli, L. L. (2003). The female leadership advantage: An evaluation of the evidence. *The Leadership Quarterly*, 14, 807-834.
- Eagly, A. H., Johannessen-Schmidt, M. C., & van Engen, M. L. (2003). Transformational, transactional, and laissez-faire leadership styles: A meta-analysis comparing women and men. *Psychological Bulletin*, 129, 569-591.
- Endress, W. (2000). *An exploratory study of college students' self-efficacy for relational leadership: the influence of leadership education, cocurricular involvement, and on-campus employment*. Unpublished doctoral dissertation, University of Maryland, College Park.
- Ervin, L. A. (2005). *Women's leadership practices in student government*. Unpublished doctoral dissertation, Kansas State University, Manhattan.
- Felser, F. J. (2005). *An outcomes assessment of a leadership development program*. Unpublished doctoral dissertation, University of Phoenix.
- Garza, O. G. (2000). A ten year follow-up study of the completer's perceptions of the Texas A & M community college and technical institute leadership development programs: Minority leadership project. Dissertation Abstracts International. (UMI No. AAT9980148).
- Higher Education Research Institute. (1996). *A social change model of leadership development: Guidebook version III*. College Park, MD: National Clearinghouse for Leadership Programs.
- Johnson, C. W. (2000). Exploring leadership development for college students who want to make a difference. *NASPA Journal*, 38(1), 143-147.
- Kezar, A., & Moriarty, D. (2000). Expanding our understanding of student leadership development: a study exploring gender and ethnic identity. *Journal of College Student Development*, 41(1), 55-68.
- Komives, S., Lucas, N., & McMahon, T. (2007). *Exploring leadership: For college students who want to make a difference* (2nd ed.). San Francisco: Jossey-Bass.
- Kouzes, J. M., & Posner, B. Z. (2003). *The Student Leadership Practices Inventory*. San Francisco: Jossey-Bass/Pfeiffer.
- Kouzes, J. M., & Posner, B. Z. (2007). *The Leadership Challenge* (4th ed.). San Francisco: Jossey-Bass.
- Kouzes, J. M., & Posner, B. Z. (2008). *The Student Leadership Challenge*. San Francisco: Jossey-Bass.
- Kruger, M. (2003). The benefits of leadership development programs on community college campuses. *Campus Activities Programming*, 34(7), 43-47.
- Lamborghini, N. M., & Dittmer, R. (2002). Northern Essex Community College: Student leadership development program. In National Association of Student Personnel Administrators (Eds.), *Bridges to student success* (pp. 10-12). Washington, DC: Magnificent.
- Levy, M. (1995). *Followers' perceptions of leaders: Prototypes and perceptions of resident assistants*. Unpublished master's thesis, University of Maryland, College Park.
- Mendez-Grant, M. (2001). *A study of freshman interest groups and leadership practices at Texas Women's University*. Unpublished doctoral dissertation, University of North Texas, Denton.
- Nahavandi, A. (2006). Teaching leadership to first year students in a learning community. *Journal of Leadership Education*, 5(2), 12-27.
- Polleys, M. S. (2002). One university's response to the anti-leadership vaccine: Developing servant leaders. *Journal of Leadership Studies*, 8(3), 117-130.
- Posner, B. Z. (2004). A leadership development instrument for students: Updated. *Journal of College Student Development*, 45(4):443-456.
- Posner, B. Z. (2009). From inside out: Beyond teaching about leadership. *Journal of Leadership Education*, 8(1), 1-10.
- Posner, B. Z., & Brodsky, B. (1992). A leadership development instrument for college students. *Journal of College Student Development*, 33(4): 231-237.

- Posner, B. Z., & Brodsky, B. (1993). The leadership practices of effective RAs. *Journal of College Student Development*, 34(4): 300-304.
- Posner, B. Z., & Brodsky, B. (1994). Leadership practices of effective student leaders: Gender makes no difference. *NASPA Journal*, 31(3): 113-120.
- Posner, B. Z., & Rosenberger, J. (1997). Effective orientation advisors are leaders too. *NASPA Journal*, 31(2), 113-120.
- Posner, B. Z., & Rosenberger, J. (1998). *The impact of situational factors on students' leadership behaviors*. Unpublished manuscript, Santa Clara University.
- Pugh, D. (2000). *College student leadership development: program impact on student participation*. Unpublished doctoral dissertation, University of Georgia, Athens.
- Rand, L. J. (2004). *The leadership practices of residence student leaders*. Unpublished master's thesis. University of New Brunswick.
- Riggio, R. E., Ciulla, J. B., & Sorenson, G. J. (2003). Leadership education at the undergraduate level: A liberal arts approach to leadership development. In S. E. Murphy & R. E. Riggio (Eds.), *The future of leadership development* (pp. 223-236). Mahwah, NJ: Lawrence Erlbaum Associates.
- Roberts, C. (2008). Developing future leaders: The role of reflection in the classroom. *Journal of Leadership Education*, 7(1), 116-129.
- Romano, C. R. (1996). A qualitative study of women student leaders. *Journal of College Student Development*, 37(6), 676-683.
- Russon, C., & Reinelt, C. (2004). The results of an evaluation scan of 55 leadership development programs. *Journal of Leadership & Organizational Studies*, 10(3), 104-107.
- Tyree, T. M. (1998). Designing an instrument to measure socially responsible leadership using the social change model of leadership development. *Dissertation Abstracts International*, 59 (06), 1,945. (UMI No. AAT 9836493).
- Walker, J. (2001). *Leadership development of students engaged in experiential learning: implications for internship programs in textiles and apparel*. Unpublished doctoral dissertation, University of North Carolina, Greensboro.
- Warren, D. G. (2003). *Perceptions of leadership behaviors and practices among Army ROTC students at two New England universities*. Unpublished doctoral dissertation, University of Phoenix.
- Wilcox, B. (2004). *Leadership development to community college students: Does participation in the Phi Theta Kappa leadership development studies course have an effect on the development of leadership behaviors?* Unpublished doctoral dissertation, West Virginia University, Morgantown.
- Zimmerman-Oster, K. (2003). How can I tell if it's working? Ten strategies for evaluating leadership development programs in higher education. *Concepts & Connections*, 11(3), 5-11.
- Zimmerman-Oster, K., & Burkhardt, J. C. (1999). Leadership in the making: A comprehensive examination of the impact of leadership development programs on students. *Journal of Leadership Studies*, 6(3-4), 50-66.