

The Durable Effects of Short-Term Programs on Student Leadership Development

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Abstract

Research involving students ($N=612$) at a large, research-extensive university who participated in voluntary short-term leadership programs showed an increase in leadership capacity, even when measured three months later. A popular assessment tool, the Socially Responsible Leadership Scale (SRLS), was used. Not all leadership competency scores showed significant increase after training, which may indicate that some leadership capacities may be more amenable than others to development through short-term programs. However, most competency scores displayed stronger relationships with each other after training, suggesting that training fostered a more integrated understanding of leadership. In addition, the analysis suggested the need for further study of the SRLS.

Introduction

Even a quick glance at many universities' mission and vision statements reveals the strong focus that professional educators place on leadership education and training (Cress, Astin, Zimmerman-Oster, & Burkhardt, 2001). While the training of society's future leaders has been a long-standing responsibility of higher education (Boyer, 1987), an increased emphasis on such efforts has been emerging recently on many college campuses (Astin & Astin, 2000; Dugan & Komives, 2007; Dugan, Komives, & Segar, 2009; Lipman-Bluman, 1996). This increasing attention to developing leaders is consistent with current public

concerns about leadership. For example, a recent study showed that 80% of United States citizens feel that our society needs more effective leadership to avoid a national decline (Rosenthal, Pittinsky, Purvin, & Montoya, 2007). There seems to be a clear need and desire to develop future leaders focused within training programs on the college campus.

However, Avolio, Walumba, and Weber (2009) reported that training leaders is complex, and often very difficult. The range and subtlety of skill required for effective leadership has risen (Astin & Astin, 2000; Eich, 2008). Leaders in contemporary society must competently collaborate with others (Allen & Cherrey, 2000; Lipman-Bluman, 1996), manage emotions (Goleman, Boyatzis, & McKee, 2002), create positive stress to affect lasting organizational change (Heifetz, Grashow, & Linksy, 2009), and lead with transparency (Seidman, 2007). Engendering these sophisticated skills could be challenging, as many students continue to espouse outdated beliefs about leadership (Astin & Astin, 2000). Research has shown contemporary college students frequently define leadership as engaging in command and control behaviors (Schertzer & Schuh, 2004). This mismatch between students' expectations and the demands of modern leadership means that training programs must not only support students in skill development, but help them understand the broader need for those skills. Given these needs, several educators have stated that the development of effective leadership programs is one of the most important issues facing education (Astin & Astin, 2000; Lipman-Bluman, 1996; Pearce & Conger, 2003). It is crucial to develop methods that help students to understand and acquire the skills they will need as leaders in contemporary society. Therefore, we examine the effect of a short-term leadership training program that is intended to give college students a more realistic conception of modern leadership.

The Face of Modern Leadership

Social structures and work practices have become flatter, more complex, and more relationship-oriented (Komives, Lucas, & McMahon, 2007), demanding corresponding changes in how we think about leadership (Fischer, Overland, & Adams, 2010; Kezar, Carducci, & Contreras-McGavin, 2006). Consistent with this, leadership theory has shifted from the so-called industrial paradigm of focus on hierarchy, control, and division of labor to a post-industrial orientation that emphasizes relationships, networks, trust, ethics, and participation (Kezar et al., 2006; Rost, 1993). Following these theoretical movements, emerging models of leadership development now focus on leadership as a relational process, rather than on leadership as the exercise of hierarchical power. In particular, popular models have focused on the emotional competencies required for creating effective relationships (Goleman et al., 2002), described how leaders work with groups to create adaptive change in organizations and society (Heifetz et al.,

2009), and emphasized leader authenticity and integrity (Avolio & Gardner, 2005).

Universities' leadership development programs need to change in a similar fashion. Some efforts have been made to do so (Faris & Outcalt, 2001), but many existing models of leadership development were created within the context of work organizations, and therefore have limited applicability to students in a higher education setting because these models emphasize employee-employer relations within a corporate environment (Komives et al., 2007; Shankman & Allen, 2008). Students require a model more appropriate to their context and priorities (Fincher & Shalka, 2009). The Social Change Model (SCM) of Leadership Development (Astin, 1996) was designed for this purpose.

Social Change Model of Leadership Development

The Social Change Model of Leadership Development was created to be a paradigm for leadership development that simultaneously met the needs of higher education and the demands of modern leadership, by emphasizing the importance of relationships, ethics, and sustainable engagement within society (Astin, 1996). The SCM is based on the belief that effective leaders possess a strong and well-developed sense of personal values that link to action, a set of interpersonal and networking skills that incorporate systems thinking and conflict management into the development of trusting teams, and a desire to engage ethically, positively, and sustainably with society (Higher Education Research Institute, 1996). Collectively, these attributes define eight competencies that form the core capacities required for effective modern leadership. These competencies are consciousness of self, congruence, commitment, collaboration, common purpose, controversy with civility, citizenship, and change. These are summarized in Table 1.

Table 1
The Eight Capacities within the Social Change Model

Competency	Description
Consciousness of Self	One's awareness of the beliefs, values, attitudes, and emotions that motivate action.
Congruence	One's ability to think, feel, and behave with consistency.
Commitment	The psychic energy that motivates one to serve, even during challenging times.
Collaboration	The capacity to work with others in a group effort.
Common Purpose	The capacity to construct shared aims and values with others.
Controversy with Civility	One's ability to recognize that differences in viewpoint are inevitable, and then to navigate respectful solutions to those differences.
Citizenship	The capacity to become responsibly connected to one's community.
Change	One's capacity for positive impact on a group and the larger society.

While the SCM has been in existence in its current form and taught in co-curricular programs on college campuses since 1996, until recently research on these programs and co-curricular programs in general has been scarce.

Research on Student Leadership Development in Higher Education

Little empirical research had been conducted on student leadership development until a decade ago (Zimmerman-Oster & Burkhardt, 1999). Recent studies conducted on the impact of comprehensive leadership programs in college indicated moderate benefits from structured efforts at leadership skill development. For example, in a national study spanning several institutions, students who participated in specific leadership interventions, in the form of short-term trainings, workshops, or retreats, displayed higher levels of responsibility and multicultural awareness, as well as a deeper sense of both personal and societal values (Cress et al., 2001). The Multi-Institutional Study of Leadership (MSL) included a series of national studies of on-campus leadership development, and highlighted the significant degree to which participation in structured leadership programs predicted better scores on leadership efficacy and practice (Dugan & Komives, 2007). Moreover, such programs predicted higher levels of skill in related areas, such as practicing community service and engaging in socio-political discussion with peers (Segar, Hershey, & Dugan, 2008).

While there has been growing evidence that structured leadership programs can benefit students' leadership ability, less is currently known about the best method for making such interventions (Posner, 2009). As Posner pointed out, "Despite the plethora of leadership programs scattered across college campuses, scant empirical investigation has been conducted into the benefits of such education efforts" (p. 551). Particularly, evidence for the benefits of short-term interventions (e.g., a retreat or day-long training) in helping students acquire necessary leadership attitudes and skills has been limited, especially when compared to long-term programs (e.g., an academic course or multi-semester certificate program). Posner and Rosenberger (1998) reported that students in leadership positions who participated in a short-term leadership training displayed behaviors comparable to those of students engaged in a semester-long program. Similarly, initial results from the first year of the MSL showed that short-term training interventions produced effects similar to longer-term interventions, which were to increase leadership abilities relative to those of students with no such intervention (Dugan & Komives, 2007). Moreover, in related findings, a multi-institutional study of students from colleges across Eastern Europe found that factors such as the creation of a sense of community within a program and students' sense of belonging were more significant than the structure of the training intervention to the participants' subsequent practice of effective leadership (Humphreys, 2007). Taken together, these findings suggest that short-term training may be an effective intervention option for developing students' leadership. Nonetheless, more must be done to understand the specific effects that particular programs have on learning, particularly since most prior research has been cross-sectional, and thus not taken account of the effects of change over time.

Thus far, we have noted that there is a growing emphasis on leadership development among college students, particularly in response to the observation that the demands of modern leadership have changed. The need for intervention is increased by the observation that how naïve students think about leadership may not be appropriate for the requirements of modern leadership. Some studies have suggested that short-term leadership development programs can be effective, but these studies have relied primarily on comparisons between groups at a single point in time, which leaves uncertainty about the long-term effectiveness of short programs. In response, this study examined the durability of effects from a short-term training intervention on students' leadership competencies by addressing the following questions:

- Does a short-term program lead to significant differences in how participants score on the SCM assessment?
- Do any of the observed changes last? Does the effect of a short-term program persist?

Method

Population

This study was conducted with leadership development participants at a large public university in the Midwestern United States. An office on this campus, which we will call the Leadership Center, served as a campus-wide hub for leadership development programs, and espoused a philosophy of leadership consistent with that in the SCM. The Leadership Center's primary objective was to teach students a comprehensive set of skills necessary for competence within the SCM, and the principal means of delivering this education was to offer short-term programs that were open to all students regardless of prior training, academic major, or involvement level on campus.

Participants in this study were drawn from the population of students who registered for one of five short-term leadership programs at the Leadership Center. Each program lasted for an average of eight hours, and each program was open to any interested student. While each one of the five programs was offered at multiple times during the year, students could participate in any particular program only once. The five programs each focused on a different aspect of leadership skills: self-awareness, interpersonal skills, ethics and integrity, organizational effectiveness, and transitional leadership skills. In each program, students had the opportunity to learn theory relevant to the skill set being taught, practice the requisite skills, and reflect upon their learning through individual journaling and small-group discussion. These programs were free, and students received no academic credit for participating.

Sample

The sample for this study consisted of 612 students drawn from participants in the Leadership Center's programs from 2007-2010. Of these, 95% ($n=583$) participated in only one program, while the remainder ($n=29$) participated in two. Overall, 65% of the sample was female. Caucasian students represented 57% of the sample, while African-American (8%), Latino (6%), Asian-American (13%) and international students (15%) comprised the remainder. Participants were spread across all class years. The largest proportion was comprised of freshman (32%), while sophomores (21%), juniors (24%), seniors (16%) and graduate students (8%) were also represented. Students from each of the major colleges within the university participated. Within this sample, women and freshman were overrepresented compared to overall university student demographics, while men and seniors were underrepresented.

Data Collection

Data were collected from three different groups of program participants. Group I data were collected before participation in the leadership program. Students who were assigned to Group I after registering to attend a Leadership Center program were invited to complete an online survey prior to the program. A total of 194 surveys were completed, corresponding to a response rate of 51%. Students assigned to Group II were invited to complete the survey immediately after their participation in one of the leadership programs. Among these students, a total of 219 surveys were completed (response rate 31%). Students assigned to Group III were invited to complete the survey three months after completing the leadership program. We received 199 surveys from this group (response rate 28%). The overall response rate was 34% across all groups, which is consistent with response rates seen in online survey research (Couper, 2000). As well, the demographic characteristics of those who completed surveys were not significantly different than those of Leadership Center participants who did not.

We collected data for each group at multiple times during the three years of this study, to be sure that all five Leadership Center programs were equally represented in the three groups. Data collection periods are summarized in Table 2. This rotating data collection process resulted in a series of “snapshots” of students’ self-reported competencies at different periods of participation in a system of short-term leadership development programs. Therefore, the structure of the data allow for between-person comparisons, rather than within-person or test-retest analysis. Nonetheless, because participants were randomly assigned to groups, there is no *a priori* reason to believe there are significant differences between respondents in each group. Therefore, the responses in each group should be representative of all individuals at that phase of leadership training, which allows for comparison across the time-lagged cross-sectional snapshots.

Instrumentation

Participants completed an online survey asking a variety of demographic questions (race, gender, class year, academic college), and including the Socially

Table 2
Data collection periods 2007-2010

	2007-2008			2008-2009			2009-2010		
	Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring
Group I – Pre-test	X				X				X
Group II – Post-test		X				X	X		
Group III – Lagged post			X	X				X	

Responsible Leadership Scale (SRLS), a 68-item instrument designed to measure the self-reported SCM leadership capacities of participants (Higher Education Research Institute, 1996; Slack, 2006). Items on the SRLS used a five-point Likert-scale ranging from “Strongly Disagree” through “Neutral” to “Strongly Agree” and referred to participants’ attitudes or abilities with regard to one of the eight competencies of the SCM (e.g., agreement with the statement that “creativity can come from conflict” measured the ‘controversy with civility’ capacity). Previous work has shown that reliability scores for the SRLS ranges from .75 on the “controversy with civility” scale to .82 on “commitment” (Dugan & Komives, 2010). The SRLS has been used as the leadership effectiveness instrument of choice in an emerging national study of the effects of college involvement on student leadership development that annually includes over 100 colleges and universities and 50,000 student participants – the Multi-Institutional Study of Leadership (Dugan & Komives, 2007). It has been used to examine differences in leadership practices across gender, race, and sexual orientation (Dugan, Komives, & Segar, 2008), the effects of college involvement on leadership success (Dugan, 2006), and the effects of mentoring on effective leadership practices (Jabaji, Slife, Dugan, & Komives, 2008), as well as with students outside the United States (Humphreys, 2007).

Data Analysis

Confirmatory factor analysis (CFA) was conducted using maximum likelihood estimation structural equation models. CFA was used to test the convergent and discriminant validity of the SRLS competencies, as well to compare the factor structure among sample groups (i.e., Groups I, II and III). The length of the full SRLS instrument (68 items) implied a large number of parameter estimates in an unconstrained model, more than was appropriate for estimation given the available sample size (MacCallum, Browne, & Sugawara, 1996). To address this problem, we opted against item parceling, so as to maximize the rigor of the scale

analysis (Bagozzi & Heatherton, 1994). Instead, we used an iterative split-sample modeling approach (Kline, 1998) which involved using half of the participant responses to identify the subset of items for each competency that best fit the data. We limited the CFA to these items and the resulting model was then tested for appropriate fit in the remainder of the participant sample, in order to reduce the risk of capitalizing on chance (McDonald & Marsh, 1990). The final CFA model was subsequently used in a group-based comparison across the three phases to test for similarities and differences in the pattern of responses. All fit decisions were based on the criteria suggested by Hu and Bentler (1999).

Results

Basic descriptive statistics for the survey responses are provided in Table 3. The values in Table 3 were calculated using the entire 68-item scale for comparability with previous studies, and the values are consistent with those reported by others (Dugan, 2006; Dugan & Komives, 2007). For parsimony, all further results reported are from the final CFA model that was adopted.

Table 3
Descriptive statistics

		M	SD	1	2	3	4	5	6	7	8
1	Change	3.86	.43	.76							
2	Citizenship	4.15	.46	.54	.85						
3	Collaboration	4.19	.41	.57	.59	.78					
4	Commitment	4.46	.42	.38	.47	.57	.77				
5	Common purpose	4.21	.39	.50	.63	.71	.56	.81			
6	Congruence	4.23	.43	.38	.51	.53	.60	.58	.79		
7	Consciousness	3.97	.48	.48	.43	.53	.49	.50	.57	.76	
8	Controversy with civility	3.98	.37	.65	.48	.60	.49	.46	.37	.44	.70

Cronbach's alpha in diagonal. All correlations significant ($p < .05$) $N = 612$

As explained in the description of the analysis, all 68 items of the SRLS were not used in the final model. Moreover, the proposed eight-factor structure of the SCM was not observed in the data; several of the competencies had correlations too high to support their discriminant validity as independent factors (Bagozzi & Edwards, 1998). Rather, a six-factor structure was found to be more appropriate, consisting of items associated with the competencies of congruence, commitment, common purpose, controversy with civility, citizenship, and change (see Table 4). The data did not support the discriminant validity of the consciousness of self and collaboration competencies.

Our final result was a model comprised of the six competencies in Table 4. This model was a statistically appropriate representation of the data ($X^2_{120}=255.70$, CFI=0.96, RMSEA=0.04, SRMR=0.04). All items in the table displayed good measurement properties. In terms of convergent validity – the extent to which the competencies could be recognized in the data – the model performed well (all

Table 4
Final six-competency factor structure and items

Competency	Retained SRLS items	A
Citizenship	I believe I have responsibilities to my community I believe I have a civic responsibility to the greater public I value opportunities that allow me to contribute to my community	.79
Commitment	I hold myself accountable for responsibilities I agree to I can be counted on to do my part I follow through on my promises	.78
Congruence	My actions are consistent with my values My behaviors are congruent with my beliefs My behaviors reflect my beliefs	.82
Controversy with Civility	I am open to others' ideas I value differences in others I respect opinions other than my own	.73
Common Purpose	It is important to develop a common direction in a group in order to get anything done Common values drive an organization I work well when I know the collective values of a group	.71
Change	Change makes me uncomfortable (reverse coded) I work well in changing environments New ways of doing things frustrate me (reverse coded)	.72

factor loadings in excess of the recommended minimum of 0.5; Chin, 1998). The model also performed well in terms of discriminant validity, which is the extent to which competencies could be distinguished from each other (the largest correlation among factors was 0.52; Bagozzi & Edwards, 1998). The final model had equally good measurement properties within each training group: Group I, before training ($X^2_{120}=205.03$, CFI=0.91, RMSEA=0.06, SRMR=0.06); Group II, immediately after training ($X^2_{120}=174.28$, CFI=0.95, RMSEA=.0.05,

SRMR=0.05); and Group III, three months after training ($X^2_{120}=211.78$, CFI=0.92, RMSEA=.006, SRMR=0.06). In all cases, the results met the criteria for good fit, indicating that the final model is an appropriate interpretation of the data (Hu & Bentler, 1999).

The next step of the analysis was a group-based comparison to test for differences in their responses. The first comparison was between Groups I and II, which assessed possible differences in the respondents' leadership model and self-reported competencies before and after training. The first model we tested constrained both groups to have identical measurement models (i.e., same factor structure, same factor loadings, same measurement intercepts). As shown in Table 5 (see Model 1) this model had an acceptable fit with the data, suggesting that respondents' mental models of leadership before and after training had the same six-competency factor structure, meaning that students grouped their response patterns similarly both before and after attending the training sessions. Models 2 and 3 then required further equivalence between the two groups' responses; specifically that the two groups have the same mean levels in the competencies (Model 2) and the same correlations among the competencies (Model 3). Both of these models had significantly worse fits with the data, as indicated by the significant increase in their X^2 score, relative to Model 1.

Table 5
Alternative models in group comparison

Model	Samples	Equivalence comparison	X^2 (df)	ΔX^2 (df)	CFI	RMSEA	SRMR
1	Groups I & II	Factor structure	398.96 (264)	--	.94	.03	.06
2		Factor means	412.99 (270)	14.03 (6)*	.93	.04	.06
3		Factor correlations	448.47 (291)	35.48 (21)*	.92	.04	.08
4	Groups II & III	Factor structure	412.90 (264)	--	.93	.04	.05
5		Factor means	419.02 (270)	6.12 (6)	.93	.04	.05
6		Factor correlations	437.05 (291)	18.03 (21)	.94	.03	.06

* $p < .05$

The worse fit of Model 2 indicates that there were significant differences in the mean levels of some competencies among respondents in the two groups. Specifically, respondents reported significantly higher competency in

commitment (Cohen's $d=.40$), common purpose ($d=.20$), controversy with civility ($d=.22$), and citizenship ($d=.17$) after training ($p<.05$). These are small to moderate effects that suggest that immediately after training participants felt more competent in these areas than they did before training. There was no difference between Groups I and II in their reported competency with congruence or change. Further, the worse fit of Model 3 indicates that there were significant differences in the correlation structures between groups, implying that the respondents perceived different relationships among the competencies before and after training. As shown in Table 6, most Pearson's r correlations were higher after training (i.e., in Group II), which suggests that the participants considered the competencies to be more interrelated and closely linked after training.

The final step in the analysis was to compare the responses of Groups II and III. As shown in Model 4 of Table 5, constraining these two groups to have identical

Table 6
Correlations among competencies before and after training (Phase I score/Phase II score)

		1	2	3	4	5
1	Change					
2	Citizenship	.29/.52				
3	Commitment	.32/.41	.12/.46			
4	Common purpose	.20/.25	.41/.44	.18/.57		
5	Congruence	.08/.39	.23/.49	.49/.53	.39/.40	
6	Controversy with civility	.40/.54	.33/.41	.36/.36	.36/.20	.15/.16

Note: All correlations ≥ 0.21 are significant ($p<.05$)

measurement models yielded a good fit with the data. Moreover, the results of Models 5 and 6 indicate that the two groups had similar means and correlations among the competencies; there were no significant differences. These results suggest that participants reported similar levels of competency and similar mental models of leadership immediately after training and three months later. Combined with the previous results, this shows that the short-term training had a lasting effect on the participants: immediately after training, participants reported higher levels of competency and perceived stronger links among the competencies, and these increases persisted for at least three months.

Discussion

The purpose of this study was to examine the effects of short-term leadership programs on students' self-reported scores on an assessment of SCM competencies. The results indicate that there may be many areas of leadership development that can be addressed through participation in short-term training programs. Moreover, the results suggest that the increased scores persist over time. Three months after training, participants still retained the effects they showed immediately after training. An additional interesting finding was that the correlations among SCM competencies generally increased after participation, pointing to the possibility of a more integrated understanding of the skills required for effective post-industrial leadership. However, all of these findings should be interpreted with the caveat that there may be issues to be resolved concerning the psychometric properties of the Socially Responsible Leadership Scale (SRLS), since the predicted eight-factor structure could not be extracted from the data. Nonetheless, these results provide empirical evidence that students can derive lasting benefits from participating in short-term leadership training, and indicate important directions for future research and the potential structure of leadership programs.

Previous studies (Healy, 2000; Rosch & Schwartz, 2009; Schuh & Upcraft, 1998) have shown the existence of a honeymoon effect in self-reported assessment of skill immediately after an educational experience, such that students overestimate the impact of their learning compared to a measurement taken months later. In this study, student scores remained elevated relative to pre-program results three months after training, and were equal to the gains seen immediately after the program. This persistence corroborates past research (Dugan & Komives, 2007), indicating the durable benefit of students attending short-term leadership interventions. The results seem to show that well-structured short-term programs can impact student leadership practices long after attendance.

At the same time, the results also signify that not all areas of leadership competency are similarly affected by such programs. Specifically, while students reported greater competency on measures of capacity for commitment, common purpose, controversy with civility, and citizenship, there was no apparent effect from training on their capacity for congruence or change. This difference may indicate that some skills required for socially responsible leadership are more amenable to training within a single, short program (e.g., team development, values prioritization, discussion facilitation, and conflict management skills). In contrast, mastering more complex skills such as moral reasoning and systems thinking (i.e., skills required for the effective practice of congruence and change) may be better accomplished in a long-term educational structure, such as an

academic course or multi-semester leadership certificate program. The fact that perceived acquisition of some SCM competencies appears to occur from participation in short-term programs while others do not may have important implications for the curriculum included in co-curricular educational programs, which are often based on short-term interventions such as evening workshops or weekend retreats.

The other interesting pattern in the findings was that most of the correlations among the SCM competencies increased and remained elevated after leadership training. This may indicate that, in addition to any changes in individuals' particular competencies, leadership training programs may promote more integrated thinking about all of the skills required to lead in complex, modern contexts. For example, as students become more proficient at the practice of gaining consensus for group action (i.e., common purpose), they may also gain a better sense of the comprehensive knowledge, skills, and attitudes required to stay committed to personal goals in the face of opposition, manage interpersonal conflict, and embrace diversity in groups.

Even though the training did not appear to contribute to increased scores in the competencies of congruence and change, post-training participants generally reported higher correlations among these and other competencies. These higher correlations may indicate that even though their reported skill does not increase, students may leave a well-designed short-term leadership program with a more integrated understanding of what is required to exercise congruence or manage a complex change process. While students may not be able to master these more complex skills within a short-term program, they may still receive meaningful gains in knowledge about these competencies.

Finally, the results also have potential implications for the use of the Socially Responsible Leadership Scale (SRLS) as an assessment tool in leadership programs. Despite its increasing popularity in assessing student leadership development, little psychometric research has been published on the SRLS beyond exploratory factor analysis. While the Cronbach's alpha score for each competency was similar to that found in past research (Dugan, 2006; Dugan & Komives, 2007), further analysis indicated a lack of convergent and discriminant validity among the competencies, requiring post-hoc deletion of scale items and competencies. While we were able to develop a valid model that was consistent with six of the SCM competencies, additional research might examine the psychometric properties of the SRLS in detail and in diverse samples of students.

Implications for Policy and Practice

These results show evidence that one-shot programs can serve as effective tools for lasting leadership development, but that not all leadership skills are acquired at the same speed or in the context of such programs. The addition of academic courses or long-term certificate programs in leadership development is human resource-heavy and time intensive; therefore, using short-term programs that can effectively educate students may be more fiscally efficient and can provide a means to scale up new initiatives in a potentially more cost-effective and quicker fashion. Our results reveal the efficacy of such programs for some competencies. Still, leadership educators in student affairs should be intentional with the design of their overall suite of programs, ensuring that the complexity that accompanies several contemporary leadership skills is adequately addressed through longer-term programs and initiatives. The SCM capacity of change, for example, may require mastery of the concept of effective systems-thinking. Such mastery requires the successful identification of stakeholders, building relationships with diverse others, testing one's assumptions, and creating effective feedback loops (Conger & Benjamin, 1999). Acquiring the skills to successfully create systemic change in contemporary systems may not be realistic in the scope of a one-day program.

These results also suggest that even if students do not leave short-term programs perceiving that they possess the skills necessary to practice complex leadership actions, they may acquire a more integrated sense of thinking about leadership. For example, some students may not leave a program more competent in matching their words and actions (i.e., the SCM capacity of congruence); however, they may recognize the important role that their personal values (i.e., the SCM capacity of consciousness of self) play in such behavior. This may have important implications for student affairs leadership educators and how they structure the programs they offer. Many leadership programs are marketed as discrete skill-building opportunities rather than as parts of a complex whole of leadership capacity-building. The educational impact of these programs may be increased by explicitly providing students with a more holistic picture of how the skills they are learning are connected to related skills for leading others. Moreover, the creation of a linked set of short-term programs, where students build skill in one area first before advancing to master a more complex skill, may aid administrators in effectively creating a comprehensive leadership development initiative.

Limitations, Future Research, and Conclusions

This study had several important limitations. Significantly, these results are based on students at a single four-year research-extensive public university in the

Midwest, all of whom volunteered to participate in relatively short training programs that took place on the weekends or over summer and winter breaks. While this sample of students was demographically representative of the general student body at that particular campus, the ability to generalize results to a more national or global population of students may be limited by the single-institution population, the fact that all participants were self-selected volunteers, and the nature of the programs in question. Consequently, more research involving multi-campus student populations and programs of varying lengths should be conducted to better understand the impact of short-term training on student leadership development.

Additionally, the post-participation element of the study design was limited to three months, thus constraining the degree to which conclusions about long-term effects can be drawn. The field of leadership development in higher education suffers from a paucity of research that examines true longitudinal change in student abilities (Komives, Owen, Longersbeam, Mainella, & Osteen, 2005; Posner, 2009). While this research began to address this problem, more efforts must be made in assessing the leadership gains of students over time. A specific direction that should be addressed in future research is the difference between knowledge, skills, and attitudes in post-industrial leadership development. While the SRLS is an assessment of self-reported skills, future research could examine how students develop and grow in each of these three areas, and the relationships among them.

In conclusion, our results show that while short-term training is a viable option for student affairs educators in helping students develop leadership skills, not all relevant skills may be appropriately addressed and mastered in a short-term program. More research must be conducted to understand which types of leadership skills can best be fostered in students through short programs, and which skills may be better left to long-term programming initiatives. As campuses are increasingly pressed to become more efficient and better stewards of existing financial and human resources, such knowledge would aid leadership educators in creating the most benefit from their efforts.

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