

ACCESS TO LEADERSHIP EFFICACY: Those Who Start Early Finish Ahead

Abstract

An increasing number of studies point to student gains from participation in leadership development opportunities. However, very little research exists to explore who has access to these experiences. In this paper, we investigate whether a student's employment off-campus has an impact on their ability to participate in, and experience gains in leadership efficacy from leadership training opportunities. We employ a linear regression path analysis to identify potential relationships between pre-college leadership efficacy, off-campus employment, participation in leadership training opportunities, and leadership efficacy for undergraduate students at a university in the Pacific Northwest. Pre-college leadership efficacy was the strongest predictor of leadership efficacy for undergraduate students, with hours of employment and leadership training having small, but significant, mediating effects. This begs the question: How do students build their leadership efficacy prior to entering post-secondary education and what drives students to continue to pursue experiences that develop their leadership efficacy?

Introduction

In the late 1990s, several researchers called out a lack of capacity for leadership among those living in the United States (Ehrlich, 1999; Korten, 1998; Lappé & DuBois, 1994). Around the same time, national attention was turning to postsecondary institutions to set the stage for leadership development of young scholars. In response to this, psychologist Patricia King made the claim, "Helping students develop the integrity and strength of character that prepares them for leadership may be one of the most challenging and important goals of higher education" (King, 1997, p. 87).

We have come a long way over the past two decades towards implementing and assessing gains from

postsecondary leadership interventions (Collins, Suarez, Beatty, & Rosch, 2017; Rosch, Ogolsky, & Stephens, 2017). For example, Cress, Astin, Zimmerman-Oster, and Burkhardt (2001) used longitudinal data from 875 students across ten institutions to demonstrate that participation in leadership programs led to growth in multicultural awareness, civic responsibility, leadership skills, personal and societal values, and understanding of leadership theories. In another study, Komives, Owen, Longerbeam, Mainella, and Osteen (2005) found the development of individual leadership identity led to established self-awareness and self-development, gains in interpersonal efficacy, increased self-confidence, application of new skills, and enhanced motivations.

However, while we do see growing evidence that postsecondary leadership interventions benefit students, we know less about who has access to these experiences. Are there personal and/or institutional barriers that prevent some students from participating in these leadership development opportunities? At a time when the United States strives to promote equity and inclusion in postsecondary institutions and, more specifically, in science, technology, engineering, and mathematics (STEM) careers (Hurtado, Newman, Tran, & Chang, 2010; Page, 2008; Russel, 2011), differential access to transformative leadership opportunities presents a major challenge. In this study, we explore one aspect of this access problem; that is, whether a student's participation in off-campus employment affects their ability to engage in and grow from campus leadership development.

Little is known about access to leadership development opportunities. However, access has been explored in relation to other high-impact educational practices (Kuh, 2008; Peters, Tisdale, & Swinton, 2019; Priest & Clegorne, 2015). For example,

Hirst, Bolduc, Liotta, and Packard (2014) provide evidence that students at two-year institutions (i.e. those who typically have greater financial need and more diverse family structures than students at four-year institutions) chose not to participate in faculty-mentored undergraduate research experiences because it would make more sense financially to work elsewhere. In this example, students with greater financial need miss out on potentially transformative learning experiences while those with less financial need are rewarded by having the time to invest in these co-curricular experiences (Hirst et al., 2014).

In an attempt to establish a stronger understanding of students' leadership development, and to better connect theory with practice, the Multi-Institutional Study of Leadership (MSL) was developed and administered by Dugan and Komives (2007). This large-scale study, first initiated in 2006, grounds itself in the social change model of leadership development, which emphasizes leadership as a process that develops greater self-knowledge and leadership competence in student participants (Figure 1; Astin et al., 1996).

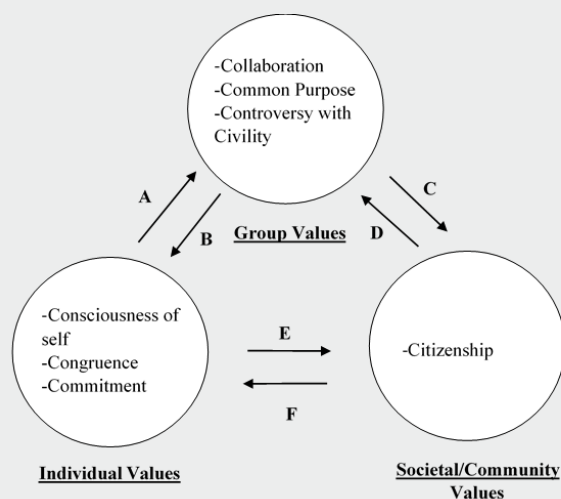


Figure 1. The social change model of leadership development (Astin et al., 1996).

The inputs-environments-outcomes (I-E-O) college impact model (Figure 2) serves as the conceptual framework for the MSL (Astin, 1995). The I-E-O model characterizes student growth and change under a variety of environmental conditions to determine the impact of the condition (Astin, 1995). This

model encapsulates the qualities and characteristics students bring to their college experiences, describes the nature of their undergraduate environment, and identifies the characteristics and qualities of students as they exit the institution (Astin, 1995).

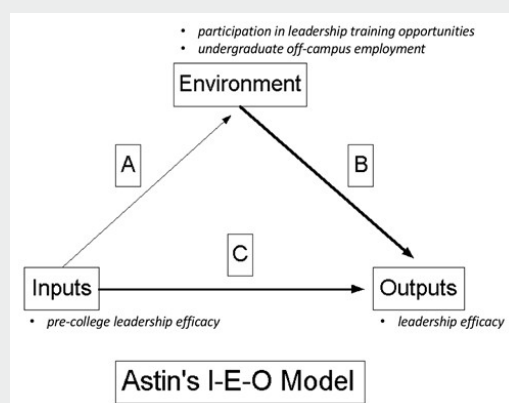


Figure 2. The inputs-environments-outcomes (I-E-O) college impact model (Astin, 1995) with our research variables overlaid (in italics)..

Together, the social change model of leadership development and the I-E-O model comprise the theoretical and conceptual frameworks for our study. We use the MSL data, specific to this university, to examine relationships between pre-college leadership efficacy (input), two environmental factors (whether a student was employed off-campus and participation in leadership training opportunities), and leadership efficacy (the output) for undergraduate students. We use path analysis to address the following research questions:

- What is the relationship between pre-college leadership efficacy, hours of off-campus employment, and participation in leadership training opportunities on leadership efficacy?
- What is the relationship between

hours of off-campus employment and pre-college leadership efficacy on leadership training and education?

- What is the relationship between pre-college leadership efficacy and hours of off-campus employment?

Methods

Instrument. The Multi-Institutional Study of Leadership (MSL) examines college student leadership development through the influences of higher education (Dugan & Komives, 2007). Dr. John P. Dugan and Dr. Susan R. Komives of Loyola University Chicago and University of Maryland, respectively, created the initial MSL study. The MSL clarifies individual and institutional factors related to

leadership development to allow institutions of higher education to begin addressing these issues through enhancing leadership development (Dugan & Komives, 2007). The end goal is to prepare civically engaged citizens for life after undergraduate studies (Dugan & Komives, 2007).

The questionnaire for the MSL uses measures adapted from the Socially Responsible Leadership Scale (SRLC; Dugan, 2006) to measure values of the social change model (Astin et al., 1996). The instrument is comprised of over 400 variables to identify students' demographics, pre- and in-college experiences, and outcome measures. The MSL is a widely utilized valid and reliable instrument (Dugan, Komives, & Owen, 2006).

Data Collection & Sample. The MSL was administered

to students at a university in the Pacific Northwest, entirely online, between January and April 2015 (Dugan & Komives, 2007). A random sample of 4000 students had the opportunity to elect into the study through a series of email solicitations. Students received pre-notification emails, invitation emails, and up to three reminder emails regarding the survey. The university that we chose to study had a 35% response rate ($n = 1152$) and an 83% completion rate. The national response rate for the survey was 31% ($n = 77,489$).

The social change model of leadership (Astin, et al., 1996) identifies seven items from the Socially Responsible Leadership Scale (SRLS; Tyree, 1998) that serve as the outcome measures for the study (Dugan & Komives, 2015). Key benchmark results are reported in Table 1.

Table 1. Mean composite scores for SRLS benchmarks

	SRLS Construct Means ¹	
	University of Interest	National Benchmark
Consciousness of Self	3.98	4.05
Congruence	4.19	4.24
Commitment	4.38	4.40
Collaboration	4.13	4.18
Controversy with Civility	4.18	4.23
Citizenship	3.81	3.94
Resiliency	3.86	3.88

¹ SRLS construct means calculated on a 1 "disagree" to 5 "strongly agree" scale (Tyree, 1998)

Variables. This study used pre-college leadership efficacy, hours of employment, and participation in leadership training and education to predict post-college leadership efficacy. Pre-college leadership efficacy and post-college leadership efficacy were both comprised of four items measured on a one to four scale (1 "not at all confident" to 4 "very confident"). These four items measure confidence in leading others, organizing group tasks to accomplish a goal, taking initiative to improve something, and working with a team on a group project. Hours of employment was reported as a continuous variable from 0 to 80 ($M = 6.35$, $SD = 12.84$). Participation in

leadership training or education defined participation as having "ever participated in a leadership training or leadership experience of any kind." Participation could be further defined in terms of frequency of participation (never, once, sometimes, and often) for sixteen different types of training or education including (but not limited to) leadership conferences, retreats, certificate programs, and majors or minors. We treated this variable as dichotomous for those who have and have not participated in leadership activities.

Construct Reliability. Two indices were calculated from the original dataset for this analysis. A pre-college leadership efficacy index comprised of four variables from the “pre-college leadership efficacy” items. Pre-college leadership efficacy items asked

students to reflect on their pre-college experience to self-assess their leadership efficacy. Cronbach’s alpha, which was greater than 0.60, measures this index as reliable. Table 2 outlines the reliability of the pre-college leadership efficacy index.

Table 2. Reliability analyses of pre-college leadership efficacy index

Leadership Efficacy Item ¹	Mean (M) ¹	Std. dev. (SD) ¹	Item Total Correlation	Alpha (α) if deleted	Cronbach’s alpha (α)
Pre-College Leadership Efficacy	2.73	.72			.87
Leading Others	2.58	.92	.73	.82	
Organizing a group	2.68	.85	.81	.79	
Taking initiative	2.81	.84	.72	.83	
Working with a team	2.85	.81	.62	.87	

¹ Variables measured on 4-point scales of 1 “not at all confident” to 4 “very confident.”

The pre-college leadership efficacy index was scaled from one to four where one equaled “not at all confident” and four equaled “very confident” (n = 1316, M = 2.73).

The leadership efficacy index consisted of four variables related to the leadership efficacy scale.

Variables on this scale ranged from 1 “not at all confident” to 4 “very confident” (n = 1168, M = 3.06). The leadership efficacy index produced a Cronbach’s alpha of $\alpha = .86$, indicating acceptable reliability. Table 3 outlines the reliability of the leadership efficacy index.

Table 3. Reliability analyses of leadership efficacy index

Leadership Efficacy Item ¹	Mean (M) ¹	Std. dev. (SD) ¹	Item Total Correlation	Alpha (α) if deleted	Cronbach’s alpha (α)
Leadership Efficacy	3.06	.65			.86
Leading Others	2.92	.82	.73	.81	
Organizing a group	3.06	.76	.80	.79	
Taking initiative	3.05	.81	.70	.82	
Working with a team	3.19	.70	.60	.86	

¹ Variables measured on 4-point scales of 1 “not at all confident” to 4 “very confident.”

A difference in mean scores between pre-college leadership efficacy and post-college leadership efficacy is evident (preM = 2.73, postM = 3.06). A paired-sample t-test identified this difference as significant ($p < .001$). The effect size for this difference is “medium” (Cohen, 1988) or “typical” (Vaske, 2008) based on Cohen’s D for a paired sample t-test ($d = .48$).

Analysis. We employed a linear regression path model to identify the relationship between inputs (pre-college leadership efficacy), participation in environmental factors (employment and leadership training) and outcomes (leadership efficacy). The path model identified for this analysis is outlined in Figure 3.

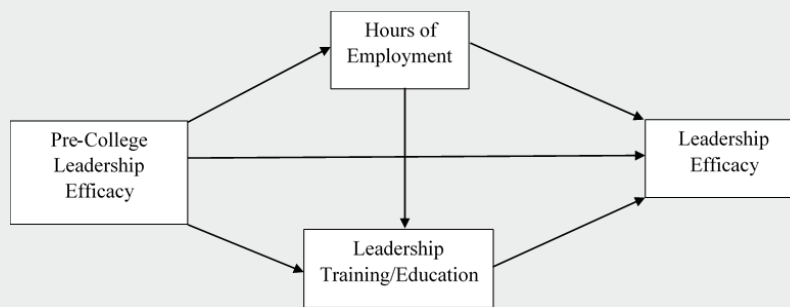


Figure 3. Path model analysis for pre-college leadership efficacy, employment, and leadership training on leadership efficacy.

The first linear regression path assesses the relationship between pre-college leadership efficacy, hours of employment, and leadership training (predictor variables) on leadership efficacy (criterion variable). The second path assesses the relationship between hours of employment and pre-college leadership efficacy (predictor variables) on participation in leadership training (criterion variable). The third path evaluates the relationship between pre-college leadership efficacy (predictor variable) on hours of employment (criterion variable). In addition to the path analyses for this model, we also evaluated the mediating effects of hours of employment and leadership training and education on pre-college leadership efficacy (predictor variable) and post-college leadership efficacy (criterion variable).

Results

Model one analyzes the relationship of pre-college leadership efficacy, weekly hours of employment, and leadership training/education on leadership efficacy. All relationships were significant ($p < .05$) and predicted an increase in post-college leadership efficacy. The strongest predictor of post-college leadership efficacy was pre-college leadership efficacy

($\beta = .48, p < .001$). This relationship was positive; as pre-college leadership efficacy increased, so did post-college leadership efficacy. Leadership training or education and hours of off-campus employment were also significant positive contributors to the model. An increase in these variables led to an increase in post-college leadership efficacy. Leadership education or training was a stronger predictor of post-college leadership efficacy ($\beta = .12, p < .001$) than hours worked off campus ($\beta = .09, p < .001$). Model one accounted for 27% of the variance in post-college leadership efficacy ($R^2 = .27$).

Model two assesses the relationship of pre-college leadership efficacy and hours of employment on participation in leadership training or education. Only pre-college leadership efficacy was a significant predictor of participation in leadership training and education ($\beta = .12, p < .001$). This relationship was positive, indicating those who had high pre-college leadership efficacy were more likely to participate in leadership training. Pre-college leadership efficacy accounted for 2% of the variance in participation in leadership training or education ($R^2 = .02$).

Model three looks at the relationship between pre-college leadership efficacy on hours of employment for undergraduates. Pre-college leadership efficacy was a significant predictor of hours of employment ($\beta = .06$, $p < .05$). This relationship was positive, indicating those with high pre-college leadership efficacy were more likely to be employed off-campus. However,

pre-college leadership efficacy only accounted for 0.4% of the variance in hours of employment for undergraduates at Oregon State University ($R^2 = .004$). Figure 4 identifies the significant results of the path analysis for predictors of post-college leadership efficacy.

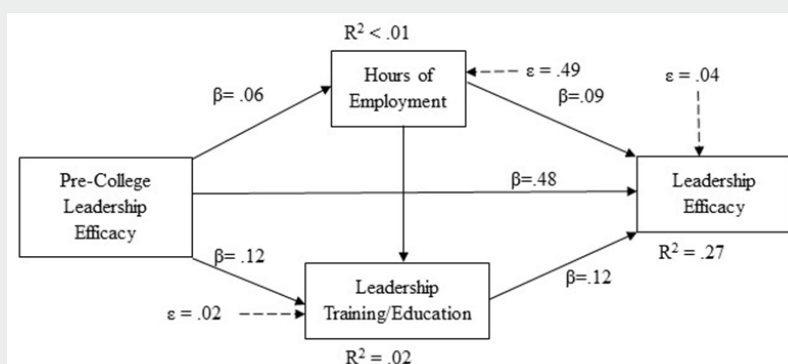


Figure 4. Path model analysis for pre-college leadership efficacy, employment, and leadership training/education on leadership efficacy (only significant results, $p < .05$, are shown)

We identified two partial mediations within this model. First, leadership training or education partially mediated the relationship between pre-college leadership efficacy and post-college leadership efficacy ($p < .001$). That is, pre-college leadership efficacy was less of a predictor for leadership efficacy after introducing leadership training or education into the model as a mediator (β decreased from .50 to .49). Second, hours of off-campus employment partially mediated the relationship between pre-college leadership efficacy and post-college leadership efficacy ($p < .001$). In other words, pre-college leadership efficacy was less of a predictor for leadership efficacy after introducing hours of off-campus employment into the model as a mediator (β decreased from .50 to .49). Both environmental variables (off-campus employment and leadership

training/education) had a similar mediating effect on the model.

Discussion

The most significant predictor of post-college leadership efficacy was pre-college leadership efficacy. Hours of employment minimally mediated this relationship, while leadership training and education more strongly (albeit still minimally) mediated the predictive ability of pre-college leadership efficacy on post-college leadership efficacy. Given this, additional work to quantify the development of leadership efficacy prior to the undergraduate experience is required. This finding begs the question: Who has access to opportunities for leadership efficacy development before college?

Moreover, for those who do not have access before college, how can we ensure participation in experiences that do lead to leadership efficacy during college?

Our second model assessed the relationship of pre-college leadership efficacy and hours of employment on participation in leadership training or education and found that only pre-college leadership efficacy was a significant predictor of participation in leadership training and education. It is possible students with high pre-college leadership efficacy feel compelled to participate in additional opportunities for leadership training programs because efficacy plays a role in one's ability to balance multiple activities and obligations throughout the undergraduate experience. In addition, high pre-college leadership efficacy may be an indication of the value a student places on leadership training or education and might predict students' affinity toward leadership-type activities. On the other hand, low pre-college leadership efficacy may discourage students from participating in leadership trainings and educational opportunities because students with low efficacy already feel less confident in their ability to manage and excel in these experiences.

Hours of employment were not a significant predictor of participation in leadership training and education opportunities. One could speculate high pre-college self-efficacy places students in a position that allows them to perceive themselves as able to balance multiple obligations, thus eliminating a barrier to participating in both employment and leadership training opportunities. Alternatively, low pre-college self-efficacy may not allow students to see themselves as able to balance multiple obligations. This, in turn, may lessen students' perceptions of themselves as successful in environmental engagement outside of coursework.

It is important to note that the model only accounts for 27% of the variance in post-college leadership

efficacy. Further analysis is necessary to identify other factors, which predict post-college leadership efficacy, including student maturation over time. Identifying contributors to gains in pre-college efficacy may be helpful in increasing leadership efficacy overall and aiding students in finding a place in undergraduate leadership training and education programs. In addition, it is important to note that leadership efficacy can only account for confidence in leadership (Bandura, 1977); it does not address the underlying skills of the leader, nor the actions resulting from their driving motivations.

Implications/Recommendations

Results from this study challenge us to consider how we can encourage students with low pre-college leadership efficacy to participate in leadership education and training programs that effectively develop efficacy during the college experience. A closer look at the selection processes that mediate entry into leadership trainings may be necessary. While this lies outside the scope of the current study, we recognize the possibility that opportunity gaps may exist because of competitive selection processes for leadership training and education. That is, a meritocratic process of student selection runs counter to the mission of engaging all students in opportunities for leadership development and should be investigated. While the rigor of programs should certainly be maintained, it will also be important for leadership training and education programs to create welcoming environments for those who may not immediately identify as "leaders." Helping to build students' self-perceptions as leaders may serve to improve their access to future opportunities for leadership development, and in doing so, contribute to a growing pool of leaders among college-aged adults in the United States.

References

- Astin, A. W. (1993). *What matters in college: Four critical years revisited*. San Francisco: Jossey-Bass.
- Astin, H. S., Astin, H. K., Bonous-Hammarth, M., Chambers, T., & Goldberg, S., Boatsman. (1996). *A social change model of leadership development: Guidebook (Version III)*. Higher Education Research Institute, University of California, Los Angeles. <http://www.heri.ucla.edu/PDFs/pubs/ASocialChangeModelofLeadershipDevelopment.pdf>
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological review*, 84(2), 191-215. doi: 10.1037/0033-295X.84.2.191
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Collins, J. D., Suarez, C. E., Beatty, C. C., Rosch, D. M. Fostering leadership capacity among black male achievers: findings from an identity-based leadership immersion program. *Journal of Leadership Education*, 16(3), 82-96. doi: 10.12806/V16/I3/R4
- 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. Retrieved from: <https://psycnet.apa.org/record/2001-16133-002>
- Dugan, J. P. (2006). Involvement and leadership: A descriptive analysis of socially responsible leadership. *Journal of College Student Development*, 47(3), 335-343. doi: 10.1353/csd.2006.0028
- Dugan, J. P., & Komives, S. R. (2007). *Developing leadership capacity in college students: Findings from a national study. A Report from the Multi-Institutional Study of Leadership*, College Park, MN: National Clearinghouse for Leadership Programs.
- Dugan, J. P., Komives, S. R., & Owen, J. E. (2006). *Multi-institutional study of leadership*. International Leadership Association.
- Dugan, J.P & Komives, S.R. (2015). *Executive Summary of the Multi-Institutional Study of Leadership for Oregon State University*. Executive Summary. Retrieved from: <https://www.leadershipstudy.net/design#design-intro>
- Ehrlich, T. (1999). Civic and moral learning. *About Campus*, 4(4), 5-9. doi: 10.1177/108648229900400403
- Hirst, R. A., Bolduc, G., Liotta, L., & Packard, B. W. L. (2014). Cultivating the STEM transfer pathway and capacity for research: a partnership between a community college and a 4-year college. *Journal of College Science Teaching*, 43(4), 12-17. Retrieved from: <https://www.jstor.org/stable/43632007>
- Hurtado, S., Newman, C. B., Tran, M. C., & Chang, M. J. (2010). Improving the rate of success for underrepresented racial minorities in STEM fields: Insights from a national project. *New Directions for Institutional Research*, 2010(148), 5-15. doi: 10.1002/ir.357
- King, P. M. (1997). *The reflective judgment model: Transforming assumptions about knowing*. College student development and academic life: Psychological, intellectual, social, and moral issues. New York, NY: Routledge, Taylor & Francis.

References

- Komives, S. R., Owen, J. E., Longerbeam, S. D., Mainella, F. C., & Osteen, L. (2005). Developing a leadership identity: A grounded theory. *Journal of College Student Development*, 46(6), 593-611. doi: 10.1353/csd.2005.0061
- Korten, D. C. (1998). When corporations rule the world. *European Business Review*, 98(1). doi: 10.1108/ebr.1998.05498aab.007
- Kuh, G. D. (2008). Excerpt from high-impact educational practices: What they are, who has access to them, and why they matter. Washington, D.C.: Association of American Colleges and Universities.
- Lappé, F. M., & DuBois, P. M. (1994). *The quickening of America*. San Francisco: Jossey Bass. Retrieved May, 25, 2010
- Page, S. E. (2008). *The difference: How the power of diversity creates better groups, firms, schools, and societies*. New Jersey: Princeton University Press.
- Peters, A. W., Tisdale, V. A., & Swinton, D. J. (2019). High-impact educational practices that promote student achievement in STEM. *Broadening Participation in STEM (Diversity in Higher Education)* (22), 183-196. doi: 10.1108/S1479-36442019000002208
- Priest, K. L. & Clegorne, N. A. (2015). Connecting to experience: high-impact practices for leadership development. *New Directions for Student Leadership* (2015)5, 71-83. doi: 10.1002/yd.20125
- Rosch, D., Ogolsky, B., & Stephens, C. M. (2017). Trajectories of student leadership development through training: an analysis by gender, race, and prior exposure. *Journal of College Student Development*, 58(8), 1184-1200. doi: 10.1353/csd.2017.0093
- Russell, A. (2011). *A guide to major U.S. college completion initiatives*. Washington, D.C.: American Association of State Colleges and Universities.
- 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), 1945. (AAT 9836493).
- Vaske, J. (2008). *Survey research and analysis: Applications in parks, recreation and human dimensions*. State College: PA: Venture.