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HIGH-IMPACT EDUCATIONAL PRACTICES AND THE DEVELOPMENT OF COLLEGE STUDENTS' PLURALISTIC OUTCOMES

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The purpose of this study was to explore the relationships between college students' participation in high-impact educational practices and their self-reported development of leadership skills and multicultural competence. Analyses of data from the multi-institutional Student Experience in the Research University (SERU) survey ($n = 11,997$) suggest students who participated in several high-impact educational practices, including common book experiences, service-learning, and courses involving themes related to diversity or global learning had significantly higher perceived development in leadership and multicultural competence. Students who participated in first-year seminars, study abroad, and international programs also reported significantly higher development in multicultural competence while students who participated in learning communities, community service, and internships reported significantly higher leadership skills compared to their peers.

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The United States is on the cusp of sweeping demographic and sociocultural transformations that will alter the population and workforce of the future. Compared with the demographic composition of the labor force in prior decades, today's workforce is older, composed of more women, and significantly more racially and ethnically diverse (Toossi, 2012). Projections of the U.S. population in the near future suggest the growth rate of all minority racial and ethnic groups will rise, with the growth rate of Hispanic and Asian populations expected to surpass that of White non-Hispanics by 2020 and, in some states, projected reversals in minority-majority populations (Day, 1996; Toossi, 2012). Immigration, one of the main sources of diversity in the nation, is also expected to increase over the next decades, with projections indicating nearly one in five Americans will be foreign born in 2050 (Toossi, 2012). Amid the changing demographic landscape, grand, adaptive social challenges—those that require significant investment of human capital and cross-disciplinary partnerships to resolve—continue to emerge, necessitating a populace of leaders who are able to bring diverse groups and organizations together to elicit lasting social change in our pluralistic democracy (Astin & Astin, 2000; Zúñiga, Williams, & Berger, 2005).

Higher education institutions are fertile grounds within which to develop future leaders who are committed to social change and can engage multiple perspectives. Within this reaffirmed attention, there is a strong need for leaders who possess multicultural competence—defined as the awareness, knowledge, and skills necessary to work with others who are culturally different from oneself (Pope & Reynolds, 1997)—and are capable of becoming the “architects of new solutions to lingering social problems” (Hurtado, 2007, p. 186). Two decades ago, the Association of American Colleges and Universities (1995) called upon higher education institutions to renew their missions to prepare students to effectively participate in

a diverse democracy. Those same principles were again echoed in a more recent report by the National Task Force on Civic Learning and Democratic Engagement (2012), which recommended higher education institutions increase students' capacity to negotiate democratic processes and work more effectively with the nation's increased diversity. A considerable number of scholars, employers, and policymakers have urged higher education institutions to develop curricular and co-curricular measures to educate college students to become engaged citizens and leaders who can positively affect social change.

Amid these calls for action, distressing statistics provide a compelling case for higher education institutions to invest in enhancing opportunities for students to develop their leadership capacities and multicultural competence. Finley's (2012) multi-institutional longitudinal study of college students' learning over four years suggested 35% of students showed no growth or decline in their level of commitment for socially responsible leadership, with 13% of students demonstrating small growth in that area. In one critical dimension of civic learning and democratic engagement (National Task Force on Civic Learning and Democratic Engagement, 2010)—students' openness to diversity and challenge—61% of students reported no growth or decline while 8% reported small growth in openness to diversity and challenge. Furthermore, Hurtado, Pryor, Palucki Blake, Eagan, and Case (2012) discovered the number of college students expressing they valued social agency—the importance of keeping informed in political affairs, participating in community action programs, becoming a community leader, helping to promote racial understanding, and a few additional areas—increased by only 10% from students' first-year of college to their senior year (from 31% to 41%). Given the preponderance of evidence indicating that college students are graduating without the necessary leadership skills and multicultural competencies

to meet future societal challenges, more research is needed to determine whether specific institutional practices can be leveraged to spur students' development in those critical areas. The purpose of this study is to examine whether students' participation in high-impact educational practices—10 different curricular and co-curricular practices demonstrated to have significant benefits for multiple student outcomes (Kuh, 2008)—are associated with students' self-reported development in leadership skills and multicultural competence.

High-Impact Educational Practices

Kuh (2008) outlined 10 high-impact practices that positively reinforce students' engagement, deep learning, gains in personal development outcomes, and retention—first-year seminars and experiences, common intellectual experiences, learning communities, writing-intensive courses, collaborative assignments and projects, undergraduate research, diversity and global learning, service-learning and community service, internships, and capstone courses and projects. These high-impact educational practices are especially effective in promoting student outcomes because they typically require students to devote considerable time and effort that deepen students' investment in the activity and in their commitment to their college or university. The amount of time and physical and psychological energy students invest in their college experiences is known to be positively associated with their development (Astin, 1993a).

Additionally, high-impact activities provide students with opportunities to have increased interactions with faculty and peers over substantive matters and an extended period of time (Kuh, 2008). In addition to increased interactions with faculty, the nature of high-impact practices provides students with opportunities to receive intensive and frequent feedback about their performance. Prior research supports the importance of

college students' interactions with faculty in supporting their personal and social development, leadership development, and engagement in active and collaborative learning activities (Astin, 1993a). Furthermore, students' collaborations with their peers can significantly enhance their learning, leadership skills, and cultural awareness (Astin, 1993a; Pascarella & Terenzini, 2005).

Many high-impact practices also increase the likelihood students will interact with peers who are different from themselves. Researchers have reported positive and informal interactions with diverse peers had higher cultural and social awareness and perspective-taking skills (Astin, 1993b; Hurtado, 2007); a greater pluralistic orientation, interest in poverty issues, and concern for the public good (Hurtado, 2007); and a greater sense of empowerment to enact social change and greater potential for involvement in civic life (Sax, 2000). Kuh (2008) stressed that high-impact practices also provide students with opportunities to integrate and apply their knowledge in a variety of different contexts; for example, students who participate in high-impact practices outside of the classrooms—such as internships, community service, and study abroad—benefit from engaging in “real world” contexts in which they are encouraged to apply their academic knowledge and skills to resolve challenges (Taylor, 2007). Some high-impact activities can be life-changing—the types of experiences that help students to solidify their values and acquire the “intellectual tools and ethical grounding to act with confidence for the betterment of the human condition” (Kuh, 2008, p. 17).

With all of the aforementioned conditions setting a framework to promote students' development, it is possible the benefits of high-impact practices may also extend to students' growth in leadership skills and multicultural competence; yet, research assessing the potential of high-impact practices to promote students' pluralistic out-

comes is limited. The three areas in which researchers have predominantly discovered links between students' participation, multicultural competence, and leadership development include community service (Astin & Sax, 1998; Dugan & Komives, 2010; Hurtado, 2007; Soria, Nobbe, & Fink, 2013), enrollment in diversity courses (Astin, 1993b; Gurin, Dey, Hurtado, & Gurin, 2002; Engberg & Mayhew, 2007; Hurtado, 2007), and study abroad (Astin, 1993a; Salisbury, An, & Pascarella, 2013), although both outcomes of leadership development and multicultural competence have not been equally examined for each of those three high-impact areas. Much less research exists that connects students' leadership development and multicultural competence to their participation in first-year seminars (Engberg & Mayhew, 2007), living-learning communities (Pike, 2002), learning communities, common book readings (Soria, 2015), undergraduate research, honors programs (Shushok, 2003), writing-intensive courses, internships (Dugan & Komives, 2010), and capstone or thesis courses.

While the outcomes of high-impact experiences are often regarded as axiomatic, Pascarella (2006) suggested that the programmatic absence of empirical support for the effectiveness of these postsecondary programs and opportunities "borders on the scandalous" (p. 513); therefore, our goal in the present study was to examine the association between college students' participation in high-impact practices and their development of pluralistic outcomes including leadership development and multicultural competence. Given the increasingly heterogeneous composition of the United States and the resulting need for students who can work effectively across differences toward shared aims, these two pluralistic outcomes are important to the nation.

Conceptual Framework

The conceptual framework for this study is built upon Astin's (1993a) well-established input-environment-output model, which

suggests researchers take into account the individual characteristics and experiences students bring with them into college (inputs), in addition to other collegiate experiences (environment), in order to estimate the net effects of specific collegiate experiences. Adhering to this model, controls for inputs (e.g., sex, racial/ethnic identity and pre-college ratings of leadership and multicultural competence) and additional college experiences (e.g., academic major) were included in the models predicting students' outcomes to as to isolate their contributions from the focal independent variables—students' participation in high-impact educational practices.

Methods

Instrument

We utilized undergraduate student survey data derived from the Student Experience in the Research University (SERU) survey which was administered at 14 large, public higher education institutions that grant doctoral degrees and are classified by the Carnegie Foundation as having very high research activity (The Carnegie Foundation for the Advancement of Teaching, n.d.). The SERU survey sampling plan is a census scan of the undergraduate experience: all undergraduates enrolled at the 14 higher education institutions participating in spring 2013 were sent the web-based questionnaire. The first author of this paper (an institutional research analyst who administers the survey) has used data from the SERU survey in a variety of research studies examining the effectiveness of institutional programs to promote students' development of multicultural competence, intercultural competence, and leadership (Soria, 2015; Soria, Fink, Lepkowski, & Snyder, 2013; Soria, Roberts, & Reinhard, 2015; Soria & Troisi, 2014). We have both pursued research agendas seeking to examine college students' leadership development and multicultural competence and, given the comprehensive nature of the SERU survey data, it provides us with a rich source

of data within which to explore mutual research interests. Researchers have provided evidence for the internal consistency of students' responses over several administrations of the survey (Chatman, 2011a), in addition to evidence suggesting there is limited non-response bias and validity with regards to students' self-reported academic learning gains (Chatman, 2011b; Douglass, Thomson, & Zhao, 2012).

Sample

The average institutional response rate was 29.55% ($n = 105,420$). From the larger sample, we used a subsample of 10-20% of students (depending upon institutional preference) who were randomly assigned to complete the aforementioned survey module. Missing data were deleted listwise, resulting in a final sample ($n = 11,997$) that was 60.3% female ($n = 7,239$), 39.7% male ($n = 4,758$), 0.2% American Indian or Alaska Native ($n = 27$), 4.8% Black ($n = 498$), 8.7% Hispanic or Latino ($n = 1,045$), 10.8% Asian or Pacific Islander ($n = 1,295$), 64.1% White ($n = 7,766$), 5.7% multiracial ($n = 683$), 3.5% international ($n = 424$), and 2.2% other or unknown race ($n = 259$). The average age of respondents was 21.17 ($SD = 3.63$).

Measures

Dependent variables. This study examined two dependent variables: students' self-reported leadership development and multicultural competence. The first—students' leadership development—was a variable constructed from four survey items that asked students to rate their current abilities in the following areas: leadership skills, self-awareness and understanding, interpersonal skills, and understanding the importance of personal social responsibility. Students were asked to rate their proficiency in these areas on a scale from 1 (very poor) to 6 (excellent).

The second dependent variable—students' multicultural competence—was a variable constructed from four survey items

asking students to rate their proficiencies in the following areas: comfort working with people from other cultures; ability to work with people from other cultures; ability to appreciate and understand racial and ethnic diversity; and ability to appreciate cultural and global diversity. Students were asked to rate their proficiency in these areas on a scale from 1 (very poor) to 6 (excellent).

Pre-college characteristics. These variables included students' pre-college demographic characteristics, including sex, race/ethnicity, and social class. Institutions provided data related to students' sex, which was dummy-coded (female = 1, male = 0), and race/ethnicity, also dummy-coded with White students as the referent. In the survey, students self-reported their social class in one of five classes: low-income or poor (6.0%), working-class (18.4%), middle-class (44.7%), upper-middle or professional-middle class (28.6%), or wealthy (2.3%). Students' age and transfer status were also included as variables.

In addition, students' self-reported ratings of their leadership skills and multicultural competence when they started at the institution were included in analysis. Rather than using change or growth scores in regression models, Pascarella, Wolniak, and Pierson (2003) suggested including a statistical control for the pretest measures. When a statistical control for the pretest measure is included in the analysis, the impact of the independent variables on the posttest scores is functionally the same as the impact of the same independent variables on the growth or gains made from the pretest to the posttest. The same eight items used to measure students' leadership skills and multicultural competence were also included in this model and the scales were the same (1 = very poor to 6 = excellent).

College experiences. Variables associated with students' college experiences included students' cumulative grade point average, academic major, academic level, academic engagement, sense of belonging, and interactions with classmates. Students'

cumulative grade point average was provided by institutions and collected in the fall semester prior to administration of the survey ($M = 3.14$, $SD = .84$). Academic level refers to the amount of time students had been enrolled at the institution based on their term and year of enrollment (e.g., first year, second year, third year, etc.). Due to the wide variety of academic majors, academic majors were recoded to larger categories (e.g., arts/humanities, social sciences).

Finally, students' academic engagement, sense of belonging, and interactions with classmates were derived from several survey items. The academic engagement items asked students to rate the frequency with which they had contributed to a class discussion, asked an insightful question in class, brought up ideas or concepts from different courses during class discussions, interacted with faculty during lecture class sessions, talked with instructors outside of class about issues and concepts derived

from a course, and had a class in which the professor knew or learned their name. These items were scaled 1 = never to 6 = frequently. Students reported their sense of belonging through three survey items—two of which asked students to rate their agreement with whether they felt they belonged on campus and whether they would reenroll. The third item asked students to rate their satisfaction with their overall social experience. These items were scaled 1 = strongly disagree to 6 = strongly agree and 1 = very dissatisfied to 6 = very satisfied respectively. Finally, students were asked to rate the frequency with which they had worked on class projects or studied as a group with classmates and had helped a classmate better understand the course material when studying. These items were scaled 1 = never to 6 = very often.

High-impact practices. In the survey, students were asked to indicate whether they were currently participating or had previously participated in a variety of high- im-

Table 1: *Students' Participation in High-Impact Practices (n = 11,997)*

	<i>n</i>	%
Writing-intensive courses	8,995	75.0
Courses that involve themes related to diversity or global learning	8,495	70.8
Participating in a community service or volunteer experience	7,309	60.9
First-year seminar	5,519	46.0
Reading a book that is common across the university (e.g., "common book")	4,208	35.1
Learning community (two or more linked classes across a common theme)	3,544	29.5
Other internship	3,230	26.9
Service learning or community-based learning	3,232	26.9
Formal undergraduate research programs	2,238	18.7
Honors program	2,170	18.1
Capstone or senior thesis credits	2,088	17.4
Study abroad program, including summer study abroad	1,785	14.9
Formal creative activity or scholarship (such as in a published collection, play, or gallery exhibit)	1,487	12.4
Internship under the direction of a faculty member	1,313	10.9
Living learning program	1,297	10.8
Obtained a certificate, minor, or major with an international or global theme (e.g., Latin American Studies)	1,178	9.8

pact practices (Kuh, 2008). The frequency of students' engagement in these activities is reported in Table 1.

Data Analysis

We conducted all data analyses using SPSS 21.0 (IBM, 2012). We first utilized a factor analysis for the purpose of data reduction—to explain a larger set of measured variables with a smaller set of latent constructs (Henson & Roberts, 2006). To develop the dependent and independent measures used in this study, we conducted a factor analysis on 19 items. Rather than rely upon Kaiser's eigenvalue rule (which can overestimate the number of factors), the scree plot test (which can suffer from subjectivity and variability), or Bartlett's test (which is sensitive to sample size), we utilized Velicer's (1976) minimum average partial (MAP) method and Raiche, Roipel, and Blais's (2006) optimal coordinate (OC) method to estimate the factors (Courtney, 2013; Zwick & Velicer, 1986). We utilized the procedures outlined by Courtney (2013) to analyze the data using SPSS R-Menu v2.0 (Basto & Pereira, 2012). Velicer's MAP values suggested a distinct 5th step minimum squared average partial correlation suggesting five factors. Additionally, against a plot of eigenvalues, OC procedures estimated five factors. Due to this evidence, we retained the following factors: leadership skills, academic engagement, sense of belonging, multicultural competence, and classmate interactions. Each component had strong internal consistency: academic engagement ($\alpha = .89$), leadership skills ($\alpha = .76$), sense of belonging ($\alpha = .86$), multicultural competence ($\alpha = .84$), and classmate interactions ($\alpha = .82$). We computed the factor scores using the regression method and standardized the scores with a mean of zero and a standard deviation of one.

Students may self-select participation in high-impact practices in ways that may introduce selection bias to the models predicting their developmental outcomes; however, we utilized ordinary least squares regression for our analyses over propensity

score matching because a large body of research suggests propensity score matching and regression yield the same effect estimates when a pretest measure of the outcome is included in models (Salisbury et al., 2013). Before we ran the regression analyses, we examined assumptions of multicollinearity, homoscedasticity, linearity, and independent/normal errors. The results of the analyses suggested assumptions were not violated (Tabachnick & Fidell, 2007).

After running the regression analyses, we manually calculated structure coefficients in the regression models. Structure coefficients represent the magnitude of the bivariate correlation between the independent variables and the predicted y variable in isolation (Nathans, Oswald, & Nimon, 2012). We calculated the structure coefficients by dividing the Pearson bivariate correlations (r) by the multiple correlation coefficient (R) for each independent variable. In combination with standardized coefficients (β weights), the structure coefficients can offer a "more insightful stereoscopic view of the dynamics within our data" (Courville & Thompson, 2001, p. 245).

Results

In Table 2 below, we present the raw coefficients (B), standardized coefficients (β), the structure coefficients (r_s), and significance levels (p). The first regression model explained 47.0% of the variance in students' self-reported leadership development. The results suggest several pre-college characteristics were associated with the dependent variable; for example, students' self-reported leadership skills when their first entered their institutions were positively and significantly ($p < .001$) associated with their self-reported current leadership skills. Examinations of the standardized coefficients (β) and the structure coefficients (r_s) suggest students' ratings of their leadership skills at the time they started their college education were among the most important variables in the model given their strong, positive correlations with stu-

dents' perception of their current leadership skills. Three of the items reflecting students' self-reported ratings of their multicultural competence at the time of their enrollment were significantly associated with perceived leadership development. Hispanic or Latino students reported significantly higher leadership development compared to their peers from all other racial/ethnic identities while international students reported significantly lower leadership development. Age was also negatively associated with students' leadership development, transfer students were less likely than non-transfer students to report leadership development, and students from higher social class backgrounds were also more likely to report leadership development than their peers.

Several collegiate experiences were significantly associated with students' perceptions of their leadership skills; for example, students' academic level was positively associated with leadership development while students enrolled in STEM majors reported significantly lower leadership development compared to their peers. Students enrolled in business majors reported significantly higher leadership development compared to their peers in all other programs. Students' academic engagement, sense of belonging, and frequency of classmate interactions were positively associated with their leadership development. The structure coefficients suggest the relationships between students' collegiate experiences and their perceived leadership development range from small to moderate.

Finally, students' participation in some high-impact practices was significantly associated with their self-reported leadership development in the model. Students who participated in a learning community, common book reading program, service-learning or community-based learning experience, community service, internship, and courses involving themes related to diversity and global learning reported, on average, significantly higher leadership development compared to their peers. Students who

completed a certificate, major, or minor with an international focus reported, on average, lower leadership development compared to peers. Examinations of the structure coefficients suggest the correlations between the collegiate experiences and students' perceived leadership skills are small to moderate.

The second regression model explained 46.6% of the variance in students' development of multicultural competence. Students' self-reported ratings of their multicultural competence when they started college were positively associated with their multicultural competence at the time of the survey. Additionally, students' pre-college leadership skills were also positively associated with their multicultural competence development. Males reported lower multicultural competence compared to females. Hispanic or Latino and multiracial students reported greater multicultural competence, on average, than their peers. International students reported lower multicultural competence than their peers and students from higher social class backgrounds reported lower multicultural competence compared to peers from lower social class backgrounds. Transfer students were more likely than non-transfer students to report higher multicultural competence. The structure coefficients suggest the relationships between students' demographic characteristics and perceived multicultural competence are small.

Additionally, several college experience variables were significant in the model predicting students' multicultural competence. Students' academic level, academic engagement, sense of belonging, and frequency of classmate interactions were also positively associated with self-reported multicultural competence. Students enrolled in STEM and general sciences majors reported, on average, lower multicultural competence compared to their peers; however, examinations of the structure coefficients suggests these relationships are mostly small to moderate.

Finally, students who participated in

specific high-impact practices, including first-year seminars, common book reading programs, writing-intensive courses, service-learning or community-based learning experiences, and study abroad reported greater multicultural competence development than their peers. Additionally, students who completed a certificate, major, or minor with an international focus and enrolled in courses involving themes related to diversity and global learning reported, on average, significantly higher multicultural competence compared to their peers. Students who completed a capstone or thesis course reported, on average, lower multicultural competence compared to their peers. Again, these relationships observed are small to moderate.

Discussion

The grand challenges of our time demand leaders who possess self-awareness, employ inclusive and relational leadership styles, and feel a strong sense of responsibility for creating social change (Astin & Astin, 2000). Amid the increasing heterogeneity of the nation, all citizens should also possess multicultural awareness and competence to effectively engage with diverse individuals in their communities and workplaces. The results of this study suggest there are areas that higher education institutions can enhance to foster the development of leadership skills and multicultural competence among their graduates—institutional measures that, above and beyond the characteristics students bring with them to college, students' academic fields of study, and students' engagement in class and with peers, are associated with students' self-reported development of pluralistic outcomes. Pre-college experiences and demographic characteristics are discussed first, followed by college experiences.

Students' pre-college capacities for leadership, interpersonal skills, social responsibility, self-awareness, and diversity awareness were influential in predicting their present multicultural competence and

leadership. Race, sex, and social class were also shown to be factors in students' self-reported development of leadership skills and multicultural competence, findings consistent with prior research (Dugan & Komives, 2007; Soria et al., 2013). Educational interventions designed to bolster students' leadership capacities should engage elements of diversity through discussions about and across differences, critiques of dominant leadership theories and models, and dialogues about power and privilege. For instance, we found that students from higher social class backgrounds were less likely to experience growth in multicultural competence compared to their peers from lower social class backgrounds. Such results may be compelling to student affairs practitioners, who may wish to divert their efforts toward ensuring that all students graduate with a heightened appreciation for multiculturalism, competence to engage with others from diverse backgrounds, and investment in social justice.

Some of the most potentially important high-impact practices revealed in this study include common book reading programs, service-learning and community-based learning, and courses involving themes of diversity or global learning. All of these high-impact practices were significantly and positively associated with students' self-reported leadership development and multicultural competence. The results of the study support prior scholarship investigating the varied benefits of students' engagement in service-learning or community-focused work to achieve pluralistic outcomes (Keen & Hall, 2009). It is encouraging to see that diversity-themed courses are positively associated with students' development of pluralistic outcomes—a finding also corroborating a substantial body of research (Astin, 1993b; Gurin et al., 2002; Engberg & Mayhew, 2007; Hurtado, 2007). Slightly over 70% of the students in this sample had enrolled in such a course, although only a little over one-quarter of students had participated in service-learning or communi-

Table 2: Regression Analysis Predicting Students' Leadership Skills and Multicultural Competence

	Leadership Skills			Multicultural Competence		
	β	r_s	p	β	r_s	p
<i>Student Pre-College Characteristics</i>						
Leadership skills	.191	.627	***	.086	.083	***
Interpersonal (social) skills	.254	.701	***	.075	.129	***
Understanding the importance of personal social responsibility	.222	.639	***	.034	.495	***
Self-awareness and understanding	.133	.600	***	.067	.311	***
Ability to appreciate and understand racial and ethnic diversity	-.004	.328		.118	.697	***
Ability to appreciate cultural and global diversity	.072	.388	***	.241	.761	***
Ability to work with people from other cultures	.103	.052	***	.208	.807	***
Comfort working with people from other cultures	.181	.015	***	.254	.825	***
Male	.003	-.152		-.031	-.139	***
Asian American	.010	-.034		.012	.084	
Black	.013	.020		.005	.069	
Hispanic or Latino	.030	.051	***	.043	.138	***
International	-.070	-.193	***	-.016	-.033	*
Multiracial	-.014	-.048		.039	.071	***
American Indian or Alaska Native	-.006	-.006		-.004	-.007	
Pacific Islander	-.001	-.023		-.002	-.009	
Other or unknown race/ethnicity	.007	.011		.011	.019	
Social class	.027	.093	**	-.041	-.101	***
Age	-.027	-.011	**	-.001	.071	
Transfer	-.019	-.086	*	.018	.044	*

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

Table 2: Regression Analysis Predicting Students' Leadership Skills and Multicultural Competence (continued)

	Leadership Skills			Multicultural Competence		
	β	r_s	p	β	r_s	p
<i>College Experiences</i>						
Grade point average	-.013	.029		-.005	.001	
Academic level	.108	.091	***	.083	.060	***
STEM major	-.038	-.143	***	-.053	-.083	***
Arts and humanities major	.007	.009		.016	.125	
Education major	-.006	.042		-.004	-.011	
Social sciences major	.011	.041		.005	.068	
Health and human services major	.007	.090		-.015	-.033	
General sciences major	.006	.022		-.031	-.055	***
Business major	.028	.042	*	-.010	-.054	
Technical major	-.002	.029		-.014	-.007	
Academic engagement	.096	.000	***	.053	.000	***
Sense of belonging	.020	.001	**	.067	.001	***
Classmate interactions	.040	.000	***	.030	.000	***

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

Table 2: Regression Analysis Predicting Students' Leadership Skills and Multicultural Competence (continued)

	Leadership Skills			Multicultural Competence		
	β	r_s	p	β	r_s	p
<i>High-Impact Practices</i>						
First-year seminar	-.008	.010		.020	.029	**
Learning community	.029	.096	***	.002	.044	
Common book	.023	.090	**	.026	.099	***
Writing-intensive courses	-.001	.036		.013	.101	
Service learning or community-based learning	.031	.115	***	.039	.077	***
Formal undergraduate research programs	-.002	-.016		.009	.043	
Formal creative activity or scholarship	.011	.045		-.004	.045	
Honors program	-.001	-.002		-.005	.006	
Living-learning programs	-.009	.005		-.012	-.018	
Internship under the direction of faculty	.008	.041		-.003	.020	
Other internship	.030	.119	***	-.009	-.009	
Capstone or thesis courses	.012	.039		-.017	-.019	*
Study abroad	-.013	.027		.038	.068	***
Certificate, major, or minor with an international focus	-.037	-.018	***	.028	.125	***
Courses involving themes related to diversity or global learning	.024	.081	**	.064	.188	***
Community service or volunteering	.090	.232	***	.006	.042	
R^2	.374		***	.466		***

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

ty-based learning opportunities.

Service-learning or community-based learning were predictive of both leadership development and multicultural competence, but community service was only predictive of leadership development. Sessa, Matos, and Hopkins (2009) argued that when students engage in service, outcomes related to diversity are the most difficult to achieve. The lack of an intentionally-designed reflection mechanism and the difficulty in achieving outcomes related to diversity may be the reasons why community service was not related to multicultural competence. Educators seeking to develop multicultural competence through service should look to models of service-learning as opposed to community service.

While substantial bodies of literature support the importance of service-learning and courses involving themes of diversity, fewer researchers have been concerned with exploring common book programs as opportunities to develop students' leadership and multicultural competence. The results of this analysis suggest that scholars may wish to rededicate their efforts toward examining the potential for common book reading programs to bolster these outcomes. Many of the books selected for these programs contain themes of diversity and leadership, and significant engagement around a common book often occurs through small group discussions or lectures, which may be why they were significant predictors of students' leadership development and multicultural competence (Soria, 2015).

Several high-impact practices were not predictive of students' self-reported gains in leadership development or multicultural competence. First-year seminars, writing-intensive courses, formal undergraduate research programs, formal creative activities, honors programs, living-learning programs, internships, or capstone courses had no statistically significant relationship to either dependent variable, suggesting participation in high-impact practices does not yield ubiquitous outcomes. Instead

of focusing on the what (i.e., high-impact practice), what might be more important is the how (i.e., pedagogy) of certain experiences or even how well these programs are implemented (Kuh, 2008). While Kuh conceptualized high-impact practices as pedagogical strategies, how these experiences are implemented is likely a key moderating component of their effectiveness.

The strength of the beta weights for the high-impact practices is worth noting. These weights were relatively small compared to students' pre-college experiences and other college experiences (e.g., academic level, sense of belonging, academic engagement). While still important, the relative predictive power of high-impact practices was quite small, especially when compared to other attributes. Many high-impact practices have significant effects on student outcomes, but their relative strength compared to other attributes and experiences should be considered when examining their impact.

Other college experiences were positively related to both leadership development and multicultural competence and these results indicate that when students feel engaged in the classroom, have positive interactions with peers, and feel welcomed and supported by the institution, the effects on leadership development and multicultural competence are positive. Astin (1993a) proposed that the amount of time, energy, and effort students put into their collegiate experience, the greater benefits they derive and the results of the study add credence to such an assertion.

Implications

The results of this study suggest there are steps that institutions can take to foster students' development of leadership and multicultural competence. Common book reading programs, service-learning and community-based learning, and courses involving themes of diversity or global learning emerged as predictive of students' development in both areas, and those are perhaps practices to which institutions should con-

tinue to divert time, energy, and resources. We do not attempt to suggest that those high-impact practices will work for all students in any context; rather, they seem to be promising practices to promote students' development and many of those opportunities are already present at colleges and universities across the nation. Creating inclusive and supportive campus environments, overall, is positively associated with leadership and multicultural competence, so we also recommend that student affairs practitioners continue to cultivate these types of holistic and supportive experiences and environments for their students.

Limitations

Several of the limitations of this study also connect to our primary discussion points; for example, one limitation is that the survey items assessing students' participation in high-impact practices did not capture the duration of students' participation or the constellation of activities within the particular experience. These limitations challenge assumptions about the benefits of participation in individual high-impact educational practices, especially within different institutional contexts. Furthermore, the survey instrument indirectly measures students' self-reported development in leadership and multicultural competence—a limitation, as several researchers have discovered, because college students may not be accurate in assessing their development (Bowman & Seifert, 2011).

Additionally, the nature of students' experiences at large, public, research-intensive institutions may provide students with different opportunities to engage in high-impact practices. The institutional context in this study may mean that the results are not as generalizable to other types of institutions and the availability of high-impact educational practices. Given these limitations, we recommend scholars continue to design studies capturing the nuances surrounding students' participation in high-impact educational practices—including duration, ped-

agogy, and content—and also integrate better measures of students' development.

Conclusion

As high-impact practices continue to gain traction in higher education through expansion of practice, this study offers a broad examination of their effect on two outcomes: students' self-reported gains in leadership skills and multicultural competence. The results of this study indicated some high-impact practices may offer the most benefits for students' development, including common book experiences, service-learning, and courses involving themes related to diversity or global learning had significant positive effects. Pre-college capacities for leadership, social responsibility, social skills, self-awareness, and multicultural competence were important as well, and added importance nuances to the relationships between pre-college experiences and demographic characteristics to leadership development and multicultural competence.

References

- Association of American Colleges and Universities. (1995). *American pluralism and the college curriculum: Higher education in a diverse democracy*. Washington, DC: Author.
- Astin, A. (1993a). *What matters in college: Four critical years revisited*. San Francisco, CA: Jossey-Bass.
- Astin, A. (1993b). Diversity and multiculturalism on the campus: How are students affected? *Change*, 25, 44-49.
- Astin, A. W., & Astin, H. S. (2000). *Leadership reconsidered: Engaging higher education in social change*. Battle Creek, MI: W. K. Kellogg Foundation.
- Astin, A. W., & Sax, L. J. (1998). How undergraduates are affected by service participation. *Journal of College Student Development*, 39(3), 251-263.
- Astin, H. S., & Astin, A. W. (1996). *A social change model of leadership development: Guidebook version III*. Los Angeles, CA:

- Higher Education Research Institute, University of California Los Angeles.
- Basto, M., & Pereira, J. M. (2012). An SPSS R-Menu for ordinal factor analysis. *Journal of Statistical Software*, 46(4), 1-29.
- Bowman, N. A., & Siefert, T. A. (2011). Can students accurately assess what affects their learning and development? *Journal of College Student Development*, 52, 270-290.
- Chatman, S. (2011a). Factor structure and reliability of the 2011 SERU/UCUES questionnaire core: SERU project technical report. Berkeley, CA: Center for Studies of Higher Education, University of California.
- Chatman, S. (2011b). No evidence of substantive non-response bias for the 2011 administration: SERU project technical report. Berkeley, CA: Center for Studies of Higher Education, University of California.
- Courtney, M. G. R. (2013). Determining the number of factors to retain in EFA: Using the SPSS R-menu v2.0 to make more judicious estimates. *Practical Assessment, Research, & Evaluation*, 18(8), 1-14.
- Courville, T., & Thompson, B. (2001). Use of structure coefficients in published multiple regression articles: β is not enough. *Educational and Psychological Measurement*, 61(2), 229-248.
- Day, J. C. (1996). *Population projections of the United States by age, sex, race, and Hispanic origin: 1995 to 2050*. Washington, DC: U.S. Bureau of the Census.
- Douglass, J. A., Thomson, G., & Zhao, C-M. (2012). The learning outcomes race: The value of self-reported gains in large research universities. *Higher Education*, 64, 317-355.
- Dugan, J. P., & Komives, S. R. (2010). Influences on college students' capacities for socially responsible leadership. *Journal of College Student Development*, 51(5), 525-549.
- Engberg, M. E., & Mayhew, M. J. (2007). The influence of first-year "success" courses on student learning and democratic outcomes. *Journal of College Student Development*, 48(3), 241-258.
- Finley, A. (2012). *Making progress? What we know about the achievement of liberal education outcomes*. Washington, DC: Association of American Colleges and Universities.
- Gurin, P., Dey, E. L., Hurtado, S., & Gurin, G. (2002). Diversity in higher education: Theory and impact on educational outcomes. *Harvard Educational Review*, 72, 330-336.
- Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research: Common errors and some comment on improved practice. *Educational and Psychological Measurement*, 66(3), 393-416.
- Hurtado, S. (2007). Linking diversity with the educational and civic missions of higher education. *The Review of Higher Education*, 30(2), 185-196.
- Hurtado, S., Pryor, J. H., Palucki Blake, L., Eagan, K., & Case, M. (2012). *Class of 2012: Findings from the college senior survey*. Los Angeles, CA: Higher Education Research Institute at the University of California Los Angeles.
- IBM Corp. (2012). IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.
- Keen, C., & Hall, K. (2009). Engaging with difference matters: Longitudinal college outcomes of co-curricular service-learning programs. *The Journal of Higher Education*, 80, 59-79.
- Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter*. Washington, DC: Association of American Colleges and Universities.
- Nathans, L. L., Oswald, F. L., & Nimon, K. (2012). Interpreting multiple linear regression: A guidebook of variable importance. *Practical Assessment Research and Evaluation*, 17(9), 1-19.
- National Task Force on Civic Learning and Democratic Engagement. (2012). *A crucial moment: College learning and democracy's future*. Washington, DC: Association of American Colleges and Universities.

- Pascarella, E. T. (2006). How college affects students: Ten directions for future research. *Journal of College Student Development, 47*(5), 508-520.
- Pascarella, E. T., Wolniak, G., & Pierson, C. (2003). Explaining student growth in college when you don't think you are. *Journal of College Student Development, 44*(1), 122-126.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research* (Vol. 2). San Francisco, CA: Jossey-Bass.
- Pike, G. R. (2002). The differential effects of on- and off-campus living arrangements on students' openness to diversity. *NASPA Journal, 39*(4), 283-299.
- Pope, R. L., & Reynolds, A. L. (1997). Student affairs core competencies: Integrating multicultural awareness, knowledge, and skills. *Journal of College Student Development, 38*, 266-277.
- Raiche, G., Roipel, M., & Blais, J. G. (2006). Non-graphical solutions for the Cattell's scree test. Paper presented at the International Annual Meeting of the Psychometric Society, Montreal.
- Salisbury, M. H., An, B. P., & Pascarella, E. T. (2013). The effect of study abroad on intercultural competence among undergraduate college students. *Journal of Student Affairs Research and Practice, 50*(1), 1-20.
- Sax, L. (2000). Citizenship development and the American college student. In T. Ehrlich (Ed.), *Civic responsibility and higher education* (pp. 3-18). Westport, CT: American Council on Education and Oryx Press.
- Sessa, V. I., Matos, C., & Hopkins, C. A. (2009). Evaluating a college leadership course: What do students learn in a leadership course with a service-learning component and how deeply do they learn it? *Journal of Leadership Education, 7*(3), 167-200.
- Shushok, F. (2003). Educating the best and the brightest: Collegiate honors programs and the intellectual, social, and psychological development of students. *Dissertation Abstracts International, 63*(11-A).
- Soria, K. M. (2015). Common reading, learning, and growing: An examination of the benefits of common book reading programs for college students' development. *Journal of the First-Year Experience and Students in Transition, 27*(1), 29-47.
- Soria, K. M., Fink, A., Lepkowski, C. C., & Snyder, L. (2013). Undergraduate student leadership and social change. *Journal of College and Character, 14*(3), 241-252.
- Soria, K. M., Nobbe, J., & Fink, A. (2013). Examining the intersections between undergraduates' engagement in community service and development of socially responsible leadership. *Journal of Leadership Education, 12*(1), 117-140.
- Soria, K. M., Roberts, J., & Reinhard, A. (2015). Undergraduate students' strengths awareness and leadership development. *Journal of Student Affairs Research and Practice, 52*(1), 89-103.
- Soria, K. M., & Troisi, J. N. (2014). Internationalization at home alternatives to study abroad: Implications for students' development of global, international, and intercultural competencies. *Journal of Studies in International Education, 18*(3), 260-279.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson.
- Taylor, M. (2007). Community participation in the real world: Opportunities and pitfalls in new governance spaces. *Urban Studies, 2*, 297-317.
- The Carnegie Foundation for the Advancement of Teaching. (n.d.). Retrieved from http://classifications.carnegiefoundation.org/lookup_listings/institution.php
- Toossi, M. (2012, January). Labor force projections to 2020: A more slowly growing workforce. *Monthly Labor Review, 135*(1), 43-64.
- Velicer, W. F. (1976). Determining the number of components from the matrix of partial correlations. *Psychometrika, 41*, 321-327.
- Zúñiga, X., Williams, E. A., & Berger, J. B.

- (2005). Action-oriented democratic outcomes: The impact of student involvement with campus diversity. *Journal of College Student Development, 46*(6), 660-678.
- Zwick, W. R., & Velicer, W. F. (1986). Comparison of five rules for determining the number of components to retain. *Psychological Bulletin, 99*(3), 432-442.