

Sticking Together: The Impact of a Collaborative Intensive Service-Learning Program on College Students' Academic Outcomes

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While student success has always been at the forefront of higher education institutions, finding ways to promote success is especially relevant today as graduation rates have decreased and years to degree increased (Bound, Lovenheim, & Turner, 2007 & 2010). To combat these trends, many institutions have implemented high-impact practices [HIP] (Kuh, 2008) into their curriculum in hopes of increasing student engagement, retention, and ultimately graduation. One reason HIPs can be effective is because they increase student involvement with courses, faculty and/or community, and create a sense of purpose and belonging. As a well-recognized HIP, service-learning has been shown to be especially effective at promoting positive school attitudes, civic engagement, and academic achievement (e.g., Celio, Durlak, & Dymnicki, 2011); making it a promising method to promote student success. Our study examines a service-learning model that requires significant collaboration among students early on in their college career, thereby engaging students in the additional HIPs of learning community and student collaborative projects/assignments. Specifically, we examined differences in student outcomes for those who participated in a collaborative intensive service-learning program Jumpstart, a nation-wide program that trains college students to teach at-risk preschoolers, compared to students enrolled in a traditional service-learning program. We focused specifically on outcome

Abstract

The purpose of this study was to examine whether participating in a collaborative intensive service-learning program, Jumpstart, is associated with positive student academic outcomes. Specifically, the retention and graduation rates, and years to degree of students who participated in Jumpstart were compared to students who participated in a traditional service-learning program. Results indicate that, while controlling for ethnicity and first-generation college student status, Jumpstart students were more likely to graduate than were non-participating students. Group differences between retention and years to degree were not found. This study contributes to literature on links between high-impact practices and student academic outcomes and highlights the benefits of promoting strong connections among students for their academic success.

measures related to retention, graduation, and years to degree, given the push from universities' administrations for students to complete their degree.

Research on student participation across HIPs reveals generally positive associations with academic success, engagement, retention, and personal growth (Brownell & Swaner, 2009; Buch & Spaulding, 2008; Cabrera, Nora, Crissman, & Terenzini, 2002; Hu & McCormick, 2012; Kuh & Schneider, 2008; but see Johnson & Stage, 2018). Each HIP develops specific skills, and thus tends to be associated with different outcomes. Those HIPs relevant to our study -- service-learning, learning communities, and collaborative projects/assignments -- have been associated with student success measures such as positive attitudes to learning, cultural awareness, and social responsibility (Cabrera et al., 2002; Celio et al., 2011; Einfeld & Collins, 2008; Jones & Abes, 2004; Kilgo, Sheets, & Pascarella, 2015; Pike, 2002; Pike, Kuh, & McCormick, 2011; Simons & Cleary, 2006; Zhao & Kuh, 2004). Also significant and of particular interest to this study, is that these HIPs help students create personal networks, feelings of engagement, and a sense of belonging, which have associations with student retention (Buch & Spaulding, 2008; Celio et al.). Additional findings have shown a dosage and timing effect, such that engaging in more service-learning hours and/or multiple HIPs, and doing so early on in college can be especially beneficial to students (e.g., Astin & Sax, 1998; Mabry, 1998; Padgett, Keup, & Pascarella, 2013; Wismath & Newberry, 2019). As such, we propose that a service-learning program like Jumpstart, that requires intensive student collaboration over an extended period of time in the first two years of college, may be particularly effective at promoting students' commitment to their education, and lead to successful academic outcomes.

Moreover, participation in HIPs can have added benefit for underrepresented students, who comprise many of students enrolled in Jumpstart at this university (e.g., Latinx, first-generation college students.) Underrepresented students often report challenges to adjusting to and navigating through a university setting, which may account, at least partially, for lower rates of retention and graduation (College Board, 2012; Granfield, 1991; Nguyen & Nguyen, 2018; Pike & Kuh, 2005; Strayhorn, 2012). Some research has found that creating personal connections through learning communities, or engaging in service-learning experiences, especially those focused around issues of social justice, may help underrepresented students increase a sense of belonging (Finley & McNair, 2013; Ribera, Miller, & Dumford, 2017; Wilsey, Friedrichs, Gabrich, & Chung, 2014, but see Taylor, Yochim, & Raykov, 2019). As described next, the Jumpstart program provides such opportunities; thus, we were interested in examining whether it was particularly helpful for the participating underrepresented students.

Jumpstart Program

Jumpstart is a nation-wide program, funded by Americorps, that trains college students to implement an intervention curriculum with at-risk preschoolers to develop children's language, literacy, and social skills

(Jumpstart, 2020). The program is based on the HighScope principles of active learning through interaction with adults and peers that builds on Lev Vygotsky's model of adults scaffolding children's learning (HighScope, 2018). While the benefits of Jumpstart on children's development has been examined by the first author (Yen & Lee, 2019), this is the first study to our knowledge to test its impact on college students' academic outcomes.

College students enroll in Jumpstart via two consecutive service-learning practicum courses (lower and upper division) that are designed specifically for Jumpstart. Students are placed in small cohorts of approximately 20 students. They typically participate within their first two years of college, but it is not mandatory. (Of note, students who participated after their second year were excluded from our study.) The course material covers child development theories, developmentally appropriate practices, and cultivating preschoolers' school readiness and social skills. Teams of four to five students work together to develop weekly lesson plans to be implemented in a Head Start classroom. There, each student serves 300 hours and spends eight hours a week team-teaching alongside fellow students and a master teacher. Students also work closely with a faculty mentor who observes students and provides feedback.

As is evident, Jumpstart combines the HIPs of service-learning, learning community, and collaborative projects/assignments, resulting in a highly immersive and collaborative experience, which is different than many other service-learning programs (and those of the comparison students in our study). Jumpstart's service-learning requirements are substantial. The number of hours exceeds that of many programs (in this study, each comparison student served 120 hours over two semesters), and Jumpstart students are responsible for direct instruction of young children. Yet, perhaps the more significant difference is the emphasis placed on student-to-student interaction. First, students are in a learning community in which they take two consecutive courses together that focus on a significant and meaningful topic (Tinto, 1997), specifically ways to prepare underserved young children for kindergarten. Second, students participate in weekly collaborative projects when creating lessons plans, so they are consistently working together to effectively apply developmental theories to the activities implemented in the preschool classroom. Students must listen to other people's views, accept feedback, and construct a curriculum together. More traditional service-learning practicum courses do not always implement learning communities nor such intensive student collaborative assignments. Thus, we anticipate that participating in Jumpstart increases students' engagement and sense of belonging that may lead to better student outcomes.

Overview of Study

The present study compared three academic outcomes – retention and graduation rates, and years to degree -- between students who participated in Jumpstart and students who participated in a traditional service-learning experience. Students were matched on demographic variables found to be

related to academic outcomes: gender, ethnicity, and first-generation status (DeAngelo, Franke, Hurtado, Pryor, & Tran, 2011). Based on the design and requirements of Jumpstart, we predicted that students who participated in Jumpstart would have higher retention and graduation rates, and decreased years to degree compared to the comparison students. Additionally, given that HIPs are especially helpful for underrepresented students (e.g., Finley & McNair, 2013), we expected that participation in Jumpstart would show added benefit to these students.

Methods

Data Source and Sample

The study used student data compiled from a large four-year comprehensive state university designated as a Hispanic-Service Institution, after receiving the university's Institutional Review Board approval. Data from two groups of students was collected: the Jumpstart group and the comparison group. The Jumpstart group consisted of native first-year students who 1) participated in the Jumpstart program in their freshmen or sophomore year, 2) were enrolled in the accompanying lower and upper division practicum courses, 3) did not participate in Jumpstart nor another service-learning practicum course in subsequent years, 4) attended the university between 2001 – 2011, and 5) if graduated, did so in less than six years. Of note, only five Jumpstart students identified as African American, which is considered too few to include as an independent group in a regression analysis (Peduzzi, Concato, Kemper, Holford, & Feinstein, 1996); thus, they were excluded from the sample. The low enrollment of African American students is consistent with that of the university (2%) and geographical region. Students who identified as mixed ethnicity were also excluded due to the inability to accurately match them on ethnicity in the comparison sample. Finally, given the push of many universities' administration to graduate students within six years, students who took longer than six years were excluded.

The comparison group consisted of a random selection of native first-year students who 1) identified as child development majors, 2) were never enrolled in Jumpstart nor the accompanying practicum courses, 3) were enrolled at the university between 2001-2011, 4) participated in the department's traditional service-learning lower and upper division practicum courses, and 5) if graduated, did so in less than six years. Comparison students took two non-consecutive service-learning courses, typically within their sophomore and junior years, and served at a range of sites related to children and/or families for 60 hours per semester. They were not placed in cohorts, did not collaborate with one another at their sites, and rarely served at the same site both semesters. From the comparison group sample, a random selection of students who matched the Jumpstart students on gender, ethnicity, and first-generation college student status were selected. Due to lack of representation in the comparison sample, first-generation status could not be matched for the two European American males.

The final sample consisted of 144 participants, evenly split between the two groups. There was a total of 44 Asian American (44 females), 20 European American (18 females, 2 males), and 70 Latinx (62 females, 8 males) students.

Measures

Demographic information was obtained on each participant, including gender, ethnicity, and first-generation college student status. The student outcome variables included: 1) whether or not students graduated (*Graduated*; 0 = did not graduate, 1 = did graduate), 2) for those who did graduate, the number of years it took them to complete their degree (*Years to Degree*), and 3) for those who did not graduate, the number of semesters they were enrolled before leaving the university (*Semesters Retained*).

Data Analysis

Descriptive statistics were conducted on the outcome measures and are presented in Table 1. Preliminary analyses were conducted between gender and the student outcome measures. A logistic regression was conducted on *Graduated*, and a multiple linear regression was conducted on *Years to Degree*. For both regressions, ethnicity, first-generation status, and Jumpstart status served as the independent variables, as well as interaction terms between Jumpstart status and ethnicity, and Jumpstart status and first-generation status. Ethnicity and first-generation status were entered in Step 1, Jumpstart status in Step 2, and the interaction terms in Step 3. All models were run with Latinx students as the reference group, and for the multiple linear regression model, additional analyses were conducted with European American students as the reference group, to test all potential ethnic group differences. *Semesters Retained* was examined via an independent sample t-test.

Table 1
Descriptive Statistics of Student Outcome Measures by Group

	First Generation	Graduated	Years to Degree	Semesters Retained
Participants	%	%	Mean (SD) Range	Mean (SD) Range
Jumpstart				
Asian American	56	73	4.56 (.69) 3.00-5.50	5.00 (.75) 2-10
European American	22	78	3.85 (.69) 3-5.00	4.00 (2.82) 2-6
Latinx	83	80	4.64 (.68) 3.00-5.5	3.71 (.75) 2-4
Total	53.66	77	4.36 (.69) 3-5.5	4.23 (1.44) 2-10
Comparison				
Asian American	56	64	4.39 (.71) 3-5.5	4.37 (3.50) 2-10
European American	33	67	4.17 (.26) 4-4.5	3.33 (1.15) 2-4
Latinx	83	57	4.52 (.52) 4-5.5	3.46 (2.47) 1-10
Total	57.33	62.67	4.36 (.50) 3-5.5	3.72 (2.37) 1-10

Note. Years to Degree was calculated for those who graduated. Semesters Retained was calculated for those who did not graduate.

Results

Gender was not significantly associated with the student outcome variables and thus not considered in further analyses. Regarding graduation rates, 77% of Jumpstart students and 63% of comparison students graduated (see Table 1). Findings from the logistic regression reveal that while the full model did not significantly predict *Graduated*, $X^2(4) = 4.52$, $p > .05$, Nagelkerke's $R^2 = .05$, the variable Jumpstart status did, suggesting that while holding ethnicity and first-generation status constant, students in Jumpstart had a higher likelihood of graduating than did students in the comparison group. No other significant main effects or interactions emerged. See Table 2 for regression coefficients.

Table 2
Logistic Regression predicting Graduated

Variable	B	S.E. B	Wald	Odds Ratio
First-Generation	-.132	.447	.088	.876
Asian American	-.056	.439	.016	.946
European American	.110	.642	.029	1.116
Latinx (ref)	--	--	.069	--
Jumpstart	.792*	.387	4.185	2.221

Note. * $p < .05$

Next, of those who graduated, the mean *Years to Degree* was 4.36 for both groups. The multiple linear regression predicting *Years to Degree* revealed that, while controlling for ethnicity and Jumpstart status, first-generation students took longer to graduate than did continuing-generation students. Additionally, there was a trend for Latinx students to take longer to graduate than European American students ($t = -1.89, p = .06$). No other significant main or interaction effects emerged; thus, Jumpstart status was unrelated to *Years to Degree*. See Table 3 for regression coefficients. Finally, of those students who did not graduate ($N = 21$), *Semesters Retained* did not vary by group, $t(39) = -.650, p > .05$ (Jumpstart $M = 4.27$; comparison $M = 3.73$).

Table 3
Multiple Linear Regression predicting Years to Degree

Variable	B	β	T
First-Generation	.356*	.264	2.44
Asian American	-.039	-.029	-.271
European American	-.391	-.213	-1.89
Jumpstart	.064	.049	.622
R	.397		
Adj R ²	.118		

Note. Model presented with Latinx students as reference group. * $p < .05$

Discussion

The purpose of our study was to examine the impact of participating in Jumpstart, a collaborative intensive service-learning experience on student academic outcomes. Findings revealed that students who participated in Jumpstart were more likely to graduate within six years than were comparison students, but not necessarily in less time. The effects on graduation rates were found while controlling for ethnicity and first-generation status, suggesting that this type of program can benefit a wide range of students. These results are promising, and speak to potentially fruitful paths to support graduation rates.

We credit the positive impact Jumpstart had on students completing their degree to the strong ties students create with other students, faculty, and the community. Given the structure of the Jumpstart model, students work in close collaboration with each other in multiple and varied contexts (e.g., college classroom, preschool classroom, team meetings), and over an extended period of time. Students have rich group experiences that tap into the benefits of the HIPs learning community and student collaborative projects/assignments (Cabrera et al., 2002; Tinto, 1997). This differs from that experienced by students in the comparison sample whose service-learning practicum courses did not require such collaboration. It is likely that students in Jumpstart were able to build a community with their cohort that supported their college experience and sense of belonging. Jumpstart, however, did not decrease the number of years students took to complete their degree. Either the effects of Jumpstart are unrelated to this measure, or years to degree showed a floor effect: students in both groups completed their degrees in approximately 4.3 years, which is less than the university's reported average years to degree of five years.

Although Jumpstart showed a positive impact on many students graduating, 33% did not complete their degrees. Of the Jumpstart students who did not graduate, they tended to leave the university at the same time as the comparison group, specifically after their sophomore year. These trends, referred to as the sophomore slump, had prompted administration and researchers to develop effective ways to engage sophomores (Graunke & Woosley, 2005; Provencher & Kassel 2017). Regarding Jumpstart, future studies could use student self-report interview data to learn more about why some students did not complete their degrees. Additionally, Jumpstart did not have added benefit for the Latinx and/or first-generation students, despite past research suggesting that HIPs can be particularly helpful for underrepresented students (e.g., Finley & McNair, 2013). In our study, first-generation students in both groups took longer to graduate than did continuing-generation students, consistent with past findings (College Board, 2012). Underrepresented students' experiences at universities are multifaceted, and call for not just student-level support, but also institutional-level changes (Taylor et al., 2019). Additionally, while one service-learning experience is not enough to overcome the many challenges facing underrepresented students, engaging in service-learning can help students develop their views on diversity, learning, and civic responsibility, all significant measures of student success (Langhout & Gordon, 2019).

The study's findings should be interpreted within its limitations. First, the demographics of the Jumpstart sample limits generalizations of findings. That is, due to the low number of African American students enrolled in Jumpstart at this university, they were not included in the study, and consistent with the Jumpstart program nation-wide, few males participated. Second, data were obtained from university archival records, limiting the ability to identify the number and type of other HIPs students may have engaged in (e.g., student-faculty research and diverse/global experiences).

Future research would benefit from self-reported student survey data that can more accurately identify students' involvement in HIPs. Finally, as with all correlational studies, generalizations regarding causal effects of participation in Jumpstart and student outcome measures cannot be made. Without random assignment into groups, these findings may have been influenced by a selection bias into the Jumpstart program (Provencher & Kassel, 2017).

In conclusion, our study contributes to the limited research on associations between service-learning and objective student outcome measures, and is the first to test the impact of this nation-wide program on college students' academic outcomes. Findings highlight the significance of fostering personal connections via meaningful academic experiences early on in students' college careers as a way of promoting students to complete their degree.

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