

Closing the postsecondary success gap with multifaceted supports: Findings from impact evaluations of four comprehensive programs

Symposium Justification

Low-income and first-generation students continue to enroll in and complete college at significantly lower rates than their more advantaged peers (e.g. Bailey & Dynarski, 2011; Baum et al., 2013). The stark differences in completion outcomes across socioeconomic groups, and the well-documented relationship between educational attainment and subsequent earnings (Jepsen, Troske, & Coomes, 2014; Ma, Pender, & Welch, 2016; Oreopoulos, 2007), present an urgent need for effective strategies that promote persistence and degree attainment. Although students enroll in higher education with a common understanding of the economic and social benefits that come with a bachelor's degree, there are pronounced differences in the costs associated with persistence across socioeconomic groups. Low-income and first-generation students are tasked with overcoming a unique, complex, and often interrelated set of barriers on their pathway to degree attainment. For example, low-income and first-generation students are more likely to enroll part-time, more likely to enroll in resource strapped and less-selective institutions, and are more likely to be referred to remedial courses that do not produce credits toward degree attainment (Bailey, Jeong, & Cho, 2010; Deil-Amen & Rosenbaum, 2002; Goodman, Hurwitz, & Smith, 2015; Rosenbaum et al., 2015). These students face unique economic challenges, including having access to stable housing and food, and situational factors that require students to take on a large amount of work hours off-campus (Broton, Frank, & Goldrick-Rab, 2014). Finally, low-income and first-generation students are more likely to lack access to the necessary social and informational resources that are needed to successfully navigate the complex academic, financial, and social contexts of postsecondary institutions (Rosenbaum, Deil-Amen, & Person, 2007; Scott-Clayton, 2011). These unique challenges can emerge as insurmountable barriers to persistence and completion, especially in the absence of ongoing guidance and support.

A review of rigorous impact evaluations to date reveals that long-lasting programs that provide a combination of financial, academic and social supports have substantial impacts on persistence and degree attainment rates. For example, a randomized study of the City University of New York's Accelerated Study in Associate Programs (ASAP), which provides comprehensive support for at-risk community college students for three years, found that the program increased three-year graduation rates by an estimated 18 percentage points (Scrivener et al., 2015). Clotfelter, Hemelt & Ladd (2016) used a combined difference-in-differences and regression discontinuity design to examine the impact of the Carolina Covenant, which provides financial and non-financial services to selected students over four years, and found that the program increased on-time graduation rates by approximately 8 percentage points. The magnitude of these impacts reveals the pressing need for additional research on comprehensive college initiatives so that the field may operate with a detailed understanding of the mechanisms underlying these successful outcomes. This proposed symposium contributes to this critical area by featuring findings from the rigorous impact evaluations of four unique comprehensive support programs that are designed to support the persistence and degree attainment of low-income and predominantly first-generation students.

Dell Scholars Program

Purpose

Page, Castleman, Kehoe, & Sahadewo (2017) conducted an impact evaluation of the Dell Scholars Program to answer two research questions: First, what is the impact of the Dell Scholars Program on persistence and degree attainment? Second, what is the impact of the Dell Scholars Program on loan borrowing behavior, academic progress and academic achievement that are known predictors of college success?

Intervention and Research Design

We estimate the impact of the Dell Scholars Program as an award package that contains ongoing financial support and guidance. The program accepts 300 scholars per year from a national pool of applicants.¹ Participants receive access to a \$20,000 scholarship award, a laptop, textbook credits, and access to individualized guidance and support from a program team based in Austin, Texas. The program maintains a lean staffing model through their use of a sophisticated web-based tool that tracks student progress over time.

We identify the impact of the program on college persistence and completion using two complementary analytic strategies. First, we capitalize on an arbitrary, sharp cutoff in the selection process that determines which applicants are chosen as Dell Scholars and use a regression discontinuity (RD) design to estimate the impact of program selection on college enrollment, persistence and degree attainment using data from the National Student Clearinghouse. Results indicate that being named a Dell Scholar has little to no impact on initial college enrollment. Yet, the program has positive impacts on college persistence and completion. Second, to bolster our RD results and to extend our inference beyond the margin of selection, we match college-enrolled Dell Scholars and non-scholar finalists (i.e., those below the selection threshold) to observationally similar students from a nationally representative dataset of first-time college students. For persistence and completion outcomes observable for students above and below the selection threshold, we use a difference-in-differences (DID) strategy to estimate program impacts for all Dell Scholars.

We then consider how the program shapes students' college experiences to derive these results. We are not able to explore college process outcomes with the RD or DID framework, as we cannot observe such outcomes for students not selected into the program. Therefore, we rely on extensive data tracked on the Dell Scholars and analogous data elements collected on comparison students to whom they are matched to estimate covariate-controlled, first-difference impacts on outcomes such as postsecondary academic performance, credit attainment and loan borrowing behavior as well as employment while in college.

Setting and Subjects

The Dell Scholars Program serves predominantly low-income, minority, and first-generation students who are enrolled in colleges and universities across forty-eight states.² The sample size

¹ The program enrolled 300 students per year from 2009-2012, which are the cohorts that are analyzed in our study.

² We focus our analyses to the 2009-2012 cohorts. We did not consider cohorts prior to 2009 due to data quality issues, and we did not consider cohorts after 2012 to restrict our examination to those cohorts that we can follow through at least four years of postsecondary education.

for RD analyses consists of 1,818 non-selected Dell finalists and 1,201 Dell Scholars. Difference-in-difference estimates were generated from a sample of 4,595 non-selected Dell finalists and their matched BPS counterparts, and 3,328 Dell Scholars and matched counterparts.³

Data Collection and Analysis

We draw on data from multiple sources. First, the Dell Scholars Application dataset consists of data for six cohorts of applicants (n=39,685) from 2009 to 2014. All program applicants submit detailed information on high school academic performance (i.e. GPA, standardized test scores), socioeconomic indicators (i.e., income, federal assistance program enrollment), and sociodemographic indicators (i.e. parent education, race/ethnicity). Our second source of data is the Dell Scholars Program dataset, which contains rich, longitudinal information about postsecondary progress and experiences for all selected scholars.⁴ Third, the program obtained completion records for all program applicants from the National Student Clearinghouse. Fourth, we use data from the Integrated Postsecondary Education Data System (IPEDS) to examine the characteristics of colleges attended by both applicants and Dell Scholars.

Examining whether the Dell Scholars Program impacts academic and financial outcomes required a source of college experience data on a comparable group of students. The NCES Beginning Postsecondary Students Longitudinal Study 2004/2009 (BPS:04/09) provided a near-perfect source of comparison; it captures data on academic achievement and college financing for a nationally representative sample of students. Therefore, the BPS:04/09 study is our fifth source of data. This dataset includes transcript data from all institutions attended by BPS subjects as well as verified federal and state financial aid information.

Findings

We obtain consistent results across the RD and DID approaches that point to the program's impact on students' postsecondary success. Both at the margin of selection and overall, scholars are 8 to 12 percentage points more likely to persist into their third year of college; 6 to 10 percentage points more likely to earn a bachelor's degree within four years; and 9 to 13 percentage points more likely to earn a bachelor's degree within six years, compared to their non-scholar counterparts. These impacts are sizeable and represent improvements on the order of 20 to 25 percent over baseline levels of four- and six-year bachelor's attainment. Our first-difference estimates show that scholars have significantly higher GPAs, attain college credits at a faster rate, are less likely to fall into academic probation, are less likely to take on either federal or private loans, and are less likely to work a high number of hours compared to their matched counterparts. Consistent with the programmatic aims, these results provide evidence that the Dell Scholars Program has a positive impact on many aspects of students' undergraduate experiences.

³ Dell subjects, and subsequently their matched BPS counterparts, are predominantly (at least 70% of the sample) female, Black or Hispanic, first-generation, and very low-income (< \$25,000).³

⁴ Continued scholarship support is contingent upon scholars reporting progress on a regular basis. Scholars provide transcripts and student aid reports that verify academic progress and financial need.

CUNY Accelerated Study in Associate Programs (ASAP)

The six-year findings presented on CUNY's ASAP are not yet publicly available. We request that you do not cite or circulate without author permission.

Purpose

Community colleges offer a pathway to the middle class for low-income individuals. Although access to college has expanded, graduation rates at community colleges remain low, especially for students who need developmental (remedial) courses to build their math, reading, or writing skills. Many reforms have been found to help students in the short term, but few have substantially boosted college completion. The City University of New York's (CUNY's) Accelerated Study in Associate Programs (ASAP), launched in 2007 with funding from the New York City Center for Economic Opportunity, as an uncommonly comprehensive and long-term program designed to help more students graduate and help them graduate more quickly. A randomized controlled trial of CUNY's ASAP, conducted by the independent research firm, MDRC, set out to answer several research questions:

- To what extent was the program implemented with fidelity to the model?
- To what extent is there a service contrast (that is, how are the services/experiences of students offered CUNY's ASAP similar/different from those who do not receive an offer of ASAP)?

What is the effect of the option to participate in CUNY's ASAP, on students' academic progress and completion?

Intervention and Research Design

ASAP, developed and implemented by CUNY, represents both an opportunity and an obligation for students. It was designed to address multiple potential barriers to student success and to address them for up to three years. ASAP requires students to attend college full time and encourages them to take developmental courses early and to graduate within three years. The program provides comprehensive advisement from an adviser with a small caseload and enhanced career services and tutoring. ASAP offers blocked or linked courses for the first year and offers a seminar for the first few semesters, covering topics such as goal-setting and study skills. The program provides a tuition waiver that fills any gap between financial aid and college tuition and fees. It also provides free MetroCards for use on public transportation, contingent on participation in key program services, and free use of textbooks.

The analytic strategy was random assignment. Students were randomly assigned either to a program group, who could participate in ASAP, or to a control group, who could receive the usual college services. Comparing the two groups' outcomes provides an estimate of ASAP's effects.

Setting and Subjects

We will present new, six-year findings from a random assignment study of CUNY's ASAP at three CUNY community colleges located in New York City: Borough of Manhattan, Kingsborough, and LaGuardia. Two groups (or cohorts) of students were randomly assigned for the MDRC evaluation: one just before the spring 2010 semester and the other just before the fall 2010 semester. (BMCC and KCC assigned students before both semesters; LGCC assigned students only before the fall 2010 semester.) A total of 896 students are in the sample — 451 in the program group and 445 in the control group. See Table 1 for select characteristics of sample members at baseline.

Data Collection and Analysis

MDRC's evaluation of ASAP relied on several data sources, including information provided by students in Baseline Information Form, field research, CUNY assessment test data, CUNY transcript data, student survey data, and data from the National Student Clearinghouse. The updated, six-year findings rely on updated CUNY transcript and National Student Clearinghouse data.

Findings

CUNY's ASAP was very well implemented, providing services to students that are substantially different than what they normally receive at CUNY colleges. The three-year program has an estimated 18 percentage point effect on three-year graduation rates (at any college), increases six-year graduation rates by an estimated 10 percentage points, and helps students graduate more quickly. Despite the large effects on earning any degree and earlier effects on enrolling at four-year colleges, the program has no discernable effect on earning a bachelor's degree. Nonetheless, graduation effect estimates of this magnitude are exceptional in randomized experiments conducted in higher education, offering hope of what is possible when serving low-income community college students.

Tables

Table 1. Summary Statistics of selected characteristics at baseline

Characteristic (percent)	Program	Control	Difference	
	Mean	Mean	Est.	P-Value
Female	63.9	60.2	3.6	0.262
Race/Ethnicity				0.745
Asian or Pacific Islander	7.1	7.9	-0.8	
Black	32.7	35.9	-3.2	
Hispanic	44.5	42.7	1.8	
White	10.4	9.6	0.8	
Other ^a	5.3	4.0	1.3	
Age				0.343
19 or younger	56.8	57.5	-0.8	
20-23 years	21.1	23.8	-2.8	
24 or older	22.2	18.7	3.5	
Diplomas/degrees earned ^b				
High school diploma	72.5	72.1	0.4	0.880
GED certificate	20.2	20.7	-0.5	0.894
Occupational/technical certificate	4.4	6.5	-2.1	0.361
Other	1.6	1.8	-0.2	0.870
None ^c	5.8	6.1	-0.3	0.891
Number of remedial courses needed				0.451
None	1.6	2.2	-0.7	
One	37.9	32.1	5.8	
Two	43.5	46.5	-3.1	
Three or more	6.7	7.4	-0.8	
Missing	10.4	11.7	-1.3	
Subject of remedial need				0.625
No need	1.6	2.2	-0.7	
English only	14.6	15.3	-0.6	
Math only	49.9	44.9	4.9	
English and math	23.5	25.8	-2.3	
Missing	10.4	11.7	-1.3	
College at time of random assignment				0.987
College A	18.8	19.1	-0.3	
College B	45.0	44.5	0.5	
College C	36.1	36.4	-0.3	
Currently employed	30.1	32.6	-2.6	0.422
First in family to attend college	28.1	32.5	-4.3	0.170
Non-traditional ^d	37.6	33.8	3.8	0.238

Notes: Missing values are only included in variable distributions for characteristics with more than 5 percent of the sample missing. P-values are derived from a χ^2 test of independence.

Sources: MDRC calculations from a baseline survey and the CUNY Institutional Research Database (IRDB).

^a The "Other" category includes students who self-identified as Native American, Alaskan Native, or Other.

^b Distributions do not add to 100 percent because categories are not mutually exclusive.

^c This includes students who were enrolled in high school at study intake.

^d Nontraditional students are defined as those who were 24 or older, worked 35 or more hours per week, had children, or did not receive a high school diploma and were not enrolled in high school at the time of random assignment. Students are listed as nontraditional if they fit any of these characteristics. Students are considered to be missing in the nontraditional category if they were missing data on two or more of these characteristics and have no other nontraditional characteristic; less than 5 percent of the study sample is missing in the nontraditional category.

Table 2. Degree completion at any college

	Program	Control	Estimated Effect		
	Mean	Mean	Diff	(SE)	P-value
Earned any degree (percent)					
Semester 1	0.0	0.0	0.0	--	--
Semester 2	0.2	0.0	0.2	(0.2)	0.318
Semester 3	2.9	1.1	1.8	(1.0)	0.080
Semester 4	14.5	8.9	5.6	(2.2)	0.010
Semester 5	29.1	15.7	13.4	(2.7)	<0.001
Semester 6	40.0	22.4	17.7	(3.1)	<0.001
Semester 7 (post-program)	42.5	26.8	15.7	(3.1)	<0.001
Semester 8 (post-program)	45.6	30.2	15.3	(3.2)	<0.001
Semester 9 (post-program)	46.9	32.7	14.2	(3.2)	<0.001
Semester 10 (post-program)	48.5	36.7	11.8	(3.3)	<0.001
Semester 11 (post-program)	50.1	38.6	11.5	(3.3)	<0.001
Semester 12 (post-program)	51.4	41.0	10.4	(3.3)	0.002
Earned an associate's degree (percent)	49.7	37.5	12.2	(3.3)	<0.001
Earned a bachelor's degree or higher (percent)	17.0	16.5	0.5	(2.5)	0.830
Highest degree earned (percent)					
Certificate	0.0	0.0	0.0	(0.0)	<0.001
Associate's	33.9	24.1	9.8	(3.0)	0.001
Bachelor's or higher	17.0	16.5	0.5	(2.5)	0.830
Observations	451	445			

Notes: Estimates are adjusted by random assignment blocks and select baseline characteristics. Degree receipt is cumulative. Those who earned a degree in an earlier semester are counted as having a degree in subsequent semesters.

Sources: MDRC calculations from the CUNY Institutional Research Database (IRDB) and National Student Clearinghouse data

Future Connect at Portland Community College

Purpose

Education Northwest (a Portland-based nonprofit that provides applied evaluation, research, and technical assistance) conducted an evaluation of Future Connect to provide a full and detailed description of the program, as well as examine its impact on students. The mixed methods evaluation asked: 1) What is the impact of Future Connect on students' college success? 2) What are the perspectives of coaches, students, and alumni on the effectiveness of the various components of the program?

Intervention and Research Design

Future Connect is a comprehensive scholarship and advising support program at Portland Community College (PCC) in Portland, Oregon, that seeks to change the lives of first-generation and low-income students. The program provides students with a last-dollar scholarship and other financial resources; a college success coach, who provides ongoing, individualized support and advising; free college and career success courses taught by their coach; and other services to help students achieve their academic and career goals.

We used propensity score matching and doubly-robust estimation procedures to examine the impact of Future Connect on postsecondary outcomes compared to a matched comparison group from the population of all direct public high school entrants to PCC. The outcomes of interest include first-year cumulative grade point average (GPA), credits earned in the first year, first-to-second term persistence, fall-to-fall persistence, completion within three years, and completion or transfer to a four-year university within three years.

Setting and Subjects

Future Connect has served 1,631 low-income and first-generation students between fall 2011 (when it began) and fall 2016. To be eligible, students must graduate from a high school or earn a GED in Multnomah County, Hillsboro School District, Beaverton School District, or other regions in the PCC district supported through state funding. In addition, applicants must be a first-generation college student (neither parent has a bachelor's degree) and/or from a low-income family (eligible for the Pell Grant).

The impact analysis focuses on Future Connect students who attended public high school and entered PCC directly after exiting high school—which is about 90 percent of all Future Connect participants between fall 2011 and fall 2016. Compared with the overall population of students who enter PCC directly from high school, Future Connect students are much more likely to be low-income and struggling to meet basic needs. Eighty-eight percent of Future Connect students received free or reduced-price lunch in high school, compared with 46 percent of all other students who entered PCC directly from high school. In addition, nearly one in four Future Connect students reported experiencing food insecurity while at PCC, and nearly one in six said they had experienced housing insecurity in the last 30 days.

Data Collection and Analysis

To identify the impact of Future Connect on postsecondary education progression, persistence, and completion, we cleaned, linked, and analyzed student-level administrative data from PCC and the Oregon Department of Education (ODE). These data included National Student Clearinghouse

(NSC) data, which provide the enrollment and completion information of students at postsecondary education institutions across the country.

Using propensity score matching, we calculated students' likelihood of participating in Future Connect based on background characteristics that are highly related to being a Future Connect participant and the outcomes of interest: gender, race/ethnicity, free or reduced-price lunch status, performance on the state math assessment in high school, attending a Title I high school, attending a high school in an urban area, being in a migrant education program, and being a high school graduate. Across these baseline characteristics, members of the comparison group look exactly like Future Connect students. We also conducted a regression analysis with the matched samples, thereby reducing any remaining differences across the observed traits between the two groups and improving the precision of the impact estimates (Rubin & Thomas, 2000). We included in the regression equation an indicator of a student's high school to control for differences across high schools that contribute to postsecondary outcomes. This analysis ensures we are comparing Future Connect students to similar students from the same high schools. However, this method cannot account for potential unobserved or unmeasurable differences between students, such as motivation, that may explain differences in outcomes.

Additionally, qualitative data were collected to understand the perspectives of coaches, participants, and alumni on the effectiveness of the program and to explore how Future Connect might be impacting students' academic and nonacademic outcomes.

Findings

Our findings suggest Future Connect has large, positive impacts on first-year GPA and credits earned, persistence to the second year of college, and three-year completion and transfer rates. Future Connect increased students' first-year GPA by 0.6 point, which represents an increase from a C average (of the matched comparison group) to a B average. In addition, Future Connect increased the number of first-year credits students earned by 12, which represents an additional term of credits for a full-time student. Future Connect has also had a positive impact on persistence. Specifically, it has increased first-to-second term persistence at PCC by 30 percentage points and fall-to-fall persistence anywhere by 14 percentage points. Finally, the program increased college completion or transfer within three years by 11 percentage points.

Based on interviews, focus groups, and responses to the survey, three main themes emerged that provide insight into the potential mechanisms underlying Future Connect's impact on academic performance, progression, and completion and transfer. First, the program as a whole seems to nurture a sense of belonging and connectedness—key nonacademic measures related to academic success. Second, coaches intentionally scaffold advising and mentoring, building students' confidence to independently access resources and forge their own path to postsecondary success. Third, coaches give students concrete guidance about how to reach their goals. All of these findings underscore that, overall, Future Connect provides a model for supporting students with holistic and comprehensive support.

Detroit Promise Path

Purpose

Though the nation has made great strides in increasing access to higher education, college graduation rates remain low. At community colleges, only a fifth of students graduate within three years. Community college students face many barriers to success: a lack of academic preparation, a confusing maze of requirements, a lack of support on campus, and costs such as books and transportation not covered by financial aid. College Promise programs, which now number more than 200, provide financial support to pay local students' tuition and fees. These programs have received bipartisan support from state and municipal policymakers to improve students' access to college, putting college financially in reach. But these programs do not typically address college success. Increasing completion rates is the next step.

The Detroit Promise, administered by the Detroit Regional Chamber, allows the city's high school graduates to attend local colleges tuition- free. The community college scholarship program covers any difference between financial aid and tuition for up to three years at five area community colleges: Henry Ford College, Macomb Community College, Oakland Community College, Schoolcraft College, and Wayne County Community College. Although the program helps Detroit's students enroll in college, too few stay in school and graduate.

Intervention and Research Design

To improve students' academic outcomes, the Chamber and MDRC partnered to create the Detroit Promise Path, which adds four components to the existing scholarship program: campus coaches who help students navigate academic and personal issues; monthly financial support contingent on meeting with coaches; enhanced summer engagement; and monitoring and messages informed by behavioral science through a management information system created by MDRC. The Detroit Promise Path launched in the 2016-2017 school year. MDRC used a random assignment design to evaluate the new program, allowing program spots to be distributed fairly while reliably estimating the program's impact.

Setting and Subjects

All eligible Detroit students (624 in total) continue to receive scholarships, and about two-thirds can receive the new services. Detroit Promise students are representative of the city: 81 percent of students identify as African-American, and 78 percent do not live with a parent who has earned a bachelor's degree. About 60 percent of students are female. Since students must enroll in the program within two years of high school graduation, almost all students are age 18 when entering the study. A second cohort of students entered the program and study in the fall 2017 semester.

Data Collection and Analysis

MDRC is tracking all student's persistence, credit accumulation, and graduation for three years. Data sources for the evaluation include information provided by students in Baseline Information Form, field research, college transcript data, student survey data, and data from the National Student Clearinghouse.

Findings

Early findings from the first year are encouraging. First, the Detroit Promise Path was implemented with fidelity to the model and participation was high: More than 95 percent of students responded

to coaches' outreach and two-thirds of enrolled students met with coaches as directed. Second, we found that students appreciated the program: 96 percent of surveyed students who had been in contact with a coach said that program was "valuable" or "very valuable" to them. Third, the program had a sizable impact (11.5 percentage points) on enrollment in the second semester, and a 6.7 percentage point and 15 percentage point impact on full-time enrollment in the first and second semesters, respectively.

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