

Closing the Gap

An Overview of the Literature on
College Persistence and
Underrepresented Populations

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Overview

This literature review is the first in a series of three publications exploring college persistence among underrepresented populations. As the first report, this serves as a jumping off point to the topic, providing a broad overview of key statistics along with a list of widely documented barriers to persistence and existing interventions to improve persistence using national data and existing literature. It identifies barriers to college degree attainment, highlights empirically tested strategies and interventions to improve persistence, and provides an overview of potential next steps for educators, practitioners, and researchers. The forthcoming second report will take a systematic approach to evaluating the existing interventions including but not limited to: transition programs, institutional initiatives, and population-specific scholarships. The third report will make best practice suggestions for practitioners, building on findings from the two reviews.

As our work at the Cowen Institute focuses on improving outcomes for young people in New Orleans, the review will focus on efforts to improve persistence among key demographic groups of students representative of those in the city's public education system: particularly first-generation college students, students from low-income backgrounds, and students of color. This review is meant to be used as a jumping off point, allowing readers to gather information on existing data points, research, and strategies to help inform and guide further work in the area.

Please note: throughout this review, we focus on “persistence,” described as the act of staying enrolled in an institution of higher education from enrollment to degree attainment. Furthermore, we rely on the terms “underrepresented student population,” defined as “first-generation college students,” “students from low-income backgrounds,” and “minority students.” Consistent with prior research, first-generation college students are defined as students whose parents both have had no postsecondary education experience and have a high school education or a lower level of educational attainment (Chen & Carroll, 2005; Ishitani, 2006; Redford & Hoyer, 2017). Continuing-generation college students are defined as students who have at least one parent who had some postsecondary education experience.

These categories are often overlapping rather than mutually exclusive. For example, a 2017 study by the National Center for Education Statistics (NCES) found that a larger percentage of first-generation college students than continuing-generation students came from lower-earning households; that is, households making \$20,000 or less (27% vs. 6%) and \$20,001 to \$50,000 (50% vs. 23%) (Redford & Hoyer, 2017). The same data shows that a lower percentage of first-generation college students than continuing-generation students were White (49% vs. 70%), while Black students represented 14% of first-generation college students, compared to 11% of continuing-generation college students. Hispanic students represented 27% of first-generation college students, compared to 9% of continuing-generation students. In other words, there exists an over-representation of students from low-income backgrounds and students of color among the cohort of first-generation college goers. However, as we draw on existing literature, many studies focus on one particular sub-group of students and rely upon specific terminology in defining that group. In an effort to convey the intention and findings of the existing research accurately, we work from the definitions provided in the original reports when discussing data.

College Persistence by the Numbers

Generally speaking, the value of a college degree is widely recognized. Access to and persistence through higher education can significantly impact occupational stability and mental wellness in the United States (U.S.), with higher levels of education contributing to increased employability and wellness. Empirical research suggests that college attendance improves verbal communication, moral reasoning, and critical thinking skills (Pascarella & Terenzini, 2005) and has been linked to lower unemployment rates, greater job satisfaction, lower reliance on public assistance programs, lower rates of obesity, and other health and wellness outcomes (Baum, Ma, & Payea, 2013). Furthermore, attaining a college degree is a key factor in improving one's earnings and long-term financial stability. For example, recent research found that among full-time employed young adults between the ages of 25 and 34, those with a bachelor's degree earned more, on average, than those with a high school diploma (\$48,500 vs. \$30,000) (Kena et al., 2015). Further research indicated that additional years of education result in higher wages over time, and that each year of education adds more to personal income than previous years (Autor, 2010).

The recognized value of college degree attainment is reflected in the number of people in the U.S. pursuing and earning degrees. Among U.S. adults age 25 and over, the percentage who held a bachelor's degree increased from 21% in 1990 to 33% in 2015 (Snyder, de Brey, & Dillow, 2016). Accompanying this trend is a shrinking proportion of children and young people whose parents did not attend college. In 1980, 77% of high school sophomores' parents had not enrolled in postsecondary education; by 2002, the percentage had declined to 62% (Cahalan, Ingels, Burns, Planty, & Daniel, 2006). While this decline is notable, there is still a sizable group of U.S. undergraduate students whose parents did not attend college. In 2011-2012, it was estimated to account for approximately one-third of all college students (Skomsvold, 2014).

Despite the overall increase in degree attainment on a national level, a large gap in college attendance and degree attainment remains between underrepresented students and their peers. For example, a 2018 report by the NCES that relied upon longitudinal data on college-going and persistence among first-generation college students found that academic and cognitive inequalities between first-generation students and their peers dated back to high school performance data. Proportionally, fewer first-generation students had completed some AP/IB credits (18% vs. 44%) or high-level math courses (27% vs. 43%) and calculus (7% vs. 22%).

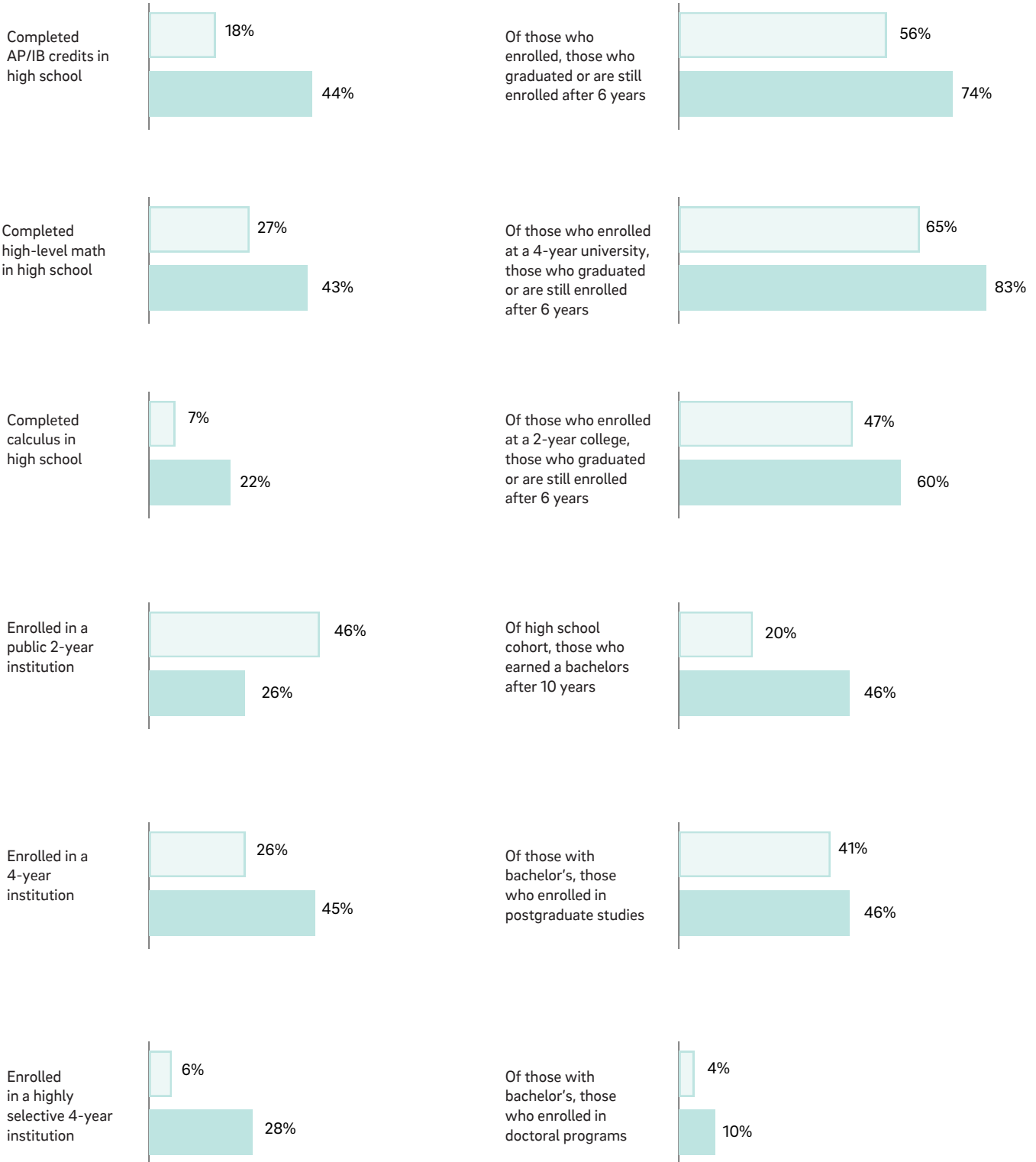
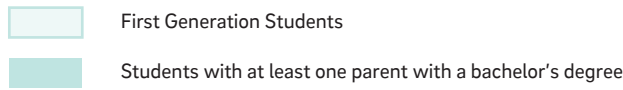
Among the cohort's students who enrolled in postsecondary institutions, 46% of first-generation students enrolled in a public two-year institution, compared with 26% of students whose parents had earned a bachelor's degree. First-generation students also began in four-year institutions at a lower rate than their continuing-generation peers: 26% compared with 45% of those whose parents had earned a bachelor's degree. Furthermore, a lower percentage of first-generation college students than continuing-generation students attended highly selective four-year institutions (6% vs. 28%) and moderately selective four-year institutions (16% vs. 27%). Conversely, a higher percentage of first-generation college students than continuing-generation students attended two-year institutions (52% vs. 28%).

Within six years of beginning postsecondary education, relatively fewer first-generation students from this cohort had earned a credential or remained enrolled (56%) when compared with their peers whose parents had some college education (63%) or a bachelor's degree (74%). This trend was true for students who first enrolled at a public or private four-year college or university (65% vs. 73% and 83%) or a public two-year college (49% vs. 57% and 0%). Looking longitudinally, ten years after they were sophomores in high school, a lower percentage of first-generation college students than continuing-generation students had obtained a bachelor's degree (20% vs. 42%).

Even among those in the cohort who earned a bachelor's degree, inequalities persisted. Within four years after earning their bachelor's degree in 2007–08, 41% of first-generation graduates had enrolled in a postsecondary degree program, compared with 46% of those whose parents held a bachelor's degree. Similarly, a smaller proportion of first-generation graduates (4%) had enrolled in doctoral or professional programs than had their counterparts (10%). Recent research revealed that first-generation students are less likely to apply to postgraduate or professional school programs, even when controlling for race, gender, and income, showing that there is some other distinctive characteristic of first-generation students that contributes to them not pursuing and attaining higher degrees (Carlton, 2015).

Studies have demonstrated similar findings among minority students. Although there has been an increase in the number of minority students pursuing higher education, Black students continue to enroll in lower numbers (Aud, Fox, & KewalRamani, 2010) and are more likely to drop out without earning a credential (Berkner, He, & Cataldi, 2002; Porchea, Allen, Robbins, & Phelps, 2010). For example, only 35% of Black males who began at four-year institutions in 2001 had completed a degree by 2007, while only 19% of Black males who began community college in 2005 had completed a degree by 2009 (Knapp, Kelly-Reid, & Ginder, 2011). For-profit institutions showed even lower rates of degree attainment (22% of all students and 16.5% of all Black students who began in 2002). A recent study found this trend continuing among Latino students, as well (Witkow, Huynh, & Fuligni, 2015). Among their sample, White and Asian students persisted at 85% and 86% respectively, while Latino students persisted at 50%. Significant generational effects were also identified in this research, with first-generation Latino students (29%) persisting less often than their second-generation (53%) and third-generation (59%) peers.

First Generation Students: A Visual Guide



Barriers to College Persistence

Data shows that after enrolling in higher education, underrepresented student groups persist through college at lower rates than their peers. When examining barriers facing these students, it becomes evident that the circumstances impacting their persistence and drop-out decisions also differ from their counterparts.

Types of Barriers:

- ▶ **Social & Cultural Barriers**
- ▶ **Economic Barriers**
- ▶ **Academic Barriers**
- ▶ **Situational Barriers**

SOCIAL AND CULTURAL BARRIERS

Family support appears to be a major influencing factor on college persistence, with many studies discussing the barriers faced by underrepresented students in terms of social and cultural capital to describe family and other support structures for students (Lin, 2002; Perna & Titus, 2005; Wells, 2008). On the whole, cultural capital appears to be extremely influential for first-generation college students, but this group often experiences a weaker family support structure for college compared to their peers because parents and siblings may be unable to relate to college-related experiences or associated problems.

For example, first-generation students cannot benefit from their parents' college-going experience—a source of cultural capital that can help students navigate college (e.g., understanding the significance of the syllabus, what “office hours” means, how to access the library or other available support systems, or how to cite sources in written assignments) (Collier & Morgan, 2008). This lack of cultural capital can negatively affect even those first-generation students who are academically well prepared. All of these factors can increase first-generation students' risk of failing to persist in postsecondary education relative to that of many of their continuing-generation peers (S. Choy, 2001; Lohfink & Paulsen, 2005).

ECONOMIC BARRIERS

Some of the most influential factors impacting college access and college persistence rates are economic in nature. While the cost of postsecondary education is a growing concern for all families nationally, underrepresented students are particularly impacted by the financial aspects of college going. For example, the NCES found that a higher percentage of first-generation college students (54%) than continuing-generation students (45%) reported they could not afford to continue going to school as a reason for leaving college without a postsecondary credential (2017).

Research has also shown that underrepresented college students are more likely to take out student loans and do so in higher amounts than their continuing-generation peers (Bettinger, Boatman, & Long, 2013; Furquim, Glasener, Oster, McCall, & DesJardins, 2017; Haveman & Smeeding, 2006). Research has suggested that underrepresented students have lower levels of student loan debt literacy and may also lack the informational, financial, and social capital of their continuing-generation peers (Lee & Mueller, 2014). Over time, Black students are more likely to have trouble paying down debt and may be more likely to drop out of college in response to high debt burdens than their white peers (Houle & Warner, 2017; Jackson & Reynolds, 2013). Given that Black students experience lower labor market returns from college than white counterparts (Gaddis, 2014), coupled with higher debt and dropout rates, Black young adults take more risk enrolling in college than many of their counterparts.

Over the past three decades, the average cost of college tuition in the U.S. has tripled (Ginder, Kelly-Reid, & Mann, 2018) and national student loan debt is now over \$1 trillion, eclipsing national credit card debt (Friedman, 2017). In addition to the growing cost of tuition, the non-tuition costs of college, including books, food, fees, cost of living, and other aspects, severely impact the ability of underrepresented students to persist (Spradlin, Rutkowski, Burroughs, & Lang, 2010). The financial realities faced by many first-generation students and students from low-income backgrounds means that many end up working part-time or even full-time jobs while enrolled in secondary education, which has been documented in the literature as a predictor of drop-out (Chen & Carroll, 2005; S. P. Choy, 2002; Nunez & Cuccaro-Alamin, 1998). While employment can help manage financial needs, it also limits opportunities for on-campus engagement and time commitment to coursework. However, some studies argue that the relationship between working and persistence is curvilinear (Pascarella & Terenzini, 2005). A number of studies have explored the subject-matter, and overall, findings related to student employment and persistence are inconsistent (Riggert, Boyle, Petrosko, Ash, & Rude-Parkins, 2006).

In addition to employment, a general lack of financial literacy can have a negative impact on persistence, though this is not necessarily limited to underrepresented groups. Two studies identified patterns of financial stress triggered by student financial mistakes (Gutter & Copur, 2011; Joo, Durband, & Grable, 2008). This resulting stress was found to have a negative impact on persistence, and the impact was more substantial when the students' parents had previously experienced credit problems, particularly with credit cards (Joo et al., 2008).

ACADEMIC BARRIERS

When considering academic barriers to college persistence, the empirical research focuses on both high school and college-level academic performance indicators. Longitudinal research from the NCES on first-generation students found a number of academic barriers to the college-going process (2017). For example, a lower percentage of first-generation college students (13%) had a cumulative high school GPA in the highest category (above 3.5) than in any of the lower categories, while 23% of first-generation college students had a GPA of 1.99 or lower compared to 9% of continuing-generation students. Furthermore, a higher percentage of first-generation college students than continuing-generation students said that they had not thought at all about taking key college-entry tests including the SAT/ACT in the 10th grade (29% vs. 14%).

Some research finds that if first-generation students are academically “college ready” when stepping foot on campus, they are as likely to succeed academically as their continuing generation peers.

As such, there has been an increasing focus among researchers on college readiness, specifically with regard to academics, among key groups of underrepresented students. A recent study examined the relationship between college readiness, defined as students who “have a B+ or better high school GPA and have completed four years of English, three years of math, two years of a foreign language, one year each of biological and physical sciences, plus an additional year of one or the other (in total three years of science), one year of history/government, and one year of arts,” and college retention after the first year of enrollment (DeAngelo & Franke, 2016). They

found that the relationship between persistence and generation status varied depending on college readiness. Among students who met the college-ready threshold, first-generation college students and their continuing-generation peers persisted after their first year at the same rate. However, among students who were not identified as college-ready, continuing-generation college students were more likely to return after their first year than first-generation college students. Thus, the research argues that when first-generation students are academically “college ready” when stepping foot on campus, they are as likely to succeed academically as their peers. However, if they are not academically “college ready,” they are more likely than their peers to leave school without a credential. Finally, it is important to be mindful of the definition of “college ready” used in the paper. The academic standards described therein are not aligned with many state-level “college-ready” indicators used for accountability purposes or school performance markers.

Interestingly, despite the widespread focus on academic indicators as predictors of college-persistence, recent data from the NCES found that only 16% of first-generation early college leavers cited “difficulty completing program requirements” as the reason for exit, which was the same percentage as their continuing-generation peers. The potential implications of this finding are discussed later in this report.

SITUATIONAL BARRIERS

In 2017 data presented by NCES, after financial reasons, the second most common reason for leaving college without a degree cited among first-generation students was a change in family status (marriage, death, or birth) (Redford & Hoyer, 2017). A total of 42% of first-generation college students cited this as a reason for leaving, compared to 32% of their continuing-generation peers. The third most common reason cited was conflict at home (31%), followed by personal problems or illness (24%). This data is important to note, as often empirical research on persistence focuses on academic, financial, and institutional predictors of retention. However, at least from their perspective, family and personal issues are just as influential, if not more so, on underrepresented students' decision to leave school.

One reason for this could be that underrepresented student populations often have increased family responsibilities, including dependents, but also situations where students must care for siblings. Several prominent studies found a negative effect of additional family responsibilities on student retention (Habley & McClanahan, 2004; Tinto, 1987; Y. Wang & Pilarzyk, 2009), with the Habley and McClanahan study finding that students at two-year colleges experienced a disproportionate burden in this area, and Wang and Pilarzyk noting an increased effect for underrepresented groups. While some research suggests that family obligations can be associated with increased motivation in high school (Suarez-Orozco & Suárez-Orozco, 1995), Witkow et al. (2014) suggest that those who anticipate helping more in the future while in high school may find that personal motivation and value of education may not be enough to persist during the college years.

In addition to family issues and extenuating personal circumstances, students' socio-emotional and psychological well-being is also tantamount to college persistence and success. However, measuring a student's socio-emotional and psychological well-being can be complicated and multifaceted. For one, the measures are varied and have included everything from motivation levels to students' perceptions of the campus or institutional environment, mental health indicators to family or home life. Given the range of indicators and measures, it is unsurprising that findings are mixed. Among underrepresented students, many studies have identified the need for students to feel a sense of "fit" on the campus, or a sense of belonging (Booker, 2016; S. P. Choy, 2002; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Ojeda, Castillo, Rosales Meza, & Piña-Watson, 2014; Tinto, 1999; Wells, 2008). Tinto (1999) draws attention to the fact that the inclusion factor is subjective and based on the student's perspective; if a student does not feel welcome, the likelihood of persisting drops considerably no matter how much effort the school expends on retention efforts.

Finally, some research has explored the role of student personality traits in predicting college retention and persistence. A 2011 study of "at-risk" college freshmen found that students who scored high on 'conscientiousness' and 'agreeableness' on a personality test were more likely to persist. Authors attributed this relationship to students increased likelihood to seek out tutoring services (Laskey & Hetzel, 2011). A similar study found that conscientiousness predicted persistence, even when controlling for standardized test score and high school academic performance (Davidson, Beck, & Milligan, 2009).

Interventions to Improve Persistence

In response to the demonstrated barriers faced by underrepresented students, there are a number of promising interventions taking place in high schools, colleges, universities, governmental organizations, and non-profits around the country to improve college access and college persistence among underrepresented student populations. From Brown University to Georgia State to the First-Generation Success Program at Clemson University, many colleges across the country have adopted some form of a “first-generation” program to help students along their journey through college.

TRANSITION PROGRAMS

Transition programs include any type of summer bridge programs or orientation activities that a school may provide for its students. This includes a number of programs and interventions aimed at reducing summer melt, including FAFSA nudge texts, bridge programs, and summer counseling (Castleman & Page, 2016; Castleman, Page, & Schooley, 2014; Kallison Jr & Stader, 2012). A literature review explored the effectiveness of a variety of transition programs and found that three of the four had a direct, measurable, positive effect on student retention (Spradlin et al., 2010). Interestingly, the three successful programs ranged from a multi-week, camping-style pre-orientation program to a more traditional “University 101” orientation, demonstrating that campuses appear to be utilizing multiple unique interventions in this area with successful results.



Transition Program Highlight: Northern Arizona University's STAR Program

NAU's transition program for first-generation students takes place over five weeks during the summer. During that time, students live on-campus, earn six credits, and take a series of topic-specific workshops. Students receive counseling on financial aid, academic requirements, and career planning. Recreational activities are organized for evening and weekend hours so students can familiarize themselves with the area and meet their peers.

ADVISING PROGRAMS

Advising programs as used in this context typically refer to targeted, dedicated advising services for use by freshmen or underrepresented student groups (Spradlin et al., 2010). Studies have linked targeted advising to increased retention rates (Bean & Metzner, 1985; Braxton et al., 2004). Generally, these programs include a specialized advising office where students can obtain personalized advice and academic guidance from a dedicated advisor. This type of personalized attention is one of the most desired features reported by student populations (Noel-Levitz, 2010). Advising services also appear to be important regardless of the nature of the institution. Habley and McClanahan (2004) included survey responses from two-year and four-year public and private colleges. When college administrators were asked what practices had the greatest contribution to student retention, “academic advising” was the first practice listed, along with first-year (transition) programs, for all categories of schools.

MENTORING PROGRAMS

Mentoring programs can take multiple forms, from one-on-one to group mentoring to formalized peer support initiatives. However, the literature is relatively weak on the effectiveness of these programs, although there does appear to be a stronger retention effect for racial minorities, where programs are generally targeted to increase the feeling of “belonging.” The research literature regarding mentoring programs is minimal, and what is available often lacks rigor (Patton, Morelon, Whitehead, & Hossler, 2006). More recent work focused on urban Latino students’ outcomes from focused mentoring programs (Torres & Hernandez, 2009). The study found that students in the program reported a significant boost in most measures of the quality of the college experience, and these students were more likely to be still persisting towards a degree in their third year than those who did not participate in the program. Other studies have found that mentoring programs are successful to the extent that students engage with their mentors (Hu & Ma, 2010).



Mentoring Program Highlight: University of South California's Mentoring Program

First-generation students at USC are assigned former first-generation USC alumni as mentors. The pairs are required to attend monthly workshops with other students and mentors and are encouraged to meet once a month on their own in a social setting.

LEARNING COMMUNITIES

Learning communities are groups of students that typically enroll together, take classes together during each academic year, and (in the case of residential colleges) live in the same dormitory (Tinto, 2010; Zhao & Kuh, 2004). Some colleges and universities have begun using the learning community model to help create a streamlined learning process in both the academic and social realms. Students live together at residential schools, and at both residential and nonresidential schools, they generally enroll in shared clusters of classes and meet in groups to discuss topics specific to their interests and needs. For example, the University of Wisconsin offers a diverse range of learning communities from the Women in Science Community to the Greenhouse Learning Community. In addition to cultivating a sense of belonging, participation in a learning community has been found to be associated with higher levels of critical thinking and intercultural effectiveness (Kilgo, Sheets, & Pascarella, 2015; Masika & Jones, 2016).



Learning Community Highlight: University of Kentucky's 1GLLC

The University of Kentucky's 1GLLC (first-generation living learning community) is focused on helping first-generation students navigate college life and access supports and resources through connected courses with their peers, increased faculty interaction, and intentional programming. Opportunities include discounted field trips and outings, seminars on daily life in college, and increased study hall hours.

FACULTY-STUDENT INTERACTION

Faculty-student interaction programs typically refer to specialized programs allowing students to interact with faculty members for mentoring and/or advice. Depending on the institution, this can take the form of formal mentoring programs, structured office hours, informal social gatherings, and/or work opportunities. As with other forms of intervention, the existing research on the efficacy of faculty/student interaction is limited. Research studies typically rely upon self-reported “perceived faculty support levels” from students as indicators of faculty/student interaction (Shelton, 2003). While the research is limited, studies suggest that positive faculty-student interaction is associated with academic performance and persistence (Campbell & Campbell, 1997; Dike, 2012; Tovar, 2015). However, the relationship has not shown to be causal. Furthermore, research has shown that students at community colleges engage in lower levels of interaction with faculty both in and out of the classroom than their peers in four-year institutions (Chang, 2005).

POPULATION SPECIFIC SCHOLARSHIPS

There is increasing evidence that reducing the financial burden of college tuition and supplemental costs (books, cost of living, transportation) can have a positive impact on college-going and persistence. In an effort to build equity and increase attainment among underrepresented populations, universities, colleges, and other institutions have begun focusing on developing additional funding streams and supports targeting specific student populations including first-generation students, students from low-income backgrounds, and minority students.

Findings on the impact of these scholarships on college persistence among underrepresented student populations are mixed. For example, a study on the Gates Millennium Scholars program, which provides scholarships to high-achieving students from low-income backgrounds, found that program participation led to modest increases in GPA but had no impact on four-year degree attainment (DesJardins & McCall, 2014).

However, recent studies on programs combining financial support with additional academic and social supports demonstrate more promising findings. At the University of North Carolina at Chapel Hill, the Carolina Covenant provides admitted low-income students with a full cost of attendance scholarship and additional counseling and supports. This program, inclusive of additional non-financial supports, led to improvements in on-time bachelor's degree attainment by eight percentage points (Clotfelter, Hemelt, & Ladd, 2018). Similarly, the Buffett Scholarship, a comprehensive financial and counseling support scholarship in Nebraska, reveals sizeable impacts on early college persistence (Angrist, Hudson, & Pallais, 2015). Both programs provide multi-level support including financial resources and additional academic supports. Furthermore, all scholarships and supports reside in, and are operated by, the colleges themselves. A similar study on the Dell Scholars program returned consistent findings (Page, Kehoe, Castleman, & Sahadewo, 2017). The Dell Scholars Program provides financial and nonfinancial resources to academically successful students from low-income backgrounds, including tuition support, a laptop, ongoing outreach, close monitoring, and assistance to students that are geographically dispersed to postsecondary institutions across the U.S.



Population Specific Scholarship Highlight: Dell Scholars Program

The Dell Scholars program provides wrap-around supports to eligible students, including tuition for up to six years, on-going academic, financial, and emotional support, connection to a network of scholars, a computer, and access to regular webinars and workshops. Student peers and one-to-one contact play a large role in the process. The program has served over 4,300 scholars and over 2,000 college graduates, with 80% of participants earning a bachelor's degree within six years of enrollment.

Recommendations

MOVE BEYOND THE MODEL

One key finding from this literature review is the impact of personal circumstances on college persistence and drop-out. Researchers, practitioners, universities, and persistence experts often focus on the financial and academic indicators predicting drop-out, with an increasing number of colleges and universities designing predictive analytic models to identify “at risk” students in time for an intervention. Ultimately, this makes sense as predictive models are quantitative in nature and therefore, limited by the type of data available and their applicability in statistical analyses.

Analytic models are crucial to persistence efforts. However... it is important to view them often as a measure of a symptom, not an illness.

However, the recent data provided by the NCES draws attention to the fact that many first-generation students are leaving college for reasons not included in these analytic models (2017). While there is surely statistical overlap between, for example, students who are performing poorly in a first semester math class and a change in their family status (e.g., a birth or death), the models are only capable of identifying the quantitative indicator, not necessarily the root cause of the problem identified by the student as the main cause for drop-out.

Analytic models and “early warning systems” are crucial to persistence efforts. They help identify at-risk students and provide universities with a broad picture of retention and persistence within their institutions, highlighting areas for further development, investment, and growth. However, in order for them to effectively serve students, it is important to view them often as a measure of a symptom, not an illness. They can help identify students needing additional support but the next step should likely include a level of personal contact with the student, either through a dedicated staff support supervisor or a peer mentor, to gain a deeper understanding of the unique circumstances faced by the student.

SUPPORT BEYOND SCHOLARSHIP

While research on the efficacy of population-specific scholarships demonstrated mixed findings, an increasing number of recent studies suggest that coupling financial support with academic and social supports have a positive impact on persistence among underrepresented students. College programs that offer wrap-around supports for underrepresented students including academic support, financial literacy training, counseling, learning communities, and access to additional resources are more likely to see improvements in retention rates among their students.

FINANCIAL LITERACY TRAINING

Young people face a world with increasingly complex financial products such as student loans, credit cards, predatory lenders, mortgages, pensions, and alternative currencies. However, research has shown that financial literacy levels among young people, particularly those from low-income backgrounds, are low. Economic behavior in college can have long-term financial impacts and also impact academic performance and overall happiness. Thus, it would be beneficial for all incoming college freshman to receive some type of formal financial literacy training prior to beginning classes and throughout their college career.

MORE ROBUST RESEARCH

Existing research on post-secondary outcomes and persistence interventions are, unfortunately, often methodologically questionable. Some common issues include poor reporting on quality indicators, a lack of detail on measures, and quasi-experimental research designs (Valentine et al., 2009). One reason for this is that post-secondary outcomes, transitions, and interventions are difficult to define, control for, assess, and track. This is particularly true when considering non-cognitive or non-academic factors. Increasingly, research and practitioner insight point to the importance of non-cognitive factors in students' college performance and persistence. However, much of the research on the subject matter relies on varied measurement tools and a 'grab-bag' approach to non-cognitive indicators. For example, when considering college involvement as a predictor of persistence, measurement approaches range from a YES/NO dummy variable including participation in any extracurricular activity (Wang, 2009) to a series of subscales measuring formal on-campus ties, informal on-campus ties, "own group" ties, and academic connections (Fischer, 2007). These are just two examples of the many ways that researchers work to capture key non-academic predictors in quantitative ways. While there is value in each approach, the end result is a wide range of siloed studies that are not directly comparable in their findings, nor easily replicable due to the private, proprietary nature of many existing measurement tools (Boynton & Greenhalgh, 2004).

There is a need for researchers to explore the topic of persistence in greater depth and through mixed-method approaches. Particularly, there is a need for robust research on the specific aspects of programs or interventions associated with success and individual-level and contextual factors that influence retention and persistence. Furthermore, there is a need for more qualitative research conducted with students and former students to identify and unpack the range of non-academic factors and conditions influencing their decision-making processes.

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