



Big Payoff, Low Probability

Post-secondary Education and Upward Mobility in
America

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Andrew P. Kelly

Since the earliest days of the Republic, it has been an article of faith that higher education is one of America's primary engines of economic mobility. In 1786, John Adams wrote,

But before any great things are accomplished, a memorable change must be made in the system of Education and knowledge must become so general as to raise the lower ranks of Society nearer to the higher. The Education of a Nation, instead of being confined to a few schools & Universities, for the instruction of the few, must become the National Care and expence, for the information of the Many.¹

Twenty-five years later, shortly after founding the University of Virginia, Thomas Jefferson described the leavening effect of public universities:

[In] establishing an institution of wisdom for them we secure it to all our future generations; that in fulfilling this duty we bring home to our own bosoms the sweet consolation of seeing our sons rising, under a luminous tuition, to destinies of high promise; these are considerations which will occur to all.²

After signing the Higher Education Act in 1965 at his alma mater, Southwest Texas State College, Lyndon Johnson told the audience, "This legislation will swing open a new door for the young people of America. . . . It means a way to deeper personal fulfillment, greater personal productivity, and increased personal reward."³

This faith in higher education as a social leveler has driven America's steady march toward mass higher education. In the mid-nineteenth century, federal policymakers laid the groundwork for publicly funded state university systems. In the twentieth century, they created a generous system of loans and grants for low-income students. States built and rapidly expanded four-year institutions, followed by community colleges, in the process redefining what college looks like and whom it was meant to serve.

By many measures, this faith in higher education has been rewarded. High school graduation and college enrollment rates have increased, especially among minorities and low-income students.⁴ Meanwhile, the proportion of recent high school graduates enrolling in college grew from just under half in 1979 to more than two-thirds in 2010.⁵ Among children born in the bottom income quartile in the 1960s, less than 20 percent enrolled in a four-year college; twenty years later, nearly 30 percent of the bottom quartile did.⁶

Meanwhile, since the dawn of mass higher education, the payoff to a college degree has grown and the fortunes of those with just a high school diploma have dimmed. The benefits are particularly large for low-income students who earn a degree.⁷ Not surprisingly, research on mobility has found that children born into disadvantaged families who earn a degree are much more likely to climb the economic ladder than those who do not complete college.⁸

These increases in college access should be great news for mobility, right? Not exactly. While mobility has not declined, a comprehensive longitudinal study of millions of families found that mobility rates have remained largely stagnant over the past two decades.⁹

How is it that rising educational attainment and increased access to college have not made a dent in economic mobility? The problem lies in the disconnect between the payoff to a college degree—which is big, on average—and the number of disadvantaged Americans who actually make it that far—which is small. College does have a large effect on one’s chances of moving up, but that effect only accrues to those who actually finish a degree. The most recent data suggest that, on average, recent college dropouts are no better off than those who never go to college at all.¹⁰ And if nearly everyone at the top of the economic ladder gets a college degree, it will be that much harder for those without one at the bottom to move up.

For far too many disadvantaged high school graduates, access to college is a dead end rather than an on ramp to the middle class. Low-income students often graduate high school unprepared for college-level work, yet all of them are eligible to enroll in college and access federal financial aid. The majority of those who do enroll wind up in remedial courses that they are unlikely to pass, and many of them wind up with little but debt and regret. Many of these individuals would be better off pursuing something other than a four-year or a two-year degree—a short-term vocational certificate or an apprenticeship that provides access to skills and a job. But such alternatives are often treated as a last resort instead of a worthwhile option and are underdeveloped and under funded.

At the other end of the spectrum, low-income students who are academically ready face their own set of obstacles. College costs have skyrocketed over the past three decades, but family incomes have not kept pace. First-generation college students often lack the information necessary to make good decisions about where to attend. As a result, far too many of these students ship off to low-quality institutions that have every incentive to take their tuition dollars and less incentive to worry about how they fare on campus. Even our highest achieving low-income students are less likely to earn a college degree than our lowest-achieving high-income students.¹¹

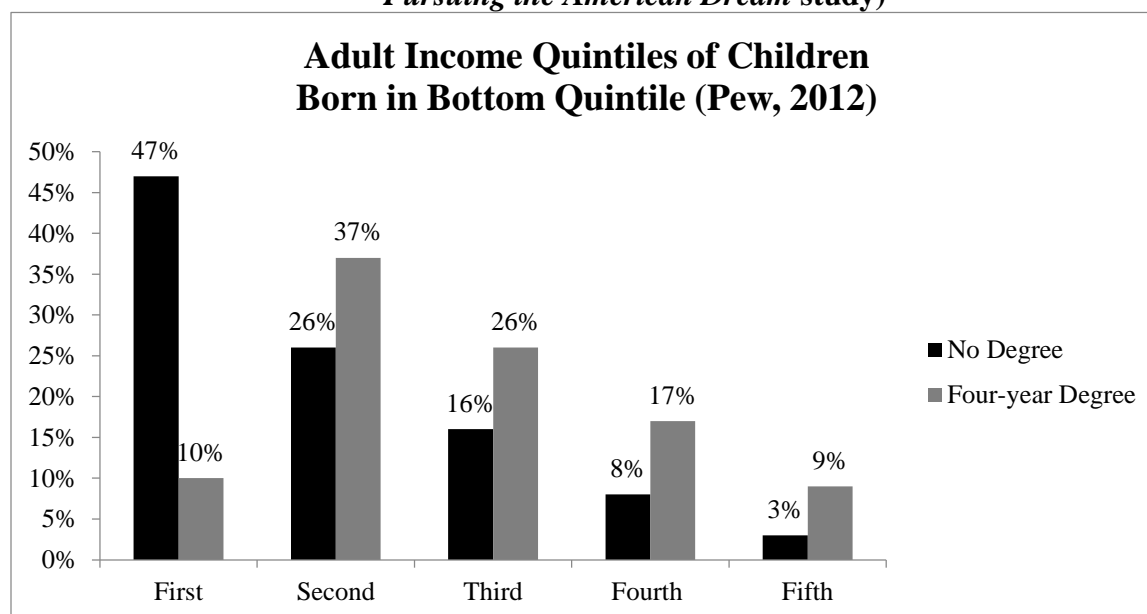
In short, the existing system is not narrowing gaps between high- and low-income families; rather, it is widening them. But all is not lost. Researchers and innovators are learning how to help more low-income Americans—both the high achieving and those with academic needs—find post-secondary options that will provide the skills and knowledge necessary for economic success. New approaches to developmental education, financial aid, college guidance, and vocational education have shown what is possible when we think beyond the traditional model.

In this chapter, I provide an overview of the impact of two-year and four-year degrees on economic mobility and the status quo in college attainment among low-income students. Using data from national surveys, I highlight the disconnect described above: while a college degree can act as a catapult for those born in the bottom, very few actually make it that far. I go on to examine the major “chokepoints” on the road to post-secondary education. I conclude by discussing potential reforms that can help jumpstart post-secondary education as an engine of mobility.

What We Know: On Average, a College Degree Enhances Mobility

Recent studies of economic mobility capture what many American families already know: it is becoming increasingly difficult to get ahead in this country with no more than a high school diploma.¹² Using data from the Panel Study of Income Dynamics (PSID), the Pew Project on Economic Mobility found that completing a four-year degree improves both absolute mobility (you are better off than your parents) and relative mobility (your position on the economic ladder is higher than your parents'). Figure 1 reproduces Pew's findings on the relative mobility of children born into the bottom income quintile who earned a college degree.

Figure 1: The effect of a college degree on economic mobility (reproduced from Pew's *Pursuing the American Dream* study)



Fully 47 percent of those who did not complete a four-year degree remained stuck in the lowest income quintile as adults; just 10 percent of those who earned a four-year degree faced the same fate. Of the most disadvantaged college graduates, 37 percent wound up in the second quintile, while more than half (53 percent) reached the middle quintile or above as adults. Just 27 percent of non-degree holders made it to the middle.

In a 2009 study, the Brookings Institution's Ron Haskins found similar effects. Whereas 16 percent of four-year college grads born in the bottom quintile remained there, 45 percent of nongraduates did. Among disadvantaged college grads, 62 percent wound up in the middle or above. In fact, this group exhibited almost perfect mobility: their chances of falling into any one quintile as an adult were roughly equal (approximately 20 percent).

Earning a college degree has a substantial effect on mobility for two reasons. First, the

college wage premium is larger than ever before. Second, disadvantaged students seem to benefit the most from post-secondary education.

I. *Economic returns remain robust*

Despite all of the popular hand wringing over “boomerang kids” (college grads who return home to live with their parents) and crippling student debt, the wage premium attached to a college degree is as large as ever. It is important to distinguish between trends in absolute returns (that is, what college completers earn) and trends in the wage premium (that is, the gap between the earnings of college graduates and those of high school diploma holders).

On the one hand, the earnings of recent college graduates have actually declined over the past decade, as the proportion of grads working in low-wage jobs that do not require a college degree has grown.¹³ On the other, because the wages of high school graduates have essentially remained flat since the 1970s, the college wage premium has remained robust, peaking in 2001 and holding steady throughout the first decade of the 2000s.¹⁴ Some analysts have found that the premium is larger than ever; in 2013, workers with a four-year degree earned 98 percent more per hour than those with just a high school diploma, up from 85 percent in 2003.¹⁵ While the costs of going to college have grown, so has the opportunity cost of *not* going.

Selection effects explain some of these patterns: college graduates are very different people, in terms of skills, work ethic, and intelligence, than high school graduates. But a voluminous scholarly literature on the returns to schooling has found that college attendance and completion have sizable positive effects on labor-market success even after accounting for these differences.¹⁶ This is true for associate degrees and bachelor’s degrees, as well as vocational certificates.¹⁷ Evidence also suggests that there is a “sheepskin” effect, where those who complete a credential earn more than those who finish the same number of credits.¹⁸

It is beyond the scope of this chapter to survey this literature in detail, but summarizing it is simple enough: *on average*, completing college pays.

II. *Disadvantaged students benefit the most*

Averages can cover up important differences across groups. From the perspective of those interested in social mobility, the question of who benefits most from earning a college degree is important. If those born in the upper end of the income distribution benefit more than those born at the bottom, higher education may make it harder to move up, and vice versa.

Recent research has shown that disadvantaged students benefit the most. In their 2010 study, Brand and Xie found that the returns to college were not uniform across different groups but were largest for those low-income students that were on the margin of attending college at all.¹⁹ Likewise, Dale and Krueger found that the payoff to earning a

degree from an elite college was larger for students from disadvantaged families.²⁰ Finally, a study of community college outcomes found that older, dislocated workers reaped significant benefits from taking community college courses in technical fields.²¹ In other words, a college education pays more for those with less.

III. *Caveat: On average ≠ always*

There are important caveats to keep in mind. First and foremost, a positive average return does not mean everybody benefits. A recent analysis by the Federal Reserve Bank of New York found that the bottom 25 percent of bachelor's degree recipients earn little more than a high school graduate and have not earned more than high school graduates since the 1970s.²² This finding jibes with Arum and Roksa's follow-up study to *Academically Adrift*, which found that only a quarter of graduates had found jobs paying more than \$40,000 a year. More than half were unemployed, working part time, or earning less than \$30,000 a year.²³

Relying on average returns also ignores significant differences across fields of study, particularly at the subbaccalaureate level. In their analysis of the returns to different bachelor's degrees, Carnevale, Strohl, and Melton found that the median computer science and engineering major earned 60–70 percent more than those who majored in the humanities, education, or psychology and social work.²⁴ In a study of the returns to subbaccalaureate credentials in Washington State, Dadgar and Trimble found that while associate degrees were valuable overall, men with associate degrees in business, humanities, and allied health did not realize a significant payoff, while those with associate degrees in science and mathematics, nursing, and construction earned significantly more.²⁵ They also found that most short-term certificates (less than one year in length) were not worthwhile. In other words, some programs are worth the investment, but some plainly are not.

Finally, a positive wage premium does not necessarily translate to greater relative or absolute mobility. Graduating from college can be better than not, but if nearly everyone born in the top also earns a degree, then it will be more difficult for low-income graduates to improve their relative position on the economic ladder. Meanwhile, declining absolute wages may also mean that while degree holders are better off than their contemporaries who are high school grads, they may not actually be faring better than their parents.²⁶

IV. *Caveat: "Going to college" ≠ "finishing college"*

Most importantly, it is important to distinguish between going to college and finishing college, because the two have very different effects. This elementary point is often missed in the debate, as analyses of whether going to college is "worth it" almost always compare degree completers to those who finished high school. This, despite the fact that somewhere between 40 and 45 percent of those students who start a degree never finish one and that the dropout rate is much higher among disadvantaged students.²⁷ To determine the costs and benefits of going to college, any estimate of the returns must be weighted by the probability of finishing.

It is true that some analyses have found that earning credits, especially in technical coursework, can pay off.²⁸ But the latest data show that the wage premium attached to “some college, no degree” is “virtually zero, averaging –3 percent for median earners and 5 percent for 90th percentile earners.”²⁹

As I show in the next section, this distinction is crucial to understanding how college access affects upward mobility. Because so many low-income students start but never finish a college credential, access to college often fails to catapult them up the economic ladder.

What We Know: Very Few Low-income Students Earn a Credential

The mobility-enhancing effect of a four-year college degree is substantial for those children born at or near the bottom, but very few actually make it that far.

In this section, I use data from the Education Longitudinal Study (ELS) to show how low-income students are underrepresented at every stage of the college-going process, particularly when it comes to college attainment. The ELS provides a recent snapshot of the gaps in college aspirations, readiness, application, and completion between students born in the bottom income groups and those born in the top.

Table 1 reports attainment rates from the final round of ELS data collection, disaggregated by students’ socioeconomic status (SES) in the base year. The ELS data include a derived variable that measures a student’s SES—an amalgam of income, parents’ education, and parents’ occupation—and divides respondents up into quartiles based on that measure. For simplicity’s sake, I collapse the second and third quartiles into a “middle” category.

Table 1: Attainment by base-year socioeconomic status, ELS cohort

Highest education level	Base-year socioeconomic status		
	Lowest	Middle	Highest
High school or below	29.0	15.1	3.7
Some college, no credential	35.9	35.1	23.8
Undergraduate certificate	12.6	11.2	5.8
Associate degree	8.1	9.8	6.7
Bachelor’s degree or above	14.3	29.0	60.0

Note: Author’s calculations from public-use ELS data, base year (SES, 2002), and third follow up (attainment, 2012).

Nearly two-thirds of students from the lowest SES quartile reported no college credential eight years after graduating high school. The modal category was some college but no credential. When it comes to the big payoff reported in studies of economic mobility—the one attached to a four-year degree—a paltry 14 percent of students from the bottom actually experience it. An additional 21 percent earned either an associate degree (8 percent) or a certificate (12.6 percent), bringing the overall attainment rate (degrees and certificates) to just over one-third.

Contrast that pattern with that for the highest SES group—the very people that students from the bottom are trying to catch. Nearly three-fourths of them earned some kind of post-secondary credential over that period (72.5 percent), and almost none failed to make it to at least “some college.” Among those in the highest SES group, 60 percent went on to earn bachelor’s degrees or above—an insurance policy against falling from the top of the heap. The Pew analysis of college and mobility found that only 9 percent of those born in the top quintile who earned a four-year degree fell below the middle quintile as adults.³⁰

Among those who start college, the results for students from the lowest SES quartile are equally discouraging. More than half have some college but no credential, double the proportion of dropouts from the highest SES quartile. Of those who enroll, 20 percent go on to earn a bachelor’s degree; the proportion of BA earners is three times as large in the high-SES group.

Table 2: Attainment among those who enrolled by base-year SES, ELS cohort

Highest education level	Base-year socioeconomic status		
	Lowest	Middle	Highest
Some college, no credential	50.6	41.3	24.7
Undergraduate certificate	17.8	13.1	6.0
Associate degree	11.4	11.5	7.0
Bachelor’s degree	20.2	34.1	62.3

Note: The authors’ calculations were made using public-use ELS data and were restricted to subsample of only enrollees: those who were enrolled in a post-secondary institution and those who were not enrolled but were previously enrolled in a post-secondary institution (third follow up, 2012).

There are plenty of explanations as to why low-SES students would lag behind their peers, some of which are to be expected. We would not expect students who do not aspire to college or are not college ready to wind up there (though many in both groups still do). The next sections detail the major choke points in the college pipeline. For now, it is worth pointing out that the lower-income lag is evident at each stage of the college-going process. Table 3 displays three of those important phases: college aspirations as sophomores, taking an entrance exam, college-application behavior, and college enrollment within two years of graduating high school.

Table 3: Stages of college-going process by base-year SES, ELS cohort

Stages of the college-going process	Base-year socioeconomic status		
	Lowest	Middle	Highest
Aspired to graduate from two- or four-year college or above ³¹	66.4	77.9	89.9
Took a college entrance exam	41.6	62.0	87.0
Applied to at least one college in senior year	62.1	70.4	86.3
Enrolled in college by 2006	50.8	71.5	90.7

Note: The author’s calculations were made using public-use ELS data, base year (SES, aspirations, 2002), first follow up (took a placement exam, applied to college, 2004), and second follow up (enrollment, 2006).

Two-thirds of students aspire to a credential, but only 40 percent take an entrance exam and about half enroll by the time they are two years out of high school. For those at the top, they aim higher and their aspirations more readily translate to behavior: 90 percent aspire to a post-secondary credential, 87 percent take an entrance exam, and 91 percent enroll in a program by the time they are two years out of high school.

These patterns help explain why the expansion of college access has failed to markedly boost mobility and may, in fact, increase inequality. Very few children born to affluent families miss out on the college wage premium, while two-thirds of poor children enter the workforce without it. Because a degree is also an insurance policy against falling out of the top, high attainment rates among the higher income group makes relative mobility even less likely for disadvantaged students.

Other evidence suggests that low-income students made only small gains in four-year college attainment over the past two decades. Bailey and Dynarski find that the bachelor's degree attainment rate among those born in the lowest income quartile in the 1960s was just 5 percent; by the 1980s cohort, that rate had increased to 9 percent (the dataset used in their analysis also sampled students in the eighth grade). These gains paled in comparison to those made by the highest quartile, where attainment rose from 36 percent to 54 percent across those two cohorts.³²

So, to reiterate once again: earning a four-year degree certainly enhances mobility, but only a very select group of low-income students make it that far. Put another way, in assessing the impact of college going on mobility, we have to weight that big payoff by a low probability. True, the picture is somewhat rosier when you include associate degrees and vocational certificates. But the point remains: while our post-secondary system can act as an engine of social mobility for those who complete a degree, only a small segment of low-income Americans cross the finish line.

The Dilemma of College Readiness (or the Lack Thereof)

What explains lackluster college-completion rates among our most needy students? In diagnosing the problem, it is helpful to distinguish between two groups: those who are not college ready when they graduate high school and those who are. Though students in the latter group have enough trouble running the gauntlet to a degree or certificate, those who are not academically prepared face extremely long odds.

Unfortunately, far too many low-income students fall into the unprepared group, and few of them are successful in college. Under federal law, anybody with a high school diploma can access federal student aid and can use Pell Grants and student loans to pay for up to two semesters of remedial coursework. States allow high school graduates to enroll whether they are college ready or not and spend billions on remedial coursework at four-year and community colleges.³³

Just how bad is it? A recent report by the ACT found that among the 1.8 million students who took a college-readiness assessment in 2014, just 26 percent met college-ready

benchmarks in all four subjects (English, reading, math, and science).³⁴ College-readiness rates were higher on individual assessments—64 percent were deemed ready in English—but just 44 and 43 percent met the standard in reading and math, respectively.

National estimates of college-remediation rates echo these findings. A study by Complete College America found that more than half of all students enrolling in two-year colleges were placed into remedial courses. At four-year colleges, the remediation rate among first-time students was 20 percent.³⁵ The Beginning Post-secondary Students survey (BPS), administered to students starting college in 2004, found that 68 percent of public community college students took at least one remedial course and that those students were required to take an average of 2.9 remedial courses.³⁶ Readiness is particularly low among disadvantaged students, who often attend low-performing high schools. BPS data show that 58 percent of students from the lowest income group (in both two- and four-year colleges) took at least one remedial course and were required to take, on average, 3.1 remedial courses.³⁷

Students who are not college ready are much less likely to be successful on the path to a credential, and remediation does little to improve their chances. The relationship between remedial classes and student success is a hotly debated topic and one that is difficult to parse due to selection effects. Are students enrolled in remediation less successful because they are not college ready or because the remedial courses cause them to drop out? The research on this question is mixed, with some finding sizable benefits for those who actually finish remedial courses but low completion rates across all those who test into remediation in the first place.³⁸

Setting aside these debates, the descriptive data tell a discouraging story: Complete College America found that just over 60 percent of community college students who are placed into remediation actually pass those courses, and only 22 percent of them go on to pass credit-bearing college courses. They estimated that just 9.5 percent of those remedial students would go on to finish a degree within three years, as compared to 13.9 percent of their college-ready peers.³⁹

I. *Solutions for non-college ready students*

What, then, do we do about college readiness? It is a difficult problem to solve at the higher-education policy level, given how much responsibility high schools bear, which are governed by the K–12 system. That being said, some promising ideas have emerged.

One is to adopt the logic of prevention in helping low-income students avoid remediation completely. Some students test into a semester or more of remedial coursework because they are unprepared for the placement test. Providing students with low-cost opportunities to diagnose their academic needs and address them prior to taking the placement tests would lower remediation rates. In California, for instance, the California State University System’s Early Assessment Program tests high school students between their junior and senior years to diagnose their likelihood of placing into remediation at a CSU campus. Students are then provided with a menu of options, including an online tutorial, designed

to help them achieve college readiness. Evaluations of the program have found that it reduces the likelihood of placing into remediation.⁴⁰ Students who avoid remediation amass more credits and are more likely to graduate.

Of course, many students will still fail to reach college-ready benchmarks before they graduate from high school. However, the diagnostic assessment enables students and counselors to recognize this before they matriculate, and the results can then be used to refer students to career and technical programs for which college-ready proficiency in math and English may not be a prerequisite. Informational interventions—where third parties provide students with personalized guides to their options—could then guide these students toward worthwhile options.

It may also be possible to reform remedial coursework such that the courses are more effective in teaching the basic skills students need. Some campuses have found success using a “corequisite” or integrated remedial model, where students receive additional academic support at the same time that they take substantive, credit-bearing coursework. Washington State’s Integrated Basic Education and Skills Training (I-BEST) pairs basic-skills teachers with occupational faculty to design and teach courses that cover both basic and career skills. Though corequisite programs have yet to be evaluated by random-assignment study, early evaluations are promising.⁴¹

But it’s also naïve to think we can reverse years of subpar math and English instruction in a couple of semesters. Needed is a much more coherent pre-K–12 reform agenda—like the one spelled out in this book—that helps prepare more low-income students for the rigors of college and holds K–12 schools accountable when they fail to do so. Playing catch up after students graduate from high school is clearly not working.

Even with significant gains, though, many low-income students will not be ready for the rigors of a four-year bachelors degree. Therefore, improving mobility will also require providing multiple pathways to the middle class, including via nondegree credentials, as Tamar Jacoby argues in her chapter. The country’s focus on college readiness (reinforced by the Common Core State Standards) has often cast these occupational options as a last resort, the domain of the most difficult-to-educate students.

The truth, however, is that some occupational certificates pay sizable returns that are comparable to the payoff for associate or bachelor’s degrees.⁴² Returns vary considerably across fields, and not all certificates are worth the investment (cosmetology and culinary arts pay low returns, while nursing and information technology pay off well). Overall, though, research suggests that certificate holders earn 20 percent more than high school graduates, and some earn more than those with a bachelor’s or associate degree.⁴³ In other words, these programs can be “trajectory-changing” for low-income students and should not be treated as a last resort for students who are not college ready.⁴⁴

Choke Points to College Completion for College-Ready, Low-Income Students

Low-income students who graduate high school ready for college-level work have one strike fewer against them. But academic preparation does not entirely explain why low-income students lag behind their peers. One NCES analysis found that low-income students who scored in the top 25 percent in math and reading as high school seniors had a lower probability of earning a bachelor's degree than high-income students who scored in the bottom 25 percent academically.⁴⁵ Thus, even high-achieving, low-income students fail to reach the finish line. What gives? I highlight three major “choke points” here: college affordability, information problems, and low-performing colleges.

I. *College affordability*

College costs have increased at two to three times the rate of inflation, pricing many low-income families out of the market and forcing others to take on significant debt. The sticker price of tuition has grown precipitously since the 1980s, and increases have been particularly steep since the mid-2000s; at both two-year and four-year public institutions, tuition and fees have increased by nearly 30 percent since 2008.⁴⁶ When the latest recession ravaged most state budgets, legislatures cut the amount of public subsidy per student that their public colleges received. Public institutions made up the gap by increasing their tuition.⁴⁷ The steady increase at private nonprofits began earlier and has been somewhat less steep of late, partly because tuition prices are so high to begin with.

What does this mean for low-income students? Higher-education advocates are fond of pointing out that net prices—what students actually pay after accounting for grants and scholarships—have not risen as fast as sticker prices. But family incomes have declined over the last six years, meaning that even slow-growing net prices have taken an increasingly large chunk of their income. Moreover, to the extent that families fail to realize the distinction between sticker prices and net prices (and, as the next section points out, many do), high sticker prices might deter them from applying in the first place.

Historically, the federal government has tried to keep college affordable through grants and loans. However, this approach is no longer keeping pace with soaring tuition, raising questions about the sustainability of federal aid programs. Despite record increases in the size of the Pell Grant over the course of President Obama's first term, its purchasing power has never been lower, washed out by increases in tuition.⁴⁸ In fact, data suggest that the moderation in net prices during the recession was due to the unprecedented boost in Pell Grant spending over that period. That boost has now been eaten up by subsequent increases in tuition, and net prices are growing again.⁴⁹

Long story short, everybody is paying more for college these days, and poor students with college aspirations are forced to take on jobs, attend part time, and/or take on large loans. Students who must work to cover expenses have less time to focus on their studies, putting their academic standing in jeopardy (and, in turn, their financial aid). Those who attend part time—80 percent of whom work while enrolled—are far less likely to finish college than those who enroll full time. According to one NCES analysis, 85 percent of students enrolled exclusively part time did not finish a degree within six years after starting school,

compared to 35 percent of full-time enrollees.⁵⁰ For some students, the prohibitive costs of attendance may put college out of reach entirely.

II. *Information Problems*

For a half-century, federal policy has focused on ensuring that low-income students can pay for college. This approach assumes that they are aware of their financial aid options and have enough information to choose the college that best fits their needs. If students have imperfect information on college costs, financial aid, or institutional quality, then they may enroll in college that is unlikely to provide a return on their investment.

Unfortunately, prospective students in all income groups lack basic information on costs, financial aid, likely returns, and differences in institutional quality. A national study of perceptions of college costs found that just 31 percent of parents were able to provide an accurate estimate of the cost of two- or four-year college.⁵¹ Low-income and first-generation students and their families are particularly underinformed. Studies have found that low-income parents overestimate the cost of college by two to three times and are often unable to identify existing sources of financial aid.⁵²

When it comes to choosing a college or program, a nontrivial number of high-achieving, low-income students enroll in colleges that are less selective than they are academically qualified to attend.⁵³ Research has shown that this decision—dubbed “undermatching”—actually reduces a student’s chances of graduating.⁵⁴ When it comes to choosing programs at the subbaccalaureate level, Jacobson and Lalonde found that just 6 percent of community college students in Florida earned a two-year degree in a moderate- or high-return field, while 12 percent earned a degree in a low-return field.⁵⁵

There is a fair amount of “overmatching” going on, as well, where students choose to enroll in institutions that are significantly more demanding than their academic ability. In a national study of college choices, Dillon and Smith found that the majority of students were “mismatched” to their college—25 percent overmatched, 28 percent undermatched—and that mismatches resulted from student choices rather than admissions decisions.⁵⁶ Though some amount of overmatching is evident among low-income students, Dillon and Smith find that it is much more prevalent among low-achieving wealthy students. Among students with high school GPAs lower than 2.5 in the ELS cohort, nearly a quarter from the lowest SES quartile attended a four-year college (7.7 percent attended a selective or moderately selective campus), as compared to the 61.6 percent of low-achieving, high SES students who went to a four-year campus.

In addition to “mismatching,” some students on the verge of enrolling just never show up, falling victim to what researchers call “summer melt.” In their study of summer melt, Castleman and Page found that somewhere around 20 percent of students experience summer melt, and in some school districts the rate was as high as 40 percent among low-income, first-generation students.⁵⁷ In the absence of school counselors to help answer questions and nudge them along over the summer, low-income students can fall out of the pipeline.

Some of these information problems reflect a failure to capitalize on existing resources. But it is also true that some questions are either not answerable with existing data or not answerable until after the student has applied and been accepted. For instance, students only learn what they will actually pay after they apply, are accepted, and receive a financial aid award. This sequencing can lead students to eliminate institutions on the basis of their sticker price, even though their net prices may be far lower. Meanwhile, other information that may be especially critical to low-income students is simply not systematically available—the rate at which Pell Grant recipients graduate from different institutions, for instance, or the earnings of graduates from particular programs.

All of this leads to a scenario where low-income students—from the most qualified to those on the margin—make enrollment decisions that decrease their chances of success. The lack of data on earnings also makes it more difficult to illustrate to families that there are paths to the middle class other than a four-year degree. Without these data, families cling to the belief that a BA is the only route to success.

III. *Colleges and policies are not designed to support student success*

To be sure, many low-income students make suboptimal choices about where to go to college. But not all of them have access to a quality option in the first place. The average graduation rate among four-year colleges is less than 60 percent and is about half that at two-year colleges.⁵⁸ Colleges are typically funded on the basis of enrollments, not student outcomes; whether they prepare their students for success after school or not, colleges are paid in full. Federal loan and grant programs subsidize attendance at any program and at any price, so long as the program is accredited. In other words, most colleges have every incentive to enroll students but fewer to ensure they are successful.

Take, for instance, the way post-secondary programs are typically structured. Students are given wide latitude in choosing what courses and what major they would like to enroll in. Although it is a deeply ingrained value in American higher education, this freedom to choose and lack of structure can lead students—particularly first-generation ones—to swirl, taking courses here and there but not making much progress toward a degree. This lack of structure is at least partly to blame for the fact that most graduates finish with excess credits.⁵⁹ And when it comes time to trim the budget, colleges often make choices that hurt student success, reducing course offerings and raising tuition to balance the budget.⁶⁰

Meanwhile, within classrooms, most PhD-trained professors were never taught how to teach students or assess learning. Despite its ubiquity, the standard college lecture is proven inferior to new methods of teaching like hybrid courses.⁶¹ Likewise, student support systems are usually passive; students get help with academic support or career advising only if they walk into the office which houses those services on-campus. Students who are at risk of dropping out often simply stop showing up to class and are unlikely to take it upon themselves to get the help they need.

The system itself often feels tilted in favor of institutions and against the interests of students. Credit transfer is a case in point. Even though a third of students transfer from one college to another, they are often unable to bring all of the credits they earned at the first institution to the second.⁶² Colleges claim this is a question of ensuring academic standards. But the truth is, they have zero incentive to accept transfer credits; each credit accepted is one fewer that an incoming student would have to pay for. The lack of credit portability is effectively a tax on students who transfer, extending their time to degree, raising the cost of completing, and potentially dissuading some from transferring at all.

How Can We Do Better?

These issues have not gone unnoticed, and a budding “completion agenda” has focused policymakers on finding ways to promote the success of low-income students. In the remainder of this chapter, I explore some of the emerging reform ideas and summarize the relevant research.

I. Innovations in financial aid

Low- and middle-income students may not enroll in or complete college because it is becoming prohibitively expensive. Quasi-experimental studies suggest that \$1,000 in need-based aid boosts enrollment by about 3 to 6 percentage points. Estimates of aid’s impact on completion are less conclusive, though a recent longitudinal study found that a Florida grant program increased persistence and degree completion.⁶³

Additional grant money might help increase access, but there is also a sense among reformers that we must go beyond simply pouring more aid into the system. After all, the federal government has invested billions in Pell grants and subsidized loans—including record amounts in recent years—yet income-attainment gaps have widened and college-completion rates remain flat. This discouraging track record has raised questions as to whether student aid programs as currently designed encourage students to graduate on time and what reforms might help better align those incentives.

In a recent review of the literature, Dynarski and Scott-Clayton highlight a series of lessons from existing literature, a few of which are worth highlighting here.⁶⁴ First, the complex and time-consuming application process for federal aid programs likely blunts their effects. Studies of programs with simple eligibility criteria (like state merit aid programs) and brief applications have found positive aid effects. Efforts to dramatically simplify the FAFSA and notify students earlier about their eligibility would help lower these transaction costs.

Second, aid programs that incentivize academic performance appear to have a positive effect. Currently, recipients of federal aid must make “satisfactory academic progress” each semester to remain eligible for aid, but the threshold varies by campus and it is not clear that students are aware of the incentive. MDRC has conducted a series of experiments using incentive-based grants, where additional grant money is conditional on meeting academic benchmarks. In general, they have found that the incentives had significant, positive effects on retention and credits earned.⁶⁵ A study of incentive-based grants combined with

additional student services at a Canadian university also found positive effects on student success.⁶⁶

Reformers have generally focused on public aid programs, but private financing can also play a fruitful role. In general, publicly funded grants and loans provide few signals to students about the value of the different programs they are considering. In contrast, private financing—like “Income-Share Agreements” (ISA)—could help steer low-income students toward worthwhile programs. Under an ISA, private investors provide the funding a student needs in return for a percentage of that student’s future income over a fixed period of time. Because investors only reap a return if the student is successful, they have incentive to guide students toward quality programs (thus helping to solve information problems) and to support students while they are in school and searching for a job. This market is currently stunted by legal and regulatory uncertainty, though federal lawmakers have set out to remove these obstacles.

IV. *Solving information problems*

In response to the information problems described above, policymakers have worked to improve the supply of information and researchers have tested new ways of providing information. The latest reauthorization of the Higher Education Act required that colleges create “net price calculators” to provide prospective students with a realistic estimate of out-of-pocket costs. The Obama administration has created a financial aid shopping sheet and a College Scorecard, and it recently pledged to develop a new set of federal college ratings. A handful of states—including Colorado, Tennessee, Florida, and others—have begun to publish data on earnings and employment outcomes linked to particular post-secondary programs.

Recent research suggests that providing information directly to students can have an affect on aspirations, application behavior, college choices, and enrollment. In a field experiment with Canadian high school students, Oreopolous and Dunn found that access to a multimedia website and video containing information on college going led treated respondents to have higher aspirations and more awareness of financial aid and likely returns even three weeks later.⁶⁷ Castleman and Page found that sending personalized text-message reminders to college-bound students helped reduce summer melt by three to four percentage points.⁶⁸

In the largest information experiment to date, Hoxby and Turner identified high-achieving low-income students and tested whether providing personalized information about college options could change behavior. The experiment sent randomly chosen strivers a guide with information on their college options, the application process, and financial aid, as well as application fee waivers. Hoxby and Turner found that for about \$6 per student, the intervention raised the probability of applying to a matched college by 56 percent and the probability of enrolling in one by 46 percent.⁶⁹

These interventions are only as good as the data upon which they are based. Unfortunately, critical data on postgraduation earnings and Pell Grant graduation rates are still not

systematically available. Better federal and state-level data collection and dissemination systems could provide the information on post-program earnings and completion rates that consumers need.⁷⁰

V. *Reforms to increase the supply of quality seats*

Helping low-income students navigate to programs where they are likely to be successful is a worthwhile enterprise, but the impact of demand-side reforms will depend on the supply of quality seats. If the capacity of good programs is more or less fixed, then helping students make better choices will be a zero-sum game: every low-income student who gets a seat will displace one who also would have benefited from it. That means we have to tackle the supply-side of reform, as well.

We are starting to learn what it takes to design post-secondary programs that set low-income students up for success, and it often requires significant organizational change. New research suggests that immersive, structured programs—with clear expectations for student performance and behavior—can promote student success. For instance, the Accelerated Study in Associates Programs (ASAP), a comprehensive effort to improve persistence and completion for developmental education students at the City University of New York (CUNY), has substantially improved student success. ASAP requires that students enroll full time; in return, they receive a tuition waiver, enhanced advising, tutoring, free Metro Cards, and money for textbooks for three years. Students are also grouped into cohorts and took block-scheduled courses. A randomized study found that ASAP students earned almost eight more credits than a control group and that graduation rates were six percentage points higher three years after implementation.⁷¹

Beyond ASAP, reformers have begun to implement “structured pathways” to a credential—programs where students are guided into a field of study quickly, are provided with a clear map of the courses they need to finish, and are given less discretion in choosing courses. In addition, structured pathways transform services that are traditionally passive and “opt in,” such as orientation, academic advising, and student success courses, to services that are mandatory and proactive.⁷² Similarly, a randomized study found that student success coaching—where a mentor calls students directly every week or so to help them set goals, build study skills, and manage their time—boosts persistence in a cost-effective way.⁷³

At the system level, states have taken pains to facilitate credit transfer, with some going so far as to create fully “stackable” credentials that allow students to accumulate stand-alone certificates that count toward a larger degree. In Texas, for instance, community colleges have partnered with energy companies to create a set of core courses for energy workers that will transfer to institutions across the state and count toward an AA (and potentially a BA) later on.⁷⁴ Stackable credentials lower the stakes of schooling decisions made at age eighteen or nineteen and can assuage fears of “tracking” low-income students into vocational programs that may have a low ceiling.

Note that these reforms are not simply tweaks to the existing model but are fundamental changes to the way a college education is delivered, how colleges interface with students,

and how institutions work with one another. In ASAP's case, it is not just "free college" but a structured program that demands a full-time enrollment. Creating stackable credentials requires changes to longstanding credit-transfer policies and traditions of academic autonomy.

The effort to figure out "what works" is just beginning, but providing colleges and systems with incentives to adopt promising strategies is another question entirely. As a start, the federal government could put colleges on the hook for a portion of any loans on which their students default. Giving colleges "skin in the game" would do two things. First, it would dissuade colleges from enrolling students who are not college ready and are unlikely to be successful. Second, it would encourage colleges to do their best to ensure that those students they do enroll are successful.

States, meanwhile, continue to experiment with outcomes-based funding policies, where public institutions are subsidized according to how well they perform. The research on these systems is decidedly mixed, with the latest analysis showing that they had little or no effect on productivity.⁷⁵ Going forward, policymakers should consider rewarding institutions on the basis of student learning or the labor-market success of graduates in addition to (or instead of) graduation rates.

The Future: New Options and Multiple Pathways

Up to now, I've focused on changes to the existing post-secondary system that could promote low-income student success. These are worthwhile steps, but many of them amount to "retrofitting" institutions and policies that were designed in a different era to accomplish new goals.⁷⁶ As such, policymakers must also look beyond higher education as traditionally conceived—the two- or four-year degree-granting college—and create space for new options that can provide additional pathways to the middle class. In particular, mobility-seeking students would benefit from a more flexible system that allows them to jump in when they need to learn new things and jump out when they are ready to rejoin the workforce.

For instance, helping people learn the skills they need for a particular job may not require multiple semesters of fifteen-week courses, general education requirements, and the like but short bursts of intensive, targeted instruction followed by a chance to apply what they've learned. Learners could repeat this sequence a few times over a decade to keep up with industry demands, all while earning credentials that add up to a larger whole. Career "bootcamps" like General Assembly and Dev Bootcamp provide one possible model; these private firms teach short, immersive courses that are linked directly to high-demand tech jobs. Udacity's "Nanodegrees"—sequences of five online courses designed in concert with employers to prepare students for particular roles—are another. Students pay \$200 a month and can move through the coursework and assignments at their own pace. These models are new and unproven, but they illustrate what's possible when we think outside of the two- and four-year degree box.

Low-income students looking to climb the economic ladder may well want to pursue such alternate routes to productive careers (and those that Tamar Lewin describes in her chapter), especially as the cost of college grows. But they will often need financial aid to do so, aid that is currently limited to accredited degree- or certificate-granting institutions. Without access to aid, less-traditional offerings—even those that are exceptionally inexpensive—cannot hope to compete with publicly funded options that are essentially free to low-income students who qualify for Pell Grants. Policymakers who want to foster new, more affordable pathways to the middle class should work to lower barriers to entry like accreditation and allow new competitors to prove their mettle.

Existing colleges and universities can promote upward mobility, but they are not miracle workers. They will be hard-pressed to overcome twelve years of slipshod instruction. Reformers must therefore not lose sight of the need for both reform of the pre-K–12 system and the development of worthwhile alternatives to the traditional college degree. It is time for America to once again redefine what post-secondary education can look like and who it should serve.

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