PATHWAYS TO POSTSECONDARY SUCCESS
Maximizing Opportunities for Youth in Poverty

RESEARCH BRIEF

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High School Coursework and Postsecondary Education Trajectories:

Disparities between Youth Who Grow Up In and Out of Poverty

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One of the most direct ways schools can positively affect students' college going trajectories is to ensure access to a rigorous college preparatory curriculum (Adelman, 2006). Students who complete gateway mathematics courses like algebra and pre-calculus, for example, are more likely to succeed in four-year postsecondary institutions (Swail, Cabrera, Lee, & Williams, 2005). Similarly, some researchers have found that enrollment in advanced placement (AP) courses can increase students' likelihood of eventually completing college (McCauley, 2007). Although students who satisfy a college preparatory curriculum while in high school do have a greater array of college choices available to them, access to this type of coursework is often stratified by socioeconomic status and race (McDonough, 1997; Walpole, 2007). It is essential that we develop a greater understanding of the effects of the high school curriculum on postsecondary outcomes for students from varied socioeconomic backgrounds so that these differences can be addressed.

This brief draws on a study of a national cohort of students to explore how socioeconomic status (SES) and high school coursework intersect to influence educational pathways. A deeper understanding of how academic course-taking in high school affects post-secondary education outcomes can help guide policy aimed at identifying and closing gaps in the college access pipeline. In particular, a more nuanced portrait of how these factors come into play for students in poverty and for their more affluent counterparts will allow for informed policy and research recommendations that can improve educational outcomes for all students.

A National Study of Students' Educational Pathways

The data presented in this brief were drawn from the 2002–2006 panel of the Education Longitudinal Study (ELS), conducted by the National Center for Education Statistics (NCES). NCES surveyed 15,441 tenth graders at the end of the 2001–2002 academic year, and again in spring 2004 (when the students were asked to report their intended high school graduation status), and in spring 2006 (two years post-high school, assuming a traditional high school path).[2] Data collection at these key points in time allowed us not only to compare students' high school experiences, but also to better understand how those experiences relate to their options and choices after high school.

In 2004, many students in the sample were graduating from high school, but others had dropped out[3] or still had high school credits to complete. And among those who were graduating with a diploma or equivalent,[4] some had completed an academic concentrator curriculum (making them college eligible), while others had not. And two years later, by 2006, some students had enrolled in postsecondary education (PSE), whether in proprietary or not-for-profit two- or four-year institutions. In this brief we specifically highlight students who graduated from high school within a traditional four-year time period and who pursued some form of postsecondary education. Isolating this particular population allows us to zero in on the relationship between their high school coursework and their PSE pathways.

Because of the role that socioeconomic status often

plays in shaping students' choices and options, we have grouped respondents according to their families' income levels. Specifically, students were identified as in poverty if their family income at the time of the first survey was at or below 185% of the 2002 federal poverty level (e.g., $34,025 for a family of four). This definition is in line with the federal designation that determines a student's qualification for free or reduced school lunch programs and is an accepted measure of economic disadvantage. For the purposes of this analysis, these young adults are referred to as "in poverty" or "low-income," whereas those above this income threshold are referred to as "not in poverty" or "higher-income." However, it is important to note that the young adults in this latter classification are from families that are simply above the poverty line, and not necessarily from middle or high income families.

The Academic Concentrator Curriculum: One Indicator of College Readiness

The academic concentrator curriculum is defined based on NCES's 1998 Revision of the Secondary School Taxonomy, which offers a framework for understanding and analyzing high school transcripts. While not required by every four-year college or university, it does signal preparedness and general eligibility for the college application process, and is therefore a useful variable for consideration here. It is characterized by the completion of specific coursework: four credits of English, three credits of mathematics (with at least one credit higher than algebra II); three credits of science (with at least one credit higher than biology); three credits of social studies (with at least one credit in U.S. or world history); and two credits in a single foreign language (NCES, 2005).

While we use the terms "college ready" and "college eligible" to denote students who have completed the academic concentrator curriculum, this designation does not account for other important factors in college admissions.

Academic Concentrator Curriculum Improves PSE Pathways for Students in Poverty… When They Have Access

Among students in poverty who secured traditional high school diplomas or the equivalent and who pursued some type of postsecondary education, the vast majority (78%) had not completed an academic concentrator curriculum. More than half (57%) of these students attended two-year, not-for-profit colleges (Figure 1). Although these institutions are an important PSE entry point for many students—especially students from lower-income backgrounds—those who attend them do not typically transfer to four-year institutions and often do not even complete associate's degrees (Dowd & Melguizo, 2008; Walpole, 2007).

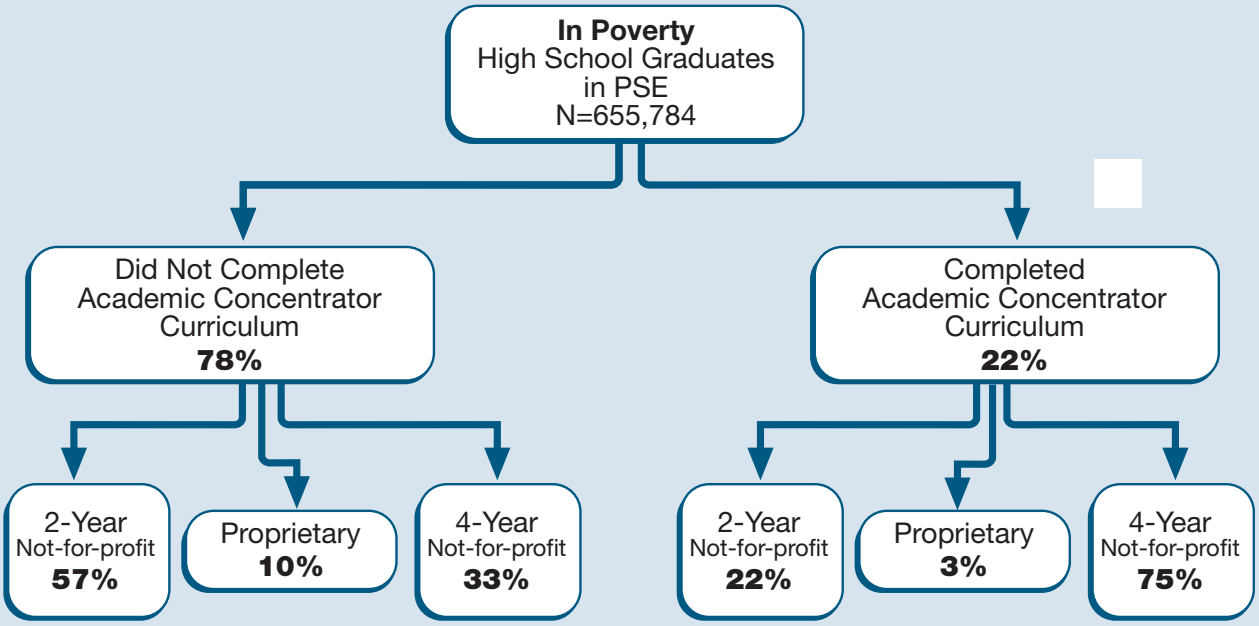
It is promising, however, that of the 22% of students in poverty who did graduate high school having completed an academic curriculum, the majority (75%) entered four-year colleges. This is significant because we know that following this path increases the likelihood that these students will persist to completion (Ashtiani & Feliciano, 2012; Adelman, 1999; Carnevale & Rose, 2004). Nevertheless, these students are in the minority and this finding must be interpreted in that context.

Many Students Who Do Not Grow Up in Poverty Secure Four-year College Enrollment, Regardless of Academic Preparation

While only 22% of students raised in poverty completed a college preparatory curriculum when they were in high school (Figure 1), more than a third (38%) of students whose families were not in poverty did so (Figure 2). Still, the majority (62%) did not satisfy college coursework parameters, and two-year colleges remained an important entry point for these more affluent students, with a large proportion (44%) pursuing postsecondary education at the two-year level.

Perhaps the most important finding related to students with higher family incomes is that even when they had *not* completed an academic concentrator curriculum, 50% still moved on to four-year colleges post-high school. And among those who *had* completed a college preparatory curriculum, the

Figure 1 Postsecondary Outcomes for Students in Poverty, by High School Preparation



NOTE: This figure only represents those students who secured a traditional high school diploma or certificate within a four year time frame.
SOURCE: Educational Longitudinal Study (ELS) 2002-06 Panel.

overwhelming majority (84%) attended four-year colleges or universities. We know that the absence of academic coursework in high school creates obstacles for college-bound students, yet we see that students who do not grow up in poverty appear more able to overcome them, perhaps drawing on resources not as readily available to their lower-income peers. These findings not only highlight persistent stratification by income, but also point to the range of resources available to students with greater financial means.

Four-Year versus Two-Year Colleges: Why Does it Matter?

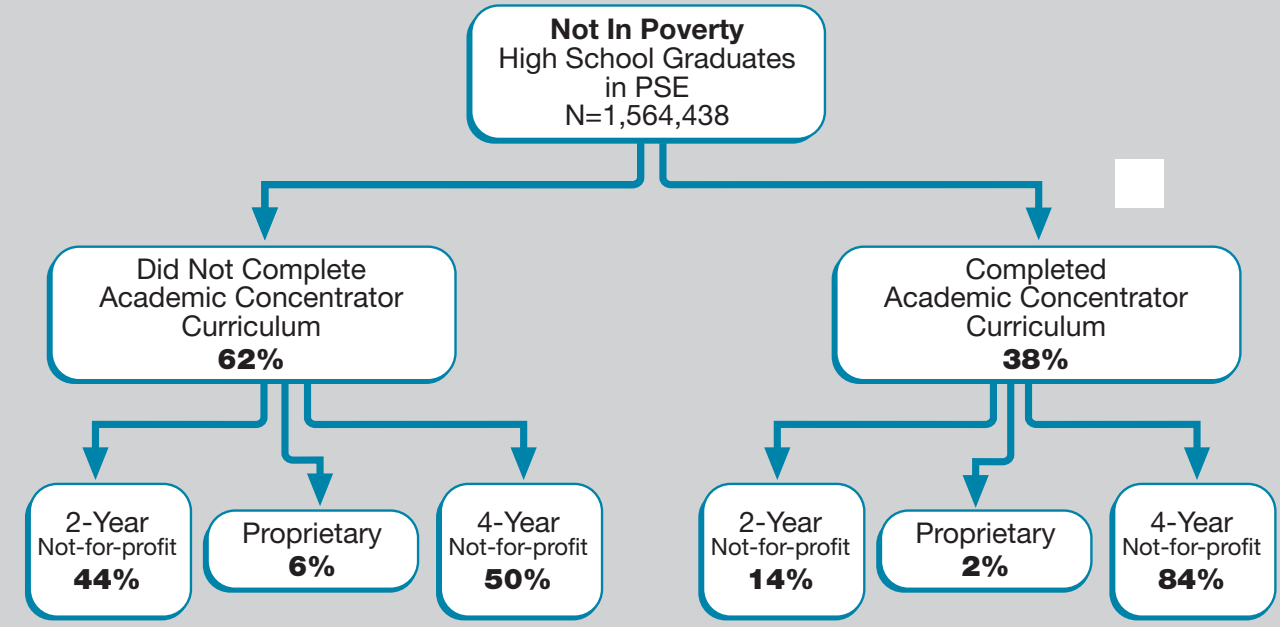
Two-year colleges are important PSE entry points for lower income students, students of color, and first generation college students, who are often one and the same. For students who enroll in two-year institutions with the intention of transferring to four-year colleges, there are challenges to be overcome. Often because of ineffective counseling, misinformation, lack of remedial support (Moore, Shulock, & Offenstein 2009), or other factors, the odds of securing educational credentials are lower for these students than for those who begin at other college types (Adelman, 2006). In fact, prior research suggests that only a small proportion (23%) of students attending community colleges transfer to four-year institutions (Moore & Shulock, 2010).

Academic Curriculum is Especially Important for Students from Lower-income Groups, Yet it is Currently Not Enough

Among both groups of students—those in poverty and those not in poverty—completion of college preparatory coursework in high school increased the likelihood of enrollment in four-year colleges within two years of graduation. Unfortunately, students in poverty were less likely to complete this type of curriculum in high school than their peers who were not in poverty, and even when they did, it had less of an impact on their postsecondary enrollment outcomes. In short, the completion of an academic curriculum does not have equal effects for students who grow up in and out of poverty.

This gap in enrollment patterns persists when we examine the types of schools attended by students who did *not* complete the academic concentrator

Figure 2 Postsecondary Outcomes for Students Not in Poverty, by High School Preparation



NOTE: This figure only represents those students who secured a traditional high school diploma or certificate within a four year time frame.
SOURCE: Educational Longitudinal Study (ELS) 2002-06 Panel.

curriculum. Specifically, lower-income students who graduated from high school without having completed these courses were less likely than higher-income students to enroll in four-year institutions within two years of graduation. Although not the focus of this brief, it is noteworthy that low-income students were also more likely than their higher-income peers to enroll in proprietary colleges—a relatively small, but fast growing postsecondary education sector. Unfortunately, the research surrounding these institutions tends to revolve around controversial recruitment practices, the high loan debt and default rates of graduates, and questionable completion rates (Kutz, 2010; Zamani-Gallaher, 2004). As a result, these higher enrollment rates among students from lower-income backgrounds should be carefully watched. Together, these findings highlight the need for a range of research and policy efforts designed to close the gap in PSE outcomes for students who grow up in and out of poverty.

First, we need a better understanding of how students choose—or are assigned to—their high school courses in order to create a system that serves them more equitably, regardless of their socioeconomic backgrounds. Our scholarly explorations should include an expansion of the research base on high schools that have been successful in helping students from lower-income backgrounds to complete college preparatory curricula before graduation. Moreover, we must implement policy measures that ensure more students have access to, enroll in, and complete necessary coursework for college eligibility.

It will also serve us well to gain a greater understanding of students who do *not* complete college preparatory curricula while in high school yet still go on to four-year colleges. If we can better understand their resiliency and resources, we can better serve students both in and out of poverty. Likewise, we must create and implement policies and programs that assist students who lack access to a full host of resources, including students who do not complete an academic concentrator curriculum or who begin their postsecondary education in two-year institutions. This should include improved remediation and counseling at the postsecondary level, as well as more clearly articulated goals and objectives for specific institutional types, so that students can make informed choices about which campuses will help them meet their individual goals.

Because of the importance of two-year colleges for so many students, these institutions must continue to receive attention from scholars and policymakers. This higher education sector is particularly vital to our lower-income students, yet these schools do not always meet the goals they have set for themselves, particularly with respect to their transfer function. As such, they are in need of further investigation so that talent is not lost. Ultimately, if we develop more effective programs that facilitate transitions from community colleges to four-year institutions, students who begin their PSE trajectories on two-year campuses will retain a full range of choices for the future.

And finally, we must continue to focus research attention on the ways in which growing up in poverty can affect students' college entry and degree attainment in order to minimize the disparity in access between different income groups. It is clear from these findings that our understanding of the influences of socioeconomic background on educational aspirations, options, and choices is not yet complete.

In Summary

This brief reminds us of the incredibly urgent need to ensure that students graduate from high school having completed the courses that qualify them to apply for and attend college. Doing so minimizes subsequent barriers to post-high school education and career options. Moreover, it highlights the importance of supporting students who, for any of a variety of reasons, do not have access to the courses that will prepare them and make them eligible for college. These students are still quite capable of pursuing a range of postsecondary options and should receive the resources and guidance they need, should they choose to do so. Finally, it reminds us of how important it is to carefully consider the family income levels of students as we shape higher education research and policy, since there remains an effect even when a student's high school curriculum supports a college pathway.

Notes

1. I thank Ezekiel Kimball for helpful research assistance.
2. The data were weighted using panel weights provided by ELS to reflect the responses of all 2002 U.S. tenth graders.
3. Dropout rates are only representative of students who were enrolled in high school as tenth graders in 2002. Most attrition occurs before the tenth grade year (Rumberger, 1995; Silver, Saunders, & Zarate, 2008), but this data set does not allow us to capture students who dropped out before this point.
4. Because the widely accepted status completion rate aggregates high school diploma earners with GED or equivalent earners, we also aggregated these groups, in particular because securing either of these credentials enables access to multiple PSE options and greater economic returns than non-completion (Murnane, Willett, & Boudet, 1995; Rumberger & Lim, 2008).

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PATHWAYS to Postsecondary Success is a five-year set of mixed-methods studies focused on maximizing opportunities for low-income youth to earn higher education credentials.

The aims of the project are to advance research on poverty; produce useful tools that improve educational opportunities; and shape the U.S. policy agenda on the relationships between poverty and education.

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