

BRIDGING THE GREAT DIVIDE

HOW THE K-12 AND POSTSECONDARY SPLIT HURTS
STUDENTS, AND WHAT CAN BE DONE ABOUT IT

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THERE ARE APPROXIMATELY 2.5 million public high school graduates in the United States each year, a number that continues to grow as enrollments increase. Over 70 percent of these graduates go on to postsecondary education within two years of graduating from high school, and over half of those students aspire to obtain a bachelor's degree. However, over 50 percent of students entering all postsecondary education institutions will take remedial courses, many in several subject areas. A large percentage of students do not continue on for a second year of college, and 41 percent who earn more than ten credits at a two- or four-year school never complete a two- or four-year degree.¹ The Education Testing Service (ETS) in a 2002 study concluded that “the proportion of young adults (age 25–29) getting a bachelor's degree—after rising throughout U.S. history—stabilized at 21 percent to 25 percent beginning 25 years ago, and only began to slightly rise again in 1996” (Barton, 2002, pp. 10–11). Student preparation and completion are particularly problematic at the institutions that are the focus of our research: the less selective two- and four-year institutions that enroll 80 percent of first-year students. Why is it that so many students are entering college unprepared for college-level work and often unable to complete a degree? We think

the causes of remediation, noncompletion, and inadequate secondary preparation lie in part in the historical split between levels of our educational system and the subsequent lack of communication and connection between them. Public education in the United States essentially comprises two distinct levels: elementary and secondary (K–12) and postsecondary, or higher, education.² Most educational structures reflect this distinction, including educational committees in the state and federal governments that focus solely on one of the two systems. Increasingly, however, more and more people are calling for what is often called a K–16, or P–16, perspective on education, a recognition that this is ideally all one system (Hodgkinson, 1999; Timpane, 1998).³

Where once a high school diploma was all that was necessary for an individual to obtain a job that could guarantee entrance into the middle class, today at least a coherent program of postsecondary training, if not a college degree, is typically necessary to achieve the same economic status.⁴ The high aspirations of our youth indicate that they understand the need for college: over 90 percent of high school seniors say they will go to college (Schneider and Stevenson, 1999). College-going rates reflect those numbers. Currently, over 70 percent of high school graduates pursue some form of postsecondary education (Education Trust, 2002). Data from the U.S. Census illustrate the significant economic returns of more education: in the year 2000, median annual earnings for workers aged twenty-five and over with a high school diploma was \$24,267, compared with \$26,693 for workers with an associate's degree (27 percent higher) and \$40,314 for those with a bachelor's degree (66 percent higher) (U.S. Bureau of the Census, 2001). Grubb (1999) found that there are also economic benefits to completing community college certificates, although the amount of benefit varies by field of study.

In sum, the high aspirations of secondary school students are not being realized as evidenced by intensive remediation and low completion rates. This is especially true for low-income and minority students. According to the Census Bureau, about 85 percent of the growth in the age group eighteen to twenty-four years will come from minority and immigrant families over the next decade. Over 40 percent will come from low-income families (*Business Week*, 2002).

Now over 70 percent of the students who enroll at community colleges expect to obtain a bachelor's degree (compared to 50 percent in 1982), but only 23 percent receive the degree (American Council on Education, 2002).

We are concerned primarily in this book with broad-access institutions. For example, community colleges enroll 45 percent of all first-year postsecondary students, and 80 percent of first-year students attend minimally

selective and nonselective two- and four-year institutions.⁵ Broad-access institutions comprise 85 percent of all postsecondary schools. Our research reveals that these institutions have the greatest problems with student preparation and completion. Most media and public attention, however, focuses on the 20 percent of students who attend selective four-year schools that have the best-prepared students and use the ACT or Scholastic Aptitude Test to help sort out applicants who exceed available student places in the first-year class (Adelman, 2001). Only 3 percent of freshmen at the 146 most selective institutions come from the bottom quarter of Americans ranked by income; only 10 percent come from the bottom half of income (Savage, 2003). This book analyzes what is happening when students prepare for community colleges and four-year institutions that accept virtually all applicants who meet their academic requirements.

While the reality for students is that their education will likely continue past the secondary years, state and institutional policies continue to reflect a significant separation between K–12 and postsecondary education. The current organization of secondary schools and postsecondary institutions is such that communication and information dissemination between levels are often difficult. For instance, students—especially those who are economically disadvantaged or whose parents did not attend college—often do not know what colleges expect of them in terms of meeting their admission requirements. Many believe that nonselective four-year institutions and community colleges do not have academic standards. This is not the case, as is evidenced by the widespread use of placement tests for access to credit-level courses. Also, policies across the segments, particularly those concerning the transition from high school graduation to college admission, are fragmented and confusing. The research in this book addresses an array of policies in the context of how successfully students make the transition from high school to college, including what happens once they enroll in postsecondary education.

Our research demonstrates that in order to increase opportunities for all students to prepare for, attend, and graduate from postsecondary institutions, reform initiatives at various levels within the entire K–16 education system should be better integrated or created in tandem. In this way, information could flow more freely back and forth, providing students, teachers, parents, and counselors with better (and earlier) information about the academic expectations for students entering college. Furthermore, a better-integrated K–16 system would allow for greater dialogue between K–12 reformers and postsecondary faculty and administrators, reducing the chance that reform efforts in one sector might be at odds with (or on different tracks from) efforts in another.

The Bridge Project

This book is the result of research conducted by Stanford University's Bridge Project: Strengthening K–16 Transition Policies, which encompassed six years of field research, literature and document review, and data analysis. The Bridge Project was a national policy research study that focused on the policies, perceptions, and practices related to the transition between high school and college. An overarching purpose was to support the development of policies that improve opportunities for all students to enter and succeed in postsecondary education through the development of more consistent and equitable policymaking across the sectors. The Bridge Project examined policies related to student transitions between K–12 and postsecondary education.

The research that we report on focused on three understudied but essential components of the K–12 and postsecondary systems: admissions policies, first-year college placement or advising policies in two- and four-year institutions, and state-level policies affecting K–12 and postsecondary education (for example, on curricula and assessments in the K–12 system). We used case study research from regions in six states (California, Georgia, Illinois, Maryland, Oregon, and Texas) to understand better the dynamics of the transitions between systems within individual states and to offer a comparative framework among the regions and states. The criteria for selecting these states and the research methodology are discussed in Appendix A.

This research and related policy recommendations focused on the nearly 70 percent of students who go on to postsecondary education within two years of graduating from high school, and particularly the 85 percent who go on to nonselective or less selective institutions, both two- and four-year, public and private.⁶ We were also concerned with whether the 30 percent of high school graduates who do not go on to college would do so if they received earlier and better information about preparation for college.

The conceptual framework that guided this research relied on several different concepts and theories that are integrated into a flow model (described in greater detail at the end of this chapter). We start with the view that policy signals and incentives are crucial drivers of students' college knowledge and actions regarding preparation for postsecondary academic success. Moreover, clear, consistent, and appropriate signals and incentives improve student learning and affect students' motivation positively (Bishop, 1990; Costrell, 1994; Powell, 1996). Even if motivation

is high, many students do not complete their desired postsecondary programs, including vocational education certificates. The postsecondary completion problem is less a result of insufficient ambitions to go on to college and more one of a lack of articulated standards and clear signals concerning adequate academic preparation, and limited knowledge of what it takes to enroll and finish (Schneider, 2003).

We acknowledge that there are many reasons that students do not enter or complete college. Certainly, affordability is a significant issue for students in terms of their likelihood to persist and complete their postsecondary education (National Center for Public Policy and Higher Education, 2002; Choy, 1998). Family and work obligations such as taking care of children or parents or tending to a full-time job are also often cited as obstacles for some students (Adelman, 1999; Tinto, 1993). Lack of support from parents and friends, particularly for those who would be first in their family to attend college, keeps many from enrolling or persisting for long. In addition, many students have had inadequate opportunities to prepare for college (due to curricular tracking in their high schools), have lacked adequate counseling, or lack the motivation to continue their education any further. Although we acknowledge the significant role that these issues and others play, we do not address them fully in this book.⁷ We focus rather on the hypothesis that the lack of consistent and well-communicated signals about what is required to enter and succeed in credit-bearing courses at the postsecondary level has a significant impact on student success. We believe that there is a role for better state and regional policy alignment that will create a more equitable policy environment, enabling more students to prepare well for postsecondary education.

Context: Twenty Years of Reform Efforts

Since the publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983), education reform has remained at the top of most state agendas. A number of new policies have been implemented: forty-nine states have created K–12 content standards in most academic subjects, and most of these states have developed statewide K–12 student assessments. Several states, including California and Nevada, have experimented with lowering the maximum class size in the lowest grades (McRobbie, Finn, and Harman, 1998). Accountability systems have been developed and tied to incentives pushing educators and schools to improve teaching and learning, and many states are focusing on improving their data systems in order to monitor changes resulting from these reforms.

These changes are taking place as the student population across the country is growing larger and more diverse. Over 47 million students were enrolled in public elementary and secondary schools in 2001, a number that is projected to increase through 2005. In 1999, 38 percent of public school students were students of color, an increase of 16 percentage points from 1972 (U.S. Department of Education, 2001a).

Although postsecondary education has traditionally been much less affected by state education reform legislation than K–12 education, some significant policy changes in the past two decades have had a noteworthy impact. Beginning in the 1980s, many states began to adopt statewide admissions policies, particularly through the establishment of required high school course work units for college admission (Rodriguez, 1998). State legislatures and courts have more recently become active in postsecondary education admissions policies, something that was virtually unheard of twenty years ago. A decision by the Fifth Circuit Court of Appeals in Texas (*Hopwood*) and a statewide ballot proposition in California (Proposition 209) changed the way many of the more selective public institutions in those states could conduct their admissions process by eliminating the use of affirmative action.⁸ Similar changes are under way in other states. As a result, new policies in some states have been put in place to reach the traditionally underrepresented populations.⁹ State legislatures and state higher education agencies have also become more involved in addressing remediation issues at the state level, an issue traditionally handled at the institutional level (Rodriguez, 1998). Concerns about the number of students who need to take remedial-level courses in colleges and universities across the country (and about the costs associated with those courses) led many postsecondary education institutions and systems to adopt new policies to try to eliminate or significantly reduce the provision of remedial courses on their four-year campuses.¹⁰

Powell (1996) and Bishop (1990) note that traditionally what has been valued in American education is participation in the system for as long as possible. Getting the high school diploma has typically been more important than what was learned, particularly for movement from high school to work. Schools traditionally receive some streams of funding based on student seat time. Education systems therefore focused more on keeping students in high school and on providing opportunities for them to graduate than on what they should know and be able to do to succeed in postsecondary education. A current wave of reforms tries to address this issue (and focus more on knowledge and skills attained), but it comes at it from many different angles.

Although these academic standards reforms deal with many of the same fundamental issues and have been occurring simultaneously, there has, with some exceptions, been very little coordination of reforms across educational levels (Kirst, 1998; Maeroff, Callan, and Usdan, 2001). There are few incentives for postsecondary institutions and systems to collaborate with K–12 districts and schools. Although local K–16 partnerships focused on precollege outreach do exist, there are few state levers in place (such as K–16 accountability systems or funding mechanisms that cross both sectors) to encourage postsecondary education to change its practices (Kirst and Venezia, 2001). While college and university reforms seem to have often ignored K–12 reform efforts, K–12 reformers have also failed to look at changes in postsecondary education (Kirst, 1998). The problem lies in part in the reach of accountability: most state accountability systems stop at the tenth grade, and K–12 relationships are almost never a part of the accountability measures for postsecondary education. K–16 offices at postsecondary education institutions are generally staffed with people who have little influence on major policies and practices at the operating level, and there are few stakes or mandates regarding K–16 reform. No significant employee- or institution-based interest group lobbies federal and state policymakers for better K–16 linkages.

The Problem: Inadequate Readiness and Preparation for College

Some postsecondary education is now essential for success and flexibility in most labor markets, where a high school education was once sufficient. Students understand this, as evidenced by changes in student aspirations and ambitions about education beyond high school. A recent study sponsored by the Sloan Foundation reports that 90 percent of current high school seniors expect to attend college, compared with only 55 percent in the 1950s (Schneider and Stevenson, 1999). The U.S. Department of Education (2001a) reports that the percentage of high school seniors who report definite plans to complete a bachelor's degree increased from 36 to 55 percent between 1983 and 1998. Seventy percent of students who begin their postsecondary careers at a two-year institution expect to earn a bachelor's degree compared to less than 50 percent twenty years ago (Schneider, 2003).

Data show that it is not only aspirations that have changed but behavior as well. Information on course-taking patterns, percentages of students graduating from high school, and percentages of graduates going on to

postsecondary education following high school illustrate these changes in behavior:

- Between 1982 and 1998, the average number of credits earned by high school graduates increased from twenty-two to twenty-five; the percentage of students taking a rigorous math curriculum rose from 6 percent to 12 percent (U.S. Department of Education, 2001a).
- In 1971, 78 percent of those twenty-five to twenty-nine years old had completed high school; in the year 2000, this number had increased to 88 percent (U.S. Department of Education, 2001a).
- A larger percentage of adults are obtaining at least some college education. In 1982, 33 percent of adults had some college compared to 51 percent in 2000; among those aged twenty-five to thirty-four, the percentage of those with some college grew from 45 percent in 1991 to 58 percent in 2000 (*Newsweek*, 2002).
- In 1999, 63 percent of graduates were enrolled in a two- or four-year college immediately after high school, compared to 49 percent in 1972 (U.S. Department of Education, 2001a).

If an increased number of students is taking more rigorous high school courses, graduating from high school, and going on to postsecondary education (all seemingly positive trends), what is the problem? While there are still significant challenges in terms of access to postsecondary education for many student populations, the problem facing most students is best illustrated by what happens once the students enroll in postsecondary education. Many are not ready for college-level work, cannot enroll in or complete the program of their choice, and do not graduate from college. These problems disproportionately affect first-generation students and economically disadvantaged students. The Sloan Study (Schneider and Stevenson, 1999) concluded that most high school students have high ambitions but no clear life plans for reaching them—what the authors call “misaligned ambitions” (p. 7). The data on student high school preparation, college persistence (the extent to which students continue to enroll in college), and college completion rates give us some insight into this paradox.

High School Course-Taking Patterns

Adelman (1999) finds that the intensity and quality of the secondary school curriculum is the best predictor of whether a student will go on to

complete a bachelor's degree.¹¹ While the percentage of students taking more rigorous classes has increased since 1982, the overall percentage taking the highest levels of math and science courses is still small. While 72 percent of students went on to college (within two years of graduating from high school) in 1992, only 47 percent of them had enrolled in a college preparatory curriculum as preparation (U.S. Department of Education, 1997). Although it is not necessarily a full measure of academic intensity and quality, the college preparatory track is one indicator that students are taking the array of high school courses recommended for college admissions. Many community colleges do not articulate specific admission standards (and therefore students are not required to complete a college preparatory program in high school to be admitted to the community college), but they do require certain placement standards for entry into credit-level work. Without a strong high school curriculum, a student may be admitted to a college but not be placed into credit-level courses.

A report from the Education Trust shows that socioeconomic status and race/ethnicity do make a difference in terms of the likelihood of a student's enrolling in such a curriculum. Low-income students are less likely to be enrolled in a college preparatory track (28.3 percent enrolled) than medium- or high-income students (48.8 percent and 65.1 percent, respectively); African American and Latino students are less likely to be enrolled in a college preparatory track (25.7 percent and 22.6 percent) than either Asian (42.1 percent) or white (34.1 percent) students (Education Trust, 1999).

Algebra II is a crucial course for college for college persistence and avoiding remediation. Algebra II enrollments for African American, Latino, and Native American high school students doubled between 1982 and 1998. But only 41 percent of Latino students took algebra II in 1998, compared to nearly two-thirds of their white and Asian peers (Education Trust, 2003).

The level of high school math a student completes is a significant indicator of the chance a student has to complete a bachelor's degree (Adelman, 1999). Again, the data show that African American, Latino, and Native American students lag behind their white and Asian counterparts in terms of the percentage who complete higher-level mathematics courses, defined as precalculus or above (Education Trust, 2002).

While many students are enrolling in college after graduating from high school, the quality and rigor of their high school curriculum may well determine whether they are prepared for college-level work. As the data on remediation indicate, many are not prepared, and extensive remediation lowers their chances of postsecondary completion (U.S. Department of Education, 2001a). Even if students have weak academic preparation,

they are more likely to receive a bachelor's degree if they enter a four-year rather than a two-year institution after high school graduation (Cabrera, Burkum, and LaNasa, 2003).

A Confusing Array of Exams

Between high school and college, college-bound students face a confusing set of exams. In high school, many students take state-mandated assessments and a number of other tests, including Advanced Placement (AP), International Baccalaureate (IB), the Scholastic Assessment Tests (SAT I and SAT II), and the ACT Assessment. Once they are admitted to a college or university, they typically have to take one or more placement exams to determine whether they are ready for college-level work. Although colleges use the same tests for admission, each may have its own placement test or series of tests, and there is little uniformity among these tests. In many colleges and universities, departmental faculty develop the placement exams. In the southeastern United States in 1998, for example, there were nearly 125 combinations of 75 different placement tests, all devised by university departments without regard to secondary school standards (Abraham, 1992). Texas has a required statewide postsecondary placement test, but many Texas universities also use their own additional placement exams. The different assessments (K–12 exit, college entrance, and college placement) often use different formats and emphasize different content (Kirst, 1999; Le and Robyn, 2001). Entering first-year students know little about the content of the placement exams, and ultimately, many score poorly and are placed in remedial courses.

High Remediation Rates

Currently, one of the most high-profile postsecondary education issues is that of remediation. Many students who are able to get into college often enter unprepared for college-level work and are placed in non-credit-bearing remedial courses. Forty-six percent of students who enter postsecondary education of any type (and 60 percent of those entering community colleges) are required to take remedial courses in one or more subjects (U.S. Department of Education, 2001a).

In some colleges, the remediation rates are staggering. For example, 95 percent of first-time students enrolled in the Baltimore City Community College (BCCC) in the fall of 2000 required remediation in

math, and 65 percent of entering students needed remediation in math, English, and reading. At BCCC, nearly half of all entering students were assigned to the lowest level of remedial math in the year 2000. This placement would require a student to take as many as nine courses (27 credits) before he or she can begin credit-level work in math (Abell Foundation, 2002). This is significant not only because it means more time for students to get to the point of actually taking college-level courses (increasing the cost of their education and creating a somewhat demoralizing atmosphere for the student), but because the data show that students requiring extensive remediation graduate at lower rates (Adelman, 2001). Thirty-four percent of 1982 high school graduates who took any remedial reading course work in college had completed a bachelor's or associate degree by ages twenty-nine to thirty-four compared with 56 percent of those with no remedial reading courses (U.S. Department of Education, 2001a). Between 1980 and 1993, only 34 percent of students who had to take even one remedial reading course completed a two- or four-year degree, compared with 56 percent of students who had taken no remedial courses at all (U.S. Department of Education 2001a).

Insufficient Persistence from First to Second Year

Although students are going to college in record numbers, many do not continue on to their second year. Approximately one in four of the students who enter four-year colleges and almost half of those who enter two-year colleges do not return for their second year (Education Trust, 2003). Many factors can affect a student's decision not to return for a second year, including academic difficulties, poor institutional fit, financial concerns, and familial obligations (Choy, 1998; Adelman, 1999). Some students stop out for a time and then continue their education later. Others may have transferred from one institution to another, and thus appear to have dropped out when in fact they have just changed institutions. Mortenson (1998) reports that for most students, the key to graduating is returning after their freshman year, to continue their studies at the college in which they first enrolled. Students who do not continue on to the second year, whatever the reason, will have a more difficult time completing a degree.

U.S. Department of Education data (2001a) provide a look at persistence (defined as continuation toward a stated degree goal) three years after entering college; they show that outcomes varied with the students' initial goals, the type of institution in which they enrolled, and whether

they transferred from one institution to the next. Over 3.3 million students enrolled for the first time in postsecondary education in 1995–1996, and the U.S. Department of Education studied what happened to these students three years later, in 1998. The data provide some indication of student persistence:

- Of those seeking a certificate, 52 percent had attained one within three years, and 37 percent had left postsecondary education.
- For those whose initial goal was an associate's degree, 15 percent had attained that degree by 1998, 6 percent had received certificates, and 39 percent were still enrolled as students (7 percent at a four-year institution). Forty-one percent of students who entered with the goal of receiving an associate's degree had left postsecondary education.
- Those who entered seeking a bachelor's degree but started at a two-year institution were more likely to have left postsecondary education (33 percent) than those who started at a four-year institution: 13 percent for those at private institutions and 16 percent at public institutions. (U.S. Department of Education, 2001a).

While it is difficult to measure student intent (the default answer for many students when they enroll is that they eventually hope to obtain a degree), it is useful to see how students have moved through (or out) of the system in the first few years.

LOW DEGREE OR CERTIFICATE COMPLETION RATES. More students are going on to postsecondary education and aspiring to a bachelor's degree, but the percentage actually obtaining the degree has not increased proportionately. Over 50 percent of those enrolled in four-year institutions take more than five years to complete a degree. We look therefore at the U.S. Department of Education data on degree attainment by age twenty-nine. Fifty-five percent of high school seniors reported plans to complete a bachelor's degree in 1998, compared with 36 percent in 1983. Thirty-three percent of high school completers (age twenty-five to twenty-nine) had obtained at least a bachelor's degree in 1998, compared to 26 percent in 1983. Sixty-five percent of those who enroll in a four-year college or university obtain a bachelor's degree by age twenty-nine. This figure has not changed since the early 1970s, even though enrollment in the four-year system has increased by 30 percent over that time period.

While overall completion rates have improved, the gap between white students and African American and Latino students persists, as indicated in Table 1.1.

ACHIEVEMENT GAP. The disconnect between the aspirations of students and the preparation for and attainment of college degrees is particularly apparent when we look at low-income students, first-generation college students, and underrepresented students of color (Rosenbaum, 2001). The Education Trust (2001) reports that students from low-income families attend four-year institutions at much lower rates than those from high-income families, regardless of high school achievement level. Families in the top income quartile are almost seven times as likely to earn a bachelor's degree as students from families in the bottom income quartile.

Underrepresented students of color do not obtain higher education anywhere close to the levels of white students. African Americans are only about one-half as likely and Latino's one-third as likely to earn a bachelor's degree by age twenty-nine as white students (Table 1.2).

Not only are African American and Latino students not obtaining education at the same rates as their white counterparts, they are not graduating

Table 1.1. Percentage of High School Completers Ages Twenty-Five to Twenty-Nine with a Bachelor's Degree or Higher.

Year	Total	White	African American	Latino
1983	26.2	27.4	16.2	17.8
2000	33.0	36.2	20.6	15.4

Source: *U.S. Department of Education (2001a)*.

Table 1.2. Number of Every 100 Kindergartners Achieving Different Educational Levels.

	Graduate from High School	Complete at Least Some College	Obtain at Least a Bachelor's Degree
White	93	62	29
African American	86	48	15
Latino	61	31	10
Native American	58		7

Source: *Education Trust (2001)*.

from high school with the same level of academic skills: African American and Latino twelfth graders read and do math at the same levels as white eighth graders (Education Trust, 2002). This is particularly problematic given the data on remediation and the extent to which the necessity of one or more remedial courses (particularly in math or reading) negatively influences the chances that a student will obtain a bachelor's degree.

Schools often sort students into curricular tracks and ability groups that offer varying levels of academic preparation for college. Such sorting has been found to be inequitable in terms of race, ethnicity, and socioeconomic status, and it has implications regarding whether and where students choose to attend college (Oakes, 1992). Our research explores whether students in different curricular tracks have access to college preparation materials and whether they have similar understandings of college policies and practices.

The achievement gap may be exacerbated by the challenges facing today's high school counselors. There is an increasingly limited number of counselors per student at the high school level, and few counselors are able to spend a majority of their time on postsecondary issues. The counselors who are there focus on a host of other issues (such as disciplinary problems, emotional needs of students, and course scheduling) and do not have the time to work with traditionally underrepresented students (McDonough, Korn, and Yamaski, 1997).¹² Although counselors are usually the only source of information about college preparation-related course work and policies for all students, several studies have found that some counselors might not be giving students the information they need to make educated decisions about their college choices (see, for example, Orfield and Paul, 1994; Rosenbaum, 2001). Rosenbaum (2001) found that counselors do not believe that they have enough authority to give students bad news about the students' college prospects. He hypothesized that this unwillingness might prevent students from receiving the information that they need in order to make the best decisions regarding their future college careers. In addition, he found that counselors' avoidance techniques hurt economically disadvantaged students the most.

The Missing Link

Why is it that students are enrolling in postsecondary education in record numbers but are entering unprepared for college-level work and often leaving before completing a certificate or two- or four-year degree? We suggest that the disconnect between secondary and postsecondary education

in this country is a major (though not the sole) factor and note several areas in which the disconnect is most apparent:

- The content between high school exit exams and college admissions and placement tests differs, leading to understandable confusion about what students really need to know in order to succeed in college. There is a lack of preparation if students are being taught to the high school exit exam standards, which differ from admission and placement test standards.
- While the research clearly indicates the importance of a rigorous high-quality high school curriculum for college success, students often believe that what they do in high school does not matter, that the existence of “second-chance” institutions will allow them to start over again after high school. The (misguided) message that the senior year in high school is not important is particularly troublesome.
- General college knowledge of middle- and low-income students—about what is required in terms of grades and competencies and how to apply for college—is low (Rosenbaum, 2001).
- There are very few policy mechanisms for addressing the connection between secondary and postsecondary education, and many existing policies simply perpetuate the separation. Many K–12 policies in this arena come out of the belief that not every student is going to go to college. Now that over 70 percent continue on to some form of postsecondary education, this belief is misguided and obsolete, and hurts many students.

Alignment of Graduation and Admission Requirements

Better articulation of K–16 policies and practices could help solve the problems outlined above. The disconnection between K–12 and postsecondary education is built into the structure of our educational systems. Postsecondary education institutions have traditionally been responsible for defining standards for college-level course work and remedial courses. At the same time, K–12 entities, whether at the local or state level, define the curricula for non-AP college prep courses in high schools (Kirst and Venezia, 2001). Hence, the high school curricula and postsecondary standards are not always consistent with one another. High school teachers and college professors often differ in their views of what students should know in order to go on to postsecondary education (ACT, 2000). It is not surprising, therefore, that students get many mixed signals about the

relationship between high school course work and standards and college readiness. Many simply do not realize that fulfilling high school academic requirements does not entail college readiness.

The Education Trust (1999) reports that high school teachers and students often do not know the difference between what postsecondary education demands in terms of high school courses and test content and what is required by the state for a secondary diploma. State high school graduation exams are most often not aligned with the tests used for college admissions or for placement into college-level courses. By and large, high school tests are much easier, covering content often not exceeding the ninth- or tenth-grade level. Data from the National Association of System Heads (NASH, 2000) show that only ten states have high school graduation requirements in English aligned with college admission requirements, and only two states have the two requirements aligned in math. In most states, “students who know everything they need to know to pass the state K–12 tests can fall quite short on college examinations and end up spending valuable college time learning what they could, and should, have learned in high school” (Education Trust, 1999 p. 6).

One of our hypotheses at the outset of the research was that the lack of alignment between high school exit exams, college admission exams, and college placement exams (subject matter exams often specific to postsecondary academic departments) can be problematic for students. If students receive confusing or conflicting signals or no signals at all about what is required for college admission and placement, they are less likely to be prepared (however, this study did not address whether the policies caused students to be underprepared). To study the extent to which different assessments in the K–16 spectrum exists, we commissioned RAND to conduct content analyses of the high school exit and college entrance tests that exist in our case study states (Le and Robyn, 2001). The results demonstrate significant differences in content between assessments used in postsecondary compared to secondary school. These differences can send mixed signals to students about college standards and preparation. Interviews by Bridge Project staff with students and parents in six states confirm that they are frequently confused about the plethora of assessments.

Relating High School Effort to College Performance

Rosenbaum (2001) suggests that there is a systemic failure on the part of colleges, particularly community colleges, to convey clear information about the preparation that is necessary for high school students if they are expecting to complete a college degree. Rosenbaum contends that

students' perceptions and understanding of college requirements are critical to their efforts in high school and ultimately to their success in college. He found that many students do not believe their high school education has relevance for their future success; furthermore, students believe there is little penalty for poor high school performance. A national survey conducted by ACT (2003) found that 20 percent of students headed to four-year institutions and 40 percent of those bound for two-year colleges were not planning to take all the courses that ACT had deemed necessary for college-level work. While it is true that students can obtain a second chance at open enrollment institutions like community colleges, Rosenbaum argues that students are rarely warned that they may have difficulty completing a degree if they do not take certain courses and achieve certain grades in high school. They are encouraged to go on to postsecondary education, but not necessarily informed of the obstacles they face if they are not well prepared.

Inaccurate or missing information about what is required for success in postsecondary education is not limited to students who go on to open enrollment institutions. Because most students apply to college during their senior year in high school, many colleges do not take grades and course work during the senior year into consideration for admission. Many students take their highest-level math courses during their junior year, often taking no math at all during the senior year (Kirst and Venezia, 2001). This can be particularly problematic when it comes time to take placement exams and students have not had any math for over a year.

A recent national survey of first-year college students (Cooperative Institutional Research Program, 2002) indicates some downward trends in student effort during the senior year in high school. Academic disengagement is at an all-time high, with 41 percent of students reporting boredom in their senior year compared with a low of 29 percent in 1985. Seniors report spending less time on studying and homework than ever before, with only 35 percent of students reporting spending six or more hours a week on homework in 2000, compared to a high of 47 percent in 1987. At the same time, senior-year high school grades continue to increase, with 44.1 percent of students reporting an A average, compared to a low of 17.6 percent with an A average in 1968.

Reflecting on these survey results, Alexander Astin, originator of the survey, notes that "the combination of academic disengagement and record grade inflation poses a real challenge for our postsecondary education system, since students are entering college with less inclination to study but with higher academic expectations than ever" (Cooperative Institutional Research Program, 2002).

Improving Student College Knowledge

Clearly, better knowledge about what is required for college success is needed, and not just by students. Parents, teachers, and counselors need better college knowledge to guide students to the right courses, skills, and competencies. This is particularly true for those working with low-income students and first-generation college students, all of whom do not traditionally have the same access to college knowledge as others.

This research explores how students from different backgrounds (for example, different income levels, race/ethnicity, type of school, and academic tracks) differ in terms of the types of college-related information they receive. It also looks at the understandings (and misunderstandings) that students, their parents, their teachers, and their counselors have of postsecondary policies and practices. Some of the results are analyzed within and across schools and districts to explore whether the understandings are consistent across the districts and schools or are different in each school. This issue—the dissemination and interpretation of college admissions–related policies and practices across and within different groups—has not been adequately addressed in the literature.

Although this study cannot determine causation, it explores educator attitudes and beliefs about their role as college information providers for students and student and parent perceptions regarding opportunities students have to receive such information.

Improving Policy Mechanisms

There are few adequate K–16 policymaking mechanisms at the state level to address these issues of transition from secondary to postsecondary education. Although there are local partnerships focused on outreach issues in different sites around the country, few levers are in place to develop systemic reform strategies between postsecondary education institutions and K–12 districts and schools. In California, for example, K–16 policymaking is divided among a dozen groups, creating a rather fragmented approach (Kirst, 2001). This is an American phenomenon: there is a much greater disjuncture between secondary and postsecondary education here than in most other nations (Kirst, 2001; Timpane, 1998). Tafel and Eberhart (1998) note that many state and local politicians in recent years have provided resources for school-college collaborative efforts, but argue that this is only a first step; sufficiently ensuring the successful student transition requires a reconception of current structures and practices and the development of new systemic approaches to link the two education sectors. Georgia,

Florida, and Maryland are examples of states that have created a K–16 statewide organization with limited responsibility for oversight of K–16 policymaking; we examine their efforts in the state chapters that follow.

Signals as a Theoretical Framework

With the above context and problem statement as background, we now turn to the development of a partial theory that shaped our research study. Within our research agenda, we view admissions and placement standards and institutional arrangements as policies that communicate signals, meaning, and expected behavior to students and secondary schools. By defining admissions and placement policies as policies that send signals to students, it is our intention to examine both existing policy structures and proposed reforms within the same analytical framework—specifically, the interaction that occurs within a state and region. In each state, our concern is with how admissions and placement-related standards and policies promulgated by states and postsecondary education institutions are understood, acted on, and interpreted by parents, students, and secondary school personnel. An underlying assumption of this research is that clear, consistent, and reinforced signals will enhance the college knowledge of prospective students in secondary schools. If the signals are embedded within incentives that provide extrinsic motivation to students, they will be more effective.¹³ We focus on incentives that will help students be admitted to universities, meet placement exams standards, and complete their desired degrees (or community college competencies). We are also very concerned that the current flow of signals about necessary college knowledge is unequal between high- and low-socioeconomic students. Our work reformulates the access issue to focus more on access to preparation and success rather than the more traditional issue of access to a slot in postsecondary education.

Examples of incentives could be admission policies that reward students for completing numerous college preparation courses or teacher professional development that helps increase the probability of students meeting placement test standards. Both extrinsic and intrinsic motivations are important components of motivating prospective college student behavior.¹⁴ We will return to motivation after discussing academic signals that can increase or decrease student motivation to prepare for postsecondary education.

Signaling theory suggests that streamlined and aligned high-quality and appropriate content messages have a positive impact on students' learning and achievement and that mixed signals—the current state of affairs—have the opposite effect (Fuhrman and O'Day, 1996). Crucial aspects of

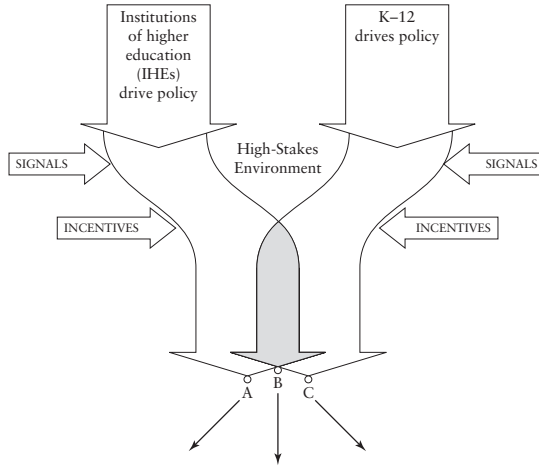
appropriate signals and incentives are simplicity, clarity, and consistency (Henry and Rubenstein, 2002). Consistency is enhanced when signals, incentives, and institutional policies are aligned—for example, the alignment of format and content of state and local student assessments with SAT I. We posit that if incoherent and vague signals and incentives are sent by postsecondary education institutions and state agencies to students, then there will be less adequate student preparation for postsecondary education. We build on related work by education scholars such as Costrell (1994), McDonough (1997), and Rosenbaum (2001). We should note that our use of the term *signaling* is slightly different from that of John Bishop (1990; Bishop and others, 2003) and other economists who have explored this topic.¹⁵ As Bishop uses the term, *signaling* refers to the attributes—achievement, education level, and ability—that students consciously attempt to transmit to employers and colleges. Our use of the term focuses on the signals that policies send to students and schools (Mow and Nettles, 1990). School site educators, including but not limited to counselors, can be purveyors of information (for example, signals) about what students need to know and be able to do in order to succeed at postsecondary education. We found that many teachers play a large role in providing signals, especially for high-achieving students.

We believe that given high student and parent aspirations for postsecondary education entrance and completion, clear signals about necessary preparation and standards for postsecondary education will have a positive impact on motivation and are one mechanism for trying to equalize the playing field. Since many postsecondary institutions are minimally selective or nonselective, students need to be motivated to meet a preparation standard rather than beat the competition. This enhances motivation because success is attainable, and effort will have a payoff in postsecondary attainment (Deci, Koestner, and Tyan, 2001). This is particularly important because economically disadvantaged students and students of color are often placed in low-level academic high school courses and tracks that can decrease both motivation and preparation (Oakes, 1992).

Since it is easy to enter so many four-year and two-year schools, there are scant incentives to work hard in high school (Bishop and others, 2003). High school graduation standards and minimum competency tests are not sufficient preparation for postsecondary success, though many students think they are. Once students enroll, they face challenging placement exams, faculty expectations, and general education and graduation requirements that they often do not know about. They end up taking remedial noncredit courses that better signals may have prevented.

Our conceptual framework (see Figure 1.1) guides our research questions and provides an analytical lens. We concentrate on whether K–12

Figure 1.1. Conceptual Framework of the Bridge Project.



+ positive influence
 - negative influence

	<u>A</u> Policy driven by IHEs in isolation from K-12	<u>B</u> Policy driven by combined efforts between IHEs and K-12	<u>C</u> Policy driven by K-12 in isolation from IHEs
K-12 stakeholders' understandings of K-16 policies and college knowledge	+ For elite pool of students - For more students - For postsecondary education since it has less information on K-12 students	+ For more students + For mutual reinforcement of understandings and expectations	- For more students enrolling in post-secondary - For K-12 since less information on postsecondary education policies
K-12 stakeholders' aspirations and actions	- Sends confusing signals that might have a negative impact on students' aspirations	+ For mutually reinforced signals that could have a positive impact on students' post-secondary aspirations	- Sends confusing signals that might have a negative impact on high school students' aspirations
Student mastery of college preparatory content and skills	+ For elite pool of students, who do not rely on high school information	+ For more students completing postsecondary education	- For more students not aspiring and completing postsecondary education
	↓	↓	↓
College Preparation and Qualification	+ For elite pool of students	+ For all students	- For most students
Postsecondary Success <ul style="list-style-type: none"> • Freshman placement and remediation • Dropout rate • Graduation rate 	- Those not in elite pool face increased remediation and dropout rates and decreased graduation rates	+ Decreased remediation and dropout rate and increased graduation rate for more students	- Increased post-secondary remediation and dropout rate and decreased graduation rate for more students

exit-level and postsecondary entrance-level signals and incentives for students are delivered in isolation from one another or through interaction and reinforcement. We identify three possible scenarios for signal delivery: postsecondary education drives policy (column A), K–12 drives policy (column C), or policy is driven by the combined efforts of K–12 and postsecondary education. The preferred delivery is column B; columns A and C have serious shortcomings.

Signals and incentives sent along either through a separate postsecondary education or K–12 system result in less student preparation, college knowledge, and postsecondary outcomes. Combined efforts between K–12 and postsecondary especially help disadvantaged students, while honors students can succeed with less K–16 cooperation. Signals are related to outcomes such as less remediation and completion of a student's desired postsecondary program (Henry and Rubenstein, 2002).

Joint efforts between postsecondary and K–12 education (column B in Figure 1.1) are crucial in creating positive outcomes for more students, particularly those from economically disadvantaged families, families in which a parent did not attend college, and those students who face stigmatization and racism as they proceed through school. If there is no K–16 interaction and reinforcement of signals, we posit that the more advantaged students will receive ample signals and incentives to prepare for postsecondary education (see column A). But the more educationally disadvantaged high school graduates will enroll at lower rates, require remediation, and experience lower postsecondary completion rates (column C).

As path B in the framework indicates, combined efforts by postsecondary education and K–12 could improve college knowledge that is essential for student aspiration and preparation. College knowledge is acquired and possessed unequally among students and families of different social classes and racial/ethnic backgrounds. College knowledge by secondary school students and parents includes knowledge of tuition, curricular requirements, placement tests, and admission procedures and selection criteria. A high school's collegiate preparation culture cannot be fully measured by simple, visible, or discrete indexes such as standardized test scores, honors and AP courses, and postsecondary placement. Collegiate culture also encompasses the less tangible, more elusive qualities that can best be described through narratives that reveal the sustaining values or ethos of a high school.

One possible route to delivery of path B in the framework is under way in Oklahoma, where eighth graders take ACT's Explore and tenth graders take ACT's PLAN assessment that tests English, math, reading, and science

reasoning (Carstensen, 2002). Since this policy was implemented, Oklahoma reports more students taking college preparation courses, increased enrollment in postsecondary education, and lower remediation rates. In a second example, the California State University System in 2002 approved dropping its internal math and English placement tests and instead will be using the high school California Standards Test for placement. This will provide secondary students with early indicators of their probable placement before they reach a California state university. Finally, the Georgia HOPE Scholarship Program, although initially problematic because of equity issues, is a simple but powerful signal that is reaching most secondary pupils who now know that a B high school average will result in a guaranteed state scholarship (Henry, 2002). For example, by middle school (grades 6–8), 51 percent of Georgia students and 59 percent of the parents knew the specific requirements for obtaining a Georgia state HOPE scholarship. This knowledge was present in 1997, only four years after HOPE scholarships started. Georgia students knew that only college preparation courses were computed as part of the B average required for a HOPE scholarship (Henry, 2002).

If K–12 schools are left to carry the brunt of college knowledge and preparation signals, then more students might receive vague signals and lesser incentives for adequate preparation. For example, a Metropolitan Life Survey in 2000 found that 71 percent of the students expected to go on to a four-year college, but teachers expected only 32 percent of their students to attend a four-year school.¹⁶ A survey of twenty-six thousand high school teachers in twelve southern states found that only 38 percent believed that it was “very important” to “help all high school students master the essential content taught in college preparatory language arts, mathematics, and science courses.” The Southern Regional Education Board determined that in its thirteen southeastern states, the percentage of high school students finishing a college prep curriculum ranged from 21 to 42 percent.¹⁷

Students who are in advanced, honors, or other accelerated tracks in high school usually receive clear and explicit signals about college preparation from the challenging content of their courses, university recruitment, their parents, other students, and some teachers who are knowledgeable about freshman-level standards (see column A in framework). But many students in middle and lower high school courses are not reached by postsecondary outreach programs or by their high schools. Frequently, counseling is inadequate, and parents lack experience concerning necessary college preparation. This is particularly true for students proceeding directly from high school to community college; because community

colleges are open enrollment, they are viewed by some students as not having standards.

We have acknowledged that many factors contribute to the current problems with preparation for college, and better-aligned policy signals are not a panacea. However, if the signals and incentives to students concerning needed postsecondary education preparation are optimal, we believe that several positive outcomes will follow. These include substantial increases in higher student and parent aspirations and actions to prepare and enter postsecondary education, increased student mastery of college preparatory content and skills, and better outcomes, such as reduced need for postsecondary remediation, increased college and university persistence, and improved time to degree rates for postsecondary students.

Introduction to the Chapters

Because these problems vary by state and local context, we use this conceptual framework to examine the relationship between high school graduation, college admission, and college placement requirements at the state level. We conducted research in six states: California, Georgia, Illinois, Maryland, Oregon, and Texas. When we started this research, Georgia, Maryland, and Oregon were viewed as leaders in addressing these issues. We are particularly interested in the signals that are sent to students by institutional and state policies. Our case studies examine the college knowledge of students—the extent to which they understand college admission and placement requirements. We also examine relationships between what they do in high school, what they know about college, and their post-high school aspirations. We look to state and institutional policies to determine what signals are being sent to students about postsecondary education and look at the extent to which those signals come from a coordinated K–16 effort or several disjointed secondary and postsecondary approaches.

More information about the project’s methodology can be found in Appendix A. The case studies begin with Chapter Two and continue through Chapter Seven. Chapter Eight presents findings from our work with several community colleges. Chapter Nine details the key findings of our research across all Bridge Project states and includes recommendations.

NOTES

1. For completion rates, see Adelman (1994). For other statistics on completion and remediation, see U.S. Department of Education (2001a, 2001b, 2001c) and American Council on Education (2002). All of these statistics are discussed later in this chapter.

2. U.S. Department of Education (2001c). According to definitions provided by the U.S. Department of Education, *higher education* is the “study beyond secondary school at an institution that offers programs terminating in an associate, baccalaureate, or higher degree,” and *postsecondary education* is “provision of formal instructional programs with a curriculum designed primarily for students who have completed the requirements for a high school diploma or equivalent. This includes programs of an academic, vocational, and continuing professional education purpose, and excludes vocational and adult basic education programs.” We use the term *postsecondary education* in this study, as it is broader in the scope of institutions that it includes.
3. K–16 refers to kindergarten through grade 16, or the end of a four-year undergraduate program. Some states call their efforts P–16, or preschool through grade 16 reforms.
4. An associate’s degree is awarded for completion of a sub-baccalaureate program of study and usually requires at least two years of college-level study. A certificate is typically awarded for completion of a program in a defined area of employment, usually requiring less than two years of study and limited general education (U.S. Department of Education, 2001c).
5. Using the 2001 Carnegie classifications, the 80 percent of students whom we focus on primarily go to Baccalaureate Colleges—General, Baccalaureate/Associates Colleges, Masters Colleges and Universities I and II. Some broad access schools are included in Doctoral/Research Universities, Intensive and Baccalaureate Colleges, Liberal Arts. See Carnegie Foundation for the Advancement of Teaching (2001). Researchers checked the Carnegie classifications with College Board data concerning the percentage of applications accepted.
6. See Carnegie Foundation for Advancement of Teaching (2001). Institutions are elaborated in note 5.
7. There is a growing debate whether limited financial aid, lack of preparation, or college knowledge is the major cause prohibiting low-income students from attending college. Pell Grants fell from 84 percent of public four-year college costs in 1974 to 40 percent in 2001. But skeptics contend that throwing financial aid at unprepared students will increase only entrance, but not completion, numbers. These critics favor expanding GEAR UP and other federal outreach programs as a higher priority than increasing Pell Grants. Both strategies seem needed to us, and financial issues may be more important at four-year schools.

We are not taking a position on this debate, but our research focuses on college knowledge and academic preparation. See Burd (2002). See also National Center for Public Policy and Higher Education (2002).

8. In 1996, the Fifth Circuit Court of Appeals ruled that the University of Texas Law School had illegally used racial preferences in admissions; in 1996, California voters approved Proposition 209, which eliminated the use of affirmative action in public employment, education, and contracting decisions.
9. In several states, new admissions policies have been put in place to automatically accept students ranked at the top of their high school graduating class. Public universities in Texas admit the top 10 percent, Florida's universities admit the top 20 percent, and the University of California admits the top 4 percent of each high school graduating class (Kirst, 2000).
10. For example, the trustees of the City University of New York voted in 1998 on a policy to begin excluding students from its bachelor's degree programs who were not deemed ready for college-level math or English, ultimately moving most remedial education to its community college campuses. The California State University Board of Trustees voted in 1996 to set a goal of reducing to 10 percent (from 50 percent) the number of first-year students needing remedial education. See Marcus (2000) and California State University (2002).
11. See also Horn, Kojaku, and Carroll (2001).
12. Of 1,054 Latino parents surveyed by telephone in Chicago, New York, and Los Angeles, 65.7 percent missed at least half of "the rather straightforward information items." The survey included such questions as, "From what you know, does a community college offer the same bachelor's degree that a university offers?" (The possible responses were yes, no, and don't know.) The report also drew on data collected through case studies of forty-one parents. See "Study Cites Inability Among Many Latino Parents to Advise Children About College" (2002).
13. For the powerful impact of extrinsic motivation for high school students, see Steinberg (1996).
14. For intrinsic versus extrinsic incentives, see Deci, Koestner, and Ryan (2001). Especially useful for our framework is the rejoinder to the article in the same issue by Cameron (2001).
15. For a similar definition of signaling to ours, see Fuhrman and O'Day (1996).
16. Metropolitan Life Survey of the American Teacher (2000).
17. Abraham (1992).

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