

Enhancing College Completion: Secondary Schools and Colleges Must Work Together

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Introduction

American postsecondary education features access to postsecondary education with much less emphasis on completion or success (Kirst and Venezia, 2004) at broad access institutions. Broad access postsecondary education can be defined as four or two year colleges/universities that accept all qualified applicants, or are open enrollment. About 80% of postsecondary students and eight five percent of institutions are broad access.² Community colleges enroll about half of first year students ages 17-20. This paper focuses upon students who enroll after high school and not adult education. Completion rates for students at broad access postsecondary education are shockingly low. Less than 25% of community college students who begin at ages 17-20 transfer, attain an AA degree or vocational certificate (American Council on Education, 2002; Shulock, 2007). About half of the students in four year broad access colleges obtain a degree within 9 years (Adelman, 2006). Remediation rates for entering students are over 60% for community colleges, and near 30% for four year colleges.³

Inadequate preparation is one major cause of dismal college completion results. Lack of money, long work hours, and social/family obligations also are important. This paper focuses on high school academic preparation and the knowledge needed to enter college without remediation and to complete the student's desired program (Conley

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² Using the 2001 Carnegie classifications, the 80% of students go to Community Colleges, 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 Foundations for the Advancement of Teaching, *The Carnegie Classification of Institutions of Higher Education* (Menlo Park, CA 2001). I recalculated this broad access percent using the 2005 revised Carnegie classifications and came up with the same 80% estimate.

³ Michael Kirst, "Remediation: Who Needs It," *Crosstalk* vol. 15, No. 1, Winter 2007, pp. 11-12.

2005). After analyzing several causes of the problem, the paper stresses that neither K-12 or postsecondary education can solve the lack of student success working alone. They must work together to accomplish their mutual goals to enhance student college completion. Before discussing the underlying causes of poor high school preparation it is useful to examine the historical reasons why K-12 higher education have grown so far apart.

History of Separation Between K-12 and Postsecondary Education

Many of the problems presented above emanate from the disjuncture between K-12 and higher education for policy, finance, academic standards, and communication. None of these arenas is connected well across the K-16 spectrum. An extreme disjuncture concerning K-12 and broad access postsecondary did not always exist, but has evolved slowly. It is now a deep fissure that will be very difficult to overcome. History reveals a gradual addition of tiers below the traditional university. Each added tier had lower admission standards and fewer dollars per pupil. Placement exams administered in these lower tiers after pupils enrolled became more important standards than admissions criteria. But the lower tier like the more selective universities moved away from linkages with K-12 schools. Many broad access four year colleges were once normal schools. Community colleges were once part of K-12 school districts in California, but now are quite detached from K-12. Postsecondary prestige emanates from moving closer to research universities and away from identification and contact with K-12. Consequently, secondary school students and teachers receive fewer and weaker signals about what they must know and do through academic preparation to succeed in broad access colleges

The origin of the disjuncture between lower and higher education in the United States stems, in part, from the laudable way the nation created mass education systems for both K-12 and higher education. In Europe, in contrast, the higher grades of secondary education were designed for an elite group who would be going on to universities, and European universities have long played a major role in determining the

content of the secondary school curriculum and both the content and format of secondary school examinations. For example, professors at British universities like Oxford and Durham grade the A levels taken by students during their last year of secondary education, and these essay exams figure crucially in a student's chances for university admission.

Over time, the chasm between lower and high education in the United States has grown greater than that in many other industrialized nations (Clark, 1985), but at one time U.S. colleges and universities did play an important role in the high schools. In 1900, for example, the College Board set uniform standards for each academic subject and issued a syllabus to help students prepare for college entrance subject-matter examinations. (Prior to that, each college had its own entrance requirements and examinations.) Soon after, the University of California began to accredit high schools to make sure that their curriculums were adequate for university preparation.

In the postwar years, however, the notion of K–16 academic standards vanished. “Aptitude” tests like the SAT replaced subject-matter standards for college admission, and secondary schools added elective courses in nonacademic areas, including vocational education and life skills. Today, K–12 faculty and college faculty may belong to the same discipline-based professional organizations, but they rarely meet with one another. K–12 policymakers and higher education policymakers cross paths even less often.

With the exception of the AP program, there are no major efforts to provide curricular coherence and sequencing between the senior year and postsecondary education, and the role of the senior year in high school as a forum for general education is rarely discussed. Nor has anyone proposed a conception of liberal education that relates the academic content of the secondary schools to the first two years of college. Instead, students face an “eclectic academic muddle in Grades 10–14” (Orrill, 2000) until they select a college major. In Ernest Boyer's metaphor, postsecondary general education is the “spare room” of the university, “the domain of no one in particular” whose many

functions make it useless for any one purpose (Boyer and Levine, 1981). The functional “rooms,” those inhabited by faculty, are the departmental majors.⁴

When attention is paid to general education, two contending theories predominate. One holds that the purpose of general education is to prepare students for a specialized major; the other, that the purpose of general education serves as an antidote to specialization, vocationalism, and majors. Clark (1993) hoped that somehow the specialized interests of the faculty could be arranged in interdisciplinary forms that would provide a framework for a coherent general education, but there is little evidence that this is happening.

In sum, the high school curriculum is unmoored from the freshman and sophomore college curriculum and from any continuous vision of liberal education. Policymakers for the secondary and postsecondary schools work in separate orbits that rarely interact, and the policy focus for K–16 has been more concerned with access to postsecondary education than with the academic preparation needed to complete a postsecondary degree or certificate. Access, rather than preparation, is also the theme of many of the professionals who mediate between the high schools and the colleges: high school counselors, college recruiters, and college admissions and financial aid officers.

The number and influence of mediating groups is, for Stocking (1985, p. 263), an indicator of the “amount of disorder and confusion that has grown through the years in the relationship between the school and the university in America.” In addition to the mediating professionals employed by the high schools and the colleges, “A major role is assumed by the major private testing organizations, whose tests have become powerful tools for allocating students to different types of universities and colleges. And

⁴ There are no recent assessments of the status of general education. Adelman (1992) analyzed college students’ transcripts from the National Longitudinal Study, data from the early to mid-1970s, which proved to be a low point in general education requirements. He reported that students took very few courses in the fields comprised by general education. Less than one-third of college credits were from courses that focused on cultural knowledge, including Western and non-Western culture, ethnic, or gender studies. Among bachelor degree recipients, 26% did not earn a single college credit in history, 40% did not study any English or American literature, and 58% had no coursework in foreign languages.

increasingly prominent is the mediating influence of federal government as it has attempted to increase equity in American education and now . . . seeks to emphasize excellence” (ibid.).

This paper examines several causes and indicators of this K-12/postsecondary chasm in the next few sections. It then turns to specific policy levers to improve the situation as part of a new relationship for K-16.

Understanding Placement Exams: A Crucial Part of College Readiness

At broad access two and four year colleges, placement exams are the crucial standard that students confront when they enter, and are the pathway to credit-level courses.⁵ Many students in broad access colleges work many hours while attending postsecondary education, and receive weak and confusing signals about necessary academic preparation to pass placement exams. But secondary school students know they will be admitted if they meet minimum GPA and course requirements, or are over 18. Consequently, they are not prepared for placement exams, and end up in remedial courses. Remediation for first semester community college students is over 60%.

Research on the content, reliability, and necessary preparation for placement exams is scant, placement standards are not well publicized to prospective students or secondary school teachers. The content, cognitive demands, and psychometric quality of placement exams are a “dark continent” in terms of the assessment research literature. Students are admitted to the postsecondary institution under a low standard, but placed in credit courses or remediation on another higher standard. Secondary school students wrongly believe that their high school graduation requirements are sufficient to be placed in postsecondary credit-level work, and rarely know about the possibility of placement exam failure that leads to starting college in remedial, non-credit courses. Students who begin in remedial reading and math courses have a lower probability of finishing their

⁵ For a recent study see Achieve, *Using Admissions and Placement Tests to Assess College Readiness* (Achieve: Washington, D.C., 2007).

desired academic program (including vocational education certificates) (Adelman, 2006). In sum, remediation is a poor pathway from high school to college, while being able to enter credit-level courses leads to better outcomes.

Revision of college placement exams have not been part of the K-12 standards movement that has swept across the U.S. Indeed, placement exams are rarely part of the discussion because standards policies are made in separate K-12 and higher education orbits that rarely intersect.

Student Engagement in Secondary School

A new study of high school student engagement reveals some major concerns about college preparation and completion (see http://ceep.indiana.edu/hssse/pdf/HSSSE_2006_Report.pdf). Engagement within a high school context is about a student's relationship with the school community (adults, peers, curriculum, facilities, etc). HSEE uses a national sample of grades 9-12 to find that:

- Fewer than half of the students go to high school because of what happens within the classroom environment
- A great majority of students are bored every day, if not in every class
- 43% spend 0-1 hour doing written homework, 83% spend 5 hours or less
- 55% spend 0 or 1 hour per week reading and studying for class, 90% spend 5 hours or fewer
- Students want more active learning such as peer working groups and presentations
- Girls report being more engaged across all dimensions of high school engagement than boys. (Girls were 58% of 4 year college graduates in 2006).

Over 70% of high school graduates now go on to postsecondary education. This study reveals many of them are at risk students who will not experience college success.

NAEP Reading Scores at Grade 12 Are Warning Signs for Lack of College Readiness

The National Assessment of Educational Progress (NAEP) released the grade 12 results recently. The results in Reading demonstrate a decline between 1992 and 2005. The results do not bode well for aspirations of higher academic readiness, college preparedness and college success. The test was given between January and March of 2005 to a representative sample of 21,000 high school seniors attending 900 public and private schools. Exams in reading, math, science and writing also were administered to fourth and eighth graders. The results found that the reading skills of 12th graders tested in 2005 were significantly worse than those of students in 1992, the first time a comparable test was given, and essentially flat since students took the exam in 2002. The share of students lacking even basic high school reading skills -- meaning they could not, for example, extract data about train fares at different times of the day from a brochure -- rose to 27 from 20 percent in 1992. The share of those proficient in reading dropped to 35 from 40 percent in 1992. Yet, high school graduates in 2005 had studied more than their counterparts in 1990, averaging 360 more hours of classroom instruction during their high school years, the transcript study showed. Their grade point average was a third of a letter grade higher than in 1990, and more students were taking foreign language and other courses aimed at preparing them for college. Thus, the poor reading scores of 12th graders puzzle educators.

Since state tests -- known generally as STAR tests in California -- indicate that student achievement has been improving, why are high schoolers faring so poorly on the annual federal assessment, known as "the nation's report card?" Educators and administrators of the National Assessment of Educational Progress blamed the seemingly contradictory trends on more difficult course work and on grade inflation -- a phenomenon documented by other surveys of high school students. The NAEP results surprised me, too, because the number of students who took 4 years of English is up from 40% in 1990 to 68% in 2005. Moreover, the average grade in English is also higher.

This is alarming because many states, including California, have been making significant gains at elementary grades, and that do not show up here in 12th grade. The trend line is baffling. We should be concerned because this is another year where the nation as a whole is showing no progress in reading at 12th grade. A recent article in the San Jose Mercury News explored the surprising findings and the article included my comments or possible explanations:(1) One possible explanation for the poor high-school showing was that test-weary 12th graders do not try hard on the national assessment.(2) Another explanation is the fact that high schools are not teaching reading, so growth in that area tapers off.(3) Or possibly the federal test standards, designed by an independent panel, aren't aligned with state standards. In fact, critics have called the federal assessment much tougher than most state standards, even those of California, which among the states has set the bar for proficiency comparatively high.

The bottom line is that high school students are taking harder courses and earning better grades yet reading at significantly lower levels than their peers did 13 years ago. Thus, there is an urgent need to teach reading skills across the high school curriculum and not just in English classes. Considerable research stresses there is a difference between English literature studies in high school and technical reading in college courses like biology and economics. NAEP tests more than English literature, so its broader emphasis may have exposed reading weakness that otherwise would have been missed by testing with an English literature emphasis. In order for college readiness and college success to increase, reading instruction – in all subject areas—must improve as well as persist through all years of secondary school.

Content Within College Preparation Courses is Crucial

A 2007 study released by ACT, the largest college admissions testing company, specified mismatches between high school course content and what college teachers want students to know. Excerpts from ACT's report are quoted below:

This national survey of 35,665 educators tells us what postsecondary institutions believe is important and necessary for their entering students to know and what middle and high school teachers are teaching. It focuses, therefore, on identifying the gap between postsecondary expectations and high school practice.

High school teachers in all content areas (English/writing, reading, mathematics and science) tended to rate far more content and skills as “important” or “very important” than did their postsecondary or remedial counterparts.

It may be that the extensive demands of state standards are forcing high school teachers to treat all content topics as important, sacrificing depth for breadth.

English/Writing:

Postsecondary instructors ranked mechanics more frequently among the most important groups of skills for success in an entry level, credit-bearing postsecondary English/writing course, while high school teachers’ rankings of these strands were generally lower.

Mathematics:

High school mathematics teachers gave more advanced topics greater importance than did their postsecondary counterparts. In contrast, postsecondary and remedial-course mathematics instructors rated a rigorous understanding of fundamental underlying mathematics skills and processes as being more important than exposure to more advanced mathematics topics.

Science:

High school science teachers consistently rated science content as more important to student success than science process/inquiry skills. These responses are in direct contrast to those of middle school and postsecondary science teachers, who

consistently rated science process skills higher in importance than science content.

The survey responses of postsecondary English/writing instructors suggest that high school language arts teachers should focus more on punctuation and grammar skills to better prepare their students for college-level expectations in college composition courses.

(Aligning Postsecondary Expectations and High School Practice: The Gap Defined - - Policy Implications of the ACT National Curriculum Survey® Results 2005–2006, Iowa City: ACT, 2007).

Community Colleges: Opportunity and Problems

America's 1,200 community colleges enroll nearly half of credit-earning undergraduates, and first year students. However, scholarly attention to this growing postsecondary sector is dwarfed by research and publications concerning 4 year institutions. Community colleges serve a disproportionate share of low income students including 79% of California's Latino students. Public four-year institutions grew by 3.5% from 1990 to 2000, but public two-year enrollments grew by 14%.

A new book by Bailey and Smith (2005) provides a balanced picture of the challenges facing community colleges and the resulting inadequate outcomes for students. The final chapter is a powerful indictment of many components of community colleges including their inadequate : completion rates, developmental education operations, information systems, transfer of credits to four-year institutions, advising, and quality of online instruction. But community colleges enroll almost anyone who wants to come regardless of preparation. Community college budgets are very fiscally constrained, and often lag enrollment growth. Moreover, need based student financial aid has not kept up with the changing student bodies. Many students, however, do succeed in community colleges despite long odds.

The authors summarize their conclusions this way:

It is fair to say that community colleges have made a crucial contribution to opening college access, but their role in providing overall equity in higher education outcomes is less clear. The majority of students who start community college do not earn a degree or certificate (p. 247)...

Thus, the good intentions and hard work of community college faculty in promoting the success of their students are not reinforced by institutional incentives and information systems. (p. 248).

Bailey and Smith begin with the historic dilemma of how community colleges can balance their multiple missions – four-year college transfer, vocational education, continuing education for businesses, basic adult education such as learning English, and recreational courses. This multiple mission analysis is highlighted by the authors' concern for a recent trend of shifting college attention and policy away from low income and disadvantaged students. Moreover, community colleges aspire to moving up the academic ladder by emulating practices and policies at four-year institutions. This chapter emphasizes that a larger and growing proportion of community college students are recent high school graduates, so college mission needs to shift more to the 17-20 age range. The multiple mission concern is heightened by the chapter on lack of accountability. The authors conclude that “accountability, especially performance-based funding, so far has been a paper tiger. It has not threatened college funding or enrollments” (p. 249).

Once remedial students reach community college the book provides impressive and novel insights about developmental education. The use of case studies works well for these topics. The authors conclude with two major points:

...there is no general agreement as to the specific reading, writing, and math skills needed to learn from the postsecondary curriculum. The lack of a common benchmark creates problems for deciding what should be taught in developmental education courses.

...there is a serious shortage of controlled evaluation research to support them, which is troubling in view of claims that postsecondary remedial course work is ineffective [page 257].

Four Policy Levers to Improve College Readiness and Success

My research with colleagues shows that states must create reforms in four key policy areas, and connect elementary and secondary education with postsecondary education across all four: curricula and assessment, finance, data collection, and the public reporting of student progress and success. Governance mechanisms must reinforce and sustain those efforts (see <http://bridgeproject.stanford.edu> publications 19 and 20). Specifically, state governments can make substantial gains toward improving college readiness and completion if they:

Stimulate high schools and colleges to align their courses and assessments in order to improve college readiness. Right now, the standards movement in K–12 education and efforts to improve higher education are operating on different tracks. For example, a widespread strategy to improve student readiness for college has been to increase enrollment in college-preparatory courses. Yet despite some successes, remediation rates in colleges have been estimated to be more than 60 percent at two-year institutions and approximately 30 percent at four-year institutions nationally. As a nation, we are learning that the number of courses that high school students take, and the units and names assigned to those courses, are often inadequate proxies for whether or not high school graduates are prepared to succeed in college-level work. The quality and level of the coursework and instruction, and their degree of alignment with postsecondary expectations, are the key elements of effective reform. Ideally, exit standards from one

education sector would equal the entrance and placement standards of the next, while ensuring that there are multiple paths of study for high school students, since “one size” does not fit all. For example, some students might wish to follow a purely academic path while others might desire a more applied course of study; both pathways would lead toward the development of the same set of knowledge and skills.

Provide incentives in state budgets for increasing the proportion of students who complete high school and enroll in college. Most state systems perpetuate the divide between K–12 and higher education by creating separate, aggregated, streams of financial support for each sector. State budgets lack any incentives to promote college-readiness reforms. For example, states could offer financial incentives to both systems to offer dual enrollment or to reduce remediation.

While no state has fully established an integrated K–16 finance model, Oregon may be moving in that direction. The Oregon Business Council analyzed state expenditures in 2002–03 for both schools and colleges as though they came from one budget, and found that the per student level of investment varied by grade and degree—with community colleges receiving the least state aid and K–12 special education receiving the most. It recommended to the governor that Oregon reform its system so that, among other things, budgets would explicitly decide the level of support per student for different services and the measurable outcomes anticipated. The governor of Oregon and a joint board that includes members from both the state board of education and the board of higher education have called for the establishment of a unified education system with curriculum alignment and a budget that connects all sectors. More states should follow a similar path.

State financial aid, a traditional means for broadening access to college, can also be used to leverage college-readiness reforms. Indiana’s Twenty-first Century Scholars Program is an excellent model for how a state can both broaden access to college and improve college readiness. The Scholars Program promises the future payment of college tuition for middle school students who qualify for the federal free and reduced lunch

program. It targets low-income students in the 8th grade and requires each participating student to complete a pledge to finish high school, maintain at least a C average, remain drug- and alcohol-free, apply for college and financial aid, and enroll in an Indiana postsecondary institution within two years of completing high school. In return, Indiana (1) encourages the Scholars to pursue a college preparatory curriculum; (2) provides support services for them and for those who fulfill the pledge; and (3) pays their tuition and fees (after other financial aid awards) at a public institution in Indiana or contributes a similar portion for tuition at an independent college. The program pays for 80% of the approved tuition and fees for students completing a regular high school diploma; 90% of tuition and fees for students completing a more rigorous high school diploma, called a Core 40 diploma; and 100% of tuition and fees for students completing the most rigorous diploma, the Academic Honors Diploma. Through these incentives, the program sends clear signals to students regarding academic preparation for college. And the results are encouraging. In 1992, Indiana was 34th in the nation in terms of the percent of high school graduates that enrolled in college immediately after graduation; in 2002, it was 10th.

Create data systems to track student progress across educational levels and institutions. Currently most states are unable to determine if their efforts to improve student readiness for college are having any impact. Although many states are working to improve their ability to gather information—Florida, for example, already has a model system up and running that links K–12 and postsecondary education, along with other public data—few, if any, currently link information from schools and colleges. Some states do not even collect data on the course-taking patterns of their high school students. Consequently, in those states, it is impossible to determine the relationships between the courses that high school students take and students' persistence and success in college. Likewise, it is impossible to identify and analyze success rates for students who enter college from the workforce, students who attend part time, or students who attend multiple institutions. In short, the lack of reliable facts and figures that connect different levels of education makes it difficult to assess needs accurately, identify the worst problems, work toward finding solutions, and evaluate reforms.

States should be able to use their data systems to answer questions such as:

- How do students who take college-preparatory courses in high school perform in postsecondary education?
- Of those students who require remediation in college, what percentage took a college-preparatory curriculum in high school?
- How do students who earn a proficient score on a state's K–12 assessment perform in college?
- What pedagogical approaches are common among high school teachers who consistently send well-prepared students to college?
- Given their students' performance in college, how can high schools change their curricula and instruction to improve student readiness for college?

Publicly report on student progress and success from high school to postsecondary education. To be effective in improving college readiness, states should establish student-achievement objectives that require the education systems to collaborate on reaching them. Determining how to use the information to improve teaching and learning is an ideal area in which high schools and colleges should collaborate. For example, high schools should use data about their graduates' performance in college to improve their curricula, instruction, and grading practices.

Promising State Policies that Implement These Policy Levers

It is useful to highlight some particularly good state studies and actions regarding college student risk factors and college support for struggling students. A superb report was released on February 12, 2007 by the Kentucky Council on Postsecondary Education through their Developmental Education Task Force (http://cpe.ky.gov/committees/develop_ed/). It is entitled *Securing Kentucky's Future*. It has six core recommendations:

1. Update college admissions regulations
2. Create an integrated accountability system tied to performance funding
3. Fund infrastructure improvement
4. Align college readiness standards and tie to educator professional development
5. Better link educator preparation to college readiness
6. Develop early student interventions

Among the specifics in the report is a detailed plan on how to help students with poor college preparation once they enter college. A key passage is quoted below:

Best practice, as implemented in the Council's admission regulation, will require that underprepared students (a) receive developmental help in their first semester of college (or perhaps before that in summer workshops); (b) be required to stay in developmental education until they successfully complete the course(s); and (c) take the appropriate credit-bearing course(s) immediately following completion of developmental work. Implementing these changes will require improved (and more directive) advising, revisions in course registration procedures, and additional resources to increase the availability of developmental education in the first semester for all students in need.

The University of California 8 Campus System Aligns Secondary School Course Preparation with UC Expectations

In order to specify necessary content and skills within high school courses and provide clearer signals to high school teachers and students, UC has created several initiatives. One of these is to influence course content in specific high school A-G courses. The term A-G means that UC requires a minimum of 4 years of English, 3 years of mathematics, 2 years of lab science, two years of history social science, and two years of languages and electives. UC is concerned with what content and skills are in these required A-G high school course labels. UC content/skills specifications for high school courses are a defacto norm for high schools to meet in their course syllabi and class schedules. A-G is a pattern of study that assures the UC faculty that high school students

attain a general level of knowledge that will provide breadth and perspective at a new, more advanced level of the university. These UC course expectation statements provide a specific direction and framework for what needs to be included within a specific A-G course, but not how to teach the course in high school. Before discussing A-G in depth, I will describe a second UC initiative for K-16 alignment.

Six universities within the UC system participated in “Standards for Success,” (S4S) a project by the nation’s leading research universities (www.s4s.org). Standards for success is not a formal part of A-G, but it demonstrates critical thinking and study skills essential for success at UC. I was the major subcontractor for this study conducted by the University of Oregon’s Center for Educational Policy Research. The study took two years in which over 400 faculty and staff from 20 research universities participated. UC system played a major role in S4S, and hosted the California statewide meeting in Berkeley. The major question each professor in each disciplinary area was asked concerned what students must know and do to succeed in entry level undergraduate courses. National academic content standards were used for comparison (e.g. Science for All Americans by the American Association for the Advancement of Science). The standards were peer reviewed in several cycles in order to ensure their validity.

Success in university is different from high school because universities facilitate greater specialization. So even an A grade in a high school course may not be sufficient. S4S, Science and Society standards include knowledge and skills that students should have to succeed in any science course. High school courses that do not include Standards for Success standards probably will not prepare their students sufficiently for college success.

The A-G Course Approval Process

The A-G course approval process has improved dramatically over the past six years. For example, the UC did not provide sufficient feedback for schools about why courses were not approved, and the entire process was not seen as user-friendly for high schools. Negative comments from high schools and concerns about the A-G review

process led the UC Office of the President to make major changes. There is now a team of reviewers headed by an articulation coordinator, and includes many part-time participants from other UC departments, such as admissions. High schools agree that the development of a team is a step in the right direction. A-G does not constrain how a course is taught or prescribe specific pedagogy, but it does focus on specific standards outlined below.

The UC provides online checklists that indicate to schools the criteria against which submitted courses will be evaluated. Moreover, UC includes specific examples of courses that have been approved including:

- Course goals and major student outcomes
- Course objectives
- Texts and materials
- Key assignments
- Instructional methods (see attachment D for a specific example)

Assuming a school provides the necessary course information, the reasons a course could be rejected include:

- Insufficient academic/theoretical content;
- Focus is too narrow/too specialized;
- Attempt to address too many topics/lack of depth;
- Too much focus on career-related skills (application), rather than academics (concepts/theory);
- Too much focus on technology tools, rather than content knowledge; and/or
- A lack of prerequisites.⁶

High school teachers are usually responsible for seeking course approval, which is done on a first-come-first-serve basis. The deadline for submission is every February and the reviews are complete by April or May so that schools have enough time to inform students of any changes. At UC Office of the President, individual reviewers review the

⁶ Visual and Performing arts criteria are different than the other six subject areas. See http://www.ucop.edu/a-gGuide/ag/course_submissions/eval_checklist.html for the checklists.

submissions, bringing any questionable applications to the full committee for discussion. The UC asks principals for their high school's course list every year and the vast majority of high schools throughout California comply with that request every year.

Improving College Knowledge Through Better K-16 Signals and Relationships

There are currently few adequate K-16 policymaking mechanisms at the state level to address the four policy levers to improve transition from secondary to postsecondary education. While there are local partnerships focused on outreach issues in different sites around the country, there are few levers 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 amongst a dozen groups, creating a fragmented policymaking approach.

Admissions, placement standards, and institutional arrangements are policies that communicate signals, meaning, and expected behavior to students and secondary schools. The concern is with how admissions and placement-related standards and policies promulgated by states and postsecondary education institutions are understood, acted upon, and interpreted by parents, students, and secondary school personnel. An underlying assumption 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.⁷ Incentives that will help students be admitted to universities, meet placement exams standards, and complete their desired degrees (or community college competencies). The current flow of signals about necessary college knowledge is unequal between high and low socio-economic students. Signals reformulate 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

⁷ For the powerful impact of extrinsic motivation for high school students, see Lawrence Steinberg, (1996), *Beyond the Classroom*. New York: Simon and Schuster.

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.⁸

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, 1996). Crucial aspects of appropriate signals and incentives are simplicity, clarity and consistency (Henry, 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. 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. This framework is built upon related work by education scholars such as Flint (1992), McDonough (1994), and Rosenbaum et al. (1999). The use of the term “signaling” is slightly different than that of John Bishop and other economists who have explored this topic.⁹ As Bishop uses the term, signaling refers to the attributes—achievement, education level, and ability—that students consciously attempt to transmit to employees and colleges. This use focuses on the signals that *policies and practices* send to students and schools (Mow and Nettles, 1990). School site educators, including but not limited to counselors, can be purveyors of information (e.g. signals) about what students need to know and be able to do in order to succeed at postsecondary education. Many teachers play a large role in providing signals, especially for high achieving students.

Since many postsecondary institutions are minimally selective or non-selective, students need to be motivated to meet a preparation standard, rather than beat the

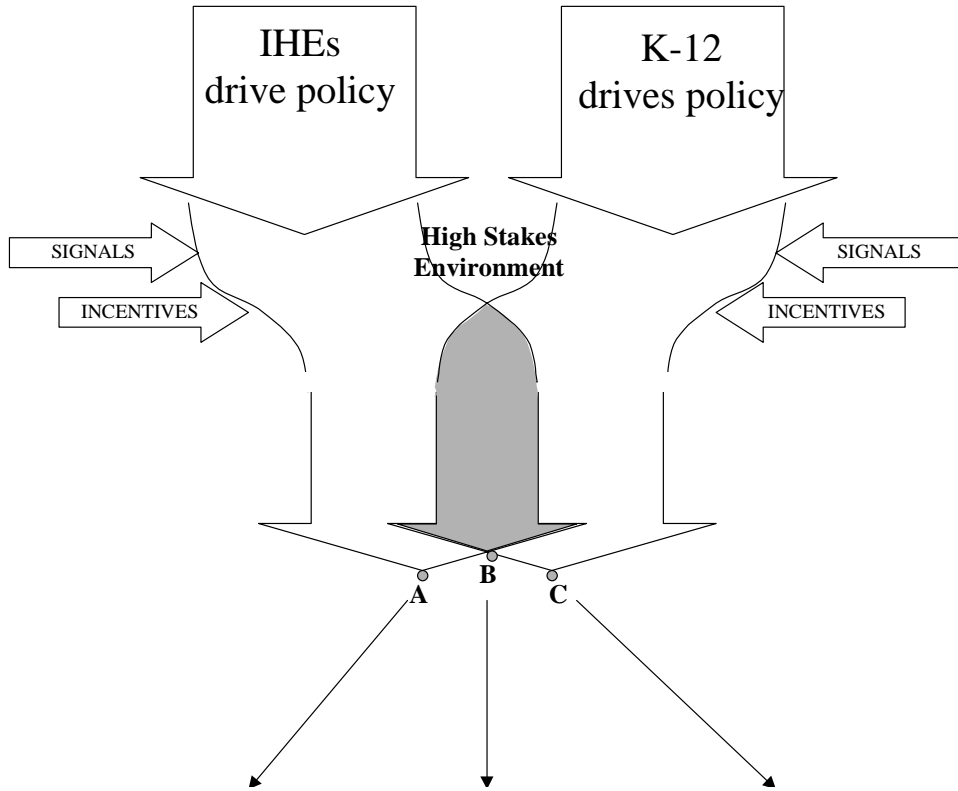
⁸ Intrinsic versus extrinsic incentives, see Edward L. Deci, Richard Koestner, and Richard Ryan, “Extrinsic Rewards and Intrinsic Motivation in Education: Reconsidered Once Again.” *Review of Educational Research*, Spring 2001, Vol. 71, No. 1, pp. 1-27. Especially useful for our framework is the rejoinder to the article in the same issue, July Cameron, “Negative Effects of Reward on Intrinsic Motivation: A Limited Phenomenon,” pp. 29-42.

⁹ For a similar definition of signaling to ours, see Fuhrman (1996).

competition. This enhances motivation because success is attainable, and effort will have a pay off in postsecondary attainment (Powell, 1996). Some secondary students have a higher standard to meet for acceptance at very selective universities. These students may be motivated to surpass their previous level of academic performance. However, low income and minority students are often placed in low-level academic high school courses and tracks that decrease both motivation and preparation. Since it is easy to enter so many four-year and two-year schools, there are scant incentives to work hard in high school (Conley, 2001).

A conceptual framework (see Figure One) guides research questions and provides an analytical lens. The key is whether K-12 and postsecondary signals and incentives for students are delivered in isolation from one another or through interaction and reinforcement. There are 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, while A and C have more serious shortcomings.

BRIDGE PROJECT - CONCEPTUAL FRAMEWORK



+ is positive influence

- is negative influence

	<u>A</u> Policy driven by IHE's in isolation from K-12	<u>B</u> Policy driven by combined efforts between IHE's and K-12	<u>C</u> Policy driven by K-12 in isolation from IHE's
K-12 stakeholders' understandings of K-16 policies/college knowledge	+ for elite pool of students - for more students - for higher ed since it has less information on K-12 students	+ for more students + mutual reinforcement of understandings and expectations	- for more students enrolling in postsec - for K-12 since less info on postsecondary education policies
K-12 stakeholders' aspirations and actions	- Sends confusing signals that might negatively impact student aspirations.	+ For mutually reinforced signals that could positively impact student	- Sending confusing signals that might negatively impact high school student

		postsec aspirations.	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 postsec.	- for more students not aspiring and completing postsec.
	↓	↓	↓

College Preparation/Qualification	+ for elite pool of students	+ for all types of students	- for most students
Post Secondary Success	- Those not in elite pool face increased remediation and drop-out rates and decreased graduation rates.	+ Decreased remediation and drop-out rate and increased graduation rate for more students.	- Increased postsec remediation and drop-out rate and decreased graduation rate for more students.
<ul style="list-style-type: none"> • Frosh Placement and remediation • Drop-out • Graduation rate 			

Signals and incentives sent along either through a separate postsecondary education or K-12 system results 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. Clear and strong signals are related to outcomes such as less remediation and completion of a student's desired postsecondary program (Henry, 2002).

Joint efforts between postsecondary and K-12 education (see column B in framework diagram) 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 will 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 via simple, visible, or discrete indices such as standardized test scores, honors and advance placement 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 path "B" in the framework is exemplified by Kentucky, where 8th Graders take ACT Explore and 10th Graders take a ACT PLAN assessment that tests English, math, reading, and science reasoning. All Kentucky students take ACT in the 11th grade. 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 eliminated its internal math and English placement tests, and instead, will be using an expanded high school California Standards Test for placement. This will provide secondary students with early indicators of their probable placement at Grade 11 before they reach a California State University. Finally, the Georgia Hope Scholarship Program 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, P. 96). These examples of well-thought out and articulated policies are suggestive of what can be done on a much larger scale.

If the K-12 schools are left to carry the brunt of college knowledge and preparation signals, then more students will receive vague signals and lesser incentives for adequate preparation (see C in framework diagram). 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.¹⁰ A survey of 26,000 high school teachers in 12 southern states found that only 38 percent believed that it was “very important” to “help all high school students master

¹⁰ Metropolitan Life Survey of the American Teacher, 2000, “Are We Preparing Students for the 21st Century?” (New York: Metropolitan Life, September 2000).

the essential content taught in college preparatory language arts, mathematics, and science courses.”

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 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.

There are many factors that lead 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;
- Improved time to degree rates for postsecondary students.

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