

with regard to becoming eligible for admission to the UC System.

In 1997, the UC Office of the President conducted a study to investigate the likely result of removing the SAT-I as an admission criterion. The study considered how eliminating the use of the SAT-I would affect UC eligibility rates. It found that such an action would produce small changes in the eligibility of African Americans (from 2.8 percent to 2.3 percent), Asian Americans (from 30 percent to 29 percent), and Latinos (from 3.8 percent to 4.0 percent); the largest change would be an increase in the eligibility rate for whites (from 12.7 percent to 14.8 percent). A California Postsecondary Education Commission report on eligibility found that only 2.5 percent of California's public high school graduates are ineligible to attend a UC campus solely on the basis on inadequate test scores. Approximately 63 percent of graduates were ineligible because they had major course omissions or grade deficiencies, or had attended a high school that has a college preparation program that is approved by the UC system.⁵¹

While many high schools offer honors courses, they can vary in quality depending on the pedagogy and curriculum. The Advanced Placement (AP) program, sponsored by the College Board, included college preparation courses and tests gauged to an external standard. AP exams are given to high school students who take AP courses in core subject areas. A passing grade on an exam is accepted by many colleges and universities for college credit. There is little consistency, though, in the system. Students can score well on an AP exam, but depending on the higher education institution, credit can be denied. High AP

scores on the English and mathematics exams also exempt students from taking those placement exams at UC and CSU institutions. The UC System also allows extra weighting of grades earned in AP courses completed during a student's sophomore and junior years in high school. California's 1999 Advanced Placement exam passing rate of 14.8 (per 100 test-takers) is above the national average of 9.4.⁵²

Bringing it All Together: K-16 Policy Alignment

The issues of articulation and of connecting K-12 and higher education standards affect a large proportion of California's college age population. A greater percentage of California students are attending the state's two and four-year institutions of higher education than ever before. In 1996, over 66 percent of California high school seniors enrolled in a postsecondary program within two years of graduation, and that is expected to grow in the 21st century.⁵³

Two major issues that arise when K-16 alignment discussions are held is that K-12 and higher education have different missions and not all students who graduate from K-12 enter higher education institutions. But aligning policies between the two systems would not change the mission of either entity, nor leave out the noncollege-bound. Rather, if all high school students are held to high standards that are aligned with college entrance requirements, it could increase standards for all students and could help ensure that all students receive clear messages about what they need to know and be able to do to enter college. K-16 reform as described in this chapter could provide previ-

ously noncollege bound students with the information and opportunity necessary to make the choice to pursue postsecondary education. It could also address equity concerns in the wake of Proposition 209 by ensuring that every high school senior's curriculum relates to college or university entrance standards. This is crucial, given that approximately 70 percent of all high school graduates will attend some form of postsecondary education. This, in addition to a well-conceived and implemented K-16 data and accountability system, could cut down on the need for remedial or developmental education. Approximately 50 percent of all college and university students in the state enroll in some form of remedial education during the course of their college-going years.

Challenges

California is striving to align standards and assessments within the K-12 policy arena. Another challenge is to link K-12 and higher education policies. The lack of compatibility between the two systems is evident in two ways: 1) policy-making bodies in the two education sectors have minimal interaction and opportunities to collaborate, and 2) assessments and other policies are not aligned across the K-16 system in terms of what they are asking students to know and be able to do. None of the state's public higher education admission and placement exams is aligned with the California State Board of Education's curriculum frameworks or the augmented STAR. Compounding this is the fact that the various tests high school students take all have different purposes, including preparation for college, freshman placement, prediction of university performance, determining trends in performance on statewide K-12 standards, and com-

paring state test results to national norms. While K-12 and higher education have different purposes—and, consequently, the assessments will differ—we argue here that the process can be streamlined, data can be made more useful for all stakeholders, and that all stakeholders should be brought to the table to discuss these issues.

It remains to be seen whether the STAR assessment system for eleventh graders and college entrance level policies will be aligned in order to send clear messages about what students need to know and be able to do. This challenge will, perhaps, be more difficult than the one facing the K-12 system since the success of the effort will depend not only on the success of the alignment efforts in the K-12 system, but on clear articulation of what students need to know and do to enter college at all levels of the higher education system, agreement among K-16 stakeholders, and an institutional center from which reforms can be made and implemented. Currently, many of the reforms in one system are made in isolation from the other system, although recent discussions of test consolidation have moved toward a K-16 inclusive reform environment.

Thus, from an assessment perspective, much work remains. The table below provides brief snapshot data regarding the major assessments and standards utilized in California during the transition between high school and college.

The Education Trust, a national nonprofit focused on K-16 reform, recommends that states take the following actions:

- Make sure that the content of all assessments used at the high school exit level and college entrance level are made public and shared widely.

- All high school students should be required to complete a rigorous, college preparatory, academic core.
 - Redundancies and mixed messages in assessment at the juncture of high school and college must be eliminated.
 - Reward high performing students by enabling them to begin college work early; provide extra time and help for high school students who are struggling.⁵⁴
- The California Education Roundtable took a slightly different perspective than did the

Test or Standard	Purpose
	K-12 Assessments and Standards
STAR	Measures knowledge of broad content areas; allows for district and national comparisons.
CA Augmented STAR	Augmented items are developed to test performance against CA standards.
STAR SABE/2	Spanish language test given to students to gauge command of content in primary language.
CAAAS Matrix	Proposed as a measure of progress toward standards. Matrix sample would assess a broad array of content items.
Golden State Exams	End-of-course exams. Student recognition for high performance and seal of merit.
Exit Exam	Will be required to pass in order to earn high school diploma.
Tests of General Educational Development	Provides an alternative way to complete high school.
California High School Proficiency Exam	Proficiency test that allows students to graduate early from high school.
State Content Standards	Outlines what students need to know and be able to do at each grade level.
High School Graduation Standards	Defines what students are expected to learn by the time they graduate from high school.
PSAT	Preparation for SAT-I; selection of National Merit Scholars
PLAN	Preparation for ACT; measurement of student knowledge.
NAEP ^{vi}	National exam that allows for comparison of performance across states.
Advanced Placement	High Scores on individual subject tests exempt students from certain baccalaureate courses.

Table 3. K-16 Assessments and Standards

Higher Education Assessments	
SAT	To predict readiness for college-level work. Used for college admission. Alternative to ACT.
ACT	Measures knowledge of subjects areas and predictor of college success. Used for college admission. Alternative to SAT-I.
SAT-II ^{vii}	Measure knowledge of subject areas; used for college placement.
Approximately 58 different Community College placement exams	Places entering students into appropriate courses.
UC English Language Arts placement test	Places entering students into appropriate courses.
CSU Entry Level English Placement Test (EPT)	Places entering students into appropriate courses.
CSU Entry Level Math Exam (ELM)	Places entering students into appropriate courses.

Table 3 continued. K-16 Assessments and Standards

Education Trust when it analyzed the state's K-16 policy environment and outlined the following problems and disjunctures:

- For many seniors, too little is demanded of them academically.
- The options for acceleration to college and the opportunities to sample college-level work are not equitably available for high school seniors.
- The senior year is not effectively employed to assist students in catching up and/or becoming fully prepared for college-level work or for the workforce.
- There could be more higher education courses offered at high school .
- By sending out early acceptance notification, colleges foster a slacking off of academic effort on the part of many seniors.
- The high school senior who is uncertain of his or her academic options has few opportunities to meet individually with an academic counselor.

- High school seniors are often unaware of their level of preparedness for college-level work, particularly in mathematics and English language arts.

The Roundtable recommends coordinating the multiple K-16 standards-development efforts.⁵⁵ Another crucial issue that is rarely addressed is that of the different teaching, learning, and assessment styles used in the K-12 system as compared to the higher education systems. Could one contributing factor to the need for remedial or developmental education be that students are underprepared for lecture styles and multiple choice exams utilized in many colleges and universities?

We propose that policymakers address the following questions in order to determine the depth of the disjunctures between the K-12 and higher education systems in the state. While we can address some of these issues, others need to be examined in close detail by educators, policymakers, and researchers.

How do the state's academic content standards and graduation requirements compare to the content of beginning level courses at the state's colleges and universities? If there is not a continuum of learning when a student leaves high school and enters higher education, that student can suffer, academically, in college. While we do not have data to address this question specifically, we can state that there is a gap between what is required to graduate from high school and what is required to become eligible for admission to the UC and CSU systems. While the curricular requirements have been well-aligned between the UC and CSU systems, they are not aligned with high school practices across the state. In 1997, the State Department of Education surveyed nearly 300 high schools regarding the nature of their high school programs. It reported that

California high schools are expecting to increase their high school graduation requirements in the areas of requiring 2 years of math, including algebra and geometry. Currently on 54 percent of high schools have this requirement, with 70 percent indicating that they will have such a requirement for the class of 2004. Currently about 80 percent of high schools require 4 years of English and 85 percent require 2 years of laboratory science. If all students are to pass a rigorous exit exam, the percent of students taking these courses, whether required as graduation criteria or not, may need to be increased.⁵⁶

Thus, high school graduation requirements often fall short of higher education admission requirements. This has implications if, for

example, the minimum high school graduation standards do not permit students to do credit level work in higher education, or if high schools' curricular offerings are gauged to low level graduation standards. Also, students are not aware of this disconnect, they might not be preparing adequately for higher education.

Is the STAR program assessment, including the augmented test, asking students to know and be able to do the same knowledge and skills that are required by UC and CSU admission and placement policies? How do the individual institutional placement exams relate to each other in terms of content, and to the STAR assessment? More specific details of differences between the *K-12 and post-secondary* assessments currently administered are outlined in a forthcoming study by RAND Corporation researchers. Researchers analyzed the alignment of mathematics content and format between the SAT-I, ACT, SAT-II, augmented STAR, Golden State Exams (High School mathematics, First year Algebra, and Geometry), and the CSU mathematics placement exam. Fewer than ten percent of the SAT-I and augmented STAR items required a memorized formula, in contrast to 25 percent of the GSE Geometry problems. Whereas the GSE Algebra and SAT-II mathematics level IIC assessments made little use of figures and tables, the augmented STAR and GSE Geometry exams included many illustrations. No more than 25 percent of the items found on California's university admission and placement assessments were seen as "authentic" or applied, as compared to 58 percent of the augmented STAR items. For college entrance exams such as the SAT-II and ACT, relatively

greater emphasis was given to Geometry and trigonometry, whereas trigonometry was largely absent from the CSU, SAT-I and augmented STAR exams.⁶⁴ As this brief discussion illustrates, the list of knowledge and skills required by the various exams is diverse, extensive, and confusing. While some content and structural misalignments may be necessary due to legitimate differences between the tests, California students are subjected to a babel of tests and standards that could be aligned better. In addition, unless the curriculum, standards, and assessments are carefully aligned across the K-16 system, the effectiveness of the proposed accountability system could be undermined.⁵⁸

Should the statewide accountability program currently being developed hold high schools accountable for offering college preparatory work including AP courses?

Should it hold higher education institutions accountable for graduating their students? As discussed earlier, the only data currently included in the accountability index are the STAR assessment results, although there are plans to increase the number of indicators and create a more comprehensive accountability system.

Can state education agencies link their databases in order to assess needs throughout the K-16 continuum? Can researchers and policymakers use the data to understand any current inequalities in terms of who enters and who graduates from higher education institutions in the state? Can issues such as college preparation be addressed by tracking student success in higher education by district or high school? It is impossible to address needs when there is not a comprehensive, linked, K-16 data system in the state. It is too soon to tell if the state's education databases will be linked. In

1999, AB 1570, sponsored by Villaraigosa, was chaptered. It requires the California Postsecondary Education Commission, in developing a comprehensive student database, to, "ensure that the database supports longitudinal studies of individual students as they move through the state's educational segments, that it provides for the interactive use of data, and that it provides each of the educational segments access to the data..."⁵⁹ A data exchange agreement has been formalized between the UC, CSU, and Community College systems to track UC outreach program participants into public higher education.⁶⁷ This is a start, but, in order to address needs statewide for all students, more work needs to be done create a K-16 data system.

Do the state's schools have a sufficient number of counselors whose main role is to advise students about college options? Do all students have early, repeated, access to college preparation information? Counselors in every state, and California is no exception, are overwhelmed by the variety of responsibilities they must fulfill every day. Counselors face a long list of roles, including scheduling classes, administering tests, and assisting students with emotional and psychological issues. Often, they do not have time to do one-on-one college counseling. California has one of the worst counselor-to-student ratio in the country.

Are there university outreach programs that are connected with local schools and districts? Are they connected with national, state, and local outreach programs? One of the challenges of the outreach environment in California is the proliferation of unconnected outreach programs. There is not a clear sense of the level of overlap, or the gaps, in types of

services or populations served. The joining of MESA, Puente, and EAOP is a good start. Additional research needs to be done in this area, in addition to more evaluative work.

Are there articulation agreements between public universities, community colleges, and high schools? California has strong articulation agreements between its higher education segments. What is lacking is a K-16 data system that can track student progress through the segments.

Is there an institutional center or mechanism that will allow K-12 and higher education stakeholders to work together and overcome fragmentation concerning such areas as policy alignment, faculty interaction, teacher training and pedagogical issues, and K-16 information systems? No one is held accountable for K-16 reform in California. There is no entity charged with developing and implementing K-16 reform. Many of these issues, such as equitable access to college preparatory courses and to higher education in general are politically charged issues that can quickly turn into turf battles. A group needs to be identified that will have the authority to represent all stakeholders. Groups such as the Education Roundtable and the Intersegmental Committee of the Academic Senates are not appropriate bodies since they do not include a representative from the Governor's office, or from the community at large. Until such a group is put together, many of these reforms will be difficult to tackle.

Opportunities for Change

Unlike many other states, California has several intersegmental groups that can begin to work

together across sectors. Such groups as the Education Roundtable, the California Postsecondary Education Commission, the Intersegmental Committee of the Academic Senates of the UCs, CSUs, and community colleges are all in good positions to work together with other K-16 stakeholders to create a more aligned system. The K-16 policy environment is slowly evolving into a more coherent whole, rather than disparate pieces.

It will be crucial to bring K-12 and higher education stakeholders together, including Governor Davis's key education aides, to create a more cohesive system of education in California. California educators and policymakers must create an institutional center for these reforms. If improved alignment is to occur, the K-12 and higher education systems need to determine whether one system will adopt the others' assessments; whether yet another assessment will be adopted; if a separate K-12 and higher education assessment will be acceptable, but data will be shared and utilized across systems; or if the status quo will remain.⁶¹ Curricular alignment needs to be addressed as well. We applaud California's educators, researchers, and policymakers for the efforts made to date, and urge them to address the issues and questions raised in this chapter. This work must be completed while balancing all the other facets of education, especially 1) creating incentives for all K-16 stakeholders to take an active role in K-16 reform, 2) ensuring that changes improve opportunities for all students to enter and graduate from higher education, and 3) making sure that capacity issues are addressed. This is a tall order to fill, but if California succeeds it could become a national model for K-16 reform.

Notes

- i. The augmented STAR is the statewide K-12 assessment that is aligned with the state's content standards. The Golden State exams are the state's end of course exams that are not aligned with the content standards.
- ii. The Round Table is an association of the chiefs of the systems (or segments) of education in California. Its members include the State Superintendent of Public Instruction, the President of the University of California, the Chancellor of the California State University, the Chancellor of the California Community Colleges, the President of the Association of Independent Colleges and Universities, and the Executive Director of the California Postsecondary Education Commission. The Round Table focuses on issues affecting all segments of education. Its agenda is implemented through working committees composed of staff, faculty and students managed by its operating arm, the Intersegmental Coordinating Committee.
- iii. EAOP, MESA, and Puente have joined forces to increase their efforts in the development of individual academic plans and preparation of students for college tests. The new entity is called the EMP (Early Mesa Puente) Outreach Collaborative.
- iv. Most students in California who proceed to a public university in the state take the SAT, rather than the ACT.
- v. The SAT, administered by the College Board, is used by institutions of higher education as an indicator of students' readiness to take college-level work. This is a different exam than the Stanford 9, also called the SAT 9, which is used as a statewide K-12 assessment in California.
- vi. NAEP is the National Assessment of Educational Progress.
- vii. Universities in the UC System require that applicants submit three SAT-II tests: Writing; Mathematics level 1, 1c, or 2c; and one of the following: English literature, foreign language, science, or social studies. These are used for admission and placement purposes.
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