



Overcoming Barriers to College Success Through Actionable Data and Collaboration

A Discussion Series

September - December 2013

From September to December 2013 a series of discussions titled “Overcoming Barriers to College Success Through Actionable Data and Collaboration” brought together Pre-K through 12, community college, university and business leaders to identify common goals, language and solutions for improving academic outcomes and creating a successful pathway to post-secondary education and living wage jobs.

Attached are issue papers that accompanied each of the discussions in the three-part series which explored challenges to and solutions for college success in the following areas:

1. Creating a Shared Pathway to College and Career Readiness by Connecting Pre-K through 12 with Post-Secondary Education
2. Increasing College Completion by Reducing the Need for Remedial Coursework through the Use of Effective Interventions and Multiple Measures of Placement
3. Targeting and Improving the Transition from Post-Secondary Education to the Workforce

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Overcoming Barriers to College Success Through Actionable Data and Collaboration

Using data and collaboration, educators and employers around the state are working together to identify challenges and solutions to create a successful pathway to college so that students can achieve the education and training needed to obtain living-wage jobs. Areas being explored for improvement along the education-to-workforce pipeline include:

1. **Creating a shared pathway to college and career readiness by connecting Pre-K through 12 to post-secondary education;**
2. Increasing college completion by reducing the need for remedial coursework through the use of effective interventions, support and multiple measures of placement into college-level courses, and;
3. Targeting and improving the transition from post-secondary education to the workforce.

This paper examines the first of these three areas:

Creating a Shared Pathway to College and Career Readiness by Connecting Pre-K through 12 to Post-Secondary Education

Why College Readiness?

There is little question about the need for students, educators and the business community to focus on college and career readiness. Research demonstrates that students who are college ready, generally meaning they can begin post-secondary education without being placed in remedial courses, are much more likely to complete college. For students placed into remediation, the outlook is grim. According to the U.S. Department of Education, only 17 percent of students enrolled in remedial reading and 27 percent of students enrolled in remedial math ever obtain a bachelor's degree. Additionally, just 25 percent of students in remedial coursework in community colleges earn a certificate or degree within eight years.

Without a pathway to a post-secondary certificate or degree, students face a difficulty entering the workforce. Most jobs, including high-demand jobs in health care, energy, and technology, now require a post-secondary certificate or degree. Consider:

- Since the 1970s the percentage of jobs requiring a post-secondary education has grown from 28 percent to 59 percent, with 70 percent of the increase occurring in jobs that used to require no more than a high school diploma.¹
- By 2020, U.S. companies will need to hire 123 million high-skill workers, but there will be only 50 million workers who qualify for these jobs. More than 150 million Americans will be competing for an estimated 44 million low-skill jobs.²

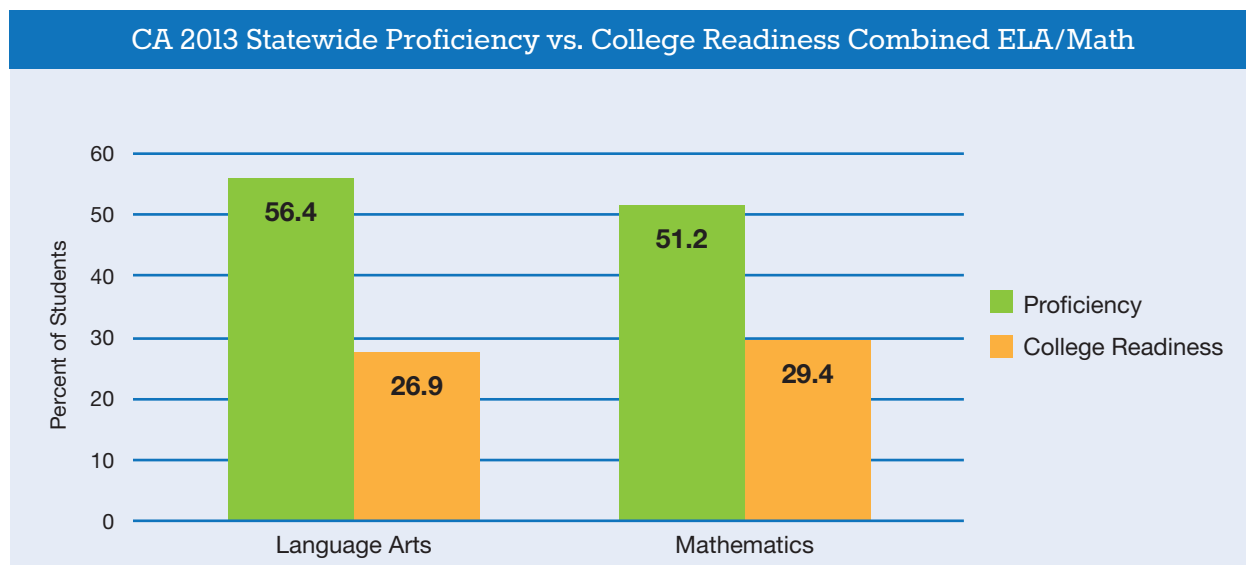
Lacking the necessary education to compete in our economy, students unable to successfully pursue post-secondary education will likely be relegated to a life of low-skill, low-wage jobs, or worse, chronic unemployment.

Upon review of actionable student data, we begin to understand that academic proficiency, long considered the goal for Pre-K through 12 education, is no longer enough when it comes to college readiness. If we are to provide students with the best opportunity to pursue a post-secondary education that leads to living wages jobs, college readiness must be our new North Star.

The Challenge

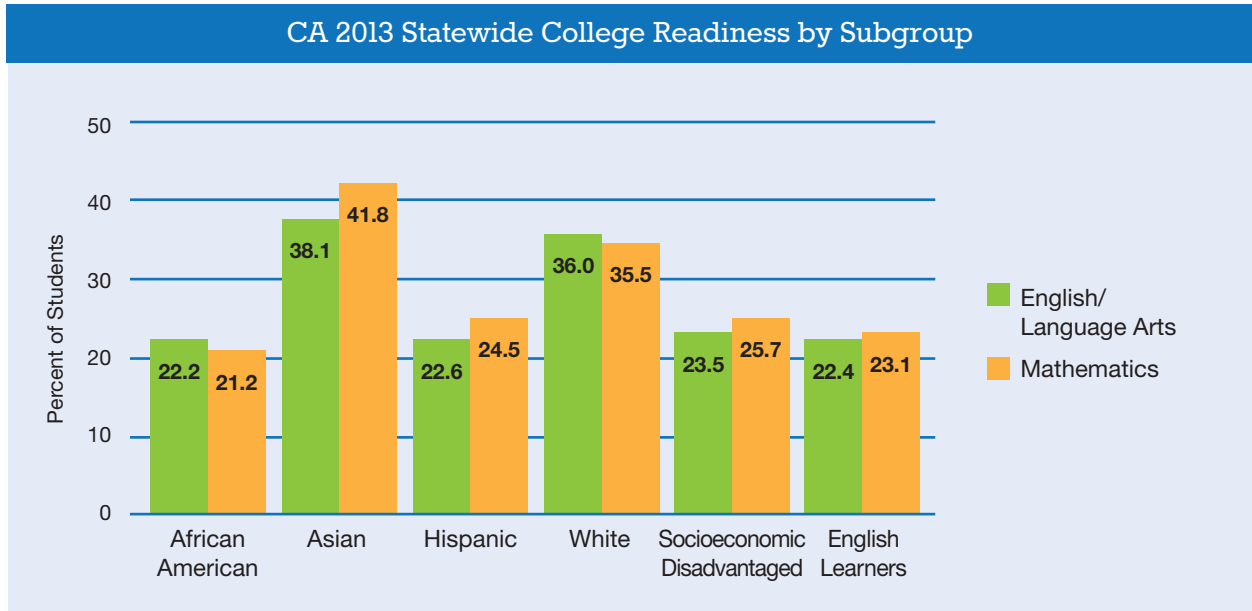
Unfortunately, California schools and school systems, along with those in most states in the country, fall short when it comes to college and career readiness. The following chart demonstrates the significant gap between California students' proficiency and their college readiness.

While English Language Arts proficiency for all California public school students was 56.4 percent in 2013, 26.9 percent of these students have a likelihood of being college ready by the 12th grade. Math proficiency versus college readiness for California students was similarly disappointing with 51.2 percent of students proficient and just 29.4 percent college ready.³

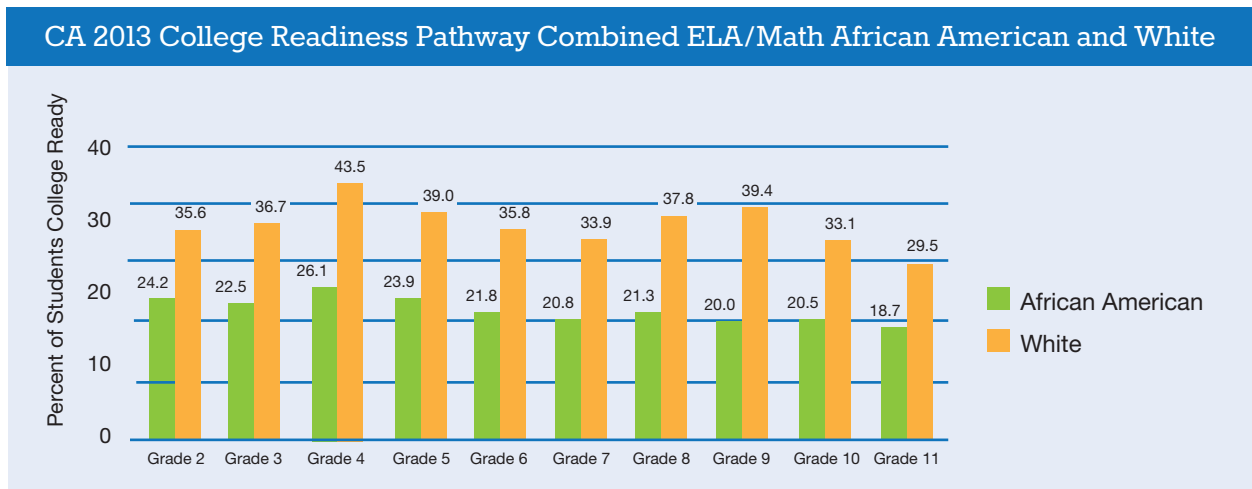


1. A. Carnevale, N. Smith, J. Srohl, Help Wanted: Projections of Jobs and Education Requirements Through 2018 (Washington, DC: Georgetown University Center on Education and the Workforce, 2010).
2. Gordon, E. (2009). The Global Talent Crisis. *The Futurist*, 43(4) Sept/Oct: 34-39
3. College readiness charts utilize a backward mapping analysis of students who tested college ready on the ACT to their previous performance on state standardized assessments to predict the percentage of students in each grade on track to be college ready by high school graduation.

The outlook is worse for historically underserved students, with just 23.3 percent of Hispanic students college ready and 22.3 percent of African American students college ready in 2013. Socio-economically disadvantaged students and English language learners experienced similarly discouraging results.



Although attention to college readiness has largely focused on high school performance, data also identifies college-readiness challenges beginning in early elementary school and all along the education pipeline. The chart below demonstrates that the likelihood of students being college ready is low as early as second grade and shows more alarming disparities between white and African American college readiness.



The result of this lack of college readiness is a massive need for postsecondary remediation – topping 70 percent of all college-going high school graduates. This means as students enter our colleges and state universities they are placed into remedial math and English courses that provide no credit toward a degree, hence delaying, if not denying, students’ completion of a certificate or degree. The charts below show the completion rate for California students who enter California Community Colleges in remedial coursework versus those who are college ready. Clearly, the outlook for students entering college in remediation is dismal.

Percentage of degree and/or transfer-seeking students tracked for six years through 2011-12 who completed a degree, certificate or transfer related outcomes.

COLLEGE PREPARED

71.2%

Gender	%
FEMALE	73.7
MALE	68.5

Age	%
UNDER 20	73.1
20-24	61.7
25-49	50.8
50 OR OVER	44.8

Ethnicity/Race	%
AFRICAN AMERICAN	65.9
AMERICAN INDIAN/ ALASKA NATIVE	59.5
ASIAN	82.2
FILIPINO	71.4
HISPANIC	64.7
PACIFIC ISLANDER	58.3
WHITE	70.5

UNPREPARED FOR COLLEGE

41.1%

Gender	%
FEMALE	42.0
MALE	39.9

Age	%
UNDER 20	43.3
20-24	32.8
25-49	31.7
50 OR OVER	28.0

Ethnicity/Race	%
AFRICAN AMERICAN	35.0
AMERICAN INDIAN/ ALASKA NATIVE	31.6
ASIAN	57.9
FILIPINO	43.1
HISPANIC	34.8
PACIFIC ISLANDER	35.8
WHITE	44.0

California Community Colleges Student Success Scorecard

If we do not work to remedy the shortfalls in students' college readiness, the costs will be staggering. State and national studies estimate that California will be over 2 million college certificates and degrees short of meeting labor market demands by 2025.⁴ In a human context, this disconnect threatens the quality of life for millions of California students unable to realize a college education and the pursuit of a fulfilling career.

Getting all California students to college readiness is a heavy lift, but this goal can be achieved. Across the state, some schools and school systems are preparing students, even historically underserved students, for college, and their practices should be investigated and emulated.

Finding Bright Spots and Solutions

Increasing college readiness has been a growing priority for education stakeholders over the past decade. A greater focus on beginning college preparation in middle school now exists. High schools and colleges have begun working together to improve college transitions and completions by reducing the need for remediation. The K-12 Common Core State Standards being implemented in states across the country have been designed to give students the rigorous content knowledge and critical thinking skills that will prepare them for college and workforce success. And the business community is beginning to seek collaboration with educators to improve the education-to-workforce pipeline.

In addition, schools and school systems, colleges, and universities are increasingly using actionable student data to identify challenges and to collaborate toward finding solutions for college-readiness. Solutions can be found reviewing data from higher performing schools, colleges and universities and then investigating these “bright spots” to understand what is working and why. Working together, education stakeholders can find the key to college readiness, and thus opportunity, for all students.

4. The Road Ahead: Higher Education, California's Promise, and Our Future Economy, California Competes Council 2012



Overcoming Barriers to College Success Through Actionable Data and Collaboration

Using data and collaboration, educators and employers around the state are working together to identify challenges and solutions to create a successful pathway to college so that students can achieve the education and training needed to obtain living-wage jobs. Areas being explored for improvement along the education-to-workforce pipeline include:

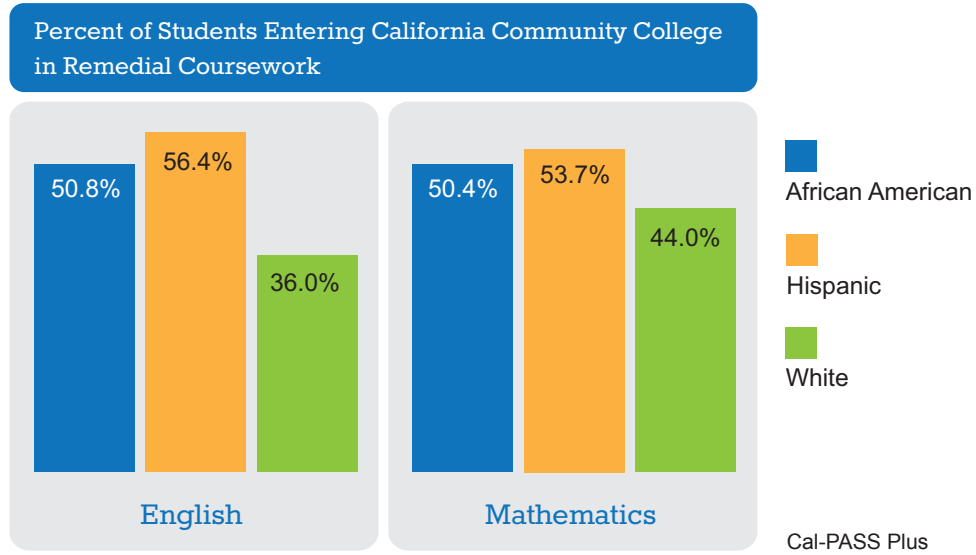
1. Creating a shared pathway to college and career readiness by connecting Pre-K through 12 to post-secondary education;
2. **Increasing college completion by reducing the need for remedial coursework through the use of effective interventions, support and multiple measures of placement into college-level courses, and;**
3. Targeting and improving the transition from post-secondary education to the workforce.

This paper examines the second of these three areas:
**INCREASING COLLEGE COMPLETION BY REDUCING
THE NEED FOR REMEDIAL COURSEWORK THROUGH
THE USE OF EFFECTIVE INTERVENTIONS AND
MULTIPLE MEASURES OF PLACEMENT**

College and University Remediation in California

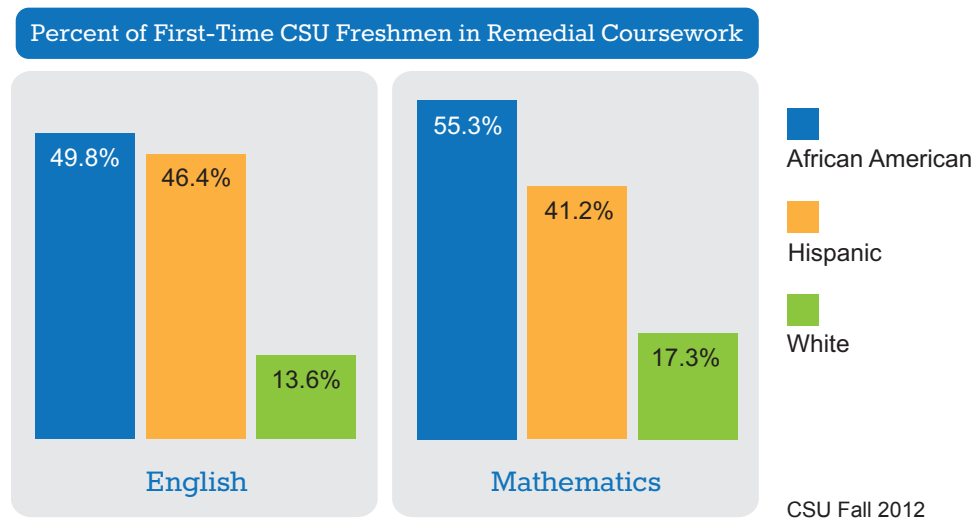
It is no secret that a large majority of California students are entering our community colleges and state universities unprepared to take college level courses in English and mathematics. The challenge of preparing students academically for college begins in early grades of K-12 education and continues until students make the transition from high school to college, if they make it there at all. The transition is confounded by placement tests at community colleges and universities that often direct students to take non-credit bearing remedial courses that are as many as 3-4 levels below entry-level college courses.

At our California Community Colleges, 70 percent of entering students require remediation in English, mathematics or both¹. Remediation figures are much higher for Hispanic and African American students, demonstrating a persistent achievement gap that stretches generally from K-12 to college and often beyond.



In the California State University system, more than 60 percent of first-time freshmen require remedial education in English, mathematics or both. These students have taken college preparatory courses and earned at least a B average in high school but are still unprepared to begin credit-bearing, college-level coursework.

In looking at specific subjects for freshmen entering CSU, we also see that African American and Hispanic students face an alarmingly disproportionate achievement gap when it comes to remediation. African American students are three times more likely to face remediation than their white counterparts, and Hispanic students are more than twice as likely.



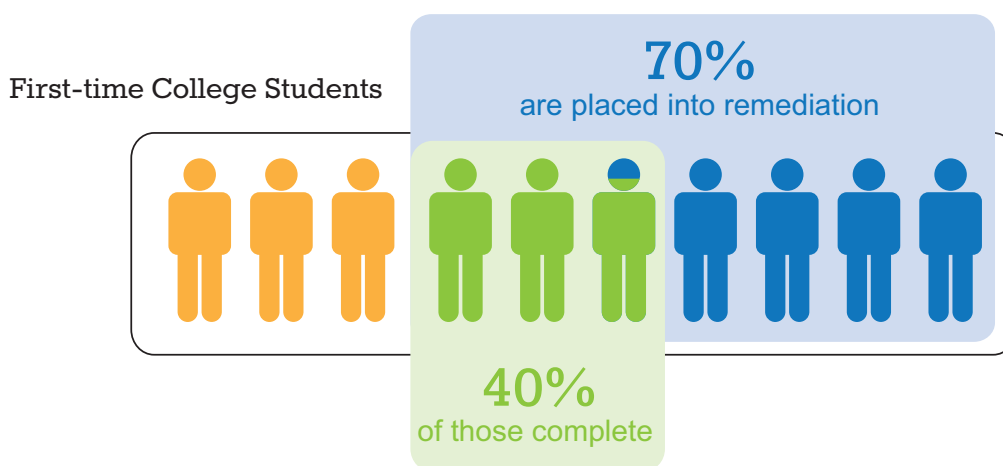
1. Total remediation figures combine unduplicated students who need remediation in one or more subjects. This applies to both figures quoted for community colleges and CSU. The charts on page two disaggregate the remediation percentages by subject.

Private schools are also faced with addressing students' lack of college readiness. Nationally, remediation for incoming freshman in private, not-for-profit four-year universities is about 15 percent.²

What Are the Stakes?

The consequences of California's remediation problem are far reaching.

Seventy percent of California community college students start out in remedial English or Math, or both. The outcomes for those students are disturbing: only 40 percent of students requiring remediation complete a certificate, degree or transfer-related outcome in six years. For Hispanic, African American and other minority students, completion rates are even lower. Based on these figures, a typical scenario of attrition for 10 students would look like this:



At CSU, where half of all students do not complete a degree after six years, students in remedial coursework face challenges similar to their counterparts in community colleges. The economic and social costs of the failure of so many of our students to succeed in post-secondary education are high:

- According to a Public Policy Institute of California (PPIC) Study titled “Closing the Gap: Meeting California’s Need for College Graduates,” California faces a shortage of almost a million baccalaureate degrees by 2025 to fill workforce needs.
- The 2012 U. S. Census shows Hispanics make up nearly 40 percent of California’s population and African Americans make up about 7 percent (in California’s K-12 education system, Hispanics now make up a majority of all students). The high remediation and low college completion rates for Hispanics and African Americans will leave many ill-equipped to obtain living wage jobs.
- Without a skilled workforce to meet labor market demands, California’s economic outlook is bleak. Companies seeking to compete and to grow face an unreliable workforce and may be forced to move out of state and/or outsource skilled positions. Furthermore, California will have difficulty attracting new businesses that would contribute to the state’s economic growth.

2. National Center for Education Statistics. First-Year Undergraduate Remedial Coursetaking: 1999–2000, 2003–04, 2007–08. January 2013

- The cost to California's taxpayer-funded colleges and universities is staggering. California community colleges spend over \$500 million annually for remediation, and state universities spend between \$40-50 million.

Why Are We Here?

The problems associated with remediation are clear, but the reasons for high levels of remediation are varied and in some cases, not yet identified.

- Many K-12 students, especially those who are historically underserved, never take the coursework necessary to prepare them for post-secondary education because there is a focus on graduation, not college readiness.
- Research has shown that using a single placement test does not always provide a complete measure of students' ability to succeed in college-level coursework.
- When students do not take rigorous, challenging courses, particularly mathematics, in their final years of high school they may not attain or retain the information needed to do well on college placement tests or courses – a situation perpetuated by insufficient course-taking requirements for graduation in our high schools.
- Students also may not realize placement tests are high stakes and thus, do not properly prepare or take them seriously.
- Many students simply have not become proficient in the subject matter needed to enter college-level courses and thus, remediation is necessary.

What Is Being Done?

From K-12 to post-secondary institutions, educators are working to understand the reasons for and ways to address the high levels of remediation in California. They are finding that we can no longer take a "one size fits all" approach to placement and interventions.

Multiple Measures of Placement

Efforts to reduce remediation through more thorough evaluation of student preparedness using "multiple measures" to inform placement decisions is currently receiving much attention. This method of determining whether graduating seniors are prepared to enter college-level English and math utilizes high school grades, course taking and other measures of performance to predict appropriate placement, in addition to a standardized placement exam.

- A recent partnership between Long Beach City College and Long Beach Unified School District known as "Promise Pathways" utilized transcripts for placement in 2012, placing an initial group of 1000 students using a multiple measures approach. The early results show that Long Beach City College could significantly increase the number of students placed into college-level courses with little to no decline in student success in those courses.
- To determine whether the multiple measures placement approach can be applied more broadly, the non-profit Research and Planning (RP) Group has conducted a pilot study to test this placement method using data from colleges and school districts of diverse sizes, locations and student populations. The pilot was able to predict similar results realized by Long Beach City College. The RP Group is now expanding this STEPS study

(Student Transcript-Enhanced Placement Study) system wide and will provide research and analysis to Cal-PASS Plus to build predictive models of how colleges can effectively use multiple measures of placement to reduce remediation and increase student success.

Interventions

Efforts are also underway along the K-12 pipeline to better prepare students to begin their post-secondary education as well as to help them succeed once they enter college or university.

- More high schools are focusing on college readiness to help ensure students are directed into coursework that prepares them to enter college without remediation. And the implementation of the K-12 Common Core State Standards, which have a key focus on college and career readiness, also holds hope for decreasing the need for remediation.
- In addition, many colleges are collaborating with high schools to allow high school students to take “early college” or “dual enrollment” courses to prepare them for post-secondary education.
- The Academic Senate for California Community Colleges, among other collaborative efforts between college and high school faculty, has begun to develop and implement a “program of study” initiative working with high school counselors to help students understand what courses they need to take to be prepared to enter college and pursue a degree in a desired field.
- The California State University system has an on-going initiative called the Early Assessment Program (EAP) – a voluntary assessment for 11th grade students that provides an early warning of students’ academic readiness for college. Students who score at a college ready level are exempt from taking English or Math placement tests upon entrance to the CSU and can immediately enter college-level, credit-bearing coursework. If students are not found to be college ready in 11th grade, they have time to pursue coursework and supports to help them enter college-level English and math.
- An off shoot from the EAP, the CSU Early Start program, requires incoming freshmen to take summer coursework focused on addressing remediation before students are enrolled at a CSU campus.
- Programs to reduce the impacts of remediation include the Acceleration Project, which supports the state’s 112 community colleges to redesign their developmental English and Math curricula and increase student completion.

Taken together, these and other collaborative programs are working to reduce the need for remedial coursework and to increase college completion for California students but more work must be done.



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This paper examines the third of these three areas:
**Targeting and Improving the Transition from
Post-Secondary Education to the Workforce**

Education is critical to providing citizens with economic opportunity and strengthening our state's economic future. Ensuring all students receive the education they need to compete for well-paying, high-demand jobs is necessary for the success of both.

This paper explores some challenges to and opportunities for improving transitions from education to living-wage jobs and how data and collaboration can help improve the education-to-workforce pipeline.

Identifying Challenges

Several challenges exist in the effort to ensure successful student transitions from post-secondary education to the workplace and the pursuit of economic opportunity, including:

- A changing labor market;
- The need for increased collaboration between and among educational institutions and employers;
- An historic absence of consistent, longitudinal data on education-to-workforce outcomes, including labor market projections;
- An ongoing achievement gap, particularly in critical subjects; and
- Barriers to college completion such as remediation

Addressing these challenges will be key to improving education-to-workforce outcomes for students, educators and employers.

Labor Market Alignment and the Skills Gap

The U.S. labor market is changing. A majority of jobs now require some post-secondary education, including jobs that traditionally have not required formal education beyond high school, such as manufacturing and construction jobs. Positions related to computer design and technology, most of which require high-level math and problem-solving skills, have been projected to grow 45 percent between 2008 and 2018.¹ In addition, half of all jobs today did not exist 25 years ago, including many in the fields of technology and science, such as cloud computing and sustainable engineering.

The rapid change to the makeup of our labor market has created a **skills gap—meaning we do not have enough educated workers to fill current and future labor market demands.**

Indeed, a 2011 national survey² showed that 67 percent of manufacturers had a moderate to severe shortage of available, qualified workers, and that in the midst of the longest unemployment crisis in decades, approximately 600,000 manufacturing jobs went unfilled due to lack of a skilled workforce.

A more recent survey by McKinsey & Company found that fewer than half of employers believe that new graduates are adequately prepared for entry-level positions.³ The survey showed that youth agree with employers, with less than half believing they are adequately prepared to enter the workforce. **Additionally, less than half of students surveyed said they had a good understanding of which disciplines lead to professions with job openings and good wage levels.**

1. National Math + Science Initiative: The STEM Crisis

2. Boiling point? The skills gap in U.S. manufacturing. Manufacturing Institute/Deloitte, 2011.

3. Education to employment: Designing a system that works. McKinsey & Company, 2012.

In contrast, the same survey found that 72 percent of education providers believe new graduates are ready to work. Why the disconnect? According to McKinsey & Company:

“In large part, this is because they [employers and education providers] are not engaged with each other. One-third of employers say they never communicate with education providers; of those that do, fewer than half say it proved effective. Meanwhile, more than a third of education providers report that they are unable to estimate the job-placement rates of their graduates.”

Part of the disconnect between students, educators and employers can be attributed to the fact that until recently, little data existed to help us understand education-to-workforce transitions and labor market demands. For example, do we know how many mechanical engineers or nurses will be needed in the next decade, and are our education institutions preparing students and offering the number of programs and course sections needed to fill the demand? Efforts to understand and address these problems are underway with efforts like the California Community College’s *Doing What Matters for Jobs and the Economy*⁴ framework and the *CTE Launchboard* data system focused on CTE student outcomes, but more work will be required from education and industry to inform the discussion and bridge this disconnect.

Clearly, in a rapidly changing workforce environment, lack of consistent communication and collaboration among stakeholders all along the education-to-workforce pipeline should be addressed to help remedy this disconnect. However, this is not the only challenge to improving the transition from education into a career.

Barriers to Student Success in College

Challenges also exist in providing students with a path to successfully pursue and complete the post-secondary education needed to obtain high-demand, living-wage jobs. These include:

- An on-going achievement gap
- Lack of college readiness
- Barriers to college completion such as remediation

As new technologies transform our labor market, are our educational institutions addressing the newly created skills gap? Research shows that student achievement in math and science, key proficiencies required to compete in our changing economy, needs improvement, particularly among minority youth. According to the California Department of Education:

- In 2011, just 35 percent of African Americans and 42 percent of Latinos in 6th grade were proficient in mathematics in California.
- In 5th grade science, 43 percent of African Americans and 45 percent of Latinos were proficient in 2011, compared to 77 percent and 79 percent for their white and Asian counterparts respectively.

4. <http://doingwhatmatters.cccco.edu/>

And the Level Playing Field Institute reports:

*“In middle and high school years, proficiency rates decline and African-American and Latino students are less likely to access and achieve success in rigorous college-preparatory coursework than their white and Asian peers. **Eighth grade Algebra I is viewed as a critical gatekeeper course, yet the majority of African American and Latino students don’t enroll in Algebra until 9th grade. Of those who did enroll in 8th grade Algebra I, just 29% of African-American and 37% of Latino students reached proficiency.**”⁵*

Preparation for the college level coursework needed to obtain most living wage jobs, particularly new economy and STEM jobs, is not just a challenge for underrepresented students but affects all students. Less than a third of 11th grade students in California have a high likelihood of being college ready in English and math by the time they graduate high school.

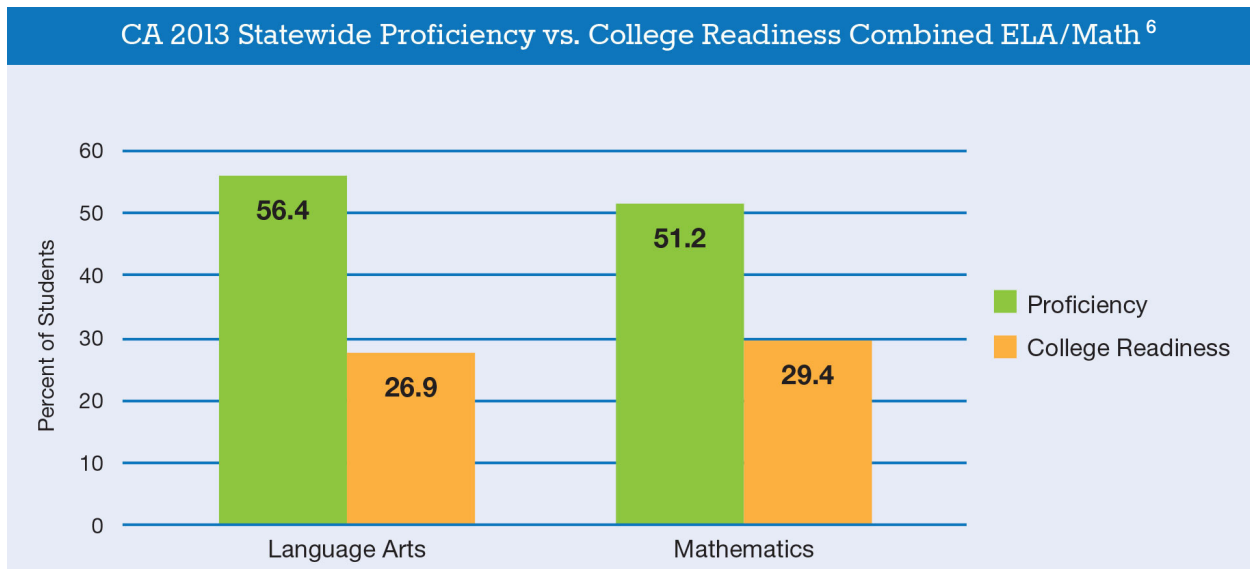


Chart based upon backward mapping California Standards Test proficiency levels of students who reached the college ready benchmark on the ACT in the 11th grade.

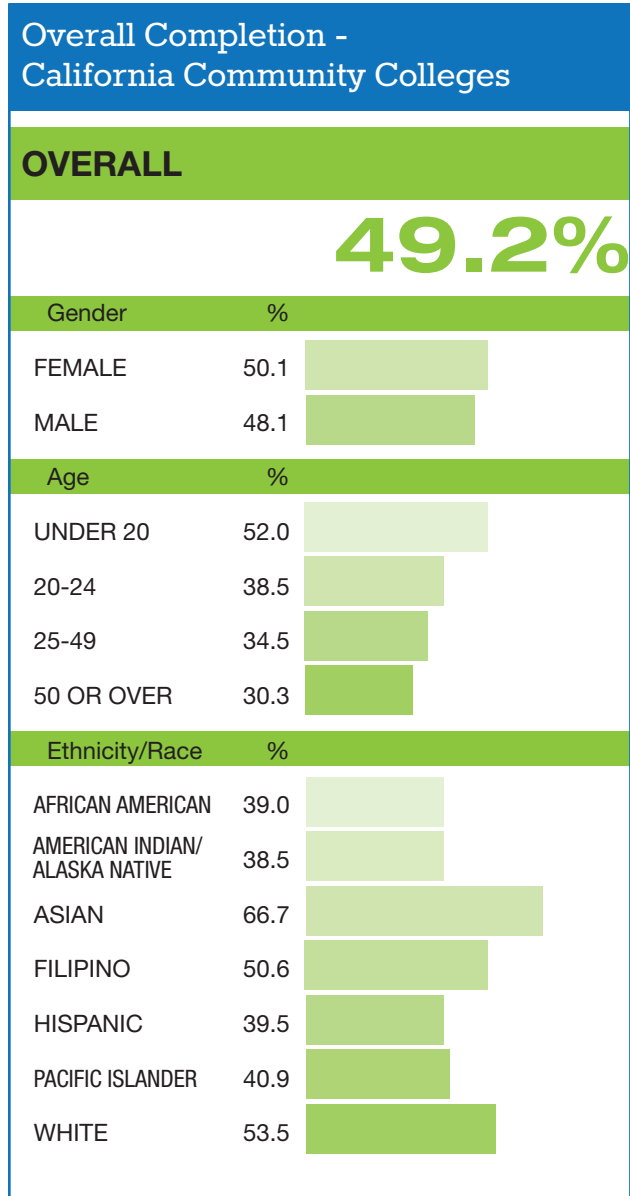
5. Level Playing Field Institute: Dissecting the Data 2012: Examining STEM Opportunities and Outcomes for Underrepresented Students in California. March 2012

6. Cal-PASS Plus

Of those students entering California community colleges unprepared—meaning they must enroll in remedial, non-credit bearing courses—just 41 percent complete a degree, certificate, or transfer-related outcome in six years. Overall, less than half of all degree or transfer-seeking students earn a degree, certificate or transfer-related outcome after six years.

Those who do complete at a 2-year or 4-year institution are taking much longer to get there. According to a national report by Jobs for the Future⁷:

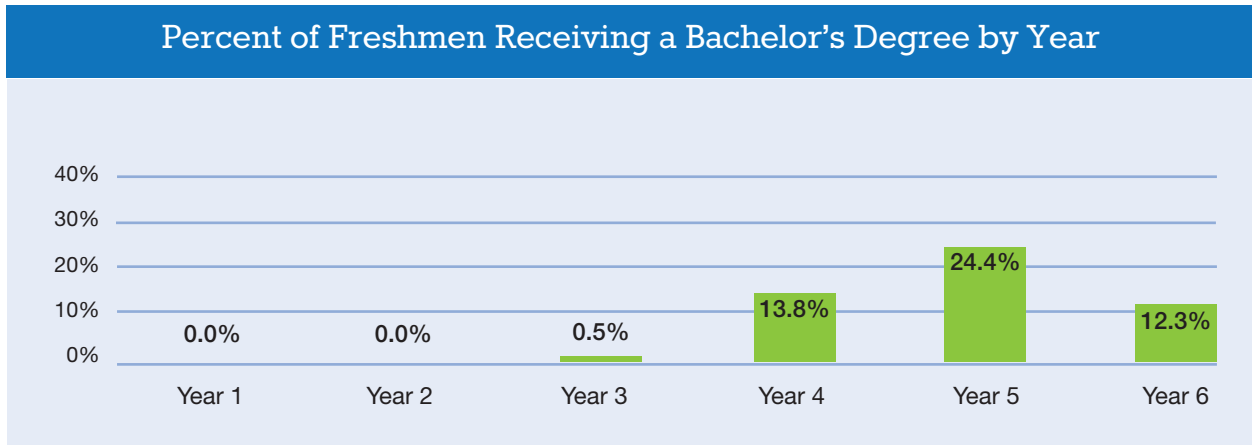
“Currently, fewer than half of first-time-in-college students who attend full time graduate with a Bachelor’s degree within four years. At the same time, many community college systems report that students are graduating with average credit accumulations far exceeding the state standard for an Associate’s degree. The average time to completion for a student who transfers to a Bachelor’s degree-granting institution from a community college is 16 months longer than a student who began at such an institution.”



California Community Colleges Student Success Scorecard

7. Jobs for the Future, Time to Completion Project, December 2009

California statistics bear out this assertion. According to a 2009 study⁸, only slightly more than half of incoming CSU freshmen receive a bachelor's degree within six years. This pattern persists for each freshman cohort entering CSU.



The need for remediation, and barriers to completion, such as high rates of remediation, low rates of community college transfer—just 25 percent⁹—and limited room for qualified candidates in some programs of study, are some of the challenges to be addressed in the effort to strengthen the education-to-workforce pipeline.

Working Toward Solutions

Fortunately, educators and business leaders have begun to address education-to-workforce transitions. But more work must be done.

Actionable Data and Collaboration

There is a growing recognition among K-20 educators and business leaders that the use of data and collaboration to improve alignment and student transitions is critical to ensuring students receive the education needed to compete for well-paying, high-demand jobs and to pursue economic opportunity. The Cal-PASS Plus system of data provides an important tool for education stakeholders to identify challenges and solutions. Cal-PASS Plus is also bringing together education stakeholders who are already working toward solutions so that they may collaborate to improve outcomes. Examples of statewide and regional efforts to strengthen education-to-workforce transitions include:

- **Reach Higher Shasta:** Lead by a group of educators, employers and public health officials, this regional, collaborative effort from K-12 to university works to ensure that students are prepared to pursue post-secondary education, from verifying early reading proficiency to creating a college-going culture in high school.

8. Institute for Higher Education Leadership & Policy. Student Flow Analysis: CSU Student Progress Toward Graduation September 2009.

9. Campaign for College Opportunity

- **California Community Colleges Economic and Workforce Development (EWD):** Through the California Colleges Centers of Excellence, the EWD program is the statewide network for the delivery of education and training services to businesses, workers, and jobseekers in key growth industries and new technologies. EWD provides information and support to colleges to better understand and use labor market data in supporting students and planning programs.
- **Doing What Matters for Jobs and the Economy:** California Community Colleges are also working with business leaders to promote a framework of key actions that lead to relevant career pathways and stackable credentials to promote student success. This project includes research on regional labor market projections that can be used to inform education institutions about pipeline needs.
- **Statewide Career Pathways:** The California Academic Senate provides a statewide framework to assist high school and college faculty to collaborate and develop programs of study that include articulation of high school coursework with college and career opportunities.
- **Career Ladders Project:** The Career Ladders Project consults and partners with community colleges throughout California to help implement educational and career pathways to ensure that disadvantaged youth and adults receive education and training that will meet the real demands of employers in the 21st century—and lead them to high-wage, high-demand careers. For example, one of the many initiatives of the Project includes the Bay Area Manufacturing Renaissance Council (BAMRC), which is building a close working relationship among labor, the manufacturing business community, local government, educators, and community-based organizations around the shared goal of rebuilding manufacturing as a foundation for the Bay Area economy.
- **Gateways:** CSU East Bay, along with K-12 systems and employers like Chevron, leads an initiative called Gateways focused on measurable goals to increase the number of students in Alameda and Contra Costa County who are prepared for and enter STEM related careers.

In addition, other organizations, including at the CSU and UC levels are working to target and improve education-to-workforce transitions, including regional consortia of community colleges and industry advisory panels working together to build pipelines into high growth industry sectors and emerging regional industries. But more work must be done. Building on, expanding, and sharing outcomes of current initiatives, as well as seeking out new and innovative partnerships and community-based solutions will help improve transitions from post-secondary education to the workforce and help secure economic opportunity for more Californians.