



**An Analysis of the Early Assessment Program (EAP) Assessments for  
Algebra II, Summative High School Mathematics, and English**

*Executive Summary*

**Conducted by Achieve on behalf of the California Diploma Project (ADP) and  
Policy Analysis for California Education (PACE)**

**October 2009**

## **Achieve**

Created in 1996 by the nation’s governors and corporate leaders, Achieve is an independent, bipartisan, non-profit education reform organization that helps states raise academic standards and graduation requirements, improve assessments and strengthen accountability. To make college and career readiness a priority in the states, in 2005, Achieve launched the American Diploma Project (ADP) Network. Starting with only a handful of states, the Network has now grown to include 35 states educating nearly 85 percent of all U.S. public school students. California joined the ADP Network in 2008, bringing together the Governor, the Superintendent of Public Instruction, the leaders of the state’s four higher education sectors, and the business community.

## **PACE**

PACE (Policy Analysis for California Education) is an independent, non-partisan research center based at the University of California – Berkeley, the University of Southern California, and Stanford University. PACE seeks to define and sustain a long-term strategy for comprehensive policy reform and continuous improvement in performance at all levels of California’s education system, from early childhood to post-secondary education and training. PACE bridges the gap between research and policy, working with scholars from California’s leading universities and with state and local policymakers to increase the impact of academic research on educational policy in California. The California Diploma Project is managed by PACE and is funded by the Bill & Melinda Gates Foundation, William and Flora Hewlett Foundation, and the James Irvine Foundation.

## **The California Diploma Project**

The American Diploma Project (ADP) works with states across the country to bring value to the high school diploma by raising the rigor of high school standards, assessments and curriculum and aligning them to the demands of postsecondary education and careers. The California Diploma Project brings together the Governor and Superintendent of Public Instruction with the leaders of the state’s four higher education sectors and business community representatives to work together to expand the number of young people who enroll and succeed in post-secondary education and training.

Achieve would like to thank the Bill & Melinda Gates Foundation, the William and Flora Hewlett Foundation, and the James Irvine Foundation for the generous funding and support that they provided to this project.

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## Executive Summary

Leaders from the California State University System (CSU) and the California Department of Education have collaborated in the creation of a unique approach to college-ready assessment. The Early Assessment Program (EAP) provides students with an “early indicator” of their level of college preparation so that they might increase their knowledge and skill while still in high school and avoid failure and remediation in their entry-level college experience. This report provides an analysis of that assessment.

### Achieve and the California Diploma Project

The California Diploma Project (CDP) sought the assistance of Achieve in order to determine the degree to which the EAP tests in Algebra II, Summative High School Mathematics (Summative Mathematics), and English provide an assessment of the level of college readiness required for entry-level coursework. For the purpose of this analysis of these EAP assessments, Achieve considered the California standards and additional expectations targeted by the CSU faculty as the benchmarks for college readiness—that is, as indicators of the level of preparation needed for entry into credit bearing coursework in English and mathematics on the CSU campuses.

### The Early Assessment Program (EAP)

The EAP serves as a college readiness signal for students while still in high school, enabling them to better prepare for college in their senior year. It is voluntary and only available to students in the 11<sup>th</sup> grade. The EAP is a combination of select items from the California Standards Test (CST)—in Algebra II, Summative Mathematics, and Grade 11 English-Language Arts (ELA)—and a set of 15 augmented items developed by faculty at CSU. In English, the EAP also includes a direct writing assessment—the EAP Essay.

While voluntary, the number of students taking the EAP has increased over the last five years. It is important to note that while many students are in English classes during their 11<sup>th</sup> grade year and are eligible to take the English EAP, the Algebra II and Summative Mathematics EAP are limited to students who are enrolled in or have completed Algebra II. Current data follow on those 11<sup>th</sup> grade students who participated in the EAP.

#### How many 11<sup>th</sup> graders participated in the 2009 CST and the EAP?

Subject	Total 11 <sup>th</sup> graders taking the CST	Total 11 <sup>th</sup> graders taking the EAP
English	447,742 96%	366,925 79%
Mathematics	220,605 47%	169,473 36%

Out of 466,303 students enrolled in 11<sup>th</sup> grade in 2009, 96% of all students took the CST in English and 79% took the 15 augmented items and the Direct Writing Assessment for the EAP in English. In 2009, 47% of all 11<sup>th</sup> graders took the CSTs in Algebra II or Summative Mathematics and 36% took the 15 augmented items on either one of these tests for the Algebra II or Summative Mathematics EAP. In mathematics, the remaining 53% of all 11<sup>th</sup> graders did not have the option of taking the EAP. Current overall performance data follow on those 11<sup>th</sup> grade students who participated in the EAP.

**How do 11<sup>th</sup> graders perform on the EAP?**

Subject	Ready for College	Conditionally Ready for College	Did not Demonstrate Readiness
English	16%	N/A	83%
Algebra II	5%	20%	74%
Summative Mathematics	21%	67%	12%

Of the 79% of all 11<sup>th</sup> graders who took the EAP in English – 16% scored ready for college and 83% did not demonstrate readiness. Of the 36% of all 11<sup>th</sup> graders who took the EAP in Algebra II, 5% scored ready for college, 20% conditional, and 74% did not demonstrate readiness. In Summative Mathematics, 21% scored ready for college, 67% conditional, and 12% did not demonstrate readiness.

**Achieve Analysis**

Achieve convened a group of content experts in English and mathematics to conduct the analysis of the EAP English, Algebra II, and Summative Mathematics assessments. Review panels were guided by the criteria set forth in the Achieve Assessment to Standards (ATS) Protocol that include content centrality, performance centrality, source of challenge, and level of cognitive demand.

One representative form for each assessment—English Language Arts, Algebra II, and Summative High School Mathematics—was reviewed. Due to state policy restrictions, Achieve was unable to review full, intact forms of the CST assessments. This analysis therefore, should not be interpreted as a review of the CST but rather as a review of the EAP assessments that are comprised of a subset of CST items and augmented items developed by the CSU faculty. The CST items as well as the augmented items and writing samples were submitted to Achieve by the Educational Testing Service (ETS), the organization responsible for developing the CST, as representative of the items used by CSU to arrive at a student’s EAP college readiness score.

## Findings

### **1. *The EAP assessments address essential college-ready content identified by CSU faculty for entering credit-bearing coursework.***

The CSU faculty identified college readiness skills required for students' success in entry-level coursework in English and mathematics. These college readiness skills include California standards as well as CSU related ELM and EPT assessed content. In mathematics, reviewers found that the majority of the items that were mapped to the California Algebra II and Summative Mathematics standards and the CSU ELM specifications consistently match the intent of the standard. In English, similar results were found in reading, the EAP Augmented items, and the EAP Essay assessment of direct writing. Only the indirect writing items did not satisfy the expectation of the standards, a difficulty typically faced by large-scale assessments that test instructional content standards requiring writing performance with multiple-choice items. The remaining majority of the EAP items target quite clearly the content described in these college readiness standards. These assessments can be depended upon to present an effective picture of student readiness for entry-level coursework on a CSU campus.

### **2. *The EAP augmentations provide rigor and contribute authentic college readiness tasks to the assessment of students' postsecondary preparation.***

In mathematics, a particular strength of the augmentation item set is that many items require students to make connections across and/or within mathematical strands. These items tend to be interesting and mathematically rich and can be used as models for developing future items. It is noteworthy that the level of cognitive demand of these items raises the overall cognitive demand and rigor of the Algebra II and Summative Mathematics EAP.

In English, the EAP Essay that was designed by CSU faculty as a measure of direct writing is particularly noteworthy. Students are asked to demonstrate the depth of their understanding of the reading passage through their writing. The EAP Essay not only assesses key content and performance expectations called for in the California standards, but it also provides an authentic college-ready measure of a student's ability to critique, analyze, construct arguments, and support ideas with relevant examples. In addition, the reading passages included on the EAP were judged by Achieve as representing a rigorous set of texts that are fair examples of the types of materials students should be able to read to demonstrate college readiness.

### **3. *Targeted improvements in the Algebra II, Summative Mathematics, and English EAP would increase the balance and rigor of the items used to assess college readiness.***

In mathematics, reviewers noted the procedural nature of many of the multiple-choice items. The inclusion/development of additional selected-response items that resemble the more cognitively demanding augmentation items, would ensure the assessment of the kinds of higher order skills students need to be prepared for college. The inclusion of application problems from the social sciences or sciences would enable students to demonstrate their abilities to use mathematics to model relevant situations with functions. The addition of a

limited number of high quality constructed-response, or open-ended, items could also increase cognitive demand. Such items can be expensive, given costs of scoring. However, these items would allow teachers to see first-hand how students approach solving problems, whether they can create graphs on their own, whether they can create conjectures or justifications on their own, and whether they can explain their reasoning.

In addition, reviewers noted a few areas of college-ready mathematics content that are in the California standards but were omitted from the Algebra II and Summative Mathematics EAP including probability and statistics and properties of logarithms and the inverse relationship between exponents and logarithms. Suggestions have been made for adjustments that would allow inclusion of these areas.

In English, reviewers found that the reading passages were complex and closely approximate the level of texts that students might encounter in college. In some instances, however, the passage was underutilized as the test-taker did not need to refer to the reading to answer the question posed. Achieve reviewers suggested that to the greatest extent possible, items that are selected for the EAP require that students read the passage in order to answer the item, providing a more accurate picture of their ability to derive meaning.

In addition, while indirect items in writing assessed students' ability to identify the correct use of conventions and grammar, reviewers found the EAP Essay provided a more direct and authentic demonstration of the writing process.

## **Recommendations**

- 1. Since the EAP is a good representation of college readiness, use of the test could reasonably be expanded beyond the CSU.***

Overall Achieve reviewers found the test aligns well with the expectations the CSU faculty have identified as essential for entry into credit-bearing coursework. Current plans in the state call for the expansion of the EAP to selected community colleges who are piloting this initiative. Achieve supports this expansion beyond the CSU campuses and recognizes the significant impact this initiative has had for students. Steady growth in the rate of student participation and improved performance provide testimony to its success. The students of the state of California are the ultimate beneficiaries of this "early indicator" program and are given the opportunity to prepare for college entry and potentially avoid failure and remediation.

- 2. Consider making minor adjustments to improve the EAP. Build on the strengths of the EAP to further align expectations across the CSU, UC, and CCC for college readiness for entry-level coursework.***

Within this report reviewers have offered suggestions for minor adjustments to the EAP assessments in English and mathematics. There are also opportunities to build on the strengths of the EAP to further align expectations. For example, reviewers found strong alignment

between the EAP Essay and the California Content Standards in reading and writing. There are also similarities between the EAP Essay and the UC Analytic Writing Placement Examination (AWPE). This creates an opportunity for further comparisons of writing expectations for incoming freshmen across the CCC, CSU, and UC. A cross-segment group of faculty could conduct an analysis of direct writing assessment passages/prompts, rubrics, and anchor papers. The resulting common expectations for college-ready writing across all postsecondary segments should be made publicly available for K-12 students and educators statewide.

**3. *Devise a communication strategy for educators, students, and communities that clarifies the level of preparation that students must reach in order to demonstrate college readiness and the specific course in which they would be placed with successful completion of the EAP.***

Achieve found that across K-12 and postsecondary, communications and documentation about the EAP are extensive but not always consistent. The EAP has the potential for impacting more 11<sup>th</sup> graders throughout the state by signaling college readiness while students have time to address preparation in high school and potentially avoid remediation when entering postsecondary. It is important that the partners in this effort clarify the expectations students need to meet for success on the EAP in order to secure placement in credit-bearing coursework. In addition, students and educators may not understand what the first credit-bearing course is in English and mathematics on various UC, CSU, and CCC campuses and when and if there are exceptions. The expansion of the EAP to select community college campuses provides the opportunity to update public communications, websites, and other support materials with respect to the requirements and benefits of the EAP.

**4. *Encourage more students to take mathematics at and above the level of Algebra II.***

While the numbers of students taking the EAP has increased over the years, it is true in mathematics that this “early indicator” system is only available to those students who are enrolled in or have completed Algebra II or higher. Given that the state graduation requirements specify two units of mathematics including Algebra I, students may not have the incentive to go further than Algebra I—a level that falls far short of the required mathematics at California postsecondary campuses. While 79% of students participate in the English EAP, only 36% of students participate in the mathematics EAP. Both the English and mathematics EAP provide incentive and opportunity for students to learn more about their level of preparation and consider college as an option. State leaders should consider strategies for encouraging many more students to take this assessment or the potential for the EAP will not be fully realized.

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In conclusion, Achieve commends the leaders from the California State University System and the California Department of Education who have collaborated over the years in the creation of this unique approach to college-ready assessment. The EAP provides a national model - an “early indicator” of postsecondary preparation so that students can increase their knowledge

and skill while still in high school and avoid failure and remediation in their entry-level college experience. The expansion of the EAP beyond the CSU campuses provides the opportunity to engage other educators across the state in a systematic program to provide greater numbers of students with the opportunity to prepare for entry into credit-bearing coursework in postsecondary.