



## Postsecondary Preparation and Remediation: Examining the Effect of the Early Assessment Program at California State University

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## Early Assessment Simple Program Overview

- Goals of EAP:
  - Provide an early signal to students about their college readiness
  - Collaborate with HS community
  - Provide 12<sup>th</sup> grade interventions
- Components of EAP:
  1. 11<sup>th</sup> grade testing (early assessment)
  2. Professional development for teachers
  3. Supplemental preparation for students

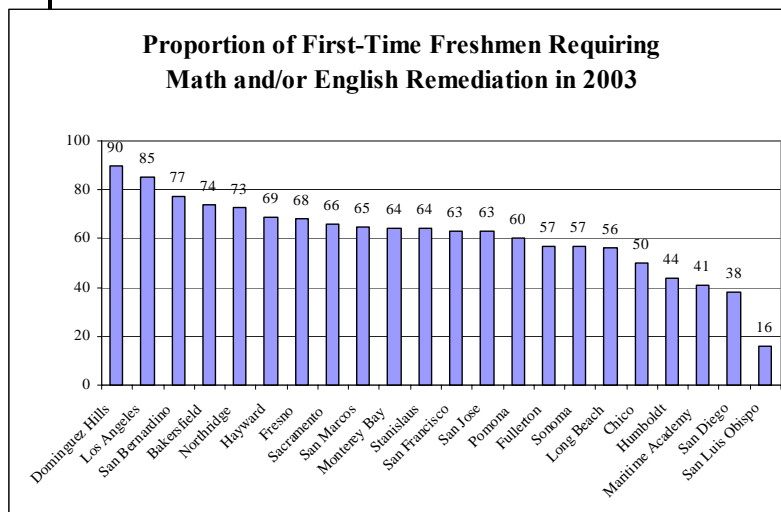


## Research Questions

- How does participation in the Early Assessment Program affect the probability of requiring remedial coursework in college?
- Additional Questions:
  - Is there any effect of EAP on college-going behavior?
  - Are there important differences in EAP participation by school?
  - Other?



## Remediation Need at CSU, 2003





## Academic Preparation Literature

- Better academic preparation → higher rates of persistence and degree completion
- Student information and expectations
  - Person, Rosenbaum, & Deil-Amen (2006); Rosenbaum (2001); Venezia, Kirst, & Antonio (2003)
- K-12 alignment with higher education
  - Venezia et al. (2005); Martinez & Klopott (2005)
- Effect of college remediation
  - Bettinger & Long (2004 )



## Early Assessment Detailed Program Overview

- Components of EAP:
  1. 11<sup>th</sup> grade testing (early assessment)
  2. Professional development for teachers
  3. Supplemental preparation for students



## Early Assessment Program: 1. Testing Component

- Voluntary examination
- Administered in the 11<sup>th</sup> Grade
- In conjunction with California Standards Test (CST)
- In English and mathematics
- Contains 15 additional multiple-choice questions in both subjects
- Essay required in English
- Selected items from CST and additional EAP items (including essay) are scored to determine readiness



## Early Assessment Program: 2. Teacher Development

- Expository Reading and Writing Course (ERWC)
  - Developed by CSU English faculty and high school teachers.
  - Aligned with ELA Content Standards and addresses critical reading and writing problems identified by the CSU English Placement Test Committee.
  - Structured around assignment template addressing reading and writing.
  - Lessons based on non-fiction and fiction texts.
  - Engages students in a study of rhetoric and composition.
  - Enables students to read and write academic prose effectively and strategically.



## Early Assessment Program: 2. Teacher Development, cont.

- Reading Institute for Academic Preparation (RIAP)
  - RIAP is an 80-hour professional development opportunity designed to create a school-wide, standards-based literacy plan across the curriculum.
  - Participants will expand their repertoire of teaching strategies to match the academic learning strengths and needs of college-eligible students.



## Early Assessment Program: 2. Teacher Development, cont.

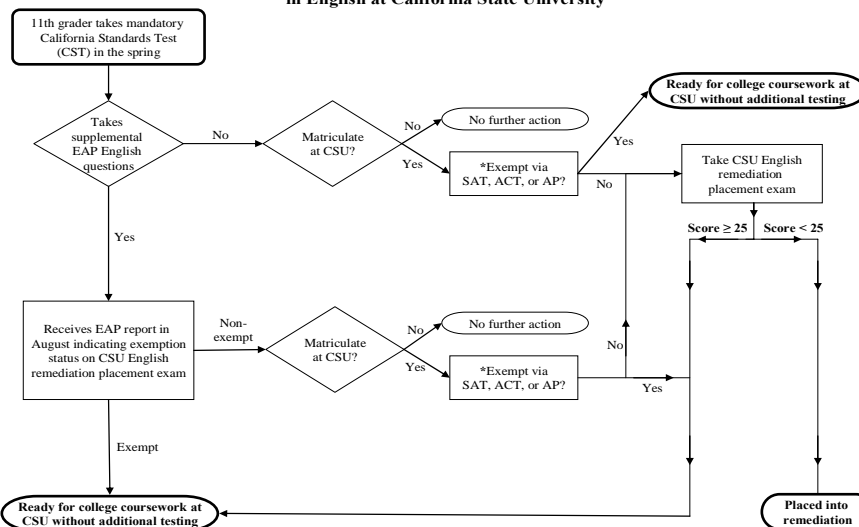
- Results
  - The improvement in percent proficient in English (from 2003 to 2006) in high intensity ERWC schools was more than 5x the rate of all CA schools (11% vs. 2.2%) and 3x the rate of control schools (11% vs. 3.6%).
  - RIAP schools outperformed control schools and all CA schools on CST-11<sup>th</sup> grade English test (14 pt. gain RIAP vs. 6.7 pt. gain in control schools vs. 3.6 pt. increase in all CA schools).
  - The improvement in percent proficient in English (from 2003 to 2006) in high intensity RIAP + ERWC schools was about 2x the rate of improvement of all CA schools (4% vs. 2.2%)



## Early Assessment Program: 3. 12<sup>th</sup> Grade Preparation

- Services aimed at students who are “not exempt” or “conditionally exempt” based on EAP testing component
  - Math Success Website:  
[www.csusmathsuccess.org](http://www.csusmathsuccess.org)
  - ALEKS ELM Tutorial:  
[www.csumathsuccess.org/alekslink](http://www.csumathsuccess.org/alekslink)
  - English Success Website:  
[www.csuenglishsuccess.org](http://www.csuenglishsuccess.org)

Figure 3: Paths to College Readiness or Remediation in English at California State University



\* Exemption requires a score of 550 or above on SAT I verbal or a score of 680 on the SAT II writing test, a score of 24 or above on ACT English, or a score of 3, 4, or 5 on either the AP Language and Composition exam or the AP Literature and Composition exam.



## Data

- CSUS Office of Institutional Research: four cohorts of first-time freshman applicants (2003 – 2006)
- California Department of Education: matched CSUS applicants to CST scores and EAP participation and outcomes
- Additionally, data on EAP participation by all HS juniors in the state since program inception



## EAP Participation Statewide

- More than 400,000 juniors in the state each year
- EAP participation rates:
  - 67.8% sat for the English EAP
  - 39.7% completed the English EAP
  - 30.1% sat for the math EAP
  - 27.5% completed the math EAP
  - Participation has increased over time
- EAP outcomes (exempt from CSU placement exams?):
  - 77.2% not exempt in English based on EAP
  - 44.5% not exempt in math based on EAP



## EAP Participation Decisions

- Individual EAP participation probabilities:
  - Lower for males
  - Higher for non-whites, those with higher CST scores, more educated parents, and greater peer math EAP participation
  
- School-level EAP participation rates:
  - **Math:** increasing in the student body proportion that is Asian, parental college attainment, and cohort size
  - **English:** increasing in the non-white student proportion, parental educational attainment, and cohort size



## CSUS Enrollees by Year

| <i>Proportion</i>    | Pre-EAP |       | Post-EAP |       |
|----------------------|---------|-------|----------|-------|
|                      | 2003    | 2004  | 2005     | 2006  |
| Male                 | 0.400   | 0.396 | 0.396    | 0.399 |
| White                | 0.406   | 0.393 | 0.375    | 0.347 |
| Black                | 0.087   | 0.085 | 0.098    | 0.119 |
| Hispanic             | 0.181   | 0.187 | 0.182    | 0.183 |
| Asian                | 0.222   | 0.231 | 0.246    | 0.250 |
| Other race/ethnicity | 0.104   | 0.104 | 0.099    | 0.102 |
| Parental Education:  |         |       |          |       |
| Mom - HS Grad        | 0.811   | 0.813 | 0.794    | 0.810 |
| Mom - College Grad   | 0.271   | 0.267 | 0.261    | 0.249 |
| Dad - HS Grad        | 0.814   | 0.805 | 0.798    | 0.904 |
| Dad - College Grad   | 0.309   | 0.325 | 0.296    | 0.286 |
| Math Proficient      | 0.516   | 0.541 | 0.494    | 0.513 |
| English Proficient   | 0.423   | 0.430 | 0.436    | 0.444 |
| <i>N</i>             | 2426    | 2329  | 2495     | 2629  |



## CSUS Enrollees by Year

|                     | Pre-EAP |       | Post-EAP |       |
|---------------------|---------|-------|----------|-------|
| <i>Average</i>      | 2003    | 2004  | 2005     | 2006  |
| ELM Test (math)     | 43.0    | 43.4  | 42.8     | 42.0  |
| Proportion non-zero | 0.707   | 0.710 | 0.660    | 0.694 |
| EPT Test (English)  | 144.6   | 144.5 | 143.9    | 144.1 |
| Proportion non-zero | 0.784   | 0.782 | 0.732    | 0.739 |
| SAT                 | 967     | 964   | 973      | 958   |
| Proportion non-zero | 0.836   | 0.843 | 0.798    | 0.798 |
| ACT                 | 20      | 19    | 19       | 20    |
| Proportion non-zero | 0.224   | 0.225 | 0.220    | 0.195 |
| High School GPA     | 3.2     | 3.2   | 3.2      | 3.2   |
| Proportion non-zero | 0.997   | 0.999 | 0.996    | 0.998 |
|                     |         |       |          |       |
| <i>N</i>            | 2426    | 2329  | 2495     | 2629  |

## EAP and Academic Preparation

- How do EAP participants (who eventually enroll in CSUS) compare to their classmates who choose not to participate?
  - English EAP participants have a 9 percentage point lower probability of needing English remediation at CSUS than non-participants.
  - Math EAP participants have a 6 percentage point lower probability of needing math remediation at CSUS than non-participants.
  - Controlling for CST score, the reduced probabilities of remediation due to EAP participation are 4.1 and 3.2 percentage points in English and math, respectively.



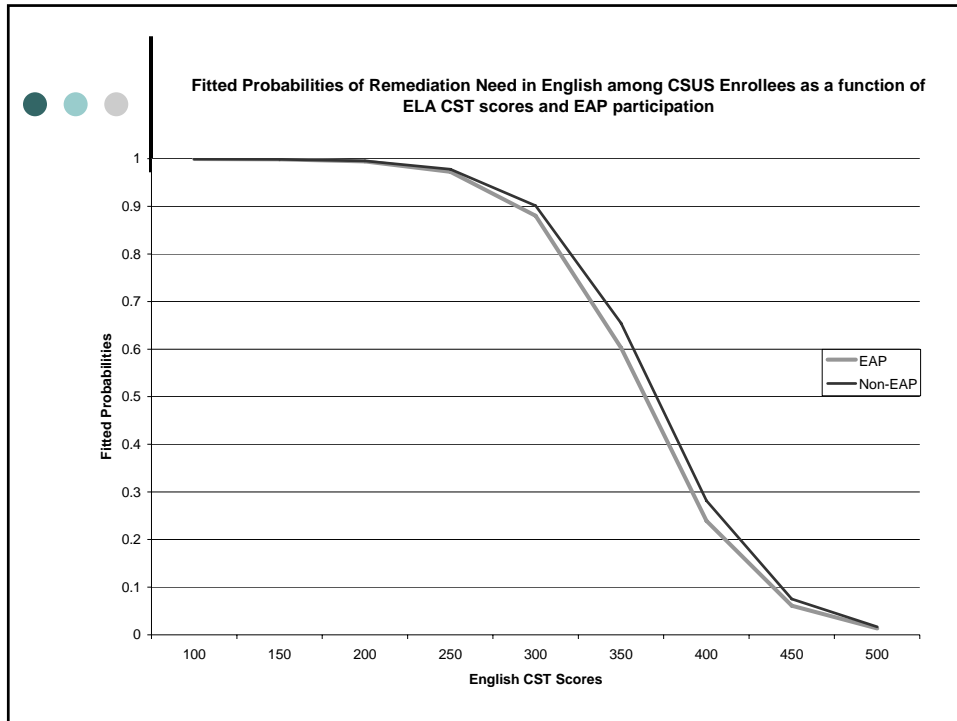
## EAP and Academic Preparation

- Remediation need by first-time freshman  $i$  in subject  $s$ , a binary variable, is a function of:
  - Individual characteristics
  - Attributes of individual's high school
  - Post-EAP indicator
  - Subject-specific EAP participation indicator
- Intuition: students in post-EAP years are the “treatment group”, while students in pre-EAP years are the “control group”
- Marginal effects from logistic regression provide the percentage point change in the probability of remediation associated with a particular variable



## Marginal Effects on Probability of Remediation Need, by subject

| Variable                  | English | z      | Math    | z      |
|---------------------------|---------|--------|---------|--------|
| Male                      | -0.0151 | -0.98  | -0.1970 | -12.63 |
| Black                     | 0.1926  | 9.81   | 0.2553  | 7.97   |
| Hispanic                  | 0.2196  | 13.95  | 0.1356  | 5.58   |
| Asian                     | 0.2627  | 17.44  | 0.1438  | 5.95   |
| Other race                | 0.1967  | 10.98  | 0.1084  | 3.69   |
| High school GPA           | -0.0968 | -5.19  | -0.1806 | -8.59  |
| CST English score         | -0.0074 | -31.90 |         |        |
| CST math score            |         |        | -0.0063 | -20.96 |
| Dad College Grad          | -0.0598 | -3.37  | -0.2697 | -1.41  |
| Mom College Grad          | -0.0662 | -3.52  | -0.0800 | -4.22  |
| Post EAP                  | 0.0335  | 1.63   | -0.0053 | -0.22  |
| English EAP participation | -0.0528 | -2.42  |         |        |
| Math EAP participation    |         |        | -0.0272 | -1.11  |
| Pseudo R-squared          | 0.2963  |        | 0.2702  |        |
| Predicted probability     | 0.6292  |        | 0.3335  |        |



- ### What's driving the empirical EAP participation effect on remediation?
- Does EAP participation encourage better academic preparation or better sorting into postsecondary study?
  - Examine the effect of EAP on application to CSUS using data on all CA juniors from California Dept. of Ed
  - Other methods of unpacking this issue



## Conclusions & Future Directions

- EAP participation does appear to reduce the probability that CSUS first-time freshmen require remediation
- Mechanism *appears* to be through better preparation rather than sorting
  - More evidence required on this issue
- Continue to look for differential EAP effects by individual characteristics and attributes of high school attended



## Remediation at Community Colleges— Opportunities and Challenges

- The need for remediation assessment at community colleges
- Utilizing existing California State Standards (CST), or augmented—EAP
- Some evidence from CALPASS Data
- Improving alignment between K-12 and postsecondary