

# Measures for a College and Career Indicator:

## SAT and ACT

## Advanced Placement and International Baccalaureate

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the Educational Policy Improvement Center (EPIC)*

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As California works to incorporate college and career preparedness into its accountability system, the Department of Education contracted with EPIC to help analyze potential measures for a College and Career Indicator (CCI).

# Project Overview

- Series of Six White Papers and Final Summary Paper
  - April: (1) SAT and ACT and (2) AP and IB
  - June: (3) Course-Taking Behavior and (4) Innovative Measures
  - August: (5) Career Preparedness and (6) To Be Determined
  - October: Draft of Final Report
  - December: Final Report Presented to State Board of Education
- Each Paper Analyzes a Class or Cluster of Measures Selected by PSAA
- Final Report Summarizes Findings Across Measures

# Analytical Framework

## 10 Evaluative Criteria Organized into Clusters

### A. Technical Quality

1. Has research base demonstrating relationship to postsecondary success
2. Allows for fair comparisons
3. Is stable

### B. Stakeholder Relevance

1. Has currency outside accountability system
2. Is understandable to stakeholder groups
3. Measures content, skills, and competencies that can be taught and learned in school
4. Emphasizes student performance

### C. System Utility

1. Minimizes burden
2. Covers wide number of students
3. Recognizes a variety of postsecondary pathways

# SAT and ACT

# SAT Overview

- First administered in 1926, adopted by Harvard in 1933 to identify promising candidates from outside east coast private schools
- Evolved from measure of “aptitude” to “developed reasoning”
- Today, the SAT is worth 2400 points and has three sections: mathematics (SATM), verbal (SATV), and writing (SATW)
  - Students have 3 hours and 45 minutes to complete the SAT
- The College Board also offers a suite of college-ready assessments including the PSAT and 20 SAT subject tests
- In March 2014, the College Board announced a set of planned revisions to the 2016 SAT
  - The redesign plans largely echo features of the CCSS

# SAT Policy Approaches

- Maine, Idaho, and Delaware all require and pay for all public high school students to take the SAT, but only Idaho uses the SAT in its accountability system
- Other states treat the SAT as a conditional measure, representing one of several data points that may be included in a high school rating
- Almost all states that do use SAT for accountability either measure performance or a combination of SAT participation and performance

# SAT Policy Approaches

- The College Board developed a college readiness benchmark of 1550 out of 2400 on the SAT
  - “Indicates a 65 percent likelihood of achieving a B- average or higher during the first year of college”
  - The College Board warns that these benchmark scores are appropriate for evaluating the general readiness of *groups* of students
- States using the SAT in accountability systems either adopt the College Board’s benchmark or create their own unique benchmarks
  - Unique state benchmarks are almost always lower than 1550
  - Some states also create ranges of scores and allocate points based on a school’s average student SAT score
  - Some states exclude the SATW and hold schools accountable to only SATV and SATM scores

# SAT Technical Quality

- Moderate connection between SAT performance and postsecondary success (i.e., college GPAs, graduation)
  - Numerous studies show the SAT is a valid predictor of student postsecondary success, but not to an overwhelming degree
  - Omitting control variables, particularly socioeconomic status, can lead to findings that overstate the SAT's predictive power
- The SAT allows for partially fair comparisons
  - Achievement gaps (socioeconomics, race) in SAT performance similar to other educational outcomes
  - Inability to account for differences in the educational quality of a student's program
- The SAT is relatively stable from year to year
  - Last major revision was in 2005 when SATW was added to the exam

# SAT Stakeholder Relevance

- Taking the SAT satisfies a common college admissions requirement
- The SAT is well known and the College Board offers many resources to educators, parents, students, and other stakeholders
- SAT directly measures student performance by examining student reasoning ability
- The SAT is a reasonable measure of key knowledge, skills, and competencies taught and learned in school, particularly in English and Mathematics
  - Potentially aligned to CCSS with the 2016 redesign

# SAT System Utility

- Students pay \$51 per test; the College Board provides fee waivers for low-income students and plans additional supports with the 2016 SAT redesign
  - The College Board sends 4 free score reports to colleges, then charges students \$11.25 for each additional score report
  - The test prep industry introduces an additional confounder to the correlation between family income and SAT scores
- System-level burden includes ordering scores from College Board as well as aggregating and analyzing scores
- In 2013, 234,767 Californians took the SAT
  - 88% public HS students
- Geared to university attendance; less relevant to assessing preparedness for other postsecondary pathways

# ACT Overview

- Developed in 1959 as an alternative to the SAT
- Focuses on achievement and assesses content knowledge and skills prioritized in national curriculum surveys
- Has a maximum score of 36 points and contains four sections: English (ACTE), mathematics (ACTM), reading (ACTR), and science (ACTS), and an optional writing section (ACTW)
  - Students have 2 hours and 55 minutes to complete the exam and have 30 minutes for the optional ACTW
- The ACT test is the terminal exam of its college readiness suite (including EXPLORE and PLAN)

# ACT Policy Approaches

- Some states treat the ACT as a universal measure, requiring and paying for all public high school students to take the exam
  - Approximately 13 states have statewide ACT testing
- Other states treat the ACT as a conditional measure, representing one of several data points that may be included in a high school rating
- States either measure ACT performance or a combination of ACT participation and performance

# ACT Policy Approaches

- The ACT developed the following college-ready benchmarks: ACTE, 18; ACTM, 22; ACTR, 22; and ACTS, 23
  - The average of these scores is a 21 out of 36 on the ACT composite
  - “Level of achievement required for students to have a 50% chance of obtaining a B or higher or about a 75% change of obtaining a C or higher in corresponding credit-bearing first-year college courses”
- States using the ACT in accountability systems either adopt the ACT’s benchmark or create their own unique benchmarks
  - The most commonly lowered benchmark was the ACTM, but some states increased benchmarks on other sections
  - Some states also create ranges of scores and allocate points based on a school’s average student ACT score
  - Many states hold schools accountable to only 2 sections of the ACT, most often the ACTM and either ACTE or ACTR

# ACT Technical Quality

- Moderate connection between ACT performance and postsecondary success (i.e., college GPAs, graduation)
  - Numerous studies from the ACT show that the ACT is a valid predictor of student postsecondary success
  - Research shows that ACT's predictive power is found in the ACTM and ACTE sections (ACTR and ACTS essentially have no predictive power)
- ACT allows for partially fair comparisons
  - Achievement gaps (socioeconomics, race) in SAT performance similar to other educational outcomes
  - Inability to account for differences in the educational quality of a student's program
- The ACT is relatively stable from year to year
  - Last major revision in 1989; optional ACTW added in 2005

# ACT Stakeholder Relevance

- Taking the SAT satisfies a common college admissions requirement
  - However, growing movement among colleges and universities making admissions tests optional for applicants
- The ACT is well known and ACT offers many resources to educators, parents, students, and other stakeholders
- Grounded in course content, the ACT directly measures student performance by examining student achievement of content knowledge, skills, and competencies taught in school

# ACT System Utility

- Students pay \$52.50 per test; the ACT provides fee waivers for low-income students
  - ACT sends 4 free score reports to colleges and charges students \$12 for each additional score report
  - ACT costs \$36.50 if students opt out of the optional SATW
  - The test prep industry introduces an additional confounder to the correlation between family income and ACT scores
- System-level burden includes ordering scores from ACT as well as aggregating and analyzing scores
- In 2013, 107,243 students took the ACT
- Geared to university attendance; less relevant to assessing preparedness for other postsecondary pathways

# SAT/ACT Summary Technical Quality

- Positively correlated to postsecondary success, but not overwhelmingly
- Allows for partially fair comparisons
- Relatively stable indicators with strong psychometric properties

# SAT/ACT Summary

## Stakeholder Relevance

- Provides students with a common admissions requirement
- Both the SAT and ACT are understandable
  - School and district reports may be more problematic to interpret
- Directly measures student performance

# SAT/ACT Summary System Utility

- Students are required to pay for both exams
  - Fee waivers are available for low-income students
- 234,767 Californians took the SAT and 107,243 took the ACT in 2013
  - 88% of SAT test takers attended public high schools
- Geared to university attendance; less relevant to assessing readiness for other postsecondary pathways

# Questions or Comments?

# **ADVANCED PLACEMENT and INTERNATIONAL BACCALAUREATE**

# Advanced Placement (AP) Overview

- AP was conceptualized in 1950 by a group of elite private colleges to provide high-achieving students (in elite and high-income schools) with college-level material
- AP offers curriculum in up to 34 subjects per school
- Access now well beyond only high-income public and private schools

# AP Policy Approaches

- States measure either AP performance, participation, or a combination of the two as a data point that may be included in a high school rating
  - Some states use AP performance and/or participation as a way for states to earn bonus points on high school ratings or earn distinctions among schools
- States measure performance as the percentage of students who score above a 3 on an AP exam
- Participation is generally measured by either the percentage of students who complete an AP course or the percentage who take an AP exam
- Nearly every state allows IB exam scores to substitute for AP exam scores

# AP Technical Quality

- Strong connection between AP exam performance and postsecondary success (i.e., college GPAs, graduation)
  - AP course-taking does not predict postsecondary success to the extent that AP exam performance does
  - AP enrollment associated with higher college-going rates
- College Board working to expand AP access to low-income schools
  - Incentives to increase enrollment and exam-taking have shown mixed results
  - Low-income schools have fewer students enrolled in AP courses and passing AP exams, and fewer qualified teachers
- AP scores have been stable, allowing for trend analysis; however, course requirements are updated periodically

# AP Stakeholder Relevance

- Opportunity for college credit and demonstration of advanced coursework on college applications
- Institutions accepting AP exam scores for credit
  - Four-year: 75%
  - Two-year: 51%
  - Less than two-year: 3%
- Well known; College Board offers many resources and reports
- Breadth of subject area coverage for students with varying interests
- Student performance reflects mainly student knowledge and skills; schools must have sufficient but reasonable resources to have AP-trained teachers or access to online AP courses

# AP System Utility

- \$89 per test; California students who receive free and reduced lunch are eligible for \$26 fee reduction
- Schools responsible for cost of providing AP course: \$1,900 in English to more than \$10,000 in the sciences
- Almost all California high schools offer at least one AP course; not all offer any one particular course
- 15% of public high school students in California took an exam
- Geared to university attendance; less relevant to assessing preparedness for other postsecondary pathways

# International Baccalaureate (IB): Overview

- Created in 1968 in Geneva, Switzerland; first U.S. school authorized in 1971
- Two-year university preparation program designed originally for internationally mobile students
- Focus on providing an intercultural, global education
- Diploma Programme offers coursework in six groups of subjects; five are required, art is optional
- Exams for each course

# IB Policy Approaches

- States either measure IB performance, participation, or a combination of the two as a data point that may be included in a high school rating
  - Some states use IB performance and/or participation as a way for states to earn bonus points on high school rates or to earn distinctions among schools
- States measure performance as the percentage of students who score above a 4 out of 7 on an IB exam
- Participation is generally measured by either the percentage of students who complete an AP course or the percentage that take an IB exam
- Nearly every state allows AP exam scores to substitute for IB exam scores

# IB Technical Quality

- Performance on IB exams a significant predictor of postsecondary success (entering 4-year college, FYGPA, graduation)
- Little research on ability of tests to allow for fair comparisons among student subpopulations
- IB is a stable indicator; no announced plans to revise IB curriculum or exams

# IB Stakeholder Relevance

- IB exam scores of 4 or higher on 7-point scale accepted at many universities for credit
- 60 universities offer scholarships to students with IB diploma
- IB offers searchable database on postsecondary institutions' recognition of the IB diploma

# IB System Utility

- Students pay \$157 registration fee to sit for the exams and an additional \$108 for every exam they take
- Significant cost to schools for IB Diploma Programme
  - \$10,660 annual IB fee, \$4,000 one time Candidate school application fee, and \$9,500 annual Candidate school fee
- System-level burden includes ordering scores from IB as well as aggregating and analyzing scores
- Approximately 6% of California high schools offer an IB course
- In 2009, California had only 1,705 IB candidates
- Geared to university attendance; less relevant to assessing preparedness for other postsecondary pathways

# AP/IB Summary

## Technical Quality

- Strong connection between AP and IB exam performance and postsecondary success
  - Participation in AP/IB seems to have little predictive value
  - AP enrollment associated with higher college-going rates
- Low-income schools have fewer students enrolled in AP courses and passing AP exams, and fewer qualified teachers
  - More research needed on fair comparisons in relation to IB
- Both AP and

# AP/IB Summary

## Stakeholder Relevance

- Both AP and IB have the potential to provide college credit and build the resumes of students
- Data is understandable to a variety of stakeholders
  - School and district reports may be more problematic to interpret
- Directly measures student performance

# AP/IB Summary System Utility

- Both AP and IB require students to pay for exams and schools to pay for starting up both programs
  - IB is significantly more expensive for both students and schools
- AP courses are offered in nearly 100% of California high schools in comparison to IB being offered in approximately 6% of high schools
- Geared toward the college-going pathway

# Questions or Comments?

# Feedback from PSAA

- What was helpful about the briefs?
  - Why was it helpful?
- What was not helpful?
  - Why was it not helpful?
- What could EPIC add that would increase the usefulness of the briefs?