Efforts to Produce Relevant Score Reports to School, District, and State Officials on National Tests

Thanos Patelis & Haifa Matos-Elefonte

The College Board

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- As assessment developers, it is our responsibility to ensure that the information displayed on score reports are understood, meaningful, and useful to their intended audiences.
  - Standards for Educational and Psychological Testing
  - Code of Fair Testing Practices in Education
  - Code of Professional Responsibilities in Educational Measurement
- We contend that the efficacy and utility of reports by consumers is an important facet of validity.
- We also contend that the delivery of good score reports is an issue of fairness.

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Our Approach

More recently, the College Board introduced more rigorous methods in the development of score reports in the last ten years.
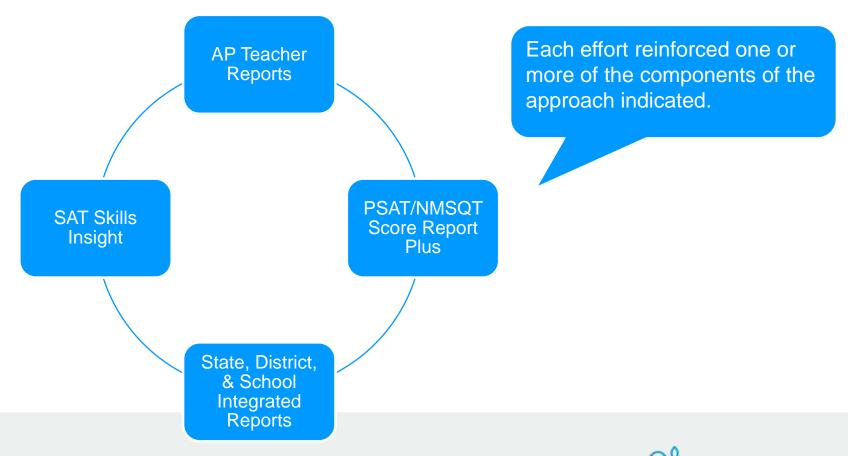
Overview of the Approach:
1. Considering the purpose of the test, clearly articulate the audience and goals of the score report.
2. Survey consumers using rigorous designs to capture needs and preferences
3. Select and utilize appropriate psychometric methods
4. Develop a mock-up of the score report
    - Keep true to the purpose
    - Provide context
    - Give guidance
    - Keep it simple
5. Capture feedback of mock-ups
    - Strive to use representative samples
    - Ask preferences and comprehension-type questions
6. Revise & pilot

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Several sets of activities/efforts changed the College Board's approach

Many good and bad things were learned when we actually asked educators what they thought and how they used score reports.

AP Teacher Reports

SAT Skills Insight

PSAT/NMSQT Score Report Plus

State, District, & School Integrated Reports

Each effort reinforced one or more of the components of the approach indicated.

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SAT® Skills Insight™ Development

The College Board engaged many external educators, curriculum experts and users to develop and validate the content in SAT Skills Insight…

Step I: Agree on the purpose of the score report

- Provide enhanced feedback to students and educators
- Give them insight into what the score represents

Step II: Conduct Scale Anchoring Research

- Ronald Hambleton, Stephen Sireci (University of Massachusetts-Amherst), and Mary Lyn Borque (formally with the National Assessment Governing Board) implemented the scale anchoring approach to the SAT.
- Using secondary and post-secondary educators and content experts, they developed scale anchors at 200-290; 300-390; 400-490; 500-590; 600-690; 700-800 for critical reading, mathematics, and writing.
- Test Development staff with R&D convened several panels for each section of the SAT to develop performance category descriptions that were accurate and understandable by consumers.

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SAT Skills Insight Development

<u>Step III: Test Concept at Focus Groups</u>

- 2007 National Forum focus group with students
- Round I of focus groups with students and counselors
- Round II of focus groups with students

<u>Step IV: Validate and Iterate on the Content</u>

- Secondary and post-secondary educators
- State and district curriculum and assessment experts

<u>Step V: Conduct Usability Testing</u>

- Usability studies with students and teachers

<u>Step VI: Test Concept at More Focus Groups</u>

- Focus groups with state educators to develop aggregate reports

Round I of Focus Groups with Students and Counselors

Focused on the following:

➢Feedback and initial reactions to skill descriptors, suggestions for improvement, and sample questions

➢Gauge intended use

➢Feedback on reactions to report format, language and overall layout

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Round I of Focus Groups: Key Findings

➢ Initial reactions to report are mixed among students and counselors

  ➢ At first glance, the information seems overwhelming and challenging to interpret. However, both audiences see that it is a tool for improving skills

➢ The availability of information on all score bands was of great interest

➢ Skill descriptors contain too much educational jargon. Needs to be more "student friendly"

➢ Skill Improvement section could be improved by identifying current weaknesses in skill areas.

➢ Examples of SAT® Questions should be provided for ALL skill descriptors

➢ Needs an eye-catching format (adding colors could enhance appeal of report)

➢ This tool would be beneficial if provided after the PSAT/NMSQT ® and prior to the first SAT

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Round II of Focus Groups: Key Findings

➢ After making revisions from the first round of focus groups, the students indicated the following:

- They could easily navigate through the website.

- The layout of the webpage was appealing.

- The most important feature of the report was the inclusion of the sample items.

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SAT Skills Insight (final version online): Student Version

Students receiving their score reports on the web (via My Online Score Report) are provided with a link to SAT Skills Insight. For those receiving their score reports on paper (in the mail) the url to skills insight is printed on their score report.

www.collegeboard.com/satskillsinsight

SAT Skills Insight – Student Version

SAT scores are grouped into six "score bands" between 200 and 800.

"Academic Skills" are skills typical of students who score within the selected score band.

"Skill Examples" are SAT questions that illustrate the meaning of each skill.

For each score band, academic skills are categorized by skill group.

"Suggestions for Improvement" help students advance to a higher score band.

SAT® Skills Insight™

OVERVIEW | CRITICAL READING | MATHEMATICS | WRITING | Print

200-290 | 300-390 | 400-490 | 500-590 | 600-690 | 700-800

Using SAT® Skills Insight™

CRITICAL READING SKILL GROUPS: 1 **2 3 4 5**   NEXT

1. Determining the Meaning of Words

Academic Skills | **Suggestions for Improvement**

A typical student in this score band can do the following:

- **SKILL 1**: Use context clues when selecting missing vocabulary at the sentence level
- **SKILL 2**: Use knowledge of root words, prefixes, and suffixes when selecting missing vocabulary at the sentence level
- **SKILL 3**: Use the context of a sentence or a short section of text to clarify the meaning of unknown words or to select the appropriate meaning of familiar and simple words that have multiple meanings

To prepare for the next score band, try the following:

- When you come across an unknown or difficult word in your reading, look at the word to see if it contains a root word that you know.
- When you come across an unknown or difficult word in your reading, try to find out if that word is jargon, or the specialized vocabulary of a specific field.
- When you come across an unknown word or a word with multiple meanings in your reading, look at the context of the sentence for clues to what the word means.
- In your reading, pick out a long sentence and break it down into smaller parts. Think about how the structure of the sentence creates relationships among the ideas in the sentence. Think about how words like *but, although,* and *also* create certain relationships.

Skill Examples

The example questions below demonstrate the Academic Skills found in this score band. Without looking at the answers, try out the questions to see how comfortable you feel with the skills they test.

SKILL 1—EXAMPLE
Use context clues when selecting missing vocabulary at the sentence level

Some fans feel that sports events are ------- only when the competitors are of equal ability, making the outcome of the game -------.

- (A) successful . . assured
- (B) boring . . questionable
- (C) dull . . foreseen
- (D) interesting . . predictable
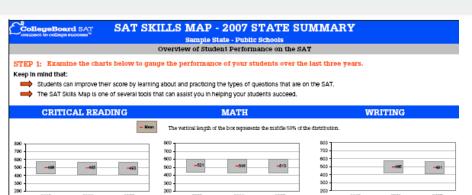
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Step VI: Refine report for state officials

➤ Using the feedback that we received from students, teachers, counselors, and other educators, developed an aggregate report for use by state officials.

➤ In addition to providing the performance category descriptions, sample items, and suggestions for activities to enhance performance, provided a summary of student performance across the state:

  ➤ Showed overall performance over time

  ➤ Offer comparisons

  ➤ Show patterns of performance

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Skills Insight Paper Report for State Officials: Original Designs

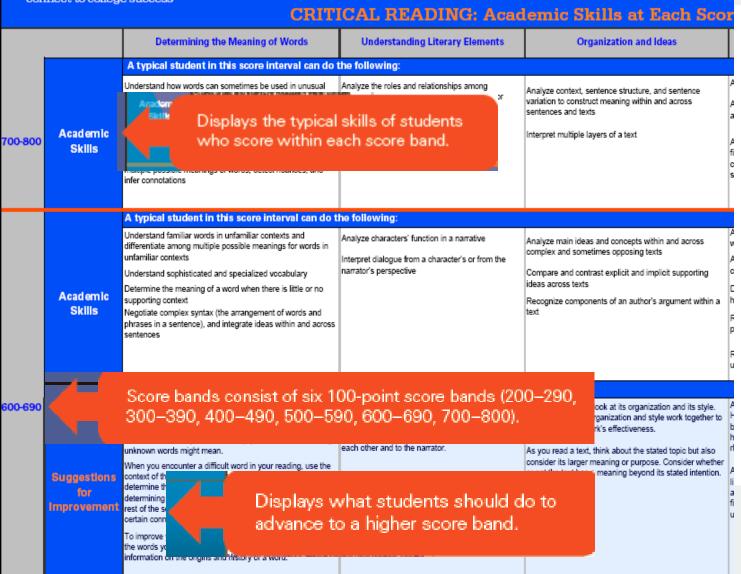Boxplots showing mean and range of scores of middle 50th percentile

Percent of students (State & Nation) falling within each score band on each section of the SAT. General Descriptions of the skills students have mastered at each score band were going to be provided in the space-holders next to each display.

Skills Insight Paper Report for State Officials: Original Designs

CRITICAL READING: Academic Skills at Each Scor

	Determining the Meaning of Words	Understanding Literary Elements	Organization and Ideas	
700-800	**Academic Skills**	A typical student in this score interval can do the following: Understand how words can sometimes be used in unusual	Analyze the roles and relationships among	Analyze context, sentence structure, and sentence variation to construct meaning within and across sentences and texts Interpret multiple layers of a text	
		multiple possible meanings of words, detect nuances, and infer connotations			
600-690	**Academic Skills**	A typical student in this score interval can do the following: Understand familiar words in unfamiliar contexts and differentiate among multiple possible meanings for words in unfamiliar contexts Understand sophisticated and specialized vocabulary Determine the meaning of a word when there is little or no supporting context Negotiate complex syntax (the arrangement of words and phrases in a sentence), and integrate ideas within and across sentences	Analyze characters' function in a narrative Interpret dialogue from a character's or from the narrator's perspective	Analyze main ideas and concepts within and across complex and sometimes opposing texts Compare and contrast explicit and implicit supporting ideas across texts Recognize components of an author's argument within a text	
	Suggestions for Improvement	unknown words might mean. When you encounter a difficult word in your reading, use the context of th... determine th... determining... rest of the s... certain conn... To improve... the words y... information on the origins and history of a word.	each other and to the narrator.	...ook at its organization and its style. ...rganization and style work together to ...rk's effectiveness. As you read a text, think about the stated topic but also consider its larger meaning or purpose. Consider whether ...meaning beyond its stated intention.	

Callouts:

- Displays the typical skills of students who score within each score band.

- Score bands consist of six 100-point score bands (200–290, 300–390, 400–490, 500–590, 600–690, 700–800).

- Displays what students should do to advance to a higher score band.

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Skills Insight Paper Report for State Officials: Revised Designs

SAT Skills Insight - 2008 State Summary
Sample State - Public Schools

Step 1: Examine the charts below to gauge the performance of your students on each section of the SAT over the last five years.
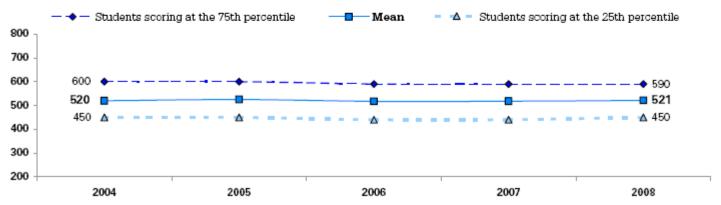
➡ Keep in mind that participation rates for your state may vary from year to year.

Sample State - Public Schools Participation Rate*

	2004	2005	2006	2007	2008
	47%	48%	45%	43%	42%
Number of Test Takers	3,367	3,338	3,514	3,449	3,341

➡ The charts below display scores for your higher performing students (75th percentile) and lower performing students (25th percentile), as well as, mean scores for all of your students, over the last five years.

Critical Reading Trends

Students scoring at the 75th percentile — Mean — Students scoring at the 25th percentile
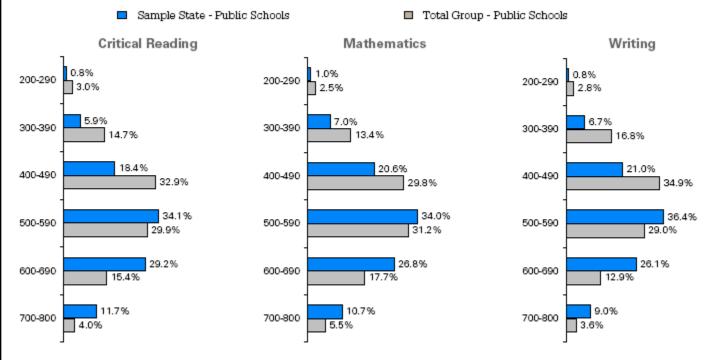
Skills Insight Paper Report for State Officials: Revised Designs

Step 3: Examine the charts below to develop an understanding of how your 2008 College-Bound Seniors performed on the SAT by score band.

➡ The charts below display the percentage of students within your state, and the Total Group, whose scores fell within each of the six score bands for Critical Reading, Mathematics, and Writing.

■ Sample State - Public Schools   ☐ Total Group - Public Schools

Step 4: Review the academic skills tested within each score band of the SAT and the suggestions for improving to the next higher scoreband to understand the types of skills your students should master to be successful in college.

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Skills Insight Paper Report for State Officials: Revised Designs

SAT SKILLS INSIGHT

Mathematics

Academic Skills at Each Score Band and Suggestions for Improvement

	200–290	300–390	400–490
NUMBER AND OPERATIONS			
Academic Skills* A typical student in this score interval can do the following:	• Identify factors of whole numbers • Solve word problems using addition, subtraction, multiplication, and division of whole numbers	• Recall basic mathematical facts/definitions about exponential notation, including scientific notation • Identify a rule that describes a numerical pattern in a sequence	• Identify, use, and represent fractions and percents in arithmetic and algebraic settings • Use properties of even and odd numbers, multiples, and factors • Identify and use the names for place values in solving problems involving decimal representations (e.g., tenths and hundredths) • Use properties of inequalities to compare and order numbers
Suggestions for Improvement To advance to the next highest score band, students should focus on the following skills:	• Recall basic mathematical facts/definitions about exponential notation, including scientific notation • Identify a rule that describes a numerical pattern in a sequence	• Identify, use, and represent fractions and percents in arithmetic and algebraic settings • Use properties of even and odd numbers, multiples, and factors • Identify and use the names for place values in solving problems involving decimal representations (e.g., tenths and hundredths) • Use properties of inequalities to compare and order numbers	• Solve problems using ideas from basic set theory and basic number theory • Recognize and apply ratio, proportion, or percent in solving problems • Use properties of real number operations, ordering, and the zero-product property • Solve problems involving counting techniques

500–590	600–690	700–800
• Solve problems using ideas from basic set theory and basic number theory • Recognize and apply ratio, proportion, or percent in solving problems • Use properties of real number operations, ordering, and the zero-product property • Solve problems involving counting techniques	• Determine values or properties of numbers in a sequence when given a description of the sequence • Create and use ratios, fractions, or percents in solving problems • Solve more-complex counting problems (e.g., permutations, combinations, and inclusion/exclusion)	• Use π in algebraic and geometric contexts • Create and use ratios, fractions, or percents, including algebraic expressions, in solving problems
• Determine values or properties of numbers in a sequence when given a description of the sequence • Create and use ratios, fractions, or percents in solving problems • Solve more-complex counting problems (e.g., permutations, combinations, and inclusion/exclusion)	• Use π in algebraic and geometric contexts • Create and use ratios, fractions, or percents, including algebraic expressions, in solving problems	This is the top score band and students who score at this level will have likely mastered the skills listed at all other levels. However, students can always benefit from more practice. We encourage students to review the skills and examples listed in the 500–590 and 600–690 score bands.

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Skills Insight Paper Report for State Officials: Revised Designs

Score Band 200–290

Number and Operations

Skill 1: Identify factors of whole numbers

Each of the following is a factor of 80 EXCEPT

(A)   5
(B)   8
(C) 12
(D) 16
(E) 40

Answer: C

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Lessons Learned

- Throughout the development process, we needed to have razor sharp focus on the purpose
  - It sometimes became easy to drift from the original purpose (and we did) or add more than what was originally planned.
- Must use empirical (scientific) methods to capture feedback
  - Don't assume…
  - Be careful of sampling issues
    - ✓ Don't just ask your friends!
- The manner in which questions are asked will influence the responses you get.
  - As Ron Hambleton and others have recommended, ask comprehension-type questions in addition to preference.
- Once delivered, need to assess how score reports are used.
- Need ongoing feedback loop to inform score report enhancements and improvements.
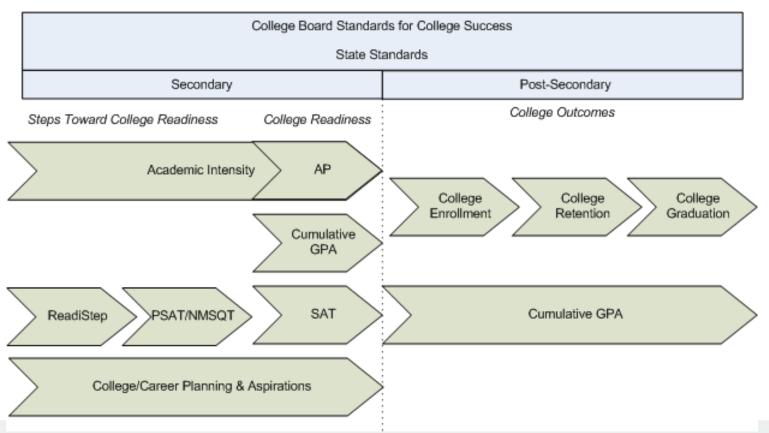
Immediate Next Steps

➢ Examine the validity of the information provides from multiple perspectives:

- Examine the use of the SAT Skills Insight score reports by state officials.

- Examine trends over time of student performance at each score anchor taking into account their curricular experience.

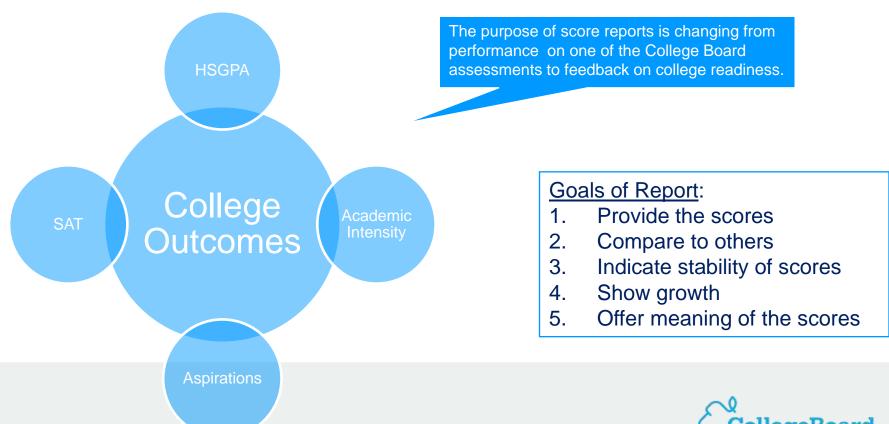- Examine whether interpretation is similar across different types of consumers.

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Vision

The College Board is focused on the integrated use of tests in helping educators make decisions about students.

Next Steps

The College Board is transforming its score reports building on current efforts to provide more comprehensive feedback to students and educators about examinees' readiness for college

HSGPA

College Outcomes

SAT

Academic Intensity

Aspirations

The purpose of score reports is changing from performance on one of the College Board assessments to feedback on college readiness.

Goals of Report:
1. Provide the scores
2. Compare to others
3. Indicate stability of scores
4. Show growth
5. Offer meaning of the scores

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Questions, Comments, Suggestions

- Researchers are encouraged to freely express their professional judgment. Therefore, points of view or opinions stated in College Board presentations do not necessarily represent official College Board position or policy.

- Please forward any questions, comments, and suggestions to: Thanos Patelis tpatelis@collegeboard.org or 212-649-8435.

Thank you!!