Incorporating SAT® Writing into Admission and Placement Decisions

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Outline of Presentation

- History & Background Info on SAT Writing

- Recent National Validity Information on SAT Writing

- Incorporating SAT Writing into Admissions – Paul Johnson, Rutgers University

- Incorporating SAT Writing into Placement – Kathleen O'Connor, Lasell College

- Conducting Local Admission and/or Placement Validity Studies

- Questions

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What is the SAT writing section?

- Implemented in March 2005.

- Lasts one hour, and is scored on a scale of 200 to 800.

- Multiple choice questions test a student's ability to improve sentences and identify sentence errors

  - This section accounts for 70% of the writing score

  - Students have 35 minutes to answer 49 multiple choice questions

- The essay tests a student's ability to articulate a coherent argument, supporting a point of view on an issue specified on the test

  - The essay accounts for 30% of the writing score

  - Students have 25 minutes to write the essay

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And how is the test performing?...

"How do you want it—the crystal mumbo-jumbo or statistical probability?"

National SAT Validity Research

- Examines the relationship of SAT Writing with important college outcomes, including:

  - SAT Writing and FYGPA

  - SAT Writing and FY English grades

  - SAT Writing and Retention

  - SAT Writing and cumulative GPA

- Studies can be found at: www.collegeboard.com/research

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Correlation

- Essentially, a correlation coefficient is a number between -1 and 1 which measures the degree to which two variables are **linearly** related.

  - Strength (absolute magnitude) and direction (negative/positive)
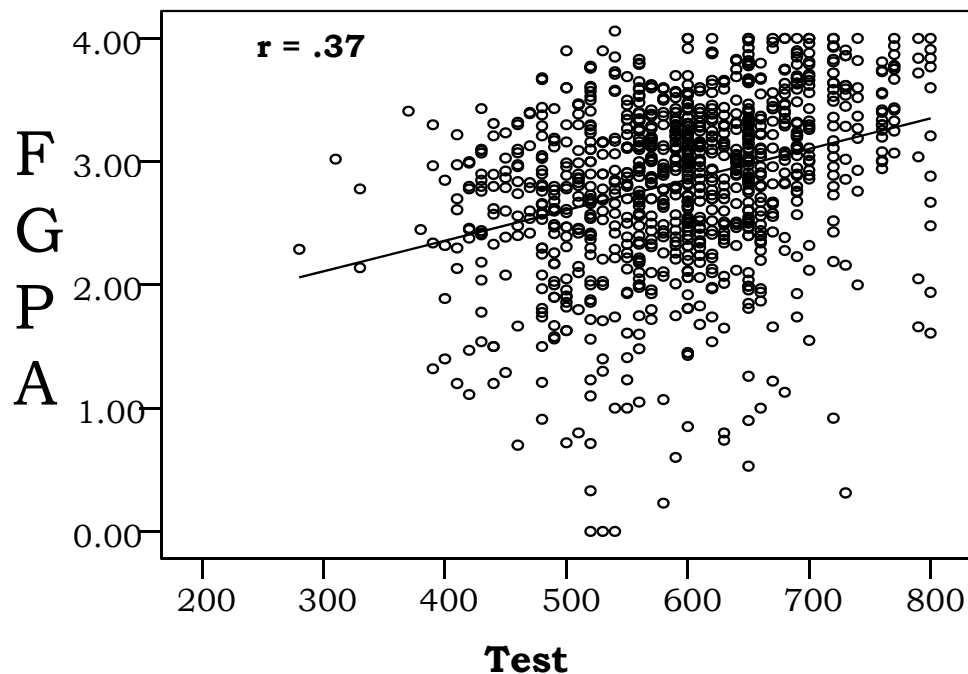
Rule of Thumb for Interpreting Correlation Coefficients

- A general rule of thumb for interpreting correlation coefficients is offered by Cohen (1988):

  - small correlation has an absolute value of approximately 0.1

  - medium correlation has an absolute value of approximately 0.3

  - strong correlation has an absolute value of approximately 0.5 or higher

SAT Validity Study results - snapshot

- ## Admission Validity Study

SAMPLE (2008 entering cohort)

129 colleges participating in Validity Study (N = 246,652)

- Schools provided first year performance data for Fall 2008 cohort through the Admitted Class Evaluation Service™ (ACES ™) portal

Restrict sample to students who completed the new SAT, submitted self reported HSGPA, and had a valid FYGPA (N=173,963)

- SAT Writing has the highest correlation with FYGPA among the three individual SAT sections (*Adj. r* = 0.52).

  - SAT CR (*Adj. r* = 0.48); SAT M (*Adj. r* = 0.48)

- As expected, the best combination of predictors of FYGPA is HSGPA and SAT scores (Adj. *r* =0.63), reinforcing the recommendation that colleges use both HSGPA and SAT scores to make the best predictions of student success.

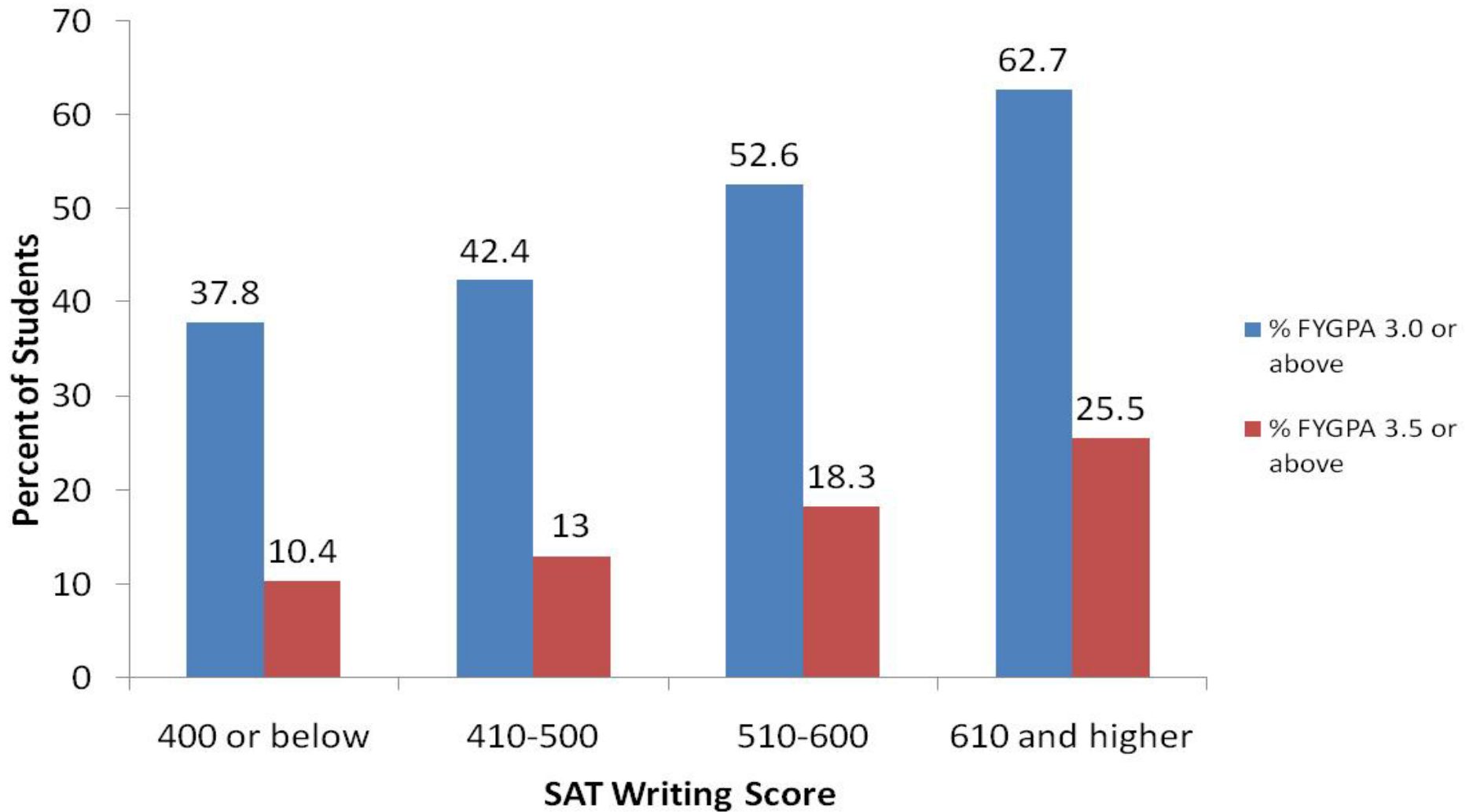# What does a validity coefficient of .53 mean?
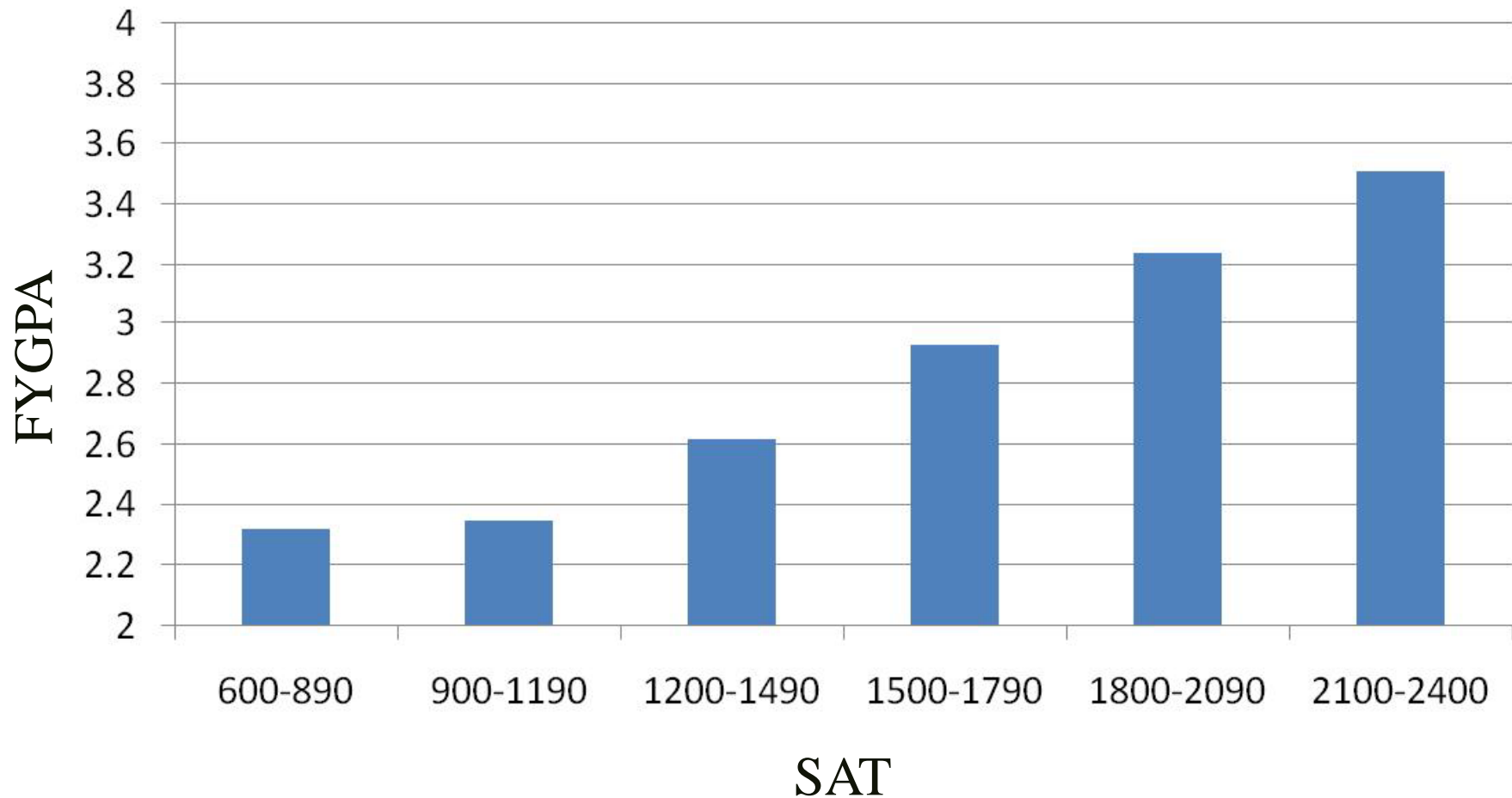
- The increment in validity attributable to the Writing section over and above the CR and M sections is 0.02. When HSGPA is also considered, the increment in validity attributable to the Writing section is 0.01.

Let's look at this graphically….

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Contribution of SAT Writing to Predicting Success for Students
Lower Achievers: HSGPA < 3.3 and SAT CR+M < 1000
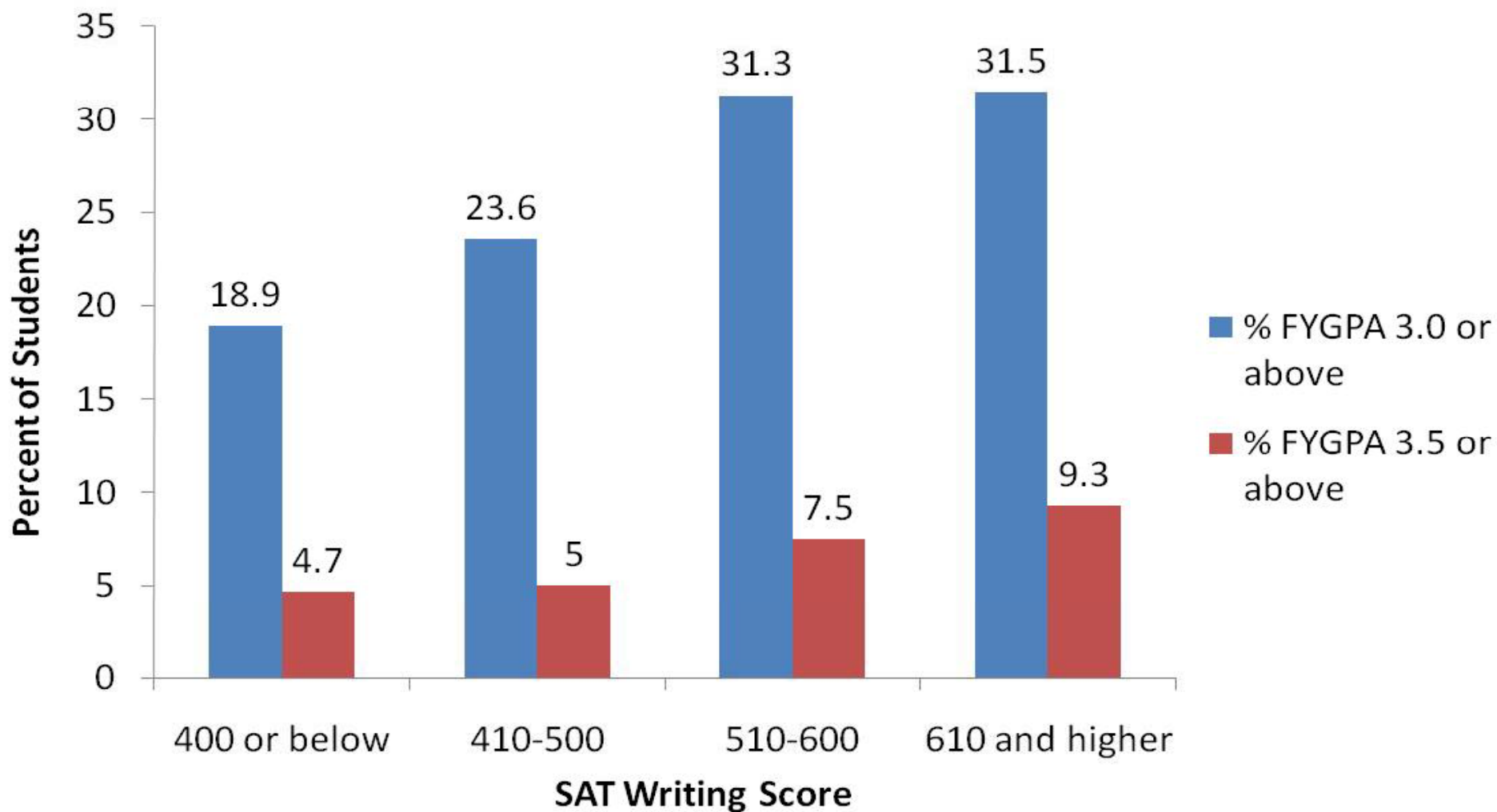
Contribution of SAT Writing to Predicting Success for Students Average Achievers: HSGPA between 3.3-3.7 and SAT CR+M between 1010 and 1200


Legend:
- ■ % FYGPA 3.0 or above
- ■ % FYGPA 3.5 or above

SAT Writing Score	% FYGPA 3.0 or above	% FYGPA 3.5 or above
400 or below	37.8	10.4
410-500	42.4	13
510-600	52.6	18.3
610 and higher	62.7	25.5

Y-axis: Percent of Students
X-axis: SAT Writing Score

Contribution of SAT Writing to Predicting Success for Students
**High Achievers: HSGPA > 3.7 and SAT CR+M > 1200**
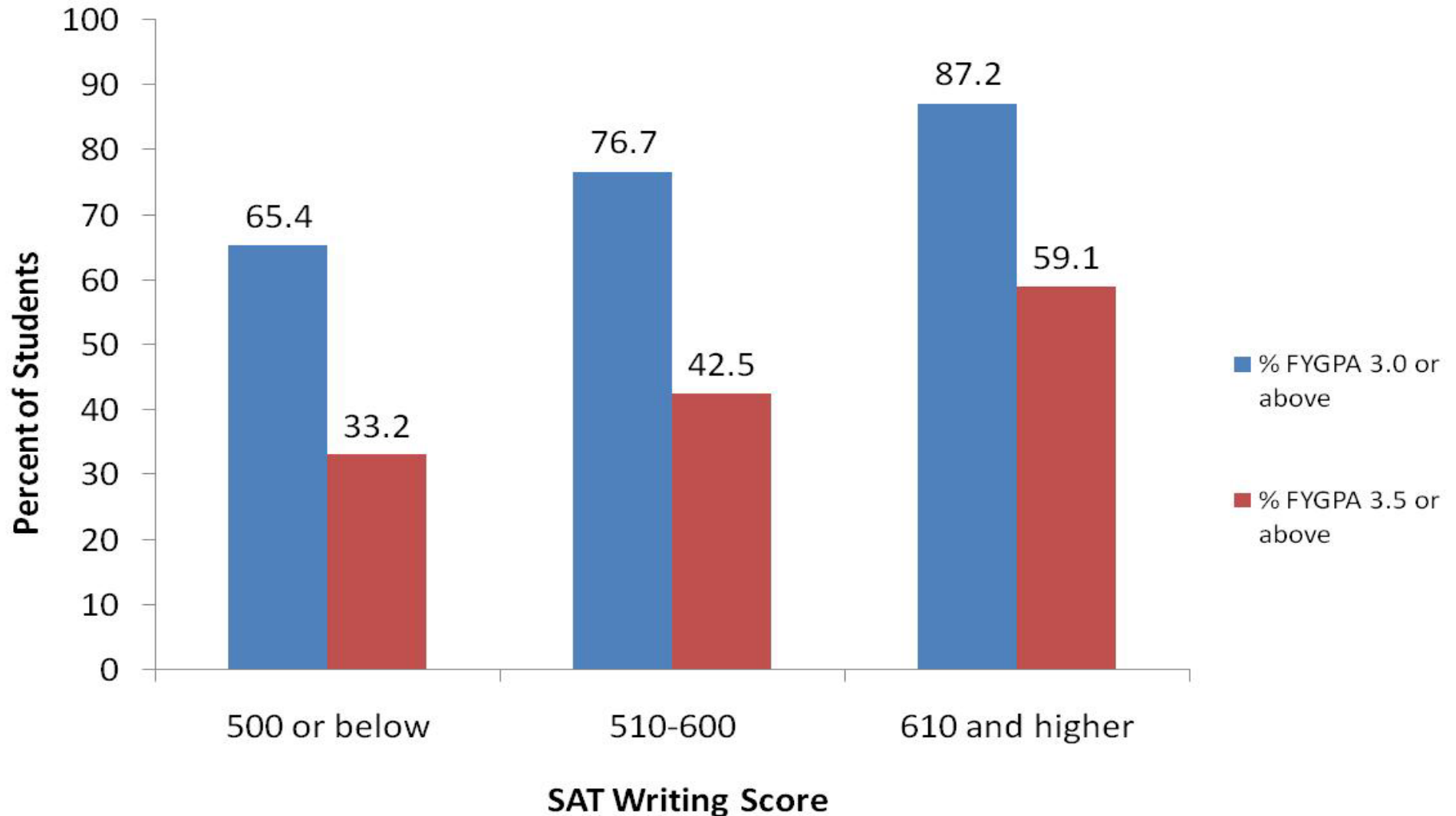
Relationship between SAT Critical Reading and Writing and 1st Year English Course Grades

The Relationship between SAT-CR & W Scores and Grades Earned in 1st Year English Courses
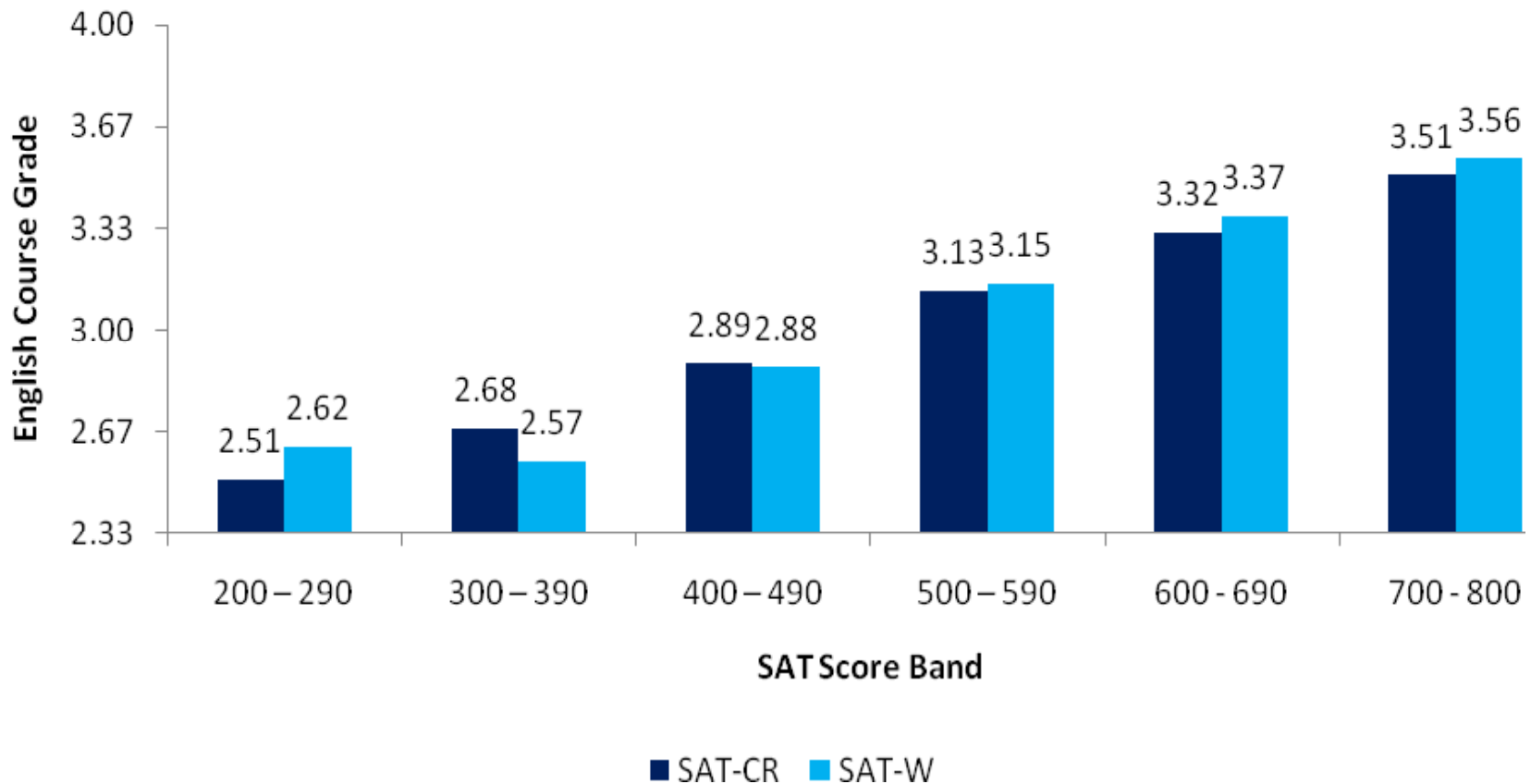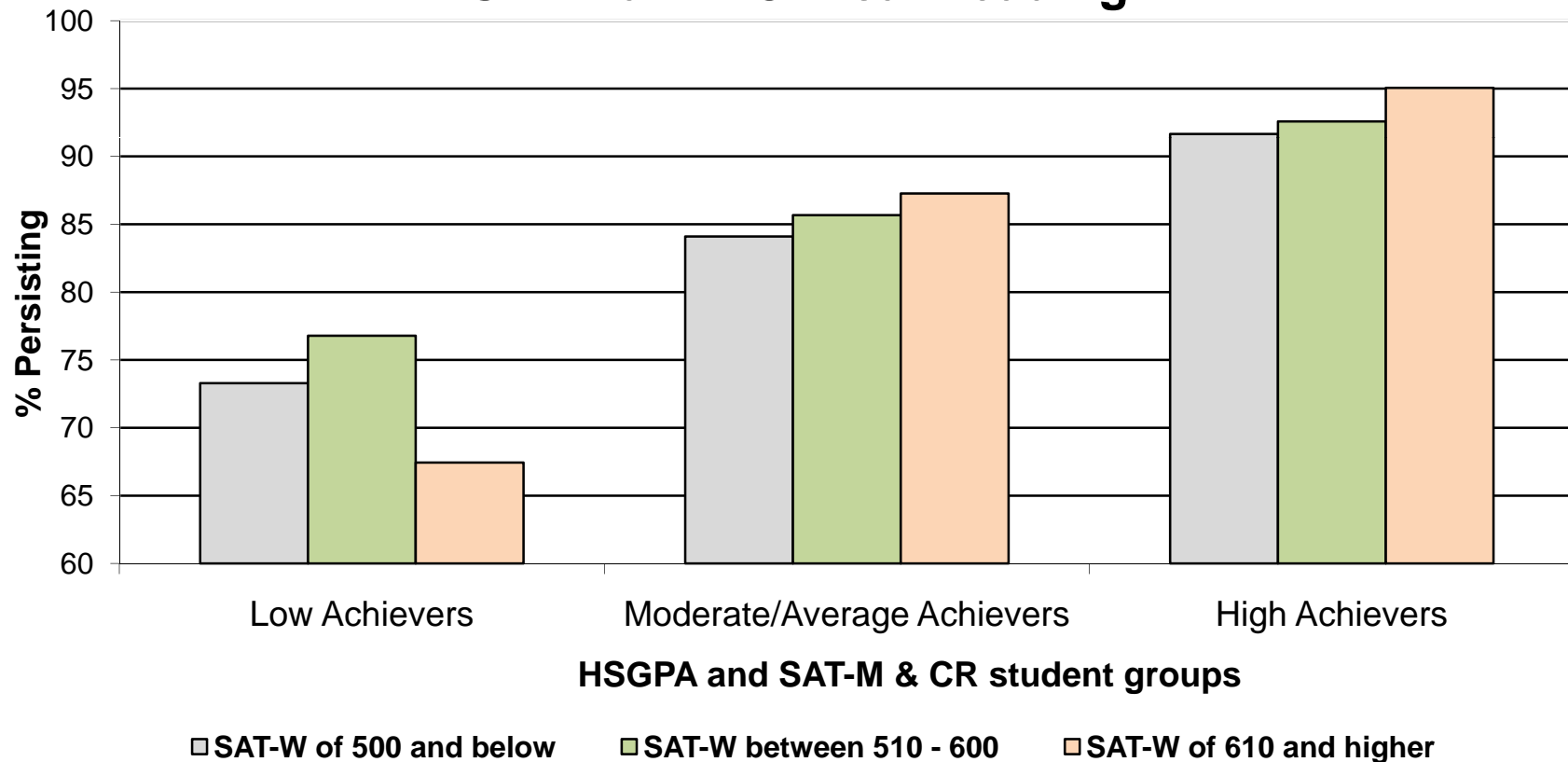
Relationship between SAT CR & W and Earning a B or Higher in 1st Year English Course

Percentage of Students Earning a B or Higher in 1st Year English Courses by SAT-CR & W Scores
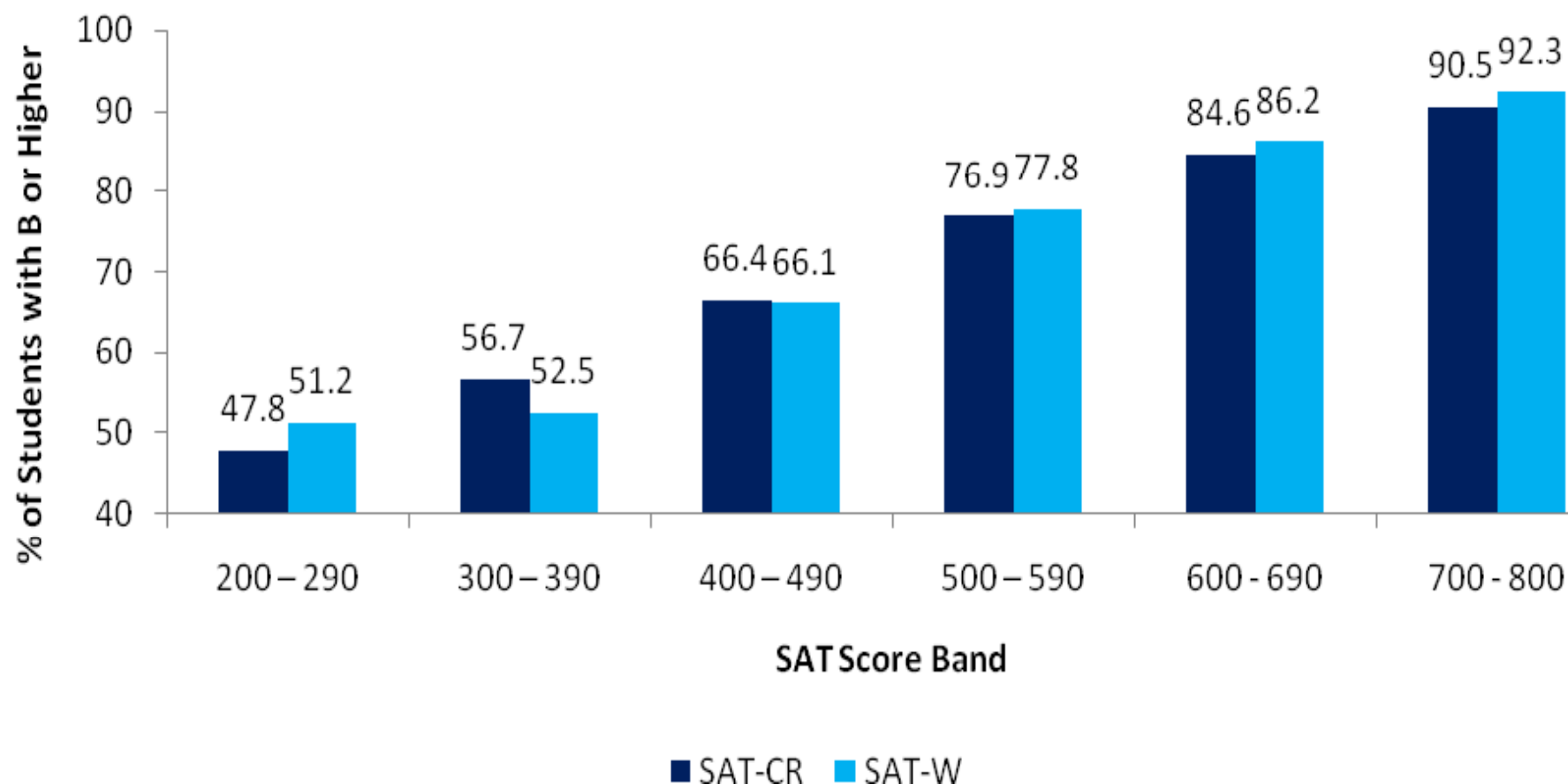
SAT Writing and Retention

Contribution of SAT Writing in the Prediction of Retention to Second Year Controlling for HSGPA and SAT Math + Critical Reading

Chart: % Persisting (y-axis, 60–100) vs HSGPA and SAT-M & CR student groups (x-axis: Low Achievers, Moderate/Average Achievers, High Achievers)

Legend:
- SAT-W of 500 and below
- SAT-W between 510 - 600
- SAT-W of 610 and higher

SAT Writing and Cum GPA

- The SAT Writing section remains quite predictive of cumulative GPA at the end of the third-year of college. (*adj. r* = 0.56)

Predictor(s)	Correlation 3rd Yr Cum GPA
1. HSGPA	0.57
2. SAT-CR	0.52
3. SAT-M	0.50
4. SAT-W	**0.56**
5. SAT-M, SAT-CR	0.55
6. HSGPA, SAT-M, SAT-CR	0.65
7. SAT-CR, SAT-M, SAT-W	0.58
8. HSGPA, SAT-CR, SAT-M, SAT-W	0.66

Note. N = number of students = 63,736. Pooled within-institution, restriction of range corrected correlations are presented; raw correlations are shown in parentheses.

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Next...

Incorporating the SAT into Admissions at Rutgers University

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Next...

Incorporating the SAT into English placement decisions at Lasell College

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Conducting a Local Admission and/or Placement Validity Study on SAT Writing

Admitted Class Evaluation Service (ACES)

• The Admitted Class Evaluation Service (ACES) is a free online service that predicts how admitted students will perform at a college or university generally (admission validity) and how successful students will be in specific classes (placement validity).

http://professionals.collegeboard.com/higher-ed/validity/aces

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ACES Admission Validity Studies

- The primary purpose of an admission validity study is to validate measures used in admission decisions.

- Can determine how well admission criteria work <u>alone</u> and in <u>combination</u> with other predictors, *and* the most effective weighting for the predictors.

  - Success (the **criterion**) may be measured by college GPA

  - Relevant **predictors** may be

    - SAT scores – Critical Reading, Math, or Writing

    - High school GPA, or Class Rank

    - Interview scores, and

    - Other information

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Overview of ACES Process

- The institutional contact/submitter will:

  1. Click link on ACES web site for a new ACES study request:
     https://cbweb1s.collegeboard.org/aces/html/newrvs.html

  2. Enter contact info (name, email, position, institution, etc.)

  3. Design study (choose predictors, subgroups, etc.)

  4. Receive automatically e-mailed user account, password, and request number from ACES

  5. Login to submit data at this site:
     https://cbweb1s.collegeboard.org/aces/html/submit1.html

  6. Record all variable locations, indicate value labels, etc.

  7. Upload data file(s)

  8. ACES reports are returned to institutions 25 - 35 business days after the receipt of data.

ACES Admission Validity Report

Section 1: Evaluating individual admission measures

This section summarizes the predictive strength of the individual admission measures in the study.

The second analysis may include results for predictors, such as SAT Subject Tests, that institutions did not explicitly choose to study but were present in their students' records.

Section 2: Evaluating combined admission measures

This section combines the admission measures that were evaluated individually in Section 1 of this report to find the best prediction of success. Combinations that are available for most of your students are presented first, followed by combinations that are available for smaller subgroups.

Because combinations of predictors tend to be more reliable and allow students to show different strengths, it is important to consider all of the information available for a given student in making an admission decision. Appendix A presents the equations needed to combine the admission measures into a single predicted First-Year GPA. Several equations are given so that you can use as much of the information provided to you by each student as possible. This section of your report gives you the information you need to choose the best combination of predictors for each student.

The tables below display the multiple correlations between combinations of admission measures and the measure of success you chose for this study. The bars at the right of each table represent this predictive strength (multiple correlation) for each combination.

The first table below presents SAT combinations. The first line of that table shows the multiple correlation for the predicted First-Year GPA using only SAT scores.

SAT combinations

SAT			HS Rank	Add. Predictors	N	Predictive Strength (multiple correlation)
Critical Reading	Math	Writing				
35	31	34			978	0.44
19	17	20	45		978	0.57
17	18	20	44	1	978	0.58

SAT & SAT Subject Test combinations

SAT			SAT Subject Test	HS Rank	Add. Predictors	N	Predictive Strength (multiple correlation)
Critical Reading	Math	Writing	High-NonLang				
23	27	27	23			782	0.53
17	19	20	12	32		782	0.60
18	20	24	11	26	1	782	0.61

Notes:

- The multiple correlation calculated by using SAT Math, SAT Critical Reading, and SAT Writing was 0.44, which represents a strong correlation. The numbers in the boxes to the left of the bars show the relative contribution of each predictor (in percentage terms) for each prediction equation. SAT Critical Reading contributes 35 percent, SAT Math contributes 31 percent, and SAT Writing contributes 34 percent when using the SAT in predicting First-Year GPA.

- The second line of the SAT combinations table adds HS Rank to the SAT information. Of the SAT and HS Rank, HS Rank makes the greatest contribution toward predicting First-Year GPA. After adding HS Rank, the multiple correlation increased from 0.44 to 0.57.

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This section combines the admission measures that were evaluated individually in Section 1 of the report to find the best prediction of success.

These tables display the multiple correlations between combinations of admission measures and the criterion. The bars at the right of each table represent this predictive strength (multiple correlation) for each combination.

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ACES Placement Validity Studies

- ACES Placement Validity Studies give you the information you need to confirm or improve your current course placement policies.

- Predictive placement validity studies evaluate student scores on the SAT, for example, to predict performance in a particular course.

- The study design is used to determine the score level on the test at which students should be placed into a course. This cutoff score can then be applied to future students who have taken the test in order to place into the course.

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ACES Placement Validity Study

- The predictive validity study provides two probability tables for cut scores, among other information:

  - For a course grade of B or higher

  - For a course grade of C or higher

Example of ACES Placement Chart

Cut Scores Associated with Predicted Probability of Success Criterion:
Final Course Grade of C or Higher in Eng100 Using SAT Scores

Cut Scores Associated with Predicted Probability of Success Criterion: Final Course Grade of C or Higher in Eng100 Using SAT Scores			
Probability of Success	SAT Critical Reading Only	SAT Writing Only	Composite Predictor
0.95			2.94
0.90	791		2.20
0.85	692	750	1.73
0.80	621	649	1.39
0.75	556	570	1.10
0.70	492	512	0.85
0.65	443	476	0.62
0.60	390	416	0.41
0.55	345	370	0.20
0.50	300	327	0.00
0.45	256	268	-0.20
0.40	211	227	-0.41
0.35			-0.62
0.30			-0.85
0.25			-1.10
0.20			-1.39
0.15			-1.73
0.10			-2.20
0.05			-2.94

The following model(s) can be used to calculate the composite predictor shown in the table above.

Model Number 1 = -4.23677 + (0.00565) × SAT Critical Reading + (0.00625) × SAT Writing

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Chart with Correlations and % Correctly Placed

Individual predictors examined (SAT CR alone, SAT W alone)

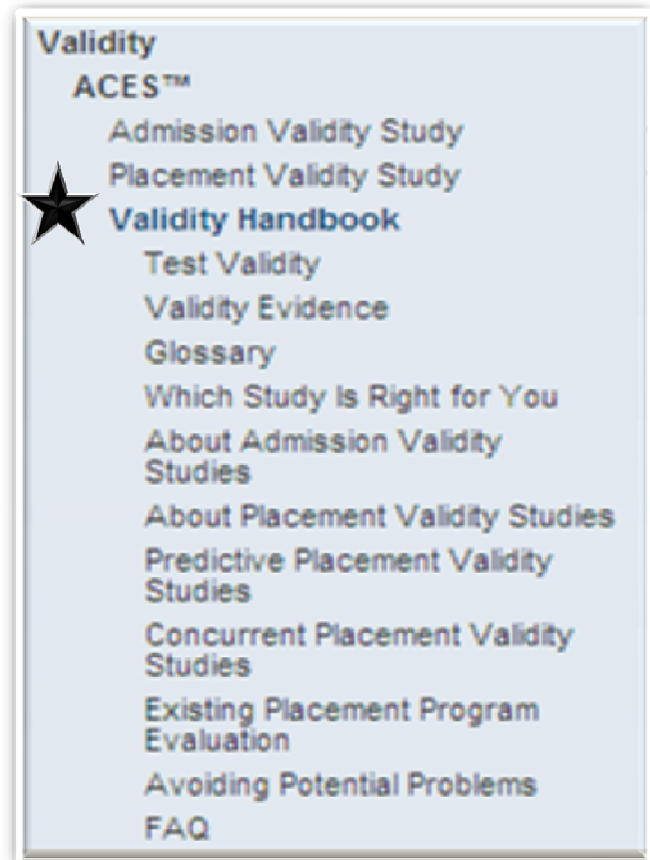Composite predictor examined (SAT CR and W together)

Logistic Biserial Correlations* of Predictors with Success on the Criterion Criterion: Final Course Grade of C or Higher in Eng100 Using SAT Scores						
Predictor Variable(s)	Study Sample			Complete Data Sample		
	N	Logistic Biserial Correlation*	% Correctly Placed	N	Logistic Biserial Correlation*	% Correctly Placed
Individual Predictors						
SAT Critical Reading	492	0.18	69	492	0.18	69
SAT Writing	492	0.29	70	492	0.29	70
Composite Predictors						
Model Number 1	492	0.47	68	492	0.47	68
Model Number 1 includes SAT Critical Reading and SAT Writing						

*The logistic biserial correlation is a measure of the strength of association. It is related to a biserial correlation, but has been modified to be consistent with logistic regression and adapted to single and multiple predictors.

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ACES Validity Handbook
(http://professionals.collegeboard.com/higher-ed/validity/aces/handbook)

- It is designed to serve as a general reference for validity and includes information about validity beyond what is specifically applicable to ACES.

- It includes specific information about the types of validity studies and their design that are available through the ACES system and helps interpret ACES study results.

Validity
  ACES™
    Admission Validity Study
    Placement Validity Study
★ **Validity Handbook**
    Test Validity
    Validity Evidence
    Glossary
    Which Study Is Right for You
    About Admission Validity Studies
    About Placement Validity Studies
    Predictive Placement Validity Studies
    Concurrent Placement Validity Studies
    Existing Placement Program Evaluation
    Avoiding Potential Problems
    FAQ

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The End

- Questions?

- Thank you for joining us today!

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