SAT Suite of Assessments Administration Report

Connecticut
SAT School Day Administration
Spring 2019

Executive Summary

This report summarizes the performance of 37,688 11th grade Connecticut test takers who took the Spring 2019 SAT School Day administration. There were five master forms administered in Connecticut (form 1 had 1,502 test takers; form 2 had 278 test takers; form 3 had 17,296 test takers; form 4 had 18,612 test takers; form 5 had 4 test takers). This report provides an analysis of the quality of the test forms administered to at least 100 test takers in the state of Connecticut. Psychometric and statistical summaries related to the moments, intercorrelations, reliability and standard error of measurement (SEM), item completion rates, form speededness, differential item functioning, and classification accuracy and consistency are also included. Depending on psychometric recommendations for minimum sample sizes for these analyses, results are reported only for forms for which the subgroup sample size was 5 or more, 100 or more, or 200 or more.

Quality of the form(s):

All of the test takers included in this sample were 11th graders. About 82% spoke English or English and another language as their first language. About 50% of the sample was male and 50% was female.

The range of the mean Evidence-Based Reading and Writing (ERW) score was 459 to 516 across forms and the range of the standard deviations was 102 to 114. The range in mean Math Section score (MSS) across forms was 433 to 503, with a range in standard deviation of 102 to 117. The range of the mean total scores was 893 to 1016 across forms and the range of the standard deviation was 196 to 222.

The average observed score correlation between ERW and MSS across forms was 0.84. The observed score correlations between ERW scores and MSS scores across forms was 0.84. The average true score correlation between ERW and MSS across forms was 0.90. The range in ERW/MSS true score correlations across forms was 0.89 to 0.92.

The average scale score reliability of ERW across forms was 0.95. The range in scale score reliability of ERW across forms was 0.94 to 0.95. The average conditional standard error of measurement (CSEM) for ERW across forms was 25. The range in CSEM for ERW across forms was 24 to 27. The average scale score reliability of MSS was 0.92. The range in scale score reliability of MSS across forms was 0.90 to 0.93. The average CSEM for MSS was 32. The range in CSEM for MSS across forms was 30 to 36. The average scale score reliability of the Total score across forms was 0.96. The range in scale score reliability of the Total score across forms was 0.96 to 0.97. The average conditional standard error of measurement (CSEM) for the Total score across forms was 41. The range in CSEM for the Total score across forms was 38 to 45.

Over 90% of the sample completed at least 75% of each of the Reading, Writing and Language, Math – No Calculator, and Math – Calculator timed sections of the test across all forms.

None of the items were classified as showing significant differential item functioning.

The percentage of test takers who met Level 3 and Level 4 for ERW was between 37% and 63%. The percentage of test takers who met Level 3 and 4 for MSS was between 18% and 43%. The probability of correct classification for the total group was between 0.82 and 0.84 for ERW and 0.81 and 0.84 for MSS. The proportion of consistent decisions for the total group was between 0.76 and 0.78 for ERW and between 0.73 and 0.78 for MSS.

Contents

SAT Suite of Assessments

The SAT Suite of Assessments (i.e., SAT, PSAT/NMSQT®, PSAT™ 10, and PSAT™ 8/9) is designed to measure student readiness for college and postsecondary education. Each assessment contains two sections (Evidence-Based Reading and Writing section [ERW] and the Math section [MSS]), three tests (Reading Test, Writing and Language Test, and Math Test), two cross-tests (Analysis in History/Social Studies and Analysis in Science) and seven subscores (Command of Evidence, Words in Context, Expression of Ideas, Standard English Conventions, Heart of Algebra, Problem Solving and Data Analysis, and Passport to Advanced Math). For the SAT, test takers are given three hours to complete 154 items. Test takers who choose to also take the optional Essay are given an additional 50 minutes.

This report contains summary information about the score tiers; specifically, the total, section, and test scores, as well as the cross-test scores, and the subscores from the Spring 2019 School Day administration of the SAT forms for the state of Connecticut. Raw scores were generated from the number of items the student answered correctly within the score tier. Scale scores were generated by applying the appropriate raw-to-scale score conversions. Table 1 describes the number of items and score scale ranges for the SAT.

The Reading Test and Writing and Language Test are administered in separately-timed sections and only contain multiple-choice (MC) items. The Math Test is administered over two separately-timed sections, Math – No Calculator and Math – Calculator. In addition, the Math Test includes two types of items in each timed section, multiple-choice (MC) items and student-produced response (SPR) items. The SAT also includes an optional essay with one prompt. See Table 2 for the number and type of items per timed section for the included forms. The content specifications for the SAT provide additional details for each test within the SAT and can be found at
https://collegereadiness.collegeboard.org/pdf/test-specifications-redesigned-sat-1.pdf.

The content specifications are deeply informed by evidence about essential requirements for college and career readiness and success. In constructing each test form of the SAT, the content specifications are of primary importance. As such, the SAT forms in the Connecticut Spring 2019 School Day administration meet 100% of the target content specifications. The same form was also administered to a national equating sample. More information about the national equating samples used for equating is in Chapter 6 of the SAT Suite of Assessments Technical Manual (College Board, 2017). The target statistical specifications for the SAT Suite are in Appendix A. The target values for difficulty, discrimination, and reliability are summarized in Tables A1 to A5.

Characteristics of the Spring 2019 School Day Administration of the SAT in Connecticut

Test Forms and Demographic Information

This report summarizes the data at the master form level for SAT form 1, form 2, form 3 and form 4. The master form was built with four timed sections (Reading, Writing and Language, Math - No Calculator, and Math - Calculator). Another form was also administered, but fewer than 100 test takers completed the form, so the results for that form are not included in this report. One Math -No Calculator item on form 2 was not included for scoring, due to concerns over the functioning of the item. This item was excluded from the analyses in this report.

Along with the test questions, each test taker completed several survey and demographic questions, including gender, current grade level (Not yet in 8th grade; 8th grade; 9th grade; 10th grade; 11th grade; 12th grade or higher; No longer in high school; 1st year of college; 2nd year of college), ethnicity (Hispanic or Latino; Cuban; Mexican; Puerto Rican; Other Hispanic or Latino; or Not Hispanic or Latino) or race (American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; or White) and first language spoken (English only; English and another language; Another language). The race/ethnicity question was a two-part question worded in the following way:

> **What is your ethnicity? (You may mark more than one.)**
> Hispanic or Latino (including Spanish origin)
>> Cuban
>> Mexican
>> Puerto Rican
> Other Hispanic or Latino
> Not Hispanic or Latino

> **What is your race? (You may mark more than one.)**
> American Indian or Alaska Native
> Asian (including Indian subcontinent and Philippines origin)
> Black or African American (including African and Afro-Caribbean origin)
> Native Hawaiian or Other Pacific Islander
> White (including Middle Eastern origin)

If a test taker selected more than one race, they were included in the Two or More Races category only.

Description of the Item Analysis Sample

Before completing the analyses contained in this report, the data used in these analyses were cleaned to exclude any test takers who were not included in the accountability file. See Table 3 for the frequency of test takers in the sample for this administration by grade level, first language, and gender. See Table 4 for the frequency of test takers in the target item analysis sample that responded to the race/ethnicity question.

Description of the Test Analyses

Moments and Score Distributions

Test taker performance is described using the first four moments for all score tiers. The mean, standard deviation, skewness, and kurtosis provide a description of the distribution of scores. Subgroup results are only reported for forms for which the subgroup sample size was 5 or more.

Intercorrelations

The Pearson product moment correlation coefficient provides an evaluation of the pairwise linear relationship between the total, section, test, and cross-test scores, and the subscores. The disattenuated, or true score correlations, are the correlations after correcting for unreliability in the two scores. Subgroup results are only reported for forms for which the subgroup sample size was 100 or more. The formulas for calculating the Pearson correlations and disattenuated, or true score, correlations are in Appendix B1 and B2, respectively.

Reliability and Standard Error of Measurement

Reliability is a measure of consistency in test takers' observed scores. Test takers' observed scores may vary for many reasons. This variance can occur, for example, if the test is administered at two different points in time, across different forms of a test, or due to changes in test administration or scoring conditions. There are many different methods to estimate reliability coefficients, including those based on Generalizability Theory, Classical Test Theory, and Structural Equation Modeling. For the SAT Suite, the compound binomial model is used to calculate reliability for scale scores (See Appendix B3). Reliability estimates range from 0-1, with values near 1 indicating more consistency and values near 0 indicating little to no consistency.

Standard error of measurement (SEM) can be considered a measure of inconsistency in test takers' observed scores. An SEM estimate measures the dispersion of measurement errors over repeated measures of a person on the same instrument. SEM estimates are inversely related to reliability estimates. An SEM value is an average across all observed scores while a conditional standard error of measurement (CSEM) is the estimated SEM for a particular (conditioned on) observed score. For the scores that were mathematically derived including Math Test, ERW, and Total scores, the root mean squared CSEM (RMS(CSEM)) was calculated.

Scale score reliability estimates were derived from averaging the CSEM values obtained from the Connecticut Spring 2019 School Day administration. See Section 6.1 of the SAT Suite of Assessments Technical Manual for more details on the scale score reliability estimates. The formulas for calculating the scale score reliability and average CSEM estimates are in Appendix B3 of this document.

Standard error of difference (SED) is calculated to assess how much scores must differ in order to reflect the differences in student ability when comparing scores between students for the same measure. If two scores differ by at least SED times 1.65, it is unlikely that the two scores indicate that the two candidates are equal in ability, since this level difference would occur 10 percent of the time or less. The formula for SED is in Appendix B4.

See the Table 5 series for scale score observed and true score correlations, moments, reliability, and RMS(CSEM) and SED values for the total group, gender, and race/ethnicity subgroups for this administration. In the correlation tables, the values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. Subgroup results are only reported for forms for which the subgroup sample size was 100 or more.

Item Completion Rates and Form Speededness

Item completion rates reflect the percentage of test takers reaching an item within each timed section. A reached item is one with a marked response. Conversely, a not reached item is one with no marked answer and no subsequent items with a marked answer within that timed section. Test form speededness is evaluated by examining the following:

- the number of items reached by at least 80% of the test takers

- the percentage of test takers completing at least 75% and 90% of each timed section

- the mean and standard deviation of the number of items not reached

Seventy-five (ninety) percent of a timed section is determined by the ceiling of 75% (90%) of the section length. For example, if a section has 47 items, the statistic is calculated as the percentage of test takers completing 36 or more items in the section. The degree of speededness of a test is negligible when 80% of the students reach the last item and all students reach at least 75% of the items (van der Linden, 2011). However, judgments of appropriateness of timing should be made using all relevant data. See Tables 6 and 7 for the speededness statistics for this administration. Subgroup results are only reported for forms for which the subgroup sample size was 5 or more.

Differential Item Functioning

Differential item functioning (DIF) is a statistical method that examines the performance of reference and focal subgroups for possible statistical bias. Based on the formulas from Dorans and Holland (1993), found in Appendix B5, the Mantel-Haenszel D-DIF (MH D-DIF) statistic is calculated. MH D-DIF values that are not statistically different from zero are classified as *A* items. Items with a p-value that exceeds 1.96 in absolute value and are significantly larger than 1.5 or less than -1.5 are classified as *C* items. The remaining values are classified as *B* items.

For analysis of DIF for gender, the performance of males is compared to the performance of females, with males serving as the reference group and females as the focal group. For analysis of DIF for racial/ethnic group, the performance of White test takers as the reference group is compared to other racial/ethnic focal subgroups. Ethnicity is defined as Hispanic or non-Hispanic and race is defined as American Indian or Alaska Native (AIAN), Asian, Black or African American, Two or More Races, and White. All non-Hispanic respondents are identified as one of the previously listed race categories with Native Hawaiian or Other Pacific Islander classified as Asian. If a test taker selected more than one race, they were included in the Two or More Races category only. DIF analysis for a specific group for an item is only completed if the sample sizes for the item are 200 for the focal group and 500 total. The final DIF category for the item was determined by the worst DIF category compared across gender and race/ethnicity DIF categories. See Table 8 for the summary of DIF values across the test forms.

Standardized Differences Between Groups

The test taker performance for each subgroup is described using the mean and standard deviation for all score tiers and the standardized mean differences between the focal and reference groups. See Appendix B6 for the formula for the standardized mean difference. Cohen (1988) suggests standardized mean differences equal to 0.20 are small, 0.50 are medium, and 0.80 are large. See the Table 9 series for the standardized mean differences between subgroups with sample sizes of 100 or more for this administration.

Classification Levels

Classification levels are based on ERW and Math Section cut scores that were determined by state leadership based on recommendations from panelists during a multi-state standard setting held in June 2016 (Morgan, Sweeney, Reshetar, Patel, & McCullough, 2016). The cut scores from the standard setting suggest test takers can be classified into four performance levels with level one being the lowest and level four being the highest. Test takers with an ERW score of at least 480 are considered proficient. Test takers with an MSS of at least 530 are considered proficient.

Upon the establishment of classification levels, one may also examine classification statistics (e.g., classification accuracy and classification consistency). Classification accuracy is the agreement between classifications based on the estimated true scores and observed scores. Classification consistency is the agreement between the classification of expected scores and actual observed scores. The classification accuracy and classification consistency decisions are from the BB-CLASS software (Brennan, 2004). The classification statistics are based on the Livingston & Lewis (1995) method which uses a four-parameter beta-binomial model with effective test length. This method is particularly useful for calculating classification accuracy of composite scores, like ERW. See Appendixes B7 – B14 for the formulas related to classification accuracy and classification consistency. Subgroup results are only reported for forms for which the subgroup sample size was 100 or more. See Tables 10-12 for the classification statistics results.

Bibliography/References

Brennan, R. L. (2004). BB-CLASS: A computer program that uses the beta-binomial model for classification consistency and accuracy. Available from: https://education.uiowa.edu/centers/center-advanced-studies-measurement-and-assessment/computer-programs/

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

College Board. (2017). SAT Suite of Assessments Technical Manual: Characteristics of the SAT New York, NY: College Board.

Crocker, L. & Algina, J. (1986). Introduction to classical and modern test theory. Belmont, CA: Wadsworth Group/Thomson Learning.

Dorans, N.J. & Holland, P. W. (1993). DIF detection and description: Mantel-Haenszel and standardization. In P. W. Holland and H. Wainer (Eds.). *Differential Item functioning* (p 35 – 66). Hillsdale, NJ: Lawrence Erlbaum Associates.

Hallgren, K. A. (2012). Computing inter-rater reliability for observational data: an overview and tutorial. Tutorials in quantitative methods for psychology, 8(1), 23.

Hanson, B. A. & Brennan, R. L. (1990). An investigation of classification consistency indexes estimated under alternative strong true score models. Journal of Educational Measurement, 27(4), 345 – 359.

Livingston, S. A., & Lewis, C. (1995). Estimating the consistency and accuracy of classifications based on test scores. Journal of Educational Measurement, 32(2), 179–197.

Morgan, D. L., Sweeney, K., Reshetar, R., Patel, P., & McCullough, J. (2016). Final report on the 2016 SAT multi-state standard setting. (Unpublished Technical Report). New York, NY: The College Board.

Schumacker R.E., & Muchinsky P. M. (1996). Disattenuating correlation coefficients. *Rasch* Measurement Transactions, 10(1), 479. Retrieved from the web on January 20, 2016 from http://www.rasch.org/rmt/rmt101g.htm.

van der Linden, W. J. (2011). Test design and speededness. *Journal of Educational Measurement*, 48(1), 44-60.

Tables

Table 1. Score Scales and Number of Items Contributing to Each Score

Scores	SAT Items	Scale
Test Scores		
Reading	52	10-40
Writing and Language (WL)	44	10-40
Math (MTS)	58	10-40
No Calculator	20	
Calculator	38	
Cross-Test Scores		
Analysis in History/Social Studies (HSS)	35	10-40
Analysis in Science (SCI)	35	10-40
Subscores		
Command of Evidence (COE)	18	1-15
Words in Context (WIC)	18	1-15
Expression of Ideas (EOI)	24	1-15
Standard English Conventions (SEC)	20	1-15
Heart of Algebra (HOA)	19	1-15
Problem Solving and Data Analysis (PSD)	17	1-15
Passport to Advanced Mathematics (PAM)	16	1-15
Section Scores		
Evidence-Based Reading and Writing (ERW)	96	200-800
Math (MSS)	58	200-800
Total	**154**	**400-1600**

CollegeBoard

Table 2. Number and Type of Items per Timed Section

Timed Section	SAT	
	Items	Timing
Reading	52 MC	65
Writing and Language (WL)	44 MC	35
Math Test - No Calculator	15 MC; 5 SPR	25
Math Test - Calculator	30 MC; 8 SPR	55

Table 3. Frequency and Percentage of Test Takers in Item Analysis Sample by Grade Level, First Language, and Gender

Subgroup	Form 1 n	Form 1 %	Form 2 n	Form 2 %	Form 3 n	Form 3 %	Form 4 n	Form 4 %
Grade Level								
11th graders	1,499	99.80	278	100.0	17,296	100.0	18,612	100.0
First Language								
English	908	60.45	183	65.83	11,306	65.37	12,306	66.12
English and another language	230	15.31	31	11.15	2,832	16.37	3,254	17.48
Another language	92	6.13	10	3.60	1,003	5.80	1,125	6.04
No response	73	4.86	24	8.63	813	4.70	600	3.22
Missing	199	13.25	30	10.79	1,342	7.76	1,327	7.13
Gender								
Male	812	54.06	166	59.71	8,498	49.13	9,525	51.18
Female	689	45.87	112	40.29	8,798	50.87	9,087	48.82

Only subgroups with sample size >=5 have statistics reported.

Table 4. Frequency and Percentage of Racial/Ethnic Subgroups in Item Analysis Sample

Subgroup	Form 1 n	%	Form 2 n	%	Form 3 n	%	Form 4 n	%
White	743	49.47	166	59.71	10,203	58.99	10,554	56.71
Black or African American	262	17.44	36	12.95	2,061	11.92	2,254	12.11
Hispanic	401	26.70	51	18.35	3,688	21.32	4,076	21.90
Asian	46	3.06	9	3.24	851	4.92	1,083	5.82
Native Hawaiian or other Pacific Islander	-	-	-	-	16	0.09	22	0.12
American Indian/Alaska Native	5	0.33	-	-	42	0.24	38	0.20
Two or More Races	34	2.26	13	4.68	416	2.41	556	2.99
Other/Missing	11	0.73	-	-	19	0.11	29	0.16

Note. If a test taker selected more than one race then they were included in the Two or More Races category. Only subgroups with sample size >=5 have statistics reported.

Table 5.a.1. Scale Score Moments, Intercorrelations, and Reliability for Form 1

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
						N = 1,502									
R	1	0.94	0.89	1.00	1.00	1.00	1.00	0.94	0.92	0.90	0.91	0.82	1.00	0.89	0.99
WL	0.84	1	0.90	0.97	0.97	1.00	1.00	1.00	1.00	0.90	0.90	0.85	1.00	0.90	0.99
MTS	0.81	0.81	1	0.96	0.96	0.93	0.88	0.90	0.87	1.00	1.00	1.00	0.91	1.00	1.00
HSS	0.90	0.82	0.82	1	0.99	1.00	1.00	1.00	0.91	0.95	0.97	0.91	1.00	0.96	1.00
SCI	0.92	0.85	0.85	0.82	1	1.00	1.00	1.00	0.92	0.95	0.99	0.91	1.00	0.96	1.00
COE	0.87	0.86	0.77	0.82	0.85	1	0.99	1.00	0.96	0.93	0.94	0.87	1.00	0.93	1.00
WIC	0.87	0.86	0.74	0.81	0.82	0.76	1	1.00	0.96	0.90	0.90	0.77	1.00	0.88	0.98
EOI	0.79	0.94	0.76	0.80	0.82	0.85	0.83	1	0.96	0.90	0.89	0.85	1.00	0.90	0.99
SEC	0.79	0.94	0.76	0.74	0.78	0.76	0.78	0.78	1	0.87	0.88	0.83	1.00	0.87	0.97
HOA	0.76	0.76	0.92	0.75	0.78	0.72	0.71	0.71	0.71	1	0.99	0.93	0.91	1.00	1.00
PSD	0.78	0.76	0.91	0.78	0.82	0.74	0.72	0.71	0.72	0.79	1	0.90	0.92	1.00	1.00
PAM	0.63	0.65	0.83	0.66	0.69	0.62	0.56	0.61	0.62	0.67	0.66	1	0.84	1.00	0.98
ERW	0.96	0.96	0.84	0.90	0.92	0.90	0.90	0.90	0.90	0.79	0.80	0.67	1	0.91	1.00
MSS	0.81	0.81	1.00	0.82	0.85	0.77	0.74	0.76	0.76	0.92	0.91	0.83	0.84	1	1.00
Total	0.92	0.92	0.96	0.89	0.92	0.87	0.85	0.86	0.86	0.89	0.89	0.78	0.96	0.96	1
Mean	23.30	22.63	22.29	23.24	23.57	7.43	6.99	7.41	6.12	6.78	6.31	6.67	459.34	445.86	905.20
S.D.	5.82	6.06	5.86	5.87	5.67	2.83	3.43	3.10	3.24	3.12	3.54	2.96	114.10	117.13	221.80
Skewness	0.19	0.28	0.36	0.04	0.21	0.26	0.02	0.15	0.44	0.26	0.42	0.48	0.30	0.36	0.37
Kurtosis	-0.29	-0.25	0.10	-0.32	0.08	-0.03	-0.90	-0.25	-0.21	-0.15	-0.63	0.37	-0.23	0.10	-0.03
Reliability	0.89	0.90	0.91	0.80	0.86	0.76	0.78	0.78	0.83	0.79	0.81	0.66	0.94	0.91	0.96
RMS(CSEM)	1.89	1.92	1.80	2.64	2.14	1.40	1.59	1.44	1.33	1.43	1.56	1.71	26.98	35.94	44.94
SED	2.68	2.72	2.54	3.74	3.03	1.97	2.25	2.04	1.87	2.02	2.20	2.42	38.16	50.82	63.55
SED x 1.65	4.42	4.48	4.19	6.17	4.99	3.26	3.71	3.36	3.09	3.34	3.63	4.00	62.96	83.86	104.87

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.a.2. Scale Score Moments, Intercorrelations, and Reliability for Form 2

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 278								
R	1	0.92	0.87	1.00	1.00	1.00	1.00	0.94	0.89	0.83	0.89	0.81	1.00	0.87	0.98
WL	0.82	1	0.93	0.97	0.96	1.00	1.00	1.00	1.00	0.89	0.90	0.90	1.00	0.93	1.00
MTS	0.77	0.83	1	0.96	0.94	0.96	0.92	0.95	0.91	1.00	1.00	1.00	0.92	1.00	1.00
HSS	0.91	0.84	0.83	1	0.96	1.00	1.00	1.00	0.93	0.89	1.00	0.90	1.00	0.96	1.00
SCI	0.90	0.83	0.81	0.80	1	1.00	1.00	1.00	0.90	0.90	0.95	0.88	1.00	0.94	1.00
COE	0.85	0.83	0.78	0.85	0.83	1	0.99	1.00	0.94	0.92	0.99	0.94	1.00	0.96	1.00
WIC	0.87	0.87	0.77	0.84	0.80	0.74	1	1.00	1.00	0.91	0.90	0.85	1.00	0.92	1.00
EOI	0.81	0.95	0.82	0.84	0.84	0.86	0.86	1	0.97	0.92	0.94	0.90	1.00	0.95	1.00
SEC	0.75	0.93	0.77	0.76	0.73	0.71	0.78	0.79	1	0.87	0.88	0.90	1.00	0.91	0.99
HOA	0.71	0.77	0.92	0.74	0.74	0.71	0.73	0.76	0.71	1	0.93	0.95	0.88	1.00	1.00
PSD	0.73	0.75	0.88	0.81	0.76	0.73	0.70	0.75	0.69	0.74	1	0.87	0.91	1.00	1.00
PAM	0.59	0.66	0.82	0.64	0.62	0.62	0.58	0.64	0.62	0.67	0.59	1	0.87	1.00	1.00
ERW	0.95	0.96	0.84	0.92	0.90	0.88	0.91	0.92	0.89	0.78	0.78	0.66	1	0.92	1.00
MSS	0.77	0.83	1.00	0.83	0.81	0.78	0.77	0.82	0.77	0.92	0.88	0.82	0.84	1	1.00
Total	0.90	0.93	0.96	0.91	0.89	0.86	0.87	0.91	0.86	0.89	0.86	0.77	0.96	0.96	1
Mean	23.54	22.51	21.63	22.87	23.42	7.54	6.99	7.02	6.19	6.45	5.63	6.72	460.43	432.63	893.06
S.D.	5.15	5.55	5.12	5.31	5.07	2.44	3.23	2.90	2.94	2.90	3.17	2.68	102.05	102.44	196.37
Skewness	0.72	0.64	0.97	0.60	0.62	0.91	0.34	0.62	0.70	0.72	0.63	0.41	0.79	0.97	0.98
Kurtosis	0.06	0.17	1.36	0.22	0.17	0.82	-0.45	-0.14	0.18	0.51	-0.13	0.63	0.08	1.36	0.69
Reliability	0.88	0.90	0.90	0.83	0.83	0.72	0.78	0.83	0.79	0.82	0.77	0.60	0.94	0.90	0.96
RMS(CSEM)	1.78	1.75	1.60	2.17	2.08	1.29	1.52	1.19	1.34	1.21	1.53	1.70	25.00	32.04	40.64
SED	2.52	2.48	2.27	3.07	2.94	1.83	2.16	1.69	1.89	1.71	2.16	2.40	35.36	45.31	57.47
SED x 1.65	4.16	4.09	3.74	5.07	4.85	3.02	3.56	2.78	3.12	2.83	3.57	3.97	58.34	74.76	94.83

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.a.3. Scale Score Moments, Intercorrelations, and Reliability for Form 3

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 17,296								
R	1	0.94	0.87	1.00	1.00	1.00	1.00	0.95	0.92	0.88	0.89	0.83	1.00	0.87	0.98
WL	0.85	1	0.89	0.97	0.98	1.00	1.00	1.00	1.00	0.90	0.91	0.86	1.00	0.89	0.99
MTS	0.80	0.81	1	0.93	0.95	0.91	0.85	0.89	0.88	1.00	1.00	1.00	0.89	1.00	1.00
HSS	0.93	0.87	0.84	1	0.98	1.00	1.00	0.99	0.94	0.94	0.97	0.88	1.00	0.93	1.00
SCI	0.92	0.87	0.86	0.85	1	1.00	1.00	0.99	0.94	0.95	0.98	0.93	1.00	0.95	1.00
COE	0.88	0.86	0.77	0.85	0.87	1	0.96	1.00	0.96	0.91	0.92	0.87	1.00	0.91	1.00
WIC	0.84	0.84	0.72	0.82	0.81	0.74	1	1.00	0.94	0.87	0.88	0.80	1.00	0.85	0.96
EOI	0.83	0.95	0.79	0.85	0.85	0.86	0.85	1	0.98	0.90	0.91	0.85	1.00	0.89	0.99
SEC	0.79	0.94	0.76	0.79	0.80	0.77	0.74	0.81	1	0.88	0.89	0.85	1.00	0.88	0.97
HOA	0.76	0.77	0.94	0.80	0.81	0.74	0.69	0.75	0.72	1	1.00	0.99	0.90	1.00	1.00
PSD	0.74	0.75	0.90	0.78	0.79	0.71	0.66	0.73	0.70	0.79	1	0.95	0.91	1.00	1.00
PAM	0.70	0.72	0.90	0.73	0.77	0.69	0.62	0.69	0.68	0.79	0.73	1	0.86	1.00	0.99
ERW	0.96	0.96	0.84	0.93	0.93	0.90	0.87	0.93	0.90	0.80	0.77	0.74	1	0.89	1.00
MSS	0.80	0.81	1.00	0.84	0.86	0.77	0.72	0.79	0.76	0.94	0.90	0.90	0.84	1	1.00
Total	0.91	0.92	0.96	0.92	0.93	0.87	0.82	0.89	0.86	0.91	0.87	0.86	0.95	0.96	1
Mean	25.84	25.54	25.13	25.87	25.69	8.54	8.78	8.78	7.67	7.97	7.86	8.24	513.80	502.55	1016.34
S.D.	5.37	5.70	5.87	5.56	5.59	2.75	3.31	2.94	3.15	2.97	3.51	3.00	106.54	117.46	214.77
Skewness	-0.04	0.10	0.16	-0.01	-0.01	0.22	-0.32	-0.05	0.24	0.08	-0.14	0.14	0.03	0.16	0.10
Kurtosis	-0.48	-0.53	-0.48	-0.46	-0.48	-0.31	-0.62	-0.60	-0.62	-0.35	-0.79	-0.21	-0.59	-0.48	-0.59
Reliability	0.91	0.91	0.93	0.87	0.88	0.79	0.76	0.84	0.81	0.82	0.75	0.78	0.95	0.93	0.97
RMS(CSEM)	1.65	1.75	1.59	1.98	1.96	1.27	1.62	1.16	1.35	1.24	1.75	1.40	24.07	31.72	39.82
SED	2.33	2.48	2.24	2.80	2.77	1.79	2.30	1.65	1.91	1.76	2.47	1.98	34.04	44.86	56.31
SED x 1.65	3.85	4.09	3.70	4.62	4.58	2.96	3.79	2.72	3.16	2.90	4.08	3.27	56.17	74.02	92.92

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.a.4. Scale Score Moments, Intercorrelations, and Reliability for Form 4

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 18,612								
R	1	0.94	0.86	1.00	1.00	1.00	1.00	0.96	0.90	0.87	0.88	0.81	1.00	0.86	0.97
WL	0.85	1	0.89	0.98	0.96	1.00	1.00	1.00	1.00	0.89	0.90	0.84	1.00	0.89	0.99
MTS	0.79	0.82	1	0.94	0.93	0.90	0.87	0.89	0.87	1.00	1.00	1.00	0.89	1.00	1.00
HSS	0.92	0.87	0.85	1	0.97	1.00	1.00	1.00	0.93	0.94	0.97	0.89	1.00	0.94	1.00
SCI	0.93	0.86	0.84	0.86	1	1.00	1.00	0.99	0.91	0.94	0.94	0.88	1.00	0.93	1.00
COE	0.89	0.86	0.78	0.87	0.86	1	0.97	1.00	0.94	0.91	0.91	0.86	1.00	0.90	1.00
WIC	0.87	0.86	0.75	0.85	0.84	0.77	1	1.00	0.95	0.87	0.90	0.80	1.00	0.87	0.98
EOI	0.84	0.95	0.79	0.86	0.86	0.87	0.87	1	0.97	0.90	0.91	0.84	1.00	0.89	0.99
SEC	0.78	0.94	0.76	0.79	0.78	0.77	0.77	0.81	1	0.87	0.87	0.83	1.00	0.87	0.96
HOA	0.75	0.77	0.93	0.79	0.80	0.73	0.70	0.74	0.72	1	0.99	0.97	0.90	1.00	1.00
PSD	0.76	0.77	0.92	0.82	0.80	0.73	0.72	0.75	0.71	0.80	1	0.94	0.90	1.00	1.00
PAM	0.67	0.70	0.88	0.72	0.72	0.67	0.62	0.67	0.66	0.76	0.73	1	0.84	1.00	0.98
ERW	0.96	0.97	0.84	0.93	0.93	0.91	0.90	0.93	0.90	0.79	0.79	0.71	1	0.89	1.00
MSS	0.79	0.82	1.00	0.85	0.84	0.78	0.75	0.79	0.76	0.93	0.92	0.88	0.84	1	1.00
Total	0.91	0.93	0.96	0.93	0.92	0.88	0.86	0.89	0.86	0.90	0.89	0.84	0.96	0.96	1
Mean	25.95	25.62	24.92	25.86	25.84	8.58	8.60	8.77	7.72	8.09	7.77	8.26	515.63	498.44	1014.06
S.D.	5.39	5.77	5.72	5.58	5.53	2.76	3.02	2.98	3.19	3.00	3.47	2.82	107.47	114.31	212.55
Skewness	0.11	0.17	0.42	0.04	0.07	0.37	-0.19	0.01	0.22	0.24	0.07	0.24	0.17	0.42	0.30
Kurtosis	-0.53	-0.47	-0.31	-0.40	-0.54	-0.57	-0.37	-0.60	-0.57	-0.28	-0.57	-0.05	-0.58	-0.31	-0.48
Reliability	0.91	0.91	0.93	0.87	0.89	0.80	0.79	0.84	0.83	0.82	0.81	0.75	0.95	0.93	0.97
RMS(CSEM)	1.64	1.74	1.50	1.98	1.87	1.23	1.38	1.19	1.32	1.28	1.52	1.40	23.87	29.93	38.28
SED	2.32	2.46	2.12	2.80	2.65	1.74	1.96	1.68	1.87	1.81	2.15	1.97	33.76	42.33	54.14
SED x 1.65	3.82	4.05	3.49	4.62	4.37	2.87	3.23	2.78	3.08	2.99	3.54	3.26	55.70	69.84	89.33

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.b.1.1. Scale Score Moments, Intercorrelations, and Reliability for Male Test Takers for Form 1

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 812								
R	1	0.94	0.90	1.00	1.00	1.00	1.00	0.94	0.92	0.91	0.92	0.84	1.00	0.90	0.99
WL	0.85	1	0.92	0.97	0.98	1.00	1.00	1.00	1.00	0.92	0.92	0.87	1.00	0.92	1.00
MTS	0.82	0.83	1	0.96	0.96	0.95	0.89	0.92	0.90	1.00	1.00	1.00	0.92	1.00	1.00
HSS	0.90	0.83	0.82	1	0.98	1.00	1.00	1.00	0.91	0.95	0.97	0.90	1.00	0.96	1.00
SCI	0.92	0.86	0.86	0.82	1	1.00	1.00	1.00	0.93	0.95	0.99	0.92	1.00	0.96	1.00
COE	0.87	0.87	0.79	0.82	0.87	1	0.99	1.00	0.96	0.94	0.97	0.90	1.00	0.95	1.00
WIC	0.86	0.86	0.76	0.80	0.83	0.77	1	1.00	0.96	0.92	0.92	0.79	1.00	0.89	0.98
EOI	0.79	0.94	0.78	0.80	0.83	0.86	0.84	1	0.96	0.92	0.92	0.88	1.00	0.92	1.00
SEC	0.79	0.93	0.78	0.75	0.79	0.77	0.78	0.77	1	0.89	0.91	0.86	1.00	0.90	0.97
HOA	0.77	0.78	0.93	0.77	0.79	0.73	0.73	0.73	0.73	1	1.00	0.94	0.93	1.00	1.00
PSD	0.79	0.79	0.92	0.79	0.83	0.76	0.74	0.73	0.75	0.81	1	0.91	0.94	1.00	1.00
PAM	0.66	0.69	0.84	0.67	0.71	0.65	0.59	0.64	0.65	0.70	0.68	1	0.87	1.00	0.99
ERW	0.96	0.96	0.86	0.90	0.93	0.91	0.90	0.90	0.90	0.81	0.82	0.70	1	0.92	1.00
MSS	0.82	0.83	1.00	0.82	0.86	0.79	0.76	0.78	0.78	0.93	0.92	0.84	0.86	1	1.00
Total	0.92	0.93	0.97	0.89	0.93	0.88	0.86	0.87	0.87	0.90	0.90	0.80	0.96	0.97	1
Mean	22.58	21.69	21.89	22.66	23.12	7.15	6.51	7.02	5.57	6.60	6.17	6.48	442.70	437.77	880.47
S.D.	5.99	6.05	6.09	6.04	5.86	2.89	3.49	3.10	3.18	3.24	3.59	3.05	115.65	121.86	228.99
Skewness	0.26	0.37	0.39	0.05	0.25	0.26	0.16	0.20	0.57	0.28	0.45	0.53	0.38	0.39	0.43
Kurtosis	-0.24	-0.06	0.07	-0.34	0.16	-0.06	-0.93	-0.18	0.00	-0.26	-0.65	0.39	-0.12	0.07	0.03
Reliability	0.90	0.90	0.91	0.81	0.87	0.77	0.79	0.78	0.83	0.81	0.82	0.69	0.95	0.91	0.96
RMS(CSEM)	1.90	1.92	1.80	2.65	2.14	1.40	1.59	1.45	1.31	1.43	1.54	1.71	27.05	35.95	44.99
SED	2.69	2.72	2.54	3.74	3.03	1.98	2.25	2.05	1.85	2.02	2.18	2.41	38.26	50.83	63.62
SED x 1.65	4.44	4.48	4.19	6.17	5.00	3.27	3.71	3.38	3.05	3.34	3.59	3.98	63.12	83.88	104.98

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.b.1.2. Scale Score Moments, Intercorrelations, and Reliability for Male Test Takers for Form 2

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 166								
R	1	0.93	0.84	1.00	1.00	1.00	1.00	0.92	0.93	0.82	0.88	0.73	1.00	0.84	0.97
WL	0.82	1	0.93	1.00	0.95	1.00	1.00	1.00	1.00	0.89	0.92	0.87	1.00	0.93	1.00
MTS	0.75	0.83	1	0.96	0.91	0.98	0.91	0.95	0.90	1.00	1.00	1.00	0.90	1.00	1.00
HSS	0.90	0.85	0.82	1	0.94	1.00	1.00	1.00	0.98	0.91	1.00	0.85	1.00	0.96	1.00
SCI	0.88	0.82	0.78	0.78	1	1.00	0.97	0.98	0.89	0.89	0.94	0.79	1.00	0.91	0.98
COE	0.83	0.82	0.78	0.84	0.82	1	0.96	1.00	0.91	0.94	1.00	0.89	1.00	0.98	1.00
WIC	0.85	0.87	0.76	0.85	0.78	0.72	1	1.00	0.99	0.90	0.93	0.77	1.00	0.91	1.00
EOI	0.78	0.94	0.82	0.83	0.81	0.85	0.85	1	0.94	0.93	0.95	0.86	1.00	0.95	1.00
SEC	0.77	0.92	0.75	0.78	0.72	0.67	0.77	0.76	1	0.83	0.89	0.87	1.00	0.90	0.99
HOA	0.70	0.76	0.92	0.75	0.74	0.72	0.72	0.77	0.67	1	0.95	0.92	0.87	1.00	0.99
PSD	0.71	0.75	0.88	0.81	0.74	0.76	0.71	0.75	0.68	0.75	1	0.83	0.92	1.00	1.00
PAM	0.53	0.64	0.81	0.60	0.56	0.58	0.53	0.61	0.60	0.65	0.56	1	0.82	1.00	0.98
ERW	0.95	0.96	0.83	0.92	0.89	0.86	0.90	0.90	0.89	0.77	0.77	0.62	1	0.90	1.00
MSS	0.75	0.83	1.00	0.82	0.78	0.78	0.76	0.82	0.75	0.92	0.88	0.81	0.83	1	1.00
Total	0.89	0.93	0.96	0.91	0.87	0.86	0.87	0.90	0.86	0.88	0.86	0.74	0.96	0.96	1
Mean	23.04	21.77	21.23	22.33	23.04	7.35	6.66	6.72	5.78	6.30	5.47	6.47	448.01	424.64	872.65
S.D.	5.07	5.36	5.09	5.21	5.00	2.38	3.25	2.87	2.84	2.93	3.05	2.73	99.48	101.86	192.61
Skewness	0.78	0.73	1.01	0.69	0.60	1.06	0.35	0.80	0.77	0.79	0.72	0.42	0.84	1.01	1.06
Kurtosis	0.38	0.51	1.45	0.64	0.38	1.46	-0.38	0.23	0.41	0.57	0.04	0.59	0.35	1.45	0.89
Reliability	0.87	0.89	0.90	0.82	0.83	0.71	0.78	0.83	0.78	0.83	0.75	0.61	0.94	0.90	0.96
RMS(CSEM)	1.79	1.76	1.61	2.21	2.09	1.29	1.53	1.20	1.32	1.21	1.53	1.71	25.09	32.10	40.75
SED	2.54	2.48	2.27	3.13	2.96	1.82	2.16	1.69	1.87	1.72	2.16	2.42	35.48	45.40	57.62
SED x 1.65	4.18	4.10	3.75	5.16	4.88	3.00	3.56	2.79	3.08	2.83	3.57	3.99	58.55	74.92	95.08

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.b.1.3. Scale Score Moments, Intercorrelations, and Reliability for Male Test Takers for Form 3

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 8,498								
R	1	0.94	0.88	1.00	1.00	1.00	1.00	0.95	0.92	0.89	0.90	0.84	1.00	0.88	0.97
WL	0.86	1	0.90	0.97	0.98	1.00	1.00	1.00	1.00	0.91	0.92	0.86	1.00	0.90	0.99
MTS	0.81	0.83	1	0.94	0.95	0.91	0.86	0.90	0.89	1.00	1.00	1.00	0.90	1.00	1.00
HSS	0.94	0.87	0.85	1	0.98	1.00	1.00	0.99	0.94	0.94	0.97	0.89	1.00	0.94	1.00
SCI	0.92	0.88	0.87	0.86	1	1.00	0.99	1.00	0.95	0.95	0.97	0.93	1.00	0.95	1.00
COE	0.89	0.87	0.79	0.86	0.88	1	0.96	1.00	0.96	0.92	0.93	0.88	1.00	0.91	1.00
WIC	0.85	0.85	0.74	0.84	0.83	0.76	1	1.00	0.94	0.88	0.89	0.81	1.00	0.86	0.96
EOI	0.84	0.96	0.80	0.86	0.87	0.87	0.86	1	0.98	0.90	0.92	0.86	1.00	0.90	0.99
SEC	0.79	0.94	0.78	0.80	0.81	0.78	0.75	0.82	1	0.90	0.90	0.86	1.00	0.89	0.98
HOA	0.78	0.79	0.94	0.81	0.82	0.76	0.71	0.77	0.74	1	0.99	0.99	0.91	1.00	1.00
PSD	0.76	0.77	0.91	0.80	0.81	0.74	0.70	0.75	0.72	0.81	1	0.95	0.92	1.00	1.00
PAM	0.71	0.74	0.91	0.75	0.78	0.70	0.64	0.71	0.69	0.81	0.75	1	0.86	1.00	0.99
ERW	0.96	0.97	0.85	0.94	0.94	0.91	0.88	0.93	0.90	0.81	0.79	0.75	1	0.90	1.00
MSS	0.81	0.83	1.00	0.85	0.87	0.79	0.74	0.80	0.78	0.94	0.91	0.91	0.85	1	1.00
Total	0.92	0.93	0.97	0.93	0.93	0.88	0.84	0.90	0.87	0.92	0.89	0.87	0.96	0.97	1
Mean	25.44	24.88	25.13	25.53	25.45	8.31	8.50	8.46	7.32	7.97	7.93	8.18	503.18	502.55	1005.73
S.D.	5.59	5.82	6.21	5.82	5.86	2.84	3.46	3.05	3.15	3.12	3.69	3.11	109.98	124.22	225.37
Skewness	0.02	0.16	0.15	0.05	0.01	0.27	-0.25	0.03	0.30	0.09	-0.17	0.17	0.09	0.15	0.13
Kurtosis	-0.58	-0.53	-0.55	-0.57	-0.57	-0.35	-0.78	-0.69	-0.53	-0.46	-0.86	-0.27	-0.65	-0.55	-0.65
Reliability	0.91	0.91	0.93	0.88	0.89	0.80	0.78	0.85	0.82	0.84	0.78	0.80	0.95	0.93	0.97
RMS(CSEM)	1.66	1.74	1.59	1.99	1.98	1.27	1.61	1.16	1.35	1.24	1.72	1.41	24.03	31.70	39.78
SED	2.34	2.46	2.24	2.82	2.80	1.79	2.28	1.64	1.90	1.76	2.44	1.99	33.98	44.83	56.26
SED x 1.65	3.87	4.06	3.70	4.65	4.62	2.96	3.76	2.71	3.14	2.90	4.02	3.29	56.06	73.98	92.82

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.b.1.4. Scale Score Moments, Intercorrelations, and Reliability for Male Test Takers for Form 4

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 9,525								
R	1	0.94	0.86	1.00	1.00	1.00	1.00	0.95	0.90	0.87	0.88	0.81	1.00	0.86	0.97
WL	0.85	1	0.90	0.98	0.96	1.00	1.00	1.00	1.00	0.91	0.90	0.85	1.00	0.90	0.99
MTS	0.80	0.83	1	0.94	0.93	0.90	0.87	0.90	0.88	1.00	1.00	1.00	0.90	1.00	1.00
HSS	0.93	0.88	0.86	1	0.97	1.00	1.00	1.00	0.94	0.94	0.98	0.89	1.00	0.94	1.00
SCI	0.93	0.87	0.85	0.86	1	1.00	1.00	0.99	0.91	0.94	0.94	0.87	1.00	0.93	0.99
COE	0.89	0.87	0.79	0.87	0.86	1	0.97	1.00	0.94	0.91	0.91	0.86	1.00	0.90	1.00
WIC	0.87	0.87	0.76	0.86	0.85	0.78	1	1.00	0.95	0.88	0.91	0.80	1.00	0.87	0.98
EOI	0.84	0.96	0.80	0.87	0.86	0.87	0.87	1	0.97	0.91	0.91	0.85	1.00	0.90	0.99
SEC	0.79	0.94	0.78	0.80	0.79	0.77	0.77	0.82	1	0.89	0.88	0.84	1.00	0.88	0.97
HOA	0.76	0.79	0.94	0.81	0.81	0.75	0.72	0.76	0.74	1	0.99	0.97	0.90	1.00	1.00
PSD	0.76	0.78	0.92	0.83	0.81	0.74	0.73	0.76	0.73	0.82	1	0.93	0.91	1.00	1.00
PAM	0.68	0.71	0.89	0.73	0.72	0.68	0.63	0.68	0.67	0.78	0.74	1	0.84	1.00	0.97
ERW	0.96	0.96	0.85	0.94	0.93	0.91	0.90	0.93	0.90	0.80	0.80	0.72	1	0.90	1.00
MSS	0.80	0.83	1.00	0.86	0.85	0.79	0.76	0.80	0.78	0.94	0.92	0.89	0.85	1	1.00
Total	0.91	0.93	0.96	0.93	0.93	0.88	0.86	0.90	0.87	0.91	0.90	0.84	0.96	0.96	1
Mean	25.74	25.14	25.15	25.73	25.72	8.45	8.44	8.55	7.44	8.15	7.97	8.32	508.84	502.93	1011.77
S.D.	5.55	5.87	5.93	5.75	5.74	2.79	3.12	3.05	3.20	3.12	3.55	2.91	109.96	118.62	219.62
Skewness	0.14	0.20	0.39	0.06	0.09	0.40	-0.20	0.05	0.29	0.21	0.01	0.27	0.20	0.39	0.30
Kurtosis	-0.59	-0.47	-0.37	-0.47	-0.61	-0.55	-0.42	-0.65	-0.52	-0.38	-0.62	-0.11	-0.61	-0.37	-0.52
Reliability	0.91	0.91	0.94	0.88	0.89	0.81	0.80	0.85	0.83	0.83	0.82	0.77	0.95	0.94	0.97
RMS(CSEM)	1.65	1.74	1.49	2.00	1.88	1.23	1.39	1.19	1.31	1.28	1.51	1.40	23.96	29.80	38.24
SED	2.33	2.46	2.11	2.83	2.66	1.74	1.96	1.69	1.86	1.81	2.14	1.98	33.88	42.14	54.07
SED x 1.65	3.84	4.06	3.48	4.66	4.38	2.88	3.24	2.79	3.06	2.99	3.53	3.26	55.90	69.54	89.22

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.b.2.1. Scale Score Moments, Intercorrelations, and Reliability for Female Test Takers for Form 1

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 689								
R	1	0.94	0.88	1.00	1.00	1.00	1.00	0.93	0.92	0.89	0.91	0.78	1.00	0.88	0.99
WL	0.84	1	0.87	0.98	0.97	1.00	1.00	1.00	1.00	0.88	0.88	0.81	1.00	0.87	0.99
MTS	0.78	0.78	1	0.96	0.96	0.91	0.86	0.87	0.86	1.00	1.00	1.00	0.89	1.00	1.00
HSS	0.90	0.82	0.80	1	1.00	1.00	1.00	1.00	0.92	0.95	0.97	0.91	1.00	0.96	1.00
SCI	0.91	0.85	0.84	0.81	1	1.00	1.00	1.00	0.93	0.95	0.99	0.89	1.00	0.96	1.00
COE	0.85	0.85	0.74	0.81	0.83	1	0.99	1.00	0.95	0.93	0.92	0.83	1.00	0.91	1.00
WIC	0.87	0.84	0.71	0.81	0.82	0.74	1	1.00	0.96	0.88	0.89	0.73	1.00	0.86	0.98
EOI	0.77	0.94	0.73	0.79	0.81	0.84	0.82	1	0.96	0.89	0.87	0.81	1.00	0.87	0.99
SEC	0.79	0.93	0.73	0.74	0.77	0.74	0.76	0.77	1	0.85	0.87	0.80	1.00	0.86	0.97
HOA	0.74	0.73	0.91	0.74	0.76	0.70	0.68	0.69	0.68	1	0.98	0.92	0.90	1.00	1.00
PSD	0.76	0.74	0.90	0.76	0.81	0.71	0.69	0.68	0.71	0.76	1	0.88	0.91	1.00	1.00
PAM	0.58	0.61	0.81	0.64	0.65	0.57	0.51	0.57	0.57	0.64	0.62	1	0.81	1.00	0.97
ERW	0.95	0.96	0.82	0.90	0.91	0.89	0.89	0.90	0.90	0.76	0.79	0.62	1	0.89	1.00
MSS	0.78	0.78	1.00	0.80	0.84	0.74	0.71	0.73	0.73	0.91	0.90	0.81	0.82	1	1.00
Total	0.91	0.91	0.95	0.89	0.92	0.85	0.84	0.85	0.86	0.88	0.89	0.75	0.95	0.95	1
Mean	24.16	23.75	22.78	23.93	24.10	7.76	7.57	7.87	6.78	7.00	6.49	6.91	479.14	455.53	934.67
S.D.	5.50	5.89	5.53	5.60	5.38	2.72	3.27	3.04	3.20	2.97	3.46	2.83	109.06	110.64	209.42
Skewness	0.18	0.21	0.37	0.10	0.21	0.32	-0.12	0.12	0.33	0.28	0.39	0.45	0.27	0.37	0.37
Kurtosis	-0.34	-0.37	0.16	-0.35	-0.04	0.01	-0.75	-0.30	-0.28	-0.01	-0.59	0.39	-0.30	0.16	-0.07
Reliability	0.88	0.89	0.89	0.78	0.84	0.74	0.76	0.78	0.82	0.77	0.79	0.63	0.94	0.89	0.95
RMS(CSEM)	1.88	1.92	1.79	2.63	2.13	1.39	1.59	1.43	1.34	1.43	1.57	1.72	26.84	35.89	44.82
SED	2.66	2.71	2.54	3.73	3.01	1.96	2.25	2.02	1.90	2.02	2.22	2.43	37.96	50.75	63.38
SED x 1.65	4.38	4.47	4.19	6.15	4.97	3.23	3.71	3.33	3.13	3.33	3.67	4.01	62.64	83.74	104.58

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.b.2.2. Scale Score Moments, Intercorrelations, and Reliability for Female Test Takers for Form 2

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 112								
R	1	0.91	0.90	1.00	1.00	1.00	1.00	0.97	0.85	0.85	0.90	0.92	1.00	0.90	0.99
WL	0.81	1	0.93	0.93	0.97	1.00	1.00	1.00	1.00	0.91	0.89	0.93	1.00	0.93	1.00
MTS	0.80	0.84	1	0.95	0.97	0.94	0.93	0.94	0.92	1.00	1.00	1.00	0.93	1.00	1.00
HSS	0.92	0.82	0.83	1	0.99	1.00	1.00	1.00	0.87	0.87	0.99	0.97	1.00	0.95	1.00
SCI	0.92	0.84	0.85	0.83	1	1.00	1.00	1.00	0.91	0.90	0.98	1.00	1.00	0.97	1.00
COE	0.87	0.85	0.77	0.86	0.85	1	1.00	1.00	0.99	0.88	0.92	1.00	1.00	0.94	1.00
WIC	0.88	0.87	0.78	0.84	0.84	0.77	1	1.00	1.00	0.93	0.88	0.97	1.00	0.93	1.00
EOI	0.83	0.96	0.82	0.85	0.87	0.86	0.87	1	1.00	0.91	0.93	0.95	1.00	0.94	1.00
SEC	0.71	0.95	0.78	0.71	0.74	0.75	0.79	0.83	1	0.94	0.87	0.93	1.00	0.92	0.98
HOA	0.72	0.79	0.92	0.72	0.75	0.68	0.74	0.75	0.76	1	0.90	1.00	0.90	1.00	1.00
PSD	0.75	0.75	0.88	0.81	0.80	0.70	0.68	0.75	0.69	0.72	1	0.92	0.92	1.00	0.99
PAM	0.66	0.68	0.83	0.68	0.71	0.67	0.65	0.66	0.63	0.69	0.62	1	0.95	1.00	1.00
ERW	0.95	0.96	0.86	0.91	0.93	0.91	0.92	0.94	0.88	0.79	0.79	0.70	1	0.93	1.00
MSS	0.80	0.84	1.00	0.83	0.85	0.77	0.78	0.82	0.78	0.92	0.88	0.83	0.86	1	1.00
Total	0.91	0.93	0.96	0.90	0.92	0.87	0.88	0.91	0.86	0.89	0.87	0.80	0.97	0.96	1
Mean	24.28	23.61	22.22	23.67	23.97	7.81	7.48	7.46	6.80	6.68	5.88	7.09	478.84	444.46	923.30
S.D.	5.20	5.67	5.13	5.37	5.13	2.51	3.13	2.89	3.00	2.84	3.35	2.59	103.46	102.60	198.84
Skewness	0.67	0.53	0.96	0.49	0.67	0.72	0.38	0.41	0.63	0.63	0.50	0.47	0.74	0.96	0.90
Kurtosis	-0.29	-0.12	1.44	-0.20	-0.09	0.22	-0.57	-0.41	-0.01	0.57	-0.29	0.86	-0.21	1.44	0.59
Reliability	0.88	0.91	0.90	0.85	0.84	0.73	0.77	0.83	0.80	0.82	0.79	0.58	0.94	0.90	0.96
RMS(CSEM)	1.77	1.74	1.60	2.11	2.04	1.30	1.52	1.19	1.36	1.21	1.53	1.67	24.84	31.91	40.43
SED	2.50	2.47	2.26	2.99	2.89	1.83	2.14	1.68	1.92	1.71	2.16	2.37	35.12	45.12	57.18
SED x 1.65	4.13	4.07	3.72	4.93	4.77	3.03	3.54	2.77	3.17	2.82	3.57	3.91	57.95	74.45	94.35

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.b.2.3. Scale Score Moments, Intercorrelations, and Reliability for Female Test Takers for Form 3

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 8,798								
R	1	0.95	0.87	1.00	1.00	1.00	1.00	0.96	0.92	0.88	0.90	0.83	1.00	0.87	0.98
WL	0.85	1	0.89	0.98	0.98	1.00	1.00	1.00	1.00	0.90	0.92	0.86	1.00	0.89	0.99
MTS	0.79	0.81	1	0.93	0.95	0.90	0.85	0.89	0.88	1.00	1.00	1.00	0.89	1.00	1.00
HSS	0.93	0.86	0.83	1	0.97	1.00	1.00	1.00	0.94	0.94	0.97	0.88	1.00	0.93	1.00
SCI	0.92	0.86	0.85	0.84	1	1.00	1.00	1.00	0.94	0.95	0.98	0.93	1.00	0.95	1.00
COE	0.87	0.85	0.76	0.84	0.85	1	0.95	1.00	0.95	0.91	0.93	0.87	1.00	0.90	1.00
WIC	0.82	0.82	0.69	0.80	0.79	0.71	1	1.00	0.95	0.86	0.87	0.79	1.00	0.85	0.96
EOI	0.82	0.95	0.78	0.84	0.84	0.85	0.83	1	0.99	0.90	0.92	0.85	1.00	0.89	0.99
SEC	0.79	0.94	0.76	0.79	0.79	0.75	0.73	0.81	1	0.89	0.91	0.85	1.00	0.88	0.98
HOA	0.75	0.77	0.93	0.78	0.80	0.72	0.66	0.74	0.71	1	1.00	0.99	0.90	1.00	1.00
PSD	0.72	0.74	0.88	0.77	0.78	0.69	0.63	0.71	0.69	0.76	1	0.96	0.92	1.00	1.00
PAM	0.68	0.71	0.90	0.71	0.75	0.67	0.59	0.67	0.67	0.78	0.71	1	0.85	1.00	0.99
ERW	0.96	0.96	0.83	0.93	0.92	0.89	0.86	0.92	0.90	0.79	0.76	0.73	1	0.89	1.00
MSS	0.79	0.81	1.00	0.83	0.85	0.76	0.69	0.78	0.76	0.93	0.88	0.90	0.83	1	1.00
Total	0.91	0.92	0.96	0.91	0.93	0.86	0.80	0.89	0.86	0.90	0.86	0.85	0.95	0.96	1
Mean	26.23	26.18	25.13	26.21	25.91	8.76	9.04	9.08	8.01	7.97	7.78	8.30	524.05	502.54	1026.59
S.D.	5.11	5.51	5.53	5.28	5.31	2.65	3.13	2.79	3.11	2.82	3.33	2.88	102.06	110.54	203.50
Skewness	-0.07	0.08	0.17	-0.05	-0.02	0.20	-0.36	-0.09	0.20	0.07	-0.13	0.12	0.00	0.17	0.09
Kurtosis	-0.37	-0.52	-0.45	-0.34	-0.42	-0.26	-0.47	-0.50	-0.68	-0.26	-0.74	-0.17	-0.52	-0.45	-0.55
Reliability	0.90	0.90	0.92	0.86	0.87	0.77	0.73	0.83	0.81	0.81	0.72	0.77	0.94	0.92	0.96
RMS(CSEM)	1.64	1.76	1.58	1.96	1.94	1.27	1.63	1.16	1.36	1.24	1.77	1.39	24.08	31.69	39.80
SED	2.32	2.49	2.24	2.78	2.75	1.80	2.31	1.65	1.92	1.75	2.50	1.96	34.06	44.82	56.29
SED x 1.65	3.83	4.11	3.70	4.58	4.53	2.96	3.81	2.72	3.17	2.89	4.12	3.24	56.19	73.95	92.87

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.b.2.4. Scale Score Moments, Intercorrelations, and Reliability for Female Test Takers for Form 4

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 9,087								
R	1	0.94	0.86	1.00	1.00	1.00	1.00	0.96	0.90	0.87	0.89	0.81	1.00	0.86	0.98
WL	0.85	1	0.90	0.98	0.97	1.00	1.00	1.00	1.00	0.89	0.91	0.85	1.00	0.90	0.99
MTS	0.79	0.82	1	0.94	0.94	0.91	0.87	0.90	0.87	1.00	1.00	1.00	0.89	1.00	1.00
HSS	0.92	0.87	0.84	1	0.97	1.00	1.00	1.00	0.93	0.93	0.98	0.89	1.00	0.94	1.00
SCI	0.92	0.86	0.84	0.85	1	1.00	1.00	1.00	0.92	0.94	0.95	0.88	1.00	0.94	1.00
COE	0.89	0.86	0.78	0.86	0.85	1	0.98	1.00	0.93	0.90	0.93	0.86	1.00	0.91	1.00
WIC	0.86	0.86	0.74	0.85	0.84	0.77	1	1.00	0.95	0.87	0.90	0.81	1.00	0.87	0.98
EOI	0.83	0.95	0.79	0.86	0.85	0.87	0.86	1	0.96	0.90	0.92	0.85	1.00	0.90	1.00
SEC	0.78	0.94	0.76	0.79	0.78	0.76	0.76	0.80	1	0.87	0.88	0.83	1.00	0.87	0.97
HOA	0.74	0.76	0.93	0.78	0.79	0.72	0.69	0.73	0.71	1	0.99	0.97	0.89	1.00	1.00
PSD	0.75	0.77	0.91	0.81	0.80	0.74	0.71	0.75	0.71	0.79	1	0.94	0.91	1.00	1.00
PAM	0.66	0.70	0.88	0.71	0.71	0.66	0.61	0.66	0.65	0.75	0.72	1	0.84	1.00	0.98
ERW	0.96	0.97	0.84	0.93	0.93	0.91	0.89	0.93	0.89	0.78	0.79	0.71	1	0.89	1.00
MSS	0.79	0.82	1.00	0.84	0.84	0.78	0.74	0.79	0.76	0.93	0.91	0.88	0.84	1	1.00
Total	0.91	0.93	0.96	0.92	0.92	0.88	0.85	0.89	0.86	0.89	0.89	0.83	0.96	0.96	1
Mean	26.16	26.11	24.69	25.99	25.96	8.71	8.76	8.99	8.01	8.03	7.56	8.20	522.74	493.73	1016.47
S.D.	5.22	5.62	5.47	5.40	5.30	2.72	2.90	2.89	3.15	2.86	3.36	2.72	104.33	109.41	204.85
Skewness	0.10	0.15	0.44	0.02	0.07	0.34	-0.16	0.00	0.15	0.28	0.14	0.18	0.15	0.44	0.31
Kurtosis	-0.48	-0.47	-0.27	-0.32	-0.47	-0.58	-0.34	-0.55	-0.58	-0.18	-0.49	0.00	-0.54	-0.27	-0.45
Reliability	0.90	0.91	0.92	0.87	0.88	0.79	0.77	0.83	0.82	0.80	0.80	0.74	0.95	0.92	0.97
RMS(CSEM)	1.63	1.73	1.50	1.96	1.86	1.23	1.38	1.18	1.32	1.28	1.52	1.39	23.75	30.03	38.28
SED	2.30	2.45	2.12	2.77	2.64	1.74	1.95	1.68	1.87	1.81	2.15	1.97	33.58	42.46	54.14
SED x 1.65	3.80	4.04	3.50	4.57	4.35	2.87	3.21	2.76	3.09	2.99	3.55	3.25	55.41	70.07	89.33

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.1.1. Scale Score Moments, Intercorrelations, and Reliability for White Test Takers for Form 1

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 743								
R	1	0.94	0.89	1.00	1.00	1.00	1.00	0.94	0.91	0.89	0.91	0.83	1.00	0.89	0.99
WL	0.84	1	0.90	0.98	0.97	1.00	1.00	1.00	1.00	0.90	0.91	0.86	1.00	0.90	0.99
MTS	0.80	0.82	1	0.95	0.96	0.93	0.88	0.89	0.88	1.00	1.00	1.00	0.91	1.00	1.00
HSS	0.91	0.84	0.81	1	0.99	1.00	1.00	1.00	0.93	0.93	0.97	0.92	1.00	0.95	1.00
SCI	0.92	0.86	0.85	0.82	1	1.00	1.00	0.99	0.92	0.94	0.99	0.92	1.00	0.96	1.00
COE	0.87	0.86	0.78	0.84	0.85	1	1.00	1.00	0.95	0.93	0.94	0.90	1.00	0.93	1.00
WIC	0.87	0.86	0.75	0.82	0.83	0.77	1	1.00	0.95	0.89	0.92	0.80	1.00	0.88	0.99
EOI	0.79	0.94	0.76	0.81	0.82	0.86	0.84	1	0.95	0.90	0.90	0.85	1.00	0.89	0.99
SEC	0.78	0.93	0.76	0.76	0.78	0.75	0.77	0.77	1	0.87	0.89	0.85	1.00	0.88	0.97
HOA	0.76	0.77	0.93	0.75	0.79	0.73	0.71	0.73	0.72	1	1.00	0.95	0.91	1.00	1.00
PSD	0.77	0.77	0.91	0.78	0.82	0.73	0.73	0.72	0.73	0.80	1	0.91	0.92	1.00	1.00
PAM	0.65	0.68	0.84	0.68	0.70	0.65	0.58	0.63	0.64	0.71	0.67	1	0.86	1.00	0.99
ERW	0.96	0.96	0.84	0.91	0.92	0.90	0.90	0.91	0.90	0.80	0.80	0.69	1	0.91	1.00
MSS	0.80	0.82	1.00	0.81	0.85	0.78	0.75	0.76	0.76	0.93	0.91	0.84	0.84	1	1.00
Total	0.91	0.93	0.96	0.90	0.92	0.87	0.86	0.87	0.86	0.90	0.89	0.80	0.96	0.96	1
Mean	25.51	24.69	24.52	25.34	25.66	8.41	8.24	8.40	7.15	7.91	7.71	7.45	502.05	490.32	992.37
S.D.	5.62	6.11	5.80	5.67	5.53	2.80	3.25	3.12	3.27	3.12	3.46	3.03	112.55	116.05	219.49
Skewness	-0.17	-0.12	-0.08	-0.29	-0.08	-0.01	-0.39	-0.15	0.09	-0.05	-0.05	0.30	-0.10	-0.08	-0.09
Kurtosis	-0.21	-0.34	0.00	-0.15	-0.02	-0.17	-0.59	-0.27	-0.41	-0.16	-0.72	-0.02	-0.33	0.00	-0.19
Reliability	0.89	0.90	0.92	0.80	0.86	0.75	0.78	0.80	0.83	0.81	0.80	0.69	0.94	0.92	0.96
RMS(CSEM)	1.85	1.90	1.67	2.51	2.07	1.39	1.52	1.38	1.35	1.35	1.56	1.70	26.50	33.43	42.66
SED	2.61	2.69	2.36	3.55	2.93	1.96	2.15	1.96	1.91	1.91	2.20	2.40	37.48	47.28	60.34
SED x 1.65	4.31	4.44	3.90	5.86	4.84	3.24	3.54	3.23	3.14	3.16	3.63	3.96	61.85	78.01	99.56

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.1.2. Scale Score Moments, Intercorrelations, and Reliability for White Test Takers for Form 2

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 166								
R	1	0.90	0.85	1.00	1.00	1.00	1.00	0.91	0.87	0.83	0.86	0.79	1.00	0.85	0.96
WL	0.81	1	0.91	0.97	0.94	1.00	1.00	1.00	1.00	0.87	0.90	0.88	1.00	0.91	0.99
MTS	0.78	0.83	1	0.96	0.92	0.95	0.90	0.94	0.87	1.00	1.00	1.00	0.91	1.00	1.00
HSS	0.92	0.85	0.85	1	0.94	1.00	1.00	0.99	0.93	0.92	0.99	0.91	1.00	0.96	1.00
SCI	0.90	0.83	0.81	0.80	1	1.00	0.98	0.97	0.89	0.90	0.92	0.84	1.00	0.92	0.99
COE	0.85	0.85	0.79	0.86	0.83	1	0.98	1.00	0.93	0.91	0.95	0.92	1.00	0.95	1.00
WIC	0.88	0.87	0.78	0.87	0.82	0.77	1	1.00	0.97	0.88	0.89	0.86	1.00	0.90	1.00
EOI	0.80	0.95	0.83	0.84	0.83	0.87	0.86	1	0.95	0.91	0.93	0.90	1.00	0.94	1.00
SEC	0.74	0.93	0.75	0.78	0.74	0.73	0.78	0.79	1	0.82	0.88	0.86	1.00	0.87	0.96
HOA	0.72	0.76	0.93	0.78	0.77	0.73	0.73	0.77	0.68	1	0.93	0.95	0.87	1.00	0.98
PSD	0.72	0.77	0.89	0.81	0.75	0.73	0.71	0.76	0.70	0.76	1	0.87	0.91	1.00	1.00
PAM	0.60	0.67	0.83	0.67	0.62	0.64	0.61	0.66	0.61	0.69	0.61	1	0.86	1.00	1.00
ERW	0.95	0.95	0.85	0.93	0.91	0.89	0.92	0.92	0.88	0.78	0.78	0.67	1	0.91	1.00
MSS	0.78	0.83	1.00	0.85	0.81	0.79	0.78	0.83	0.75	0.93	0.89	0.83	0.85	1	1.00
Total	0.90	0.93	0.96	0.92	0.90	0.88	0.88	0.91	0.85	0.89	0.87	0.78	0.96	0.96	1
Mean	24.94	24.15	22.89	24.46	24.73	8.13	7.95	7.87	6.99	7.02	6.40	7.28	490.90	457.89	948.80
S.D.	5.52	5.79	5.38	5.46	5.30	2.62	3.35	3.02	3.08	3.07	3.29	2.74	107.68	107.60	206.82
Skewness	0.34	0.24	0.78	0.38	0.34	0.67	-0.03	0.29	0.33	0.54	0.38	0.30	0.38	0.78	0.64
Kurtosis	-0.36	-0.05	0.85	-0.02	-0.18	0.16	-0.58	-0.42	-0.25	0.13	-0.35	0.46	-0.36	0.85	0.07
Reliability	0.90	0.91	0.92	0.86	0.86	0.75	0.81	0.85	0.80	0.85	0.79	0.63	0.95	0.92	0.96
RMS(CSEM)	1.73	1.75	1.57	2.07	2.01	1.30	1.46	1.18	1.36	1.20	1.52	1.67	24.61	31.32	39.83
SED	2.45	2.47	2.21	2.93	2.84	1.84	2.07	1.67	1.92	1.70	2.15	2.36	34.80	44.30	56.33
SED x 1.65	4.05	4.07	3.65	4.84	4.69	3.03	3.41	2.75	3.17	2.80	3.55	3.89	57.42	73.09	92.95

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.1.3. Scale Score Moments, Intercorrelations, and Reliability for White Test Takers for Form 3

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
								N = 10,203							
R	1	0.93	0.85	1.00	1.00	1.00	1.00	0.94	0.90	0.85	0.86	0.81	1.00	0.85	0.97
WL	0.83	1	0.86	0.97	0.96	1.00	1.00	1.00	1.00	0.87	0.87	0.83	1.00	0.86	0.98
MTS	0.77	0.78	1	0.92	0.94	0.88	0.82	0.86	0.84	1.00	1.00	1.00	0.87	1.00	1.00
HSS	0.92	0.84	0.81	1	0.97	1.00	1.00	0.99	0.92	0.92	0.95	0.87	1.00	0.92	1.00
SCI	0.91	0.84	0.84	0.83	1	1.00	0.99	0.99	0.92	0.94	0.96	0.91	1.00	0.94	1.00
COE	0.87	0.83	0.74	0.82	0.85	1	0.94	1.00	0.94	0.89	0.90	0.86	1.00	0.88	1.00
WIC	0.80	0.80	0.66	0.77	0.77	0.68	1	1.00	0.92	0.83	0.84	0.77	1.00	0.82	0.95
EOI	0.80	0.94	0.74	0.82	0.82	0.83	0.81	1	0.97	0.87	0.88	0.82	1.00	0.86	0.98
SEC	0.75	0.93	0.72	0.76	0.76	0.73	0.68	0.77	1	0.85	0.85	0.82	1.00	0.84	0.96
HOA	0.72	0.73	0.93	0.76	0.78	0.69	0.62	0.70	0.67	1	0.99	1.00	0.88	1.00	1.00
PSD	0.70	0.70	0.88	0.76	0.77	0.67	0.60	0.68	0.64	0.76	1	0.94	0.88	1.00	1.00
PAM	0.67	0.69	0.90	0.71	0.75	0.66	0.57	0.65	0.64	0.78	0.71	1	0.83	1.00	0.99
ERW	0.95	0.96	0.81	0.92	0.92	0.89	0.84	0.91	0.88	0.76	0.74	0.71	1	0.87	1.00
MSS	0.77	0.78	1.00	0.81	0.84	0.74	0.66	0.74	0.72	0.93	0.88	0.90	0.81	1	1.00
Total	0.90	0.91	0.96	0.91	0.92	0.85	0.78	0.87	0.84	0.89	0.85	0.86	0.95	0.96	1
Mean	27.31	27.23	26.83	27.43	27.31	9.25	9.71	9.65	8.53	8.79	8.84	8.96	545.44	536.50	1081.94
S.D.	4.94	5.27	5.36	5.09	5.12	2.62	2.95	2.69	2.99	2.71	3.21	2.83	97.48	107.14	194.57
Skewness	-0.21	-0.13	-0.05	-0.16	-0.21	0.09	-0.57	-0.30	0.02	-0.10	-0.43	0.01	-0.20	-0.05	-0.14
Kurtosis	-0.16	-0.18	-0.22	-0.19	-0.18	-0.26	0.01	-0.15	-0.53	-0.01	-0.36	-0.17	-0.23	-0.22	-0.24
Reliability	0.89	0.89	0.92	0.85	0.86	0.76	0.70	0.81	0.79	0.80	0.74	0.78	0.94	0.92	0.96
RMS(CSEM)	1.63	1.78	1.50	1.95	1.91	1.29	1.62	1.17	1.38	1.22	1.65	1.33	24.14	29.99	38.50
SED	2.30	2.52	2.12	2.76	2.70	1.82	2.29	1.65	1.95	1.73	2.33	1.88	34.13	42.41	54.44
SED x 1.65	3.80	4.16	3.50	4.56	4.46	3.00	3.77	2.72	3.21	2.85	3.85	3.10	56.32	69.98	89.83

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.1.4. Scale Score Moments, Intercorrelations, and Reliability for White Test Takers for Form 4

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 10,554								
R	1	0.93	0.84	1.00	1.00	1.00	1.00	0.95	0.88	0.84	0.86	0.79	1.00	0.84	0.96
WL	0.83	1	0.87	0.98	0.95	1.00	1.00	1.00	1.00	0.88	0.87	0.83	1.00	0.87	0.98
MTS	0.76	0.79	1	0.93	0.92	0.88	0.85	0.87	0.84	1.00	1.00	1.00	0.87	1.00	1.00
HSS	0.92	0.86	0.83	1	0.97	1.00	1.00	1.00	0.92	0.93	0.96	0.89	1.00	0.93	1.00
SCI	0.92	0.84	0.83	0.85	1	1.00	1.00	0.99	0.89	0.93	0.94	0.87	1.00	0.92	1.00
COE	0.88	0.85	0.75	0.85	0.84	1	0.96	1.00	0.92	0.89	0.89	0.84	1.00	0.88	0.99
WIC	0.84	0.84	0.71	0.83	0.82	0.74	1	1.00	0.94	0.86	0.88	0.80	1.00	0.85	0.98
EOI	0.82	0.95	0.77	0.86	0.84	0.86	0.85	1	0.96	0.88	0.89	0.83	1.00	0.87	0.99
SEC	0.75	0.93	0.73	0.77	0.75	0.74	0.74	0.79	1	0.85	0.84	0.81	1.00	0.84	0.95
HOA	0.72	0.75	0.93	0.78	0.78	0.71	0.67	0.72	0.69	1	0.99	0.98	0.88	1.00	1.00
PSD	0.72	0.73	0.91	0.79	0.78	0.70	0.68	0.72	0.67	0.79	1	0.95	0.88	1.00	1.00
PAM	0.66	0.69	0.90	0.72	0.71	0.66	0.61	0.67	0.64	0.78	0.74	1	0.83	1.00	0.98
ERW	0.95	0.96	0.82	0.93	0.92	0.90	0.88	0.93	0.88	0.77	0.76	0.71	1	0.87	0.99
MSS	0.76	0.79	1.00	0.83	0.83	0.75	0.71	0.77	0.73	0.93	0.91	0.90	0.82	1	1.00
Total	0.90	0.92	0.96	0.92	0.92	0.86	0.83	0.89	0.84	0.90	0.88	0.84	0.95	0.96	1
Mean	27.47	27.17	26.38	27.40	27.39	9.30	9.45	9.55	8.53	8.78	8.70	8.82	546.46	527.50	1073.96
S.D.	5.05	5.49	5.43	5.20	5.14	2.69	2.75	2.81	3.07	2.86	3.23	2.76	100.90	108.65	199.64
Skewness	-0.08	-0.05	0.19	-0.10	-0.12	0.16	-0.37	-0.20	0.01	0.08	-0.11	0.10	-0.06	0.19	0.07
Kurtosis	-0.35	-0.34	-0.30	-0.23	-0.34	-0.69	0.08	-0.38	-0.50	-0.27	-0.39	-0.19	-0.42	-0.30	-0.39
Reliability	0.90	0.90	0.93	0.86	0.87	0.78	0.75	0.83	0.81	0.81	0.79	0.77	0.95	0.93	0.97
RMS(CSEM)	1.60	1.72	1.44	1.91	1.83	1.25	1.37	1.16	1.32	1.24	1.50	1.33	23.48	28.84	37.20
SED	2.27	2.43	2.04	2.71	2.59	1.76	1.93	1.64	1.87	1.75	2.11	1.88	33.21	40.79	52.60
SED x 1.65	3.74	4.00	3.37	4.47	4.27	2.91	3.19	2.70	3.08	2.89	3.49	3.09	54.80	67.31	86.79

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

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Table 5.c.2.1. Scale Score Moments, Intercorrelations, and Reliability for Black Test Takers for Form 1

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 262								
R	1	0.91	0.83	1.00	1.00	1.00	1.00	0.87	0.91	0.81	0.84	0.68	1.00	0.83	1.00
WL	0.75	1	0.76	0.92	0.98	1.00	1.00	1.00	1.00	0.76	0.73	0.67	1.00	0.76	0.98
MTS	0.67	0.62	1	0.98	0.94	0.84	0.75	0.76	0.73	1.00	1.00	1.00	0.82	1.00	1.00
HSS	0.84	0.69	0.71	1	0.98	1.00	0.99	0.99	0.84	0.95	0.93	0.87	1.00	0.98	1.00
SCI	0.85	0.78	0.72	0.69	1	1.00	1.00	1.00	0.89	0.88	0.96	0.86	1.00	0.94	1.00
COE	0.77	0.78	0.60	0.71	0.74	1	0.87	1.00	0.95	0.83	0.86	0.68	1.00	0.84	1.00
WIC	0.77	0.79	0.56	0.69	0.73	0.60	1	1.00	0.96	0.80	0.73	0.57	1.00	0.75	0.95
EOI	0.64	0.90	0.54	0.65	0.73	0.75	0.73	1	0.95	0.74	0.73	0.72	1.00	0.76	0.97
SEC	0.71	0.91	0.56	0.59	0.67	0.66	0.70	0.66	1	0.72	0.72	0.62	1.00	0.73	0.95
HOA	0.56	0.53	0.86	0.60	0.59	0.51	0.52	0.45	0.47	1	0.91	0.90	0.80	1.00	1.00
PSD	0.62	0.55	0.80	0.62	0.67	0.56	0.50	0.48	0.50	0.57	1	0.71	0.81	1.00	1.00
PAM	0.39	0.39	0.69	0.45	0.47	0.34	0.30	0.36	0.33	0.43	0.36	1	0.69	1.00	1.00
ERW	0.94	0.94	0.69	0.82	0.87	0.83	0.83	0.82	0.87	0.58	0.62	0.41	1	0.82	1.00
MSS	0.67	0.62	1.00	0.71	0.72	0.60	0.56	0.54	0.56	0.86	0.80	0.69	0.69	1	1.00
Total	0.88	0.85	0.91	0.83	0.87	0.78	0.76	0.75	0.78	0.78	0.77	0.60	0.92	0.91	1
Mean	20.53	20.03	19.19	20.35	20.95	6.13	5.47	6.07	4.90	5.26	4.43	5.46	405.65	383.85	789.50
S.D.	4.66	4.68	4.19	4.87	4.42	2.34	3.08	2.52	2.52	2.38	2.63	2.25	87.52	83.78	157.30
Skewness	0.44	0.36	0.60	0.33	0.24	0.44	0.45	0.17	0.61	0.18	0.96	0.24	0.51	0.60	0.71
Kurtosis	1.21	1.20	3.03	0.62	1.69	1.52	-0.36	0.36	1.02	0.38	1.05	1.35	1.87	3.03	3.56
Reliability	0.83	0.83	0.78	0.67	0.75	0.65	0.72	0.65	0.74	0.59	0.66	0.39	0.90	0.78	0.91
RMS(CSEM)	1.94	1.91	1.95	2.79	2.21	1.38	1.64	1.49	1.27	1.53	1.53	1.75	27.26	38.93	47.52
SED	2.74	2.71	2.75	3.94	3.13	1.95	2.32	2.11	1.80	2.17	2.17	2.47	38.55	55.05	67.20
SED x 1.65	4.53	4.47	4.54	6.50	5.16	3.22	3.83	3.48	2.97	3.58	3.58	4.08	63.61	90.83	110.89

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.2.2. Scale Score Moments, Intercorrelations, and Reliability for Black Test Takers for Form 3

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 2,061								
R	1	0.92	0.85	1.00	1.00	1.00	1.00	0.92	0.90	0.86	0.88	0.79	1.00	0.85	0.98
WL	0.79	1	0.86	0.96	0.97	1.00	1.00	1.00	1.00	0.87	0.89	0.81	1.00	0.86	0.99
MTS	0.73	0.74	1	0.92	0.95	0.89	0.85	0.86	0.86	1.00	1.00	1.00	0.87	1.00	1.00
HSS	0.91	0.81	0.77	1	0.96	1.00	1.00	0.99	0.92	0.93	0.99	0.85	1.00	0.92	1.00
SCI	0.87	0.81	0.78	0.78	1	1.00	1.00	1.00	0.93	0.94	0.97	0.93	1.00	0.95	1.00
COE	0.83	0.81	0.69	0.80	0.80	1	0.98	1.00	0.95	0.90	0.90	0.84	1.00	0.89	1.00
WIC	0.81	0.82	0.67	0.79	0.77	0.69	1	1.00	0.97	0.87	0.88	0.78	1.00	0.85	0.99
EOI	0.76	0.94	0.71	0.80	0.79	0.82	0.82	1	0.99	0.87	0.90	0.81	1.00	0.86	0.99
SEC	0.71	0.91	0.68	0.71	0.71	0.68	0.70	0.75	1	0.87	0.88	0.81	1.00	0.86	0.98
HOA	0.68	0.69	0.91	0.72	0.72	0.64	0.63	0.66	0.63	1	1.00	0.97	0.88	1.00	1.00
PSD	0.63	0.63	0.83	0.68	0.66	0.58	0.57	0.61	0.58	0.67	1	0.95	0.91	1.00	1.00
PAM	0.57	0.59	0.82	0.60	0.65	0.54	0.52	0.55	0.54	0.64	0.56	1	0.82	1.00	1.00
ERW	0.95	0.95	0.78	0.91	0.89	0.87	0.86	0.90	0.86	0.72	0.67	0.61	1	0.87	1.00
MSS	0.73	0.74	1.00	0.77	0.78	0.69	0.67	0.71	0.68	0.91	0.83	0.82	0.78	1	1.00
Total	0.89	0.89	0.95	0.89	0.89	0.82	0.81	0.85	0.81	0.87	0.80	0.76	0.94	0.95	1
Mean	22.66	21.92	21.04	22.52	21.95	6.96	6.85	6.88	5.89	6.02	5.60	6.47	445.83	420.88	866.71
S.D.	4.61	4.53	4.62	4.77	4.64	2.21	3.05	2.45	2.49	2.44	3.00	2.47	86.51	92.44	168.72
Skewness	0.26	0.56	0.55	0.28	0.31	0.44	0.23	0.45	0.75	0.40	0.37	0.16	0.46	0.55	0.56
Kurtosis	-0.14	0.41	0.32	-0.02	0.09	0.46	-0.62	-0.02	0.63	-0.10	-0.40	0.37	0.05	0.32	0.23
Reliability	0.87	0.87	0.86	0.82	0.80	0.70	0.71	0.78	0.73	0.73	0.58	0.61	0.93	0.86	0.94
RMS(CSEM)	1.69	1.66	1.75	2.00	2.06	1.21	1.63	1.15	1.29	1.27	1.94	1.55	23.66	34.90	42.17
SED	2.39	2.35	2.47	2.83	2.92	1.72	2.31	1.62	1.83	1.80	2.74	2.19	33.47	49.36	59.63
SED x 1.65	3.94	3.87	4.07	4.67	4.81	2.83	3.81	2.68	3.02	2.96	4.52	3.61	55.22	81.44	98.39

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.2.3. Scale Score Moments, Intercorrelations, and Reliability for Black Test Takers for Form 4

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 2,254								
R	1	0.92	0.82	1.00	1.00	1.00	1.00	0.93	0.87	0.82	0.83	0.74	1.00	0.82	0.98
WL	0.78	1	0.84	0.97	0.96	1.00	1.00	1.00	1.00	0.83	0.84	0.77	1.00	0.84	1.00
MTS	0.70	0.72	1	0.93	0.89	0.88	0.84	0.84	0.81	1.00	1.00	1.00	0.85	1.00	1.00
HSS	0.88	0.80	0.77	1	0.93	1.00	1.00	1.00	0.89	0.91	0.97	0.85	1.00	0.93	1.00
SCI	0.88	0.80	0.75	0.75	1	1.00	1.00	1.00	0.87	0.91	0.89	0.82	1.00	0.89	1.00
COE	0.83	0.79	0.67	0.79	0.78	1	0.97	1.00	0.91	0.87	0.88	0.82	1.00	0.88	1.00
WIC	0.82	0.83	0.66	0.79	0.79	0.69	1	1.00	0.95	0.84	0.85	0.73	1.00	0.84	0.99
EOI	0.74	0.93	0.68	0.77	0.78	0.80	0.82	1	0.94	0.84	0.85	0.78	1.00	0.84	1.00
SEC	0.69	0.91	0.65	0.69	0.68	0.65	0.70	0.70	1	0.80	0.80	0.74	1.00	0.81	0.96
HOA	0.63	0.63	0.87	0.67	0.68	0.59	0.59	0.60	0.57	1	0.97	0.92	0.85	1.00	1.00
PSD	0.64	0.65	0.87	0.73	0.67	0.61	0.61	0.62	0.58	0.67	1	0.88	0.85	1.00	1.00
PAM	0.49	0.51	0.75	0.54	0.52	0.48	0.44	0.48	0.45	0.54	0.53	1	0.77	1.00	0.99
ERW	0.94	0.95	0.75	0.89	0.89	0.86	0.88	0.89	0.85	0.67	0.69	0.52	1	0.85	1.00
MSS	0.70	0.72	1.00	0.77	0.75	0.67	0.66	0.68	0.65	0.87	0.87	0.75	0.75	1	1.00
Total	0.88	0.89	0.94	0.89	0.87	0.82	0.82	0.84	0.80	0.82	0.83	0.68	0.94	0.94	1
Mean	22.94	22.51	21.58	22.88	22.57	7.12	7.02	7.21	6.11	6.48	5.71	6.98	454.56	431.66	886.22
S.D.	4.43	4.57	4.19	4.66	4.48	2.14	2.68	2.49	2.60	2.40	2.87	2.18	84.96	83.75	157.91
Skewness	0.45	0.45	0.75	0.21	0.41	0.73	0.13	0.31	0.52	0.34	0.39	0.06	0.54	0.75	0.71
Kurtosis	0.07	0.16	0.75	-0.02	0.14	0.59	-0.20	-0.26	0.04	0.45	-0.02	0.83	0.14	0.75	0.54
Reliability	0.85	0.85	0.86	0.80	0.81	0.69	0.73	0.75	0.75	0.68	0.71	0.50	0.92	0.86	0.94
RMS(CSEM)	1.69	1.76	1.59	2.08	1.95	1.19	1.39	1.25	1.30	1.36	1.55	1.54	24.40	31.84	40.12
SED	2.40	2.48	2.25	2.95	2.75	1.69	1.97	1.77	1.84	1.92	2.19	2.18	34.51	45.03	56.73
SED x 1.65	3.95	4.10	3.71	4.86	4.54	2.78	3.25	2.92	3.04	3.17	3.61	3.59	56.95	74.29	93.61

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.3.1. Scale Score Moments, Intercorrelations, and Reliability for Hispanic Test Takers for Form 1

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 401								
R	1	0.91	0.83	1.00	1.00	1.00	1.00	0.93	0.86	0.86	0.87	0.69	1.00	0.83	0.99
WL	0.77	1	0.86	0.95	0.94	1.00	1.00	1.00	1.00	0.87	0.84	0.76	1.00	0.86	1.00
MTS	0.69	0.72	1	0.95	0.95	0.90	0.82	0.88	0.81	1.00	1.00	1.00	0.86	1.00	1.00
HSS	0.84	0.72	0.71	1	0.98	1.00	1.00	1.00	0.82	0.96	0.95	0.83	1.00	0.95	1.00
SCI	0.87	0.76	0.76	0.72	1	1.00	1.00	1.00	0.83	0.93	0.98	0.85	1.00	0.95	1.00
COE	0.81	0.80	0.65	0.70	0.80	1	1.00	1.00	0.92	0.91	0.91	0.77	1.00	0.90	1.00
WIC	0.82	0.80	0.61	0.73	0.72	0.70	1	1.00	0.96	0.89	0.85	0.61	1.00	0.82	0.99
EOI	0.69	0.90	0.65	0.71	0.74	0.81	0.76	1	0.94	0.91	0.82	0.80	1.00	0.88	1.00
SEC	0.69	0.91	0.64	0.60	0.64	0.64	0.69	0.67	1	0.82	0.82	0.70	1.00	0.81	0.95
HOA	0.63	0.64	0.85	0.63	0.65	0.58	0.58	0.59	0.57	1	1.00	0.79	0.89	1.00	1.00
PSD	0.66	0.64	0.87	0.65	0.72	0.60	0.58	0.55	0.59	0.66	1	0.85	0.87	1.00	1.00
PAM	0.46	0.50	0.75	0.50	0.54	0.44	0.36	0.47	0.44	0.45	0.51	1	0.74	1.00	0.97
ERW	0.94	0.94	0.75	0.83	0.87	0.85	0.86	0.85	0.85	0.67	0.69	0.51	1	0.86	1.00
MSS	0.69	0.72	1.00	0.71	0.76	0.65	0.61	0.65	0.64	0.85	0.87	0.75	0.75	1	1.00
Total	0.87	0.89	0.93	0.82	0.87	0.80	0.78	0.80	0.80	0.82	0.83	0.67	0.94	0.93	1
Mean	20.49	20.12	19.70	20.86	20.89	6.31	5.52	6.28	4.76	5.43	4.73	5.76	406.16	393.94	800.10
S.D.	4.81	4.92	4.57	4.99	4.68	2.33	2.95	2.60	2.66	2.51	2.76	2.51	91.45	91.34	170.90
Skewness	0.41	0.59	0.51	0.07	0.22	0.27	0.35	0.30	0.69	0.26	0.92	0.40	0.58	0.51	0.58
Kurtosis	0.74	1.16	1.98	0.31	1.25	0.74	-0.52	0.67	0.58	0.30	1.04	1.10	1.36	1.98	2.13
Reliability	0.84	0.84	0.82	0.68	0.78	0.64	0.67	0.66	0.77	0.63	0.68	0.52	0.91	0.82	0.92
RMS(CSEM)	1.94	1.94	1.92	2.81	2.20	1.40	1.68	1.51	1.29	1.52	1.55	1.73	27.44	38.39	47.19
SED	2.74	2.75	2.71	3.97	3.11	1.98	2.38	2.14	1.82	2.14	2.20	2.45	38.81	54.29	66.74
SED x 1.65	4.53	4.53	4.48	6.55	5.13	3.27	3.93	3.53	3.00	3.54	3.62	4.05	64.04	89.58	110.11

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.3.2. Scale Score Moments, Intercorrelations, and Reliability for Hispanic Test Takers for Form 3

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 3,688								
R	1	0.93	0.84	1.00	1.00	1.00	1.00	0.94	0.92	0.85	0.88	0.77	1.00	0.84	0.98
WL	0.82	1	0.86	0.97	0.98	1.00	1.00	1.00	1.00	0.86	0.89	0.81	1.00	0.86	0.99
MTS	0.74	0.75	1	0.91	0.95	0.89	0.83	0.86	0.85	1.00	1.00	1.00	0.86	1.00	1.00
HSS	0.91	0.83	0.78	1	0.96	1.00	1.00	1.00	0.93	0.92	0.96	0.84	1.00	0.91	1.00
SCI	0.89	0.84	0.80	0.80	1	1.00	1.00	1.00	0.95	0.94	0.99	0.91	1.00	0.95	1.00
COE	0.85	0.84	0.71	0.81	0.83	1	0.98	1.00	0.98	0.90	0.92	0.83	1.00	0.89	1.00
WIC	0.84	0.82	0.67	0.80	0.79	0.72	1	1.00	0.95	0.85	0.87	0.75	1.00	0.83	0.97
EOI	0.79	0.95	0.72	0.82	0.82	0.84	0.83	1	1.00	0.87	0.90	0.80	1.00	0.86	0.99
SEC	0.75	0.93	0.69	0.74	0.75	0.73	0.71	0.78	1	0.85	0.88	0.81	1.00	0.85	0.98
HOA	0.70	0.71	0.91	0.73	0.74	0.67	0.64	0.68	0.65	1	1.00	0.97	0.87	1.00	1.00
PSD	0.64	0.66	0.84	0.69	0.70	0.62	0.59	0.63	0.60	0.69	1	0.95	0.90	1.00	1.00
PAM	0.57	0.60	0.83	0.61	0.65	0.56	0.51	0.57	0.56	0.67	0.59	1	0.80	1.00	1.00
ERW	0.95	0.95	0.78	0.91	0.91	0.89	0.87	0.91	0.88	0.73	0.68	0.62	1	0.86	1.00
MSS	0.74	0.75	1.00	0.78	0.80	0.71	0.67	0.72	0.69	0.91	0.84	0.83	0.78	1	1.00
Total	0.89	0.90	0.95	0.90	0.90	0.85	0.81	0.86	0.83	0.88	0.81	0.77	0.94	0.95	1
Mean	22.95	22.20	21.68	22.77	22.56	7.15	6.99	7.11	5.93	6.31	5.91	6.71	451.55	433.50	885.05
S.D.	4.87	4.83	4.81	4.98	4.84	2.38	3.19	2.58	2.66	2.56	3.08	2.52	92.53	96.14	177.97
Skewness	0.30	0.54	0.55	0.32	0.33	0.45	0.13	0.37	0.73	0.39	0.26	0.25	0.45	0.55	0.56
Kurtosis	-0.35	0.10	0.29	-0.19	-0.10	0.29	-0.75	-0.26	0.41	0.04	-0.61	0.57	-0.22	0.29	0.06
Reliability	0.88	0.88	0.87	0.84	0.82	0.74	0.74	0.80	0.76	0.76	0.61	0.63	0.93	0.87	0.94
RMS(CSEM)	1.68	1.67	1.73	2.01	2.05	1.23	1.63	1.15	1.30	1.27	1.92	1.53	23.72	34.62	41.97
SED	2.38	2.37	2.45	2.85	2.90	1.73	2.30	1.63	1.84	1.79	2.71	2.17	33.54	48.96	59.35
SED x 1.65	3.92	3.90	4.04	4.69	4.79	2.86	3.80	2.68	3.03	2.95	4.47	3.58	55.35	80.79	97.93

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.3.3. Scale Score Moments, Intercorrelations, and Reliability for Hispanic Test Takers for Form 4

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
						N = 4,076									
R	1	0.92	0.83	1.00	1.00	1.00	1.00	0.94	0.88	0.85	0.84	0.74	1.00	0.83	0.98
WL	0.80	1	0.86	0.97	0.96	1.00	1.00	1.00	1.00	0.88	0.87	0.77	1.00	0.86	1.00
MTS	0.73	0.75	1	0.93	0.91	0.88	0.85	0.87	0.83	1.00	1.00	1.00	0.86	1.00	1.00
HSS	0.89	0.82	0.79	1	0.96	1.00	1.00	1.00	0.91	0.94	0.97	0.84	1.00	0.93	1.00
SCI	0.90	0.81	0.78	0.79	1	1.00	1.00	1.00	0.89	0.94	0.92	0.82	1.00	0.91	1.00
COE	0.85	0.82	0.70	0.82	0.81	1	0.98	1.00	0.94	0.90	0.89	0.80	1.00	0.88	1.00
WIC	0.84	0.83	0.69	0.82	0.80	0.71	1	1.00	0.93	0.87	0.88	0.73	1.00	0.85	0.99
EOI	0.77	0.93	0.71	0.80	0.80	0.82	0.83	1	0.96	0.88	0.89	0.76	1.00	0.87	1.00
SEC	0.72	0.92	0.68	0.72	0.71	0.69	0.71	0.74	1	0.85	0.83	0.76	1.00	0.83	0.96
HOA	0.66	0.68	0.89	0.71	0.72	0.64	0.63	0.65	0.62	1	1.00	0.93	0.88	1.00	1.00
PSD	0.67	0.69	0.88	0.75	0.72	0.64	0.65	0.67	0.62	0.71	1	0.86	0.87	1.00	1.00
PAM	0.52	0.54	0.77	0.57	0.56	0.51	0.47	0.50	0.50	0.58	0.55	1	0.77	1.00	0.97
ERW	0.95	0.95	0.78	0.90	0.90	0.88	0.88	0.90	0.86	0.71	0.72	0.56	1	0.86	1.00
MSS	0.73	0.75	1.00	0.79	0.78	0.70	0.69	0.71	0.68	0.89	0.88	0.77	0.78	1	1.00
Total	0.89	0.90	0.94	0.90	0.89	0.84	0.83	0.85	0.82	0.85	0.85	0.70	0.94	0.94	1
Mean	22.98	22.39	21.73	22.70	22.78	7.15	6.93	7.16	6.03	6.56	5.88	6.94	453.72	434.52	888.24
S.D.	4.67	4.84	4.48	4.87	4.78	2.25	2.81	2.60	2.70	2.49	2.99	2.33	90.26	89.69	169.69
Skewness	0.46	0.48	0.76	0.26	0.42	0.73	0.11	0.34	0.59	0.39	0.37	0.17	0.55	0.76	0.70
Kurtosis	0.04	0.31	0.90	-0.02	0.08	0.67	-0.29	-0.12	0.17	0.44	-0.07	0.91	0.18	0.90	0.60
Reliability	0.87	0.87	0.87	0.82	0.83	0.72	0.75	0.77	0.77	0.70	0.73	0.56	0.93	0.87	0.94
RMS(CSEM)	1.69	1.77	1.59	2.09	1.94	1.20	1.40	1.25	1.31	1.36	1.55	1.54	24.49	31.77	40.11
SED	2.40	2.50	2.25	2.96	2.75	1.69	1.98	1.77	1.85	1.93	2.19	2.18	34.63	44.93	56.73
SED x 1.65	3.95	4.12	3.71	4.89	4.53	2.79	3.27	2.92	3.05	3.18	3.61	3.60	57.14	74.14	93.60

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.4.1. Scale Score Moments, Intercorrelations, and Reliability for Asian Test Takers for Form 3

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 851								
R	1	0.94	0.82	1.00	1.00	1.00	1.00	0.95	0.92	0.84	0.85	0.76	1.00	0.82	0.95
WL	0.85	1	0.86	0.98	0.98	1.00	1.00	1.00	1.00	0.88	0.88	0.81	1.00	0.86	0.98
MTS	0.76	0.80	1	0.91	0.92	0.86	0.76	0.85	0.86	1.00	1.00	1.00	0.86	1.00	1.00
HSS	0.93	0.87	0.82	1	0.99	1.00	1.00	1.00	0.96	0.92	0.94	0.84	1.00	0.91	1.00
SCI	0.92	0.88	0.84	0.87	1	1.00	0.96	0.99	0.94	0.93	0.95	0.87	1.00	0.92	1.00
COE	0.89	0.85	0.76	0.87	0.88	1	0.94	1.00	0.94	0.88	0.89	0.81	1.00	0.86	0.98
WIC	0.83	0.83	0.64	0.81	0.78	0.73	1	1.00	0.94	0.78	0.80	0.70	1.00	0.76	0.92
EOI	0.83	0.95	0.76	0.86	0.86	0.85	0.85	1	0.98	0.87	0.88	0.79	1.00	0.85	0.97
SEC	0.80	0.94	0.76	0.81	0.81	0.77	0.74	0.82	1	0.88	0.88	0.81	1.00	0.86	0.97
HOA	0.73	0.77	0.94	0.78	0.80	0.73	0.62	0.73	0.73	1	0.98	0.99	0.87	1.00	1.00
PSD	0.73	0.76	0.91	0.80	0.80	0.72	0.62	0.73	0.72	0.81	1	0.94	0.88	1.00	1.00
PAM	0.67	0.71	0.93	0.73	0.75	0.67	0.56	0.67	0.67	0.83	0.78	1	0.80	1.00	0.96
ERW	0.96	0.97	0.81	0.94	0.93	0.91	0.86	0.93	0.91	0.78	0.77	0.72	1	0.86	0.98
MSS	0.76	0.80	1.00	0.82	0.84	0.76	0.64	0.76	0.76	0.94	0.91	0.93	0.81	1	1.00
Total	0.90	0.92	0.96	0.92	0.93	0.87	0.78	0.88	0.87	0.91	0.89	0.87	0.95	0.96	1
Mean	28.28	28.29	29.57	28.58	28.68	9.83	9.89	10.05	9.19	10.08	9.88	10.55	565.70	591.49	1157.19
S.D.	5.42	6.00	6.18	5.63	5.57	2.95	3.18	3.03	3.25	3.04	3.51	3.15	109.97	123.61	222.34
Skewness	-0.29	-0.22	-0.34	-0.32	-0.26	-0.09	-0.61	-0.33	-0.20	-0.21	-0.66	-0.37	-0.28	-0.34	-0.30
Kurtosis	-0.07	-0.59	-0.45	-0.34	-0.24	-0.53	-0.08	-0.46	-0.75	-0.34	-0.23	-0.51	-0.40	-0.45	-0.43
Reliability	0.91	0.91	0.95	0.88	0.89	0.81	0.75	0.85	0.82	0.84	0.81	0.85	0.95	0.95	0.97
RMS(CSEM)	1.62	1.84	1.43	1.98	1.87	1.30	1.58	1.17	1.37	1.23	1.52	1.22	24.53	28.69	37.75
SED	2.29	2.61	2.03	2.80	2.65	1.83	2.24	1.66	1.93	1.73	2.15	1.73	34.69	40.58	53.38
SED x 1.65	3.78	4.30	3.35	4.62	4.37	3.02	3.69	2.74	3.19	2.86	3.55	2.85	57.23	66.95	88.08

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.4.2. Scale Score Moments, Intercorrelations, and Reliability for Asian Test Takers for Form 4

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 1,083								
R	1	0.95	0.85	1.00	1.00	1.00	1.00	0.95	0.90	0.84	0.89	0.80	1.00	0.85	0.96
WL	0.86	1	0.87	0.98	0.97	1.00	1.00	1.00	1.00	0.86	0.90	0.83	1.00	0.87	0.98
MTS	0.79	0.81	1	0.92	0.91	0.88	0.82	0.86	0.86	1.00	1.00	1.00	0.87	1.00	1.00
HSS	0.93	0.88	0.84	1	0.97	1.00	1.00	1.00	0.93	0.91	0.98	0.88	1.00	0.92	1.00
SCI	0.93	0.87	0.84	0.86	1	1.00	1.00	0.99	0.92	0.90	0.95	0.87	1.00	0.91	0.99
COE	0.90	0.87	0.78	0.88	0.87	1	0.99	1.00	0.94	0.88	0.92	0.85	1.00	0.88	0.99
WIC	0.88	0.87	0.71	0.86	0.85	0.80	1	1.00	0.94	0.81	0.87	0.77	1.00	0.82	0.95
EOI	0.85	0.95	0.78	0.87	0.87	0.88	0.88	1	0.96	0.85	0.90	0.82	1.00	0.86	0.97
SEC	0.79	0.94	0.76	0.79	0.79	0.77	0.76	0.80	1	0.85	0.87	0.84	1.00	0.86	0.96
HOA	0.74	0.76	0.95	0.79	0.79	0.74	0.67	0.73	0.72	1	0.99	0.99	0.86	1.00	0.99
PSD	0.77	0.77	0.92	0.83	0.81	0.75	0.70	0.75	0.72	0.83	1	0.97	0.90	1.00	1.00
PAM	0.71	0.74	0.94	0.76	0.76	0.71	0.64	0.70	0.70	0.85	0.81	1	0.83	1.00	0.97
ERW	0.96	0.97	0.83	0.94	0.93	0.92	0.90	0.93	0.89	0.78	0.80	0.75	1	0.87	0.99
MSS	0.79	0.81	1.00	0.84	0.84	0.78	0.71	0.78	0.76	0.95	0.92	0.94	0.83	1	1.00
Total	0.91	0.93	0.96	0.93	0.92	0.88	0.84	0.89	0.86	0.91	0.90	0.89	0.95	0.96	1
Mean	28.29	28.81	29.55	28.76	28.79	9.86	9.76	10.28	9.42	10.41	10.01	10.41	570.99	591.02	1162.00
S.D.	5.46	5.85	6.16	5.60	5.53	2.86	3.01	3.01	3.19	3.11	3.43	3.11	109.29	123.20	222.35
Skewness	-0.12	-0.15	-0.08	-0.22	-0.28	-0.01	-0.38	-0.35	-0.12	-0.16	-0.30	-0.34	-0.14	-0.08	-0.10
Kurtosis	-0.74	-0.63	-0.88	-0.55	-0.58	-0.96	-0.28	-0.60	-0.63	-0.86	-0.70	-0.53	-0.74	-0.88	-0.82
Reliability	0.91	0.91	0.95	0.89	0.89	0.82	0.79	0.86	0.82	0.86	0.82	0.86	0.95	0.95	0.97
RMS(CSEM)	1.59	1.72	1.38	1.90	1.81	1.23	1.37	1.12	1.33	1.18	1.47	1.18	23.48	27.69	36.31
SED	2.25	2.44	1.96	2.68	2.56	1.73	1.93	1.59	1.89	1.66	2.08	1.66	33.20	39.16	51.34
SED x 1.65	3.72	4.02	3.23	4.42	4.22	2.86	3.19	2.62	3.11	2.75	3.44	2.75	54.78	64.62	84.72

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.5.1. Scale Score Moments, Intercorrelations, and Reliability for Two or More Races Test Takers for Form 3

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 416								
R	1	0.95	0.88	1.00	1.00	1.00	1.00	0.97	0.93	0.90	0.91	0.86	1.00	0.88	0.98
WL	0.86	1	0.90	0.97	0.97	1.00	1.00	1.00	1.00	0.90	0.93	0.89	1.00	0.90	0.99
MTS	0.81	0.83	1	0.92	0.95	0.90	0.84	0.89	0.90	1.00	1.00	1.00	0.90	1.00	1.00
HSS	0.93	0.86	0.83	1	0.97	1.00	0.97	0.99	0.94	0.93	0.96	0.90	1.00	0.92	1.00
SCI	0.93	0.87	0.87	0.85	1	1.00	0.98	0.99	0.95	0.96	0.99	0.93	1.00	0.95	1.00
COE	0.88	0.86	0.77	0.84	0.85	1	0.94	1.00	0.95	0.91	0.93	0.88	1.00	0.90	0.99
WIC	0.83	0.85	0.71	0.80	0.81	0.73	1	1.00	0.93	0.84	0.89	0.80	1.00	0.84	0.95
EOI	0.84	0.95	0.78	0.85	0.85	0.87	0.87	1	0.98	0.90	0.93	0.87	1.00	0.89	0.99
SEC	0.80	0.94	0.79	0.79	0.81	0.76	0.74	0.81	1	0.90	0.93	0.90	1.00	0.90	0.99
HOA	0.77	0.78	0.94	0.79	0.82	0.73	0.67	0.74	0.74	1	1.00	1.00	0.91	1.00	1.00
PSD	0.75	0.77	0.90	0.77	0.81	0.71	0.68	0.73	0.73	0.81	1	0.96	0.93	1.00	1.00
PAM	0.72	0.75	0.91	0.75	0.78	0.69	0.62	0.71	0.72	0.82	0.74	1	0.88	1.00	1.00
ERW	0.96	0.97	0.85	0.93	0.93	0.90	0.87	0.93	0.91	0.80	0.79	0.76	1	0.90	1.00
MSS	0.81	0.83	1.00	0.83	0.87	0.77	0.71	0.78	0.79	0.94	0.90	0.91	0.85	1	1.00
Total	0.92	0.93	0.96	0.91	0.93	0.87	0.82	0.89	0.88	0.91	0.88	0.87	0.96	0.96	1
Mean	26.68	26.29	25.84	26.83	26.47	8.94	9.30	9.20	7.96	8.26	8.25	8.58	529.69	516.80	1046.49
S.D.	5.43	5.69	5.86	5.48	5.81	2.79	3.36	2.90	3.18	2.98	3.44	3.00	107.31	117.18	215.79
Skewness	-0.15	0.05	0.28	0.02	-0.11	0.16	-0.48	-0.16	0.29	0.27	-0.12	0.18	-0.07	0.28	0.13
Kurtosis	-0.58	-0.52	-0.54	-0.53	-0.52	-0.39	-0.33	-0.47	-0.60	-0.30	-0.71	-0.33	-0.60	-0.54	-0.65
Reliability	0.91	0.90	0.93	0.87	0.89	0.79	0.77	0.84	0.82	0.82	0.75	0.79	0.95	0.93	0.97
RMS(CSEM)	1.65	1.77	1.57	1.96	1.94	1.28	1.60	1.17	1.35	1.25	1.73	1.37	24.20	31.43	39.67
SED	2.33	2.50	2.22	2.77	2.75	1.81	2.27	1.65	1.91	1.77	2.44	1.94	34.22	44.45	56.10
SED x 1.65	3.85	4.13	3.67	4.57	4.53	2.98	3.74	2.73	3.15	2.91	4.03	3.20	56.46	73.35	92.56

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 5.c.5.2. Scale Score Moments, Intercorrelations, and Reliability for Two or More Races Test Takers for Form 4

	R	WL	MTS	HSS	SCI	COE	WIC	EOI	SEC	HOA	PSD	PAM	ERW	MSS	Total
							N = 556								
R	1	0.93	0.85	1.00	1.00	1.00	1.00	0.94	0.90	0.85	0.87	0.81	1.00	0.85	0.97
WL	0.85	1	0.88	0.97	0.96	1.00	1.00	1.00	1.00	0.89	0.87	0.86	1.00	0.88	0.98
MTS	0.79	0.81	1	0.92	0.92	0.89	0.86	0.88	0.85	1.00	1.00	1.00	0.88	1.00	1.00
HSS	0.93	0.87	0.83	1	0.96	1.00	1.00	1.00	0.92	0.91	0.95	0.89	1.00	0.92	1.00
SCI	0.92	0.87	0.84	0.85	1	1.00	1.00	0.99	0.91	0.93	0.92	0.87	1.00	0.92	0.99
COE	0.89	0.86	0.78	0.87	0.86	1	0.99	1.00	0.92	0.90	0.90	0.86	1.00	0.89	0.99
WIC	0.87	0.86	0.73	0.85	0.85	0.78	1	1.00	0.97	0.85	0.87	0.81	1.00	0.86	0.98
EOI	0.82	0.95	0.78	0.86	0.85	0.86	0.86	1	0.95	0.89	0.88	0.85	1.00	0.88	0.98
SEC	0.78	0.94	0.75	0.78	0.78	0.76	0.77	0.80	1	0.85	0.84	0.83	1.00	0.85	0.95
HOA	0.74	0.77	0.94	0.78	0.80	0.74	0.68	0.74	0.71	1	0.97	1.00	0.88	1.00	1.00
PSD	0.74	0.74	0.91	0.79	0.78	0.72	0.68	0.71	0.68	0.79	1	0.96	0.89	1.00	1.00
PAM	0.68	0.72	0.91	0.73	0.73	0.68	0.62	0.69	0.67	0.81	0.75	1	0.85	1.00	0.99
ERW	0.96	0.96	0.83	0.93	0.93	0.91	0.90	0.92	0.90	0.79	0.77	0.73	1	0.88	0.99
MSS	0.79	0.81	1.00	0.83	0.84	0.78	0.73	0.78	0.75	0.94	0.91	0.91	0.83	1	1.00
Total	0.91	0.92	0.96	0.92	0.92	0.88	0.85	0.89	0.86	0.90	0.88	0.86	0.95	0.96	1
Mean	26.75	26.50	25.71	26.71	26.62	8.94	9.06	9.21	8.20	8.41	8.34	8.60	532.50	514.30	1046.80
S.D.	5.44	5.74	5.77	5.49	5.65	2.80	2.86	2.92	3.25	3.07	3.31	2.87	107.53	115.42	213.37
Skewness	0.02	0.11	0.38	-0.03	-0.09	0.27	-0.27	-0.13	0.25	0.19	0.04	0.31	0.09	0.38	0.22
Kurtosis	-0.34	-0.38	-0.41	-0.27	-0.37	-0.76	-0.01	-0.48	-0.55	-0.35	-0.48	-0.23	-0.49	-0.41	-0.54
Reliability	0.91	0.91	0.93	0.88	0.89	0.81	0.77	0.84	0.84	0.83	0.79	0.78	0.95	0.93	0.97
RMS(CSEM)	1.62	1.72	1.48	1.94	1.85	1.23	1.38	1.17	1.31	1.27	1.51	1.36	23.65	29.50	37.81
SED	2.30	2.43	2.09	2.74	2.61	1.74	1.96	1.65	1.86	1.79	2.13	1.92	33.44	41.72	53.47
SED x 1.65	3.79	4.01	3.44	4.53	4.31	2.88	3.23	2.73	3.07	2.95	3.52	3.17	55.18	68.84	88.23

Note. The values above the diagonal represent the true score correlations. The correlations below the diagonal represent the observed score correlations. SED=Standard Error of Difference. Only subgroups with sample size >=100 have statistics reported.

Table 6.a. Item Level Completion Rates for SAT Form 1 (N=1,502)

Item Number	Reading	Writing and Language	Math-No Calculator	Math-Calculator
1	98.34	96.80	96.40	95.81
2	98.34	96.74	96.34	95.67
3	98.14	96.74	96.34	95.67
4	98.14	96.74	96.34	95.67
5	98.14	96.74	96.21	95.67
6	98.00	96.67	96.01	95.67
7	97.94	96.67	95.67	95.61
8	97.94	96.67	95.67	95.47
9	97.94	96.67	95.61	95.47
10	97.94	96.67	95.61	95.47
11	97.74	96.54	95.41	95.47
12	97.67	96.47	95.34	95.41
13	97.60	96.47	95.01	95.34
14	97.47	96.34	94.54	95.27
15	97.47	96.34	94.34	95.27
16	97.47	96.27	86.22	95.07
17	97.40	96.27	77.10	95.07
18	97.40	96.27	74.37	95.07
19	97.27	96.21	70.51	94.94
20	97.07	96.14	66.25	94.87
21	97.00	96.07	-	94.81
22	96.87	95.94	-	94.67
23	96.80	95.74	-	94.67
24	96.67	95.54	-	94.41
25	96.60	95.27	-	94.34
26	96.54	95.01	-	94.21
27	96.54	94.94	-	94.21
28	96.40	94.87	-	94.14
29	96.40	94.81	-	94.14
30	96.34	94.74	-	94.14
31	96.01	94.61	-	86.28
32	95.74	94.21	-	84.02
33	94.61	93.94	-	82.82
34	94.61	93.87	-	81.82
35	94.34	93.81	-	78.03
36	93.94	93.61	-	76.56
37	93.28	93.14	-	74.83
38	93.21	92.94	-	65.85
39	93.14	92.74	-	-
40	92.94	92.34	-	-
41	92.28	91.61	-	-
42	92.08	91.15	-	-
43	91.41	91.15	-	-
44	91.21	90.88	-	-
45	91.01	-	-	-
46	90.48	-	-	-
47	90.48	-	-	-
48	90.21	-	-	-
49	89.68	-	-	-

Table 6.a. Item Level Completion Rates for SAT Form 1 (N=1,502)

Item Number	Reading	Writing and Language	Math-No Calculator	Math-Calculator
50	89.61	-	-	-
51	89.01	-	-	-
52	88.81	-	-	-

Note. * represents items that were not included for scoring due to concerns over the functioning of the items.

Table 6.b. Item Level Completion Rates for SAT Form 2 (N=278)

Item Number	Reading	Writing and Language	Math-No Calculator	Math-Calculator
1	100.00	98.92	98.56	98.56
2	100.00	98.92	98.56	98.56
3	100.00	98.92	98.56	98.56
4	100.00	98.92	98.20	98.56
5	100.00	98.92	98.20	98.56
6	100.00	98.92	98.20	98.56
7	100.00	98.92	98.20	98.56
8	100.00	98.92	98.20	98.56
9	100.00	98.92	98.20	98.56
10	100.00	98.92	98.20	98.56
11	99.64	98.92	98.20	98.56
12	99.64	98.56	98.20	98.56
13	99.64	98.56	97.84	98.56
14	99.64	98.56	97.84	98.56
15	99.64	98.56	*	98.56
16	99.64	98.56	90.29	98.56
17	99.64	98.56	89.21	98.56
18	99.64	98.20	87.05	98.56
19	99.64	98.20	84.53	98.56
20	99.64	98.20	82.37	98.20
21	99.64	98.20	-	98.20
22	99.64	98.20	-	97.84
23	99.28	98.20	-	97.84
24	99.28	98.20	-	97.84
25	99.28	97.48	-	97.48
26	98.56	97.48	-	97.48
27	98.56	97.48	-	97.12
28	98.56	97.12	-	96.76
29	97.84	96.76	-	96.40
30	97.48	96.40	-	96.40
31	97.12	96.04	-	93.53
32	96.76	95.32	-	93.53
33	96.40	94.24	-	93.53
34	96.04	92.45	-	93.17
35	96.04	91.73	-	92.09
36	95.68	91.37	-	92.09
37	95.68	91.01	-	91.01
38	95.68	90.29	-	88.85
39	94.96	89.57	-	-
40	94.96	88.85	-	-
41	94.60	88.85	-	-
42	93.88	88.49	-	-
43	93.53	87.41	-	-
44	93.17	86.69	-	-
45	92.81	-	-	-
46	92.45	-	-	-
47	91.37	-	-	-
48	90.65	-	-	-
49	90.65	-	-	-

Table 6.b. Item Level Completion Rates for SAT Form 2 (N=278)

Item Number	Reading	Writing and Language	Math-No Calculator	Math-Calculator
50	89.57	-	-	-
51	89.57	-	-	-
52	89.57	-	-	-

Note. * represents items that were not included for scoring due to concerns over the functioning of the items.

Table 6.c. Item Level Completion Rates for SAT Form 3 (N=17,296)

Item Number	Reading	Writing and Language	Math-No Calculator	Math-Calculator
1	99.91	99.73	99.57	99.43
2	99.89	99.72	99.56	99.43
3	99.88	99.71	99.56	99.42
4	99.86	99.70	99.54	99.42
5	99.85	99.70	99.54	99.42
6	99.85	99.69	99.52	99.40
7	99.84	99.69	99.49	99.38
8	99.84	99.68	99.46	99.38
9	99.84	99.66	99.42	99.36
10	99.82	99.65	99.36	99.35
11	99.77	99.65	99.33	99.33
12	99.76	99.64	99.24	99.32
13	99.75	99.64	99.15	99.32
14	99.73	99.64	99.03	99.31
15	99.72	99.61	98.91	99.31
16	99.71	99.58	92.06	99.25
17	99.69	99.56	90.27	99.24
18	99.68	99.53	87.95	99.21
19	99.66	99.47	83.95	99.17
20	99.65	99.46	76.49	99.14
21	99.62	99.42	-	99.12
22	99.51	99.39	-	99.08
23	99.45	99.28	-	99.04
24	99.42	99.26	-	98.98
25	99.38	99.21	-	98.88
26	99.30	99.17	-	98.86
27	99.26	99.02	-	98.71
28	99.25	98.98	-	98.65
29	99.21	98.92	-	98.60
30	99.19	98.73	-	98.57
31	99.12	98.61	-	94.56
32	99.06	98.51	-	93.26
33	98.68	98.30	-	91.16
34	98.58	97.99	-	89.04
35	98.53	97.77	-	86.14
36	98.39	97.60	-	83.98
37	98.25	97.46	-	82.11
38	98.03	97.21	-	80.02
39	97.92	97.11	-	-
40	97.74	96.94	-	-
41	97.62	96.63	-	-
42	97.51	96.53	-	-
43	96.92	96.27	-	-
44	96.73	95.76	-	-
45	96.54	-	-	-
46	96.31	-	-	-
47	95.91	-	-	-
48	95.78	-	-	-
49	95.55	-	-	-

Table 6.c. Item Level Completion Rates for SAT Form 3 (N=17,296)

Item Number	Reading	Writing and Language	Math-No Calculator	Math-Calculator
50	95.20	-	-	-
51	94.96	-	-	-
52	94.60	-	-	-

Note. * represents items that were not included for scoring due to concerns over the functioning of the items.

Table 6.d. Item Level Completion Rates for SAT Form 4 (N=18,612)

Item Number	Reading	Writing and Language	Math-No Calculator	Math-Calculator
1	99.91	99.72	99.62	99.60
2	99.88	99.72	99.61	99.60
3	99.88	99.72	99.61	99.58
4	99.88	99.72	99.60	99.58
5	99.86	99.70	99.59	99.58
6	99.85	99.69	99.58	99.57
7	99.85	99.69	99.58	99.55
8	99.85	99.69	99.54	99.54
9	99.84	99.69	99.54	99.53
10	99.83	99.69	99.52	99.52
11	99.77	99.68	99.47	99.51
12	99.77	99.68	99.40	99.51
13	99.76	99.67	99.35	99.49
14	99.75	99.66	99.26	99.49
15	99.74	99.65	99.20	99.48
16	99.73	99.64	97.16	99.47
17	99.73	99.61	92.57	99.45
18	99.72	99.59	87.54	99.44
19	99.69	99.57	84.18	99.41
20	99.68	99.53	75.73	99.38
21	99.65	99.50	-	99.32
22	99.55	99.44	-	99.32
23	99.51	99.34	-	99.28
24	99.47	99.29	-	99.26
25	99.41	99.23	-	99.24
26	99.32	99.18	-	99.22
27	99.29	99.09	-	99.16
28	99.17	98.98	-	99.12
29	99.09	98.91	-	99.09
30	99.03	98.76	-	99.05
31	98.98	98.60	-	96.59
32	98.86	98.55	-	96.27
33	98.53	98.37	-	95.99
34	98.42	98.14	-	94.64
35	98.21	98.08	-	94.32
36	98.08	97.85	-	93.86
37	97.87	97.74	-	93.20
38	97.66	97.67	-	88.65
39	97.45	97.49	-	-
40	97.24	97.30	-	-
41	97.09	96.96	-	-
42	96.90	96.64	-	-
43	96.40	96.45	-	-
44	96.22	96.28	-	-
45	96.08	-	-	-
46	95.75	-	-	-
47	95.58	-	-	-
48	95.17	-	-	-
49	94.76	-	-	-

Table 6.d. Item Level Completion Rates for SAT Form 4 (N=18,612)

Item Number	Reading	Writing and Language	Math-No Calculator	Math-Calculator
50	94.33	-	-	-
51	93.93	-	-	-
52	93.52	-	-	-

Note. * represents items that were not included for scoring due to concerns over the functioning of the items.

Table 7.a. Section Completion Rates by Timed Section

Test	Category	Form 1 (N=1,502)	Form 2 (N=278)	Form 3 (N=17,296)	Form 4 (N=18,612)
Reading	# Items Reached by 80%	52	52	52	52
	# Items in Section	52	52	52	52
	% Completing 75%	93.14	94.96	97.92	97.45
	% Completing 90%	90.48	91.37	95.91	95.58
	% Completing Section	88.81	89.57	94.60	93.52
	Mean Not Reached	2.50	1.54	0.73	0.84
	S.D. Not Reached	8.98	5.50	4.02	4.19
Writing & Language	# Items Reached by 80%	44	44	44	44
	# Items in Section	44	44	44	44
	% Completing 75%	93.94	94.24	98.30	98.37
	% Completing 90%	92.34	88.85	96.94	97.30
	% Completing Section	90.88	86.69	95.76	96.28
	Mean Not Reached	2.17	1.78	0.53	0.49
	S.D. Not Reached	8.51	6.15	3.46	3.34
Math-No Calculator	# Items Reached by 80%	16	19	19	19
	# Items in Section	20	19	20	20
	% Completing 75%	94.34	90.29	98.91	99.20
	% Completing 90%	74.37	84.53	87.95	87.54
	% Completing Section	66.25	82.37	76.49	75.73
	Mean Not Reached	1.91	0.91	0.79	0.70
	S.D. Not Reached	4.15	2.80	2.05	1.83
Math-Calculator	# Items Reached by 80%	34	38	38	38
	# Items in Section	38	38	38	38
	% Completing 75%	94.14	96.40	98.60	99.09
	% Completing 90%	78.03	92.09	86.14	94.32
	% Completing Section	65.85	88.85	80.02	88.65
	Mean Not Reached	3.18	1.18	1.25	0.64
	S.D. Not Reached	8.17	5.10	3.85	3.14

Table 7.b.1. Section Completion Rates by Gender

Test	Category	Form 1		Form 2	
		Male (N=812)	**Female (N=689)**	**Male (N=166)**	**Female (N=112)**
Reading	# Items Reached by 80%	52	52	52	52
	# Items in Section	52	52	52	52
	% Completing 75%	92.36	94.19	92.77	98.21
	% Completing 90%	89.90	91.29	87.95	96.43
	% Completing Section	88.55	89.26	86.14	94.64
	Mean Not Reached	2.92	1.97	2.15	0.64
	S.D. Not Reached	10.10	7.36	6.49	3.38
Writing & Language	# Items Reached by 80%	44	44	44	44
	# Items in Section	44	44	44	44
	% Completing 75%	92.36	95.94	92.77	96.43
	% Completing 90%	91.13	93.90	87.35	91.07
	% Completing Section	89.53	92.60	84.94	89.29
	Mean Not Reached	2.74	1.47	2.04	1.39
	S.D. Not Reached	9.71	6.76	6.64	5.34
Math-No Calculator	# Items Reached by 80%	16	16	19	19
	# Items in Section	20	20	19	19
	% Completing 75%	93.35	95.50	87.95	93.75
	% Completing 90%	73.28	75.76	83.13	86.61
	% Completing Section	67.24	65.17	80.72	84.82
	Mean Not Reached	2.13	1.64	1.04	0.72
	S.D. Not Reached	4.65	3.46	2.95	2.57
Math-Calculator	# Items Reached by 80%	33	36	38	38
	# Items in Section	38	38	38	38
	% Completing 75%	92.24	96.37	95.18	98.21
	% Completing 90%	75.37	81.28	89.16	96.43
	% Completing Section	62.56	69.81	86.75	91.96
	Mean Not Reached	3.92	2.30	1.50	0.71
	S.D. Not Reached	9.31	6.50	5.69	4.05

Only subgroups with sample size >=5 have statistics reported.

Table 7.b.2. Section Completion Rates by Gender

Test	Category	Form 3		Form 4	
		Male (N=8,498)	Female (N=8,798)	Male (N=9,525)	Female (N=9,087)
Reading	# Items Reached by 80%	52	52	52	52
	# Items in Section	52	52	52	52
	% Completing 75%	97.53	98.31	97.41	97.50
	% Completing 90%	95.67	96.14	95.69	95.48
	% Completing Section	94.60	94.60	93.91	93.11
	Mean Not Reached	0.84	0.62	0.84	0.83
	S.D. Not Reached	4.55	3.43	4.33	4.05
Writing & Language	# Items Reached by 80%	44	44	44	44
	# Items in Section	44	44	44	44
	% Completing 75%	97.71	98.87	98.15	98.59
	% Completing 90%	96.32	97.53	97.09	97.52
	% Completing Section	95.14	96.36	96.19	96.38
	Mean Not Reached	0.71	0.36	0.54	0.44
	S.D. Not Reached	4.18	2.57	3.54	3.11
Math-No Calculator	# Items Reached by 80%	19	19	19	19
	# Items in Section	20	20	20	20
	% Completing 75%	98.59	99.22	99.04	99.36
	% Completing 90%	86.79	89.08	87.13	87.97
	% Completing Section	75.97	76.99	75.99	75.46
	Mean Not Reached	0.88	0.69	0.73	0.68
	S.D. Not Reached	2.33	1.73	1.92	1.73
Math-Calculator	# Items Reached by 80%	37	38	38	38
	# Items in Section	38	38	38	38
	% Completing 75%	98.16	99.02	98.99	99.19
	% Completing 90%	84.56	87.67	93.86	94.79
	% Completing Section	78.70	81.30	89.01	88.27
	Mean Not Reached	1.49	1.01	0.69	0.59
	S.D. Not Reached	4.51	3.05	3.33	2.92

Only subgroups with sample size >=5 have statistics reported.

Table 7.c.1. Section Completion Rates by Race/Ethnicity for Form 1

Test	Category	White (N=743)	Black (N=262)	Hispanic (N=401)	Asian (N=46)	AIAN (N=5)	Two or More Races (N=34)
Reading	# Items Reached by 80%	52	52	52	52	52	52
	# Items in Section	52	52	52	52	52	52
	% Completing 75%	96.90	86.26	89.78	100.00	100.00	97.06
	% Completing 90%	95.29	82.44	85.29	100.00	100.00	97.06
	% Completing Section	93.41	81.68	83.29	100.00	100.00	94.12
	Mean Not Reached	1.35	4.35	3.77	0.00	0.00	1.59
	S.D. Not Reached	6.89	11.14	10.80	0.00	0.00	8.91
Writing & Language	# Items Reached by 80%	44	44	44	44	44	44
	# Items in Section	44	44	44	44	44	44
	% Completing 75%	96.50	90.08	91.02	100.00	100.00	94.12
	% Completing 90%	95.56	87.40	89.28	97.83	100.00	91.18
	% Completing Section	94.75	84.73	87.28	97.83	100.00	88.24
	Mean Not Reached	1.39	3.35	3.02	0.17	0.00	2.82
	S.D. Not Reached	7.20	10.02	9.84	1.18	0.00	10.52
Math-No Calculator	# Items Reached by 80%	18	15	15	20	18	16
	# Items in Section	20	20	20	20	20	20
	% Completing 75%	97.04	91.22	91.52	97.83	100.00	88.24
	% Completing 90%	82.37	62.60	64.59	93.48	80.00	79.41
	% Completing Section	73.62	53.44	58.85	84.78	40.00	70.59
	Mean Not Reached	1.28	2.77	2.64	0.46	1.60	2.29
	S.D. Not Reached	3.45	4.78	4.77	1.49	1.67	5.31
Math-Calculator	# Items Reached by 80%	37	30	30	38	38	37
	# Items in Section	38	38	38	38	38	38
	% Completing 75%	96.90	89.69	91.52	95.65	100.00	94.12
	% Completing 90%	87.89	62.21	68.83	84.78	80.00	82.35
	% Completing Section	73.62	51.53	58.10	80.43	80.00	73.53
	Mean Not Reached	1.88	5.12	4.53	1.91	1.60	3.15
	S.D. Not Reached	6.59	9.50	9.59	6.26	3.58	9.15

Note. AIAN stands for American Indian/Alaska Native. Only subgroups with sample size >=5 have statistics reported.

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Table 7.c.2. Section Completion Rates by Race/Ethnicity for Form 2

Test	Category	White (N=166)	Black (N=36)	Hispanic (N=51)	Asian (N=9)	Two or More Races (N=13)
Reading	# Items Reached by 80%	52	52	52	52	28
	# Items in Section	52	52	52	52	52
	% Completing 75%	95.18	97.22	96.08	100.00	76.92
	% Completing 90%	91.57	97.22	90.20	100.00	69.23
	% Completing Section	89.16	94.44	90.20	100.00	69.23
	Mean Not Reached	1.38	0.61	1.86	0.00	6.38
	S.D. Not Reached	4.72	3.19	7.15	0.00	10.86
Writing & Language	# Items Reached by 80%	44	44	44	33	31
	# Items in Section	44	44	44	44	44
	% Completing 75%	96.39	97.22	92.16	88.89	76.92
	% Completing 90%	91.57	94.44	86.27	66.67	69.23
	% Completing Section	89.76	94.44	84.31	66.67	53.85
	Mean Not Reached	1.43	0.67	2.37	3.22	5.31
	S.D. Not Reached	6.01	2.80	7.34	5.09	8.77
Math-No Calculator	# Items Reached by 80%	19	19	19	18	14
	# Items in Section	19	19	19	19	19
	% Completing 75%	90.96	88.89	92.16	100.00	69.23
	% Completing 90%	84.94	86.11	84.31	88.89	69.23
	% Completing Section	82.53	86.11	82.35	77.78	69.23
	Mean Not Reached	0.82	1.06	0.88	0.44	2.38
	S.D. Not Reached	2.50	3.48	2.91	1.01	4.63
Math-Calculator	# Items Reached by 80%	38	38	38	38	30
	# Items in Section	38	38	38	38	38
	% Completing 75%	97.59	94.44	96.08	100.00	84.62
	% Completing 90%	92.17	91.67	94.12	100.00	76.92
	% Completing Section	89.16	91.67	86.27	100.00	76.92
	Mean Not Reached	1.01	1.67	1.25	0.00	2.77
	S.D. Not Reached	4.66	6.77	5.62	0.00	5.59

Note. Only subgroups with sample size >=5 have statistics reported.

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Table 7.c.3. Section Completion Rates by Race/Ethnicity for Form 3

Test	Category	White (N=10,203)	Black (N=2,061)	Hispanic (N=3,688)	Asian (N=851)	NHPI (N=16)	AIAN (N=42)	Two or More Races (N=416)
Reading	# Items Reached by 80%	52	52	52	52	52	52	52
	# Items in Section	52	52	52	52	52	52	52
	% Completing 75%	98.96	94.32	96.85	98.82	100.00	95.24	98.08
	% Completing 90%	97.77	90.15	93.55	97.77	100.00	92.86	95.91
	% Completing Section	96.62	88.16	91.97	97.18	100.00	88.10	95.43
	Mean Not Reached	0.39	1.81	1.11	0.45	0.00	1.48	0.72
	S.D. Not Reached	2.96	6.30	4.83	3.65	0.00	5.56	3.79
Writing & Language	# Items Reached by 80%	44	44	44	44	44	44	44
	# Items in Section	44	44	44	44	44	44	44
	% Completing 75%	99.12	95.34	97.51	99.06	100.00	97.62	98.32
	% Completing 90%	98.35	92.33	95.31	98.35	100.00	92.86	96.63
	% Completing Section	97.60	90.10	93.41	97.65	100.00	92.86	95.91
	Mean Not Reached	0.30	1.28	0.81	0.30	0.00	0.83	0.52
	S.D. Not Reached	2.71	5.08	4.23	2.83	0.00	3.32	3.03
Math-No Calculator	# Items Reached by 80%	20	15	17	20	20	17	19
	# Items in Section	20	20	20	20	20	20	20
	% Completing 75%	99.36	97.33	98.37	99.53	100.00	97.62	99.04
	% Completing 90%	93.25	72.93	79.88	94.59	87.50	78.57	91.59
	% Completing Section	82.85	58.71	66.73	84.49	81.25	78.57	79.09
	Mean Not Reached	0.48	1.64	1.24	0.42	0.56	1.29	0.59
	S.D. Not Reached	1.61	2.78	2.51	1.56	1.41	3.42	1.48
Math-Calculator	# Items Reached by 80%	38	32	34	38	38	38	38
	# Items in Section	38	38	38	38	38	38	38
	% Completing 75%	99.26	96.75	97.53	99.29	100.00	97.62	99.76
	% Completing 90%	92.23	69.09	77.11	91.89	87.50	88.10	89.66
	% Completing Section	87.06	60.16	69.74	86.96	81.25	80.95	82.93
	Mean Not Reached	0.70	2.78	2.07	0.70	1.06	1.69	0.81
	S.D. Not Reached	2.84	5.50	4.93	2.97	2.46	6.09	2.11

Note. AIAN stands for American Indian/Alaska Native, NHPI stands for Native Hawaiian or other Pacific Islander. Only subgroups with sample size >=5 have statistics reported.

Table 7.c.4. Section Completion Rates by Race/Ethnicity for Form 4

Test	Category	White (N=10,554)	Black (N=2,254)	Hispanic (N=4,076)	Asian (N=1,083)	NHPI (N=22)	AIAN (N=38)	Two or More Races (N=556)
Reading	# Items Reached by 80%	52	52	52	52	52	52	52
	# Items in Section	52	52	52	52	52	52	52
	% Completing 75%	98.73	94.06	95.58	99.45	100.00	94.74	97.12
	% Completing 90%	97.37	90.68	92.89	98.43	100.00	94.74	95.86
	% Completing Section	95.64	87.62	90.41	96.86	100.00	94.74	93.35
	Mean Not Reached	0.47	1.77	1.41	0.27	0.00	0.74	0.91
	S.D. Not Reached	3.02	5.88	5.64	2.02	0.00	3.17	4.60
Writing & Language	# Items Reached by 80%	44	44	44	44	44	44	44
	# Items in Section	44	44	44	44	44	44	44
	% Completing 75%	99.19	96.10	97.18	99.82	100.00	100.00	97.84
	% Completing 90%	98.68	93.66	95.44	99.08	100.00	97.37	96.22
	% Completing Section	98.04	91.26	94.16	98.71	100.00	97.37	94.06
	Mean Not Reached	0.27	0.99	0.84	0.11	0.00	0.13	0.74
	S.D. Not Reached	2.67	4.03	4.46	1.27	0.00	0.81	4.22
Math-No Calculator	# Items Reached by 80%	20	17	17	20	18	19	19
	# Items in Section	20	20	20	20	20	20	20
	% Completing 75%	99.45	98.76	98.63	100.00	100.00	97.37	98.92
	% Completing 90%	92.51	75.64	79.56	94.83	81.82	86.84	86.51
	% Completing Section	81.11	61.62	67.71	84.12	72.73	78.95	73.92
	Mean Not Reached	0.48	1.21	1.10	0.32	0.86	0.84	0.77
	S.D. Not Reached	1.53	2.04	2.37	0.87	1.64	2.37	1.99
Math-Calculator	# Items Reached by 80%	38	37	38	38	38	38	38
	# Items in Section	38	38	38	38	38	38	38
	% Completing 75%	99.43	98.49	98.28	99.91	100.00	97.37	99.28
	% Completing 90%	97.39	86.96	89.43	98.06	90.91	92.11	95.14
	% Completing Section	94.00	74.53	80.89	94.92	86.36	86.84	89.93
	Mean Not Reached	0.33	1.32	1.19	0.17	0.77	0.89	0.57
	S.D. Not Reached	2.48	3.82	4.29	1.06	2.35	3.24	3.12

Note. AIAN stands for American Indian/Alaska Native, NHPI stands for Native Hawaiian or other Pacific Islander. Only subgroups with sample size >=5 have statistics reported.

Table 8.a. DIF Summary for Form 1

Test	Category	Worst DIF # of Items	% of Items	Summary Statistics	Focal Group Female (N=640)	Black (N=249)	Hispanic (N=334)
Reading	C+	0	0.00		0	0	0
	B+	6	11.54		2	1	3
	A	43	82.69		50	49	48
	B-	3	5.77		0	2	1
	C-	0	0.00		0	0	0
				N	52	52	52
				MEAN	0.05	0.07	0.06
				SD	0.48	0.52	0.51
				MIN	-0.72	-1.57	-1.12
				MAX	1.39	1.09	1.24
WL	C+	0	0.00		0	0	0
	B+	7	15.91		1	5	2
	A	33	75.00		42	36	41
	B-	4	9.09		1	3	1
	C-	0	0.00		0	0	0
				N	44	44	44
				MEAN	0.01	0.03	0.05
				SD	0.49	0.74	0.51
				MIN	-1.24	-1.71	-1.06
				MAX	1.15	1.84	1.13
Math	C+	0	0.00		0	0	0
	B+	10	17.24		3	8	2
	A	43	74.14		54	36	50
	B-	5	8.62		1	2	4
	C-	0	0.00		0	0	0
				N	58	46	56
				MEAN	0.06	0.06	-0.02
				SD	0.54	0.68	0.66
				MIN	-1.12	-1.25	-1.47
				MAX	1.81	1.41	1.37

Note. The summary statistics are from the distribution of Mantel-Haenszel D-DIF statistics within each group. Only subgroups with sample size >=200 have statistics reported. DIF analysis only includes test takers whose first language is "English" or "English and another language."

Table 8.c. DIF Summary for Form 3

Test	Category	Worst DIF # of Items	Worst DIF % of Items	Summary Statistics	Focal Group Female (N=8,261)	Focal Group Black (N=1,998)	Focal Group Hispanic (N=3,103)	Focal Group Asian (N=721)	Focal Group Two or More Races (N=408)
Reading	C+	0	0.00		0	0	0	0	0
	B+	1	1.92		1	0	0	0	0
	A	49	94.23		50	51	52	52	52
	B-	2	3.85		1	1	0	0	0
	C-	0	0.00		0	0	0	0	0
				N	52	52	52	52	52
				MEAN	0.02	0.03	0.01	0.00	0.02
				SD	0.45	0.39	0.31	0.37	0.33
				MIN	-1.04	-1.18	-0.59	-0.83	-0.69
				MAX	1.06	0.85	0.68	0.79	0.62
WL	C+	0	0.00		0	0	0	0	0
	B+	1	2.27		0	0	0	1	0
	A	41	93.18		43	44	44	42	44
	B-	2	4.55		1	0	0	1	0
	C-	0	0.00		0	0	0	0	0
				N	44	44	44	44	44
				MEAN	0.02	0.02	-0.01	-0.01	0.03
				SD	0.43	0.37	0.32	0.53	0.42
				MIN	-1.01	-0.89	-0.79	-1.36	-0.89
				MAX	0.92	0.76	0.62	1.15	0.99
Math	C+	0	0.00		0	0	0	0	0
	B+	0	0.00		0	0	0	0	0
	A	55	94.83		56	57	58	57	58
	B-	3	5.17		2	1	0	1	0
	C-	0	0.00		0	0	0	0	0
				N	58	58	58	58	58
				MEAN	-0.02	0.01	0.01	0.04	0.02
				SD	0.46	0.42	0.32	0.48	0.34
				MIN	-1.22	-1.07	-0.96	-1.07	-0.66
				MAX	0.64	0.72	0.56	0.94	0.79

Note. The summary statistics are from the distribution of Mantel-Haenszel D-DIF statistics within each group. If a test taker selected more than one race then they were included in the Two or More Races category. Only subgroups with sample size >=200 have statistics reported. DIF analysis only includes test takers whose first language is "English" or "English and another language."

Table 8.d. DIF Summary for Form 4

Test	Category	Worst DIF		Summary Statistics	Focal Group				
		# of Items	% of Items		Female (N=8,504)	Black (N=2,179)	Hispanic (N=3,424)	Asian (N=915)	Two or More Races (N=547)
Reading	C+	0	0.00		0	0	0	0	0
	B+	2	3.85		1	0	0	1	0
	A	47	90.38		50	51	51	50	52
	B-	3	5.77		1	1	1	1	0
	C-	0	0.00		0	0	0	0	0
				N	52	52	52	52	52
				MEAN	0.02	0.02	0.00	-0.02	0.00
				SD	0.44	0.41	0.32	0.44	0.30
				MIN	-1.20	-1.47	-1.24	-1.11	-0.78
				MAX	1.08	0.79	0.44	1.12	0.42
WL	C+	0	0.00		0	0	0	0	0
	B+	2	4.55		0	0	0	2	0
	A	41	93.18		44	43	44	42	43
	B-	1	2.27		0	1	0	0	1
	C-	0	0.00		0	0	0	0	0
				N	44	44	44	44	44
				MEAN	0.00	0.01	-0.01	-0.02	0.01
				SD	0.43	0.47	0.31	0.49	0.39
				MIN	-0.98	-1.14	-0.64	-0.99	-1.08
				MAX	0.94	0.88	0.55	1.19	0.67
Math	C+	0	0.00		0	0	0	0	0
	B+	2	3.45		0	0	0	2	0
	A	53	91.38		56	57	58	54	58
	B-	3	5.17		2	1	0	2	0
	C-	0	0.00		0	0	0	0	0
				N	58	58	58	58	58
				MEAN	-0.01	0.02	0.00	-0.01	0.00
				SD	0.49	0.40	0.29	0.52	0.27
				MIN	-1.39	-1.34	-0.69	-1.05	-0.62
				MAX	0.84	0.71	0.48	1.37	0.50

Note. The summary statistics are from the distribution of Mantel-Haenszel D-DIF statistics within each group. If a test taker selected more than one race then they were included in the Two or More Races category. Only subgroups with sample size >=200 have statistics reported. DIF analysis only includes test takers whose first language is "English" or "English and another language."

Table 9.a. Scale Score Mean, Standard Deviation, and Standardized Difference between Gender Groups

Form	Score	N	Male Mean	S.D.	N	Female Mean	S.D.	Std. Diff.
Form 1	R	812	22.58	5.99	689	24.16	5.50	0.27
	WL		21.69	6.05		23.75	5.89	0.35
	MTS		21.89	6.09		22.78	5.53	0.15
	HSS		22.66	6.04		23.93	5.60	0.22
	SCI		23.12	5.86		24.10	5.38	0.17
	COE		7.15	2.89		7.76	2.72	0.22
	WIC		6.51	3.49		7.57	3.27	0.31
	EOI		7.02	3.10		7.87	3.04	0.27
	SEC		5.57	3.18		6.78	3.20	0.38
	HOA		6.60	3.24		7.00	2.97	0.13
	PSD		6.17	3.59		6.49	3.46	0.09
	PAM		6.48	3.05		6.91	2.83	0.15
	ERW		442.70	115.65		479.14	109.06	0.32
	MSS		437.77	121.86		455.53	110.64	0.15
	Total		880.47	228.99		934.67	209.42	0.25
Form 2	R	166	23.04	5.07	112	24.28	5.20	0.24
	WL		21.77	5.36		23.61	5.67	0.34
	MTS		21.23	5.09		22.22	5.13	0.19
	HSS		22.33	5.21		23.67	5.37	0.25
	SCI		23.04	5.00		23.97	5.13	0.18
	COE		7.35	2.38		7.81	2.51	0.19
	WIC		6.66	3.25		7.48	3.13	0.26
	EOI		6.72	2.87		7.46	2.89	0.25
	SEC		5.78	2.84		6.80	3.00	0.35
	HOA		6.30	2.93		6.68	2.84	0.13
	PSD		5.47	3.05		5.88	3.35	0.13
	PAM		6.47	2.73		7.09	2.59	0.23
	ERW		448.01	99.48		478.84	103.46	0.30
	MSS		424.64	101.86		444.46	102.60	0.19
	Total		872.65	192.61		923.30	198.84	0.26

Note. Std. Diff.=Standardized Difference for female mean - male mean. Only subgroups with sample size >=100 have statistics reported.

Table 9.a. Scale Score Mean, Standard Deviation, and Standardized Difference between Gender Groups (continued)

Form	Score	N	Male Mean	S.D.	N	Female Mean	S.D.	Std. Diff.
Form 3	R	8,498	25.44	5.59	8,798	26.23	5.11	0.15
	WL		24.88	5.82		26.18	5.51	0.23
	MTS		25.13	6.21		25.13	5.53	0.00
	HSS		25.53	5.82		26.21	5.28	0.12
	SCI		25.45	5.86		25.91	5.31	0.08
	COE		8.31	2.84		8.76	2.65	0.16
	WIC		8.50	3.46		9.04	3.13	0.16
	EOI		8.46	3.05		9.08	2.79	0.21
	SEC		7.32	3.15		8.01	3.11	0.22
	HOA		7.97	3.12		7.97	2.82	0.00
	PSD		7.93	3.69		7.78	3.33	-0.04
	PAM		8.18	3.11		8.30	2.88	0.04
	ERW		503.18	109.98		524.05	102.06	0.20
	MSS		502.55	124.22		502.54	110.54	0.00
	Total		1005.73	225.37		1026.59	203.50	0.10
Form 4	R	9,525	25.74	5.55	9,087	26.16	5.22	0.08
	WL		25.14	5.87		26.11	5.62	0.17
	MTS		25.15	5.93		24.69	5.47	-0.08
	HSS		25.73	5.75		25.99	5.40	0.05
	SCI		25.72	5.74		25.96	5.30	0.04
	COE		8.45	2.79		8.71	2.72	0.09
	WIC		8.44	3.12		8.76	2.90	0.10
	EOI		8.55	3.05		8.99	2.89	0.15
	SEC		7.44	3.20		8.01	3.15	0.18
	HOA		8.15	3.12		8.03	2.86	-0.04
	PSD		7.97	3.55		7.56	3.36	-0.12
	PAM		8.32	2.91		8.20	2.72	-0.04
	ERW		508.84	109.96		522.74	104.33	0.13
	MSS		502.93	118.62		493.73	109.41	-0.08
	Total		1011.77	219.62		1016.47	204.85	0.02

Note. Std. Diff.=Standardized Difference for female mean - male mean. Only subgroups with sample size >=100 have statistics reported.

Table 9.b. Scale Score Mean, Standard Deviation, and Standardized Difference between Racial/Ethnic Groups

Form	Score	N	White Mean	White S.D.	N	Black Mean	Black S.D.	Black Std. Diff.	N	Hispanic Mean	Hispanic S.D.	Hispanic Std. Diff.
Form 1	R	743	25.51	5.62	262	20.53	4.66	-0.93	401	20.49	4.81	-0.94
	WL		24.69	6.11		20.03	4.68	-0.81		20.12	4.92	-0.80
	MTS		24.52	5.80		19.19	4.19	-0.98		19.70	4.57	-0.89
	HSS		25.34	5.67		20.35	4.87	-0.91		20.86	4.99	-0.82
	SCI		25.66	5.53		20.95	4.42	-0.89		20.89	4.68	-0.91
	COE		8.41	2.80		6.13	2.34	-0.85		6.31	2.33	-0.79
	WIC		8.24	3.25		5.47	3.08	-0.87		5.52	2.95	-0.86
	EOI		8.40	3.12		6.07	2.52	-0.78		6.28	2.60	-0.72
	SEC		7.15	3.27		4.90	2.52	-0.73		4.76	2.66	-0.78
	HOA		7.91	3.12		5.26	2.38	-0.90		5.43	2.51	-0.85
	PSD		7.71	3.46		4.43	2.63	-1.01		4.73	2.76	-0.92
	PAM		7.45	3.03		5.46	2.25	-0.70		5.76	2.51	-0.59
	ERW		502.05	112.55		405.65	87.52	-0.90		406.16	91.45	-0.91
	MSS		490.32	116.05		383.85	83.78	-0.98		393.94	91.34	-0.89
	Total		992.37	219.49		789.50	157.30	-0.99		800.10	170.90	-0.94
Form 2	R	166	24.94	5.52	-	-	-	-	-	-	-	-
	WL		24.15	5.79		-	-	-		-	-	-
	MTS		22.89	5.38		-	-	-		-	-	-
	HSS		24.46	5.46		-	-	-		-	-	-
	SCI		24.73	5.30		-	-	-		-	-	-
	COE		8.13	2.62		-	-	-		-	-	-
	WIC		7.95	3.35		-	-	-		-	-	-
	EOI		7.87	3.02		-	-	-		-	-	-
	SEC		6.99	3.08		-	-	-		-	-	-
	HOA		7.02	3.07		-	-	-		-	-	-
	PSD		6.40	3.29		-	-	-		-	-	-
	PAM		7.28	2.74		-	-	-		-	-	-
	ERW		490.90	107.68		-	-	-		-	-	-
	MSS		457.89	107.60		-	-	-		-	-	-
	Total		948.80	206.82		-	-	-		-	-	-

Note. Results are only included if the non-white group sample is equal to or greater than 100.

Table 9.b. Scale Score Mean, Standard Deviation, and Standardized Difference between Racial/Ethnic Groups (continued)

			White			Black				Hispanic		
Form	Score	N	Mean	S.D.	N	Mean	S.D.	Std. Diff.	N	Mean	S.D.	Std. Diff.
Form 3	R	10,203	27.31	4.94	2,061	22.66	4.61	-0.95	3,688	22.95	4.87	-0.89
	WL		27.23	5.27		21.92	4.53	-1.03		22.20	4.83	-0.98
	MTS		26.83	5.36		21.04	4.62	-1.10		21.68	4.81	-0.99
	HSS		27.43	5.09		22.52	4.77	-0.97		22.77	4.98	-0.92
	SCI		27.31	5.12		21.95	4.64	-1.06		22.56	4.84	-0.94
	COE		9.25	2.62		6.96	2.21	-0.90		7.15	2.38	-0.82
	WIC		9.71	2.95		6.85	3.05	-0.97		6.99	3.19	-0.90
	EOI		9.65	2.69		6.88	2.45	-1.05		7.11	2.58	-0.95
	SEC		8.53	2.99		5.89	2.49	-0.91		5.93	2.66	-0.89
	HOA		8.79	2.71		6.02	2.44	-1.04		6.31	2.56	-0.93
	PSD		8.84	3.21		5.60	3.00	-1.02		5.91	3.08	-0.92
	PAM		8.96	2.83		6.47	2.47	-0.90		6.71	2.52	-0.82
	ERW		545.44	97.48		445.83	86.51	-1.04		451.55	92.53	-0.98
	MSS		536.50	107.14		420.88	92.44	-1.10		433.50	96.14	-0.99
	Total		1081.94	194.57		866.71	168.72	-1.13		885.05	177.97	-1.03
Form 4	R	10,554	27.47	5.05	2,254	22.94	4.43	-0.92	4,076	22.98	4.67	-0.91
	WL		27.17	5.49		22.51	4.57	-0.87		22.39	4.84	-0.90
	MTS		26.38	5.43		21.58	4.19	-0.92		21.73	4.48	-0.90
	HSS		27.40	5.20		22.88	4.66	-0.89		22.70	4.87	-0.92
	SCI		27.39	5.14		22.57	4.48	-0.96		22.78	4.78	-0.92
	COE		9.30	2.69		7.12	2.14	-0.84		7.15	2.25	-0.84
	WIC		9.45	2.75		7.02	2.68	-0.89		6.93	2.81	-0.91
	EOI		9.55	2.81		7.21	2.49	-0.85		7.16	2.60	-0.87
	SEC		8.53	3.07		6.11	2.60	-0.81		6.03	2.70	-0.84
	HOA		8.78	2.86		6.48	2.40	-0.83		6.56	2.49	-0.81
	PSD		8.70	3.23		5.71	2.87	-0.94		5.88	2.99	-0.89
	PAM		8.82	2.76		6.98	2.18	-0.69		6.94	2.33	-0.71
	ERW		546.46	100.90		454.56	84.96	-0.94		453.72	90.26	-0.95
	MSS		527.50	108.65		431.66	83.75	-0.92		434.52	89.69	-0.90
	Total		1073.96	199.64		886.22	157.91	-0.97		888.24	169.69	-0.97

Note. Results are only included if the non-white group sample is equal to or greater than 100.
If a test taker selected more than one race they were included in the Two or More Races category.

Table 9.b. Scale Score Mean, Standard Deviation, and Standardized Difference between Racial/Ethnic Groups (continued)

		White			Asian			Two or More Races			
Form	Score	N	Mean	S.D.	N	Mean	S.D.	Std. Diff.	N	Mean	S.D.	Std. Diff.
Form 3	R	10,203	27.31	4.94	851	28.28	5.42	0.20	416	26.68	5.43	-0.13
	WL		27.23	5.27		28.29	6.00	0.20		26.29	5.69	-0.18
	MTS		26.83	5.36		29.57	6.18	0.51		25.84	5.86	-0.18
	HSS		27.43	5.09		28.58	5.63	0.22		26.83	5.48	-0.12
	SCI		27.31	5.12		28.68	5.57	0.27		26.47	5.81	-0.16
	COE		9.25	2.62		9.83	2.95	0.22		8.94	2.79	-0.12
	WIC		9.71	2.95		9.89	3.18	0.06		9.30	3.36	-0.14
	EOI		9.65	2.69		10.05	3.03	0.15		9.20	2.90	-0.17
	SEC		8.53	2.99		9.19	3.25	0.22		7.96	3.18	-0.19
	HOA		8.79	2.71		10.08	3.04	0.47		8.26	2.98	-0.19
	PSD		8.84	3.21		9.88	3.51	0.32		8.25	3.44	-0.18
	PAM		8.96	2.83		10.55	3.15	0.56		8.58	3.00	-0.13
	ERW		545.44	97.48		565.70	109.97	0.21		529.69	107.31	-0.16
	MSS		536.50	107.14		591.49	123.61	0.51		516.80	117.18	-0.18
	Total		1081.94	194.57		1157.19	222.34	0.38		1046.49	215.79	-0.18
Form 4	R	10,554	27.47	5.05	1,083	28.29	5.46	0.16	556	26.75	5.44	-0.14
	WL		27.17	5.49		28.81	5.85	0.30		26.50	5.74	-0.12
	MTS		26.38	5.43		29.55	6.16	0.58		25.71	5.77	-0.12
	HSS		27.40	5.20		28.76	5.60	0.26		26.71	5.49	-0.13
	SCI		27.39	5.14		28.79	5.53	0.27		26.62	5.65	-0.15
	COE		9.30	2.69		9.86	2.86	0.21		8.94	2.80	-0.13
	WIC		9.45	2.75		9.76	3.01	0.11		9.06	2.86	-0.14
	EOI		9.55	2.81		10.28	3.01	0.26		9.21	2.92	-0.12
	SEC		8.53	3.07		9.42	3.19	0.29		8.20	3.25	-0.11
	HOA		8.78	2.86		10.41	3.11	0.57		8.41	3.07	-0.13
	PSD		8.70	3.23		10.01	3.43	0.41		8.34	3.31	-0.11
	PAM		8.82	2.76		10.41	3.11	0.57		8.60	2.87	-0.08
	ERW		546.46	100.90		570.99	109.29	0.24		532.50	107.53	-0.14
	MSS		527.50	108.65		591.02	123.20	0.58		514.30	115.42	-0.12
	Total		1073.96	199.64		1162.00	222.35	0.44		1046.80	213.37	-0.14

Note. Results are only included if the non-white group sample is equal to or greater than 100.
If a test taker selected more than one race they were included in the Two or More Races category.

Table 10.a. Percentage of Test Takers in Each Classification Level for SAT by Subgroup for Form 1

Level Score Range	N	Evidence-Based Reading and Writing				Math			
		Level 1 200 - 410	Level 2 420 - 470	Level 3 480 - 620	Level 4 630 - 800	Level 1 200 - 410	Level 2 420 - 520	Level 3 530 - 640	Level 4 650 - 800
Grade Level									
All	1,502	39.08	20.17	30.76	9.99	44.87	31.76	17.51	5.86
Gender									
Male	812	46.92	17.49	27.83	7.76	49.14	28.45	16.75	5.67
Female	689	29.75	23.37	34.25	12.63	39.77	35.70	18.43	6.10
Race/Ethnicity									
White	743	22.61	17.36	44.15	15.88	27.19	35.13	28.67	9.02
Black or African American	262	57.25	26.34	14.50	1.91	69.08	27.10	3.05	0.76
Hispanic	401	60.10	21.20	16.46	2.24	64.34	28.93	5.24	1.50
Asian	46	21.74	17.39	32.61	28.26	21.74	32.61	21.74	23.91
Two or more races	34	38.24	23.53	32.35	5.88	44.12	29.41	23.53	2.94

Note. Classification levels are not reported for groups with less than 30 test takers.

Table 10.b. Percentage of Test Takers in Each Classification Level for SAT by Subgroup for Form 2

Level Score Range	N	Evidence-Based Reading and Writing				Math			
		Level 1 200 - 410	Level 2 420 - 470	Level 3 480 - 620	Level 4 630 - 800	Level 1 200 - 410	Level 2 420 - 520	Level 3 530 - 640	Level 4 650 - 800
Grade Level									
All	278	43.88	18.71	29.14	8.27	54.32	27.34	14.39	3.96
Gender									
Male	166	50.00	15.06	27.71	7.23	60.24	22.89	13.25	3.61
Female	112	34.82	24.11	31.25	9.82	45.54	33.93	16.07	4.46
Race/Ethnicity									
White	166	27.71	20.48	39.16	12.65	41.57	31.93	21.08	5.42
Black or African American	36	72.22	19.44	8.33	0.00	77.78	16.67	5.56	0.00
Hispanic	51	70.59	13.73	13.73	1.96	80.39	15.69	3.92	0.00

Note. Classification levels are not reported for groups with less than 30 test takers.

Table 10.c. Percentage of Test Takers in Each Classification Level for SAT by Subgroup for Form 3

Level Score Range	N	Evidence-Based Reading and Writing				Math			
		Level 1 200 - 410	Level 2 420 - 470	Level 3 480 - 620	Level 4 630 - 800	Level 1 200 - 410	Level 2 420 - 520	Level 3 530 - 640	Level 4 650 - 800
Grade Level									
All	17,296	20.59	16.62	47.05	15.74	26.39	31.02	29.82	12.78
Gender									
Male	8,498	25.01	16.77	43.88	14.34	28.15	28.81	28.80	14.25
Female	8,798	16.32	16.47	50.11	17.09	24.69	33.16	30.80	11.35
Race/Ethnicity									
White	10,203	10.41	12.92	55.58	21.09	14.13	30.58	38.63	16.66
Black or African American	2,061	41.34	24.75	31.15	2.77	53.23	33.24	11.89	1.65
Hispanic	3,688	39.64	23.40	32.67	4.28	49.02	33.70	14.59	2.68
Asian	851	10.46	11.63	46.77	31.14	9.40	19.51	35.14	35.96
American Indian/Alaskan Native	42	40.48	21.43	35.71	2.38	54.76	26.19	16.67	2.38
Two or more races	416	15.63	16.35	46.88	21.15	22.36	32.69	28.85	16.11

Note. Classification levels are not reported for groups with less than 30 test takers.

Table 10.d. Percentage of Test Takers in Each Classification Level for SAT by Subgroup for Form 4

Level Score Range	N	Evidence-Based Reading and Writing				Math			
		Level 1 200 - 410	Level 2 420 - 470	Level 3 480 - 620	Level 4 630 - 800	Level 1 200 - 410	Level 2 420 - 520	Level 3 530 - 640	Level 4 650 - 800
Grade Level									
All	18,612	20.06	18.29	44.07	17.57	25.75	34.47	27.82	11.96
Gender									
Male	9,525	22.86	18.26	41.98	16.90	25.23	33.17	28.18	13.43
Female	9,087	17.12	18.33	46.26	18.28	26.30	35.83	27.45	10.42
Race/Ethnicity									
White	10,554	10.92	14.19	51.33	23.56	15.27	33.54	36.08	15.10
Black or African American	2,254	35.98	27.28	32.83	3.90	46.58	38.46	13.18	1.77
Hispanic	4,076	38.30	25.12	31.72	4.86	46.15	37.71	13.49	2.65
Asian	1,083	9.42	12.65	43.58	34.35	8.22	22.81	32.96	36.01
American Indian/Alaskan Native	38	28.95	18.42	44.74	7.89	39.47	39.47	10.53	10.53
Two or more races	556	13.67	19.60	45.50	21.22	21.22	35.25	27.70	15.83

Note. Classification levels are not reported for groups with less than 30 test takers.

Table 11.a. Classification Accuracy for SAT for Form 1

	ERW			MATH		
	Probability of correct classification	False positive	False negative	Probability of correct classification	False positive	False negative
Grade Level						
All	0.82	0.09	0.08	0.81	0.10	0.09
Gender						
Male	0.85	0.08	0.07	0.81	0.10	0.09
Female	0.81	0.10	0.09	0.79	0.12	0.10
Race/Ethnicity						
White	0.82	0.09	0.09	0.80	0.11	0.10
Black or African American	0.82	0.10	0.08	0.84	0.10	0.06
Hispanic	0.84	0.09	0.07	0.83	0.10	0.07
Individual cut points						
Level 1 vs. Level 2 - 4	0.93	0.04	0.04	0.91	0.05	0.05
Level 1 - 2 vs. Level 3 - 4	0.93	0.04	0.03	0.93	0.04	0.03
Level 1 - 3 vs. Level 4	0.97	0.02	0.01	0.97	0.02	0.01

Note. Classification accuracy is reported for groups with more than 100 test takers.

Table 11.b. Classification Accuracy for SAT for Form 2

	ERW			MATH		
	Probability of correct classification	False positive	False negative	Probability of correct classification	False positive	False negative
Grade Level						
All	0.84	0.09	0.07	0.84	0.09	0.07
Gender						
Male	0.86	0.08	0.06	0.86	0.08	0.06
Female	0.82	0.10	0.08	0.82	0.11	0.07
Race/Ethnicity						
White	0.84	0.09	0.08	0.83	0.10	0.07
Individual cut points						
Level 1 vs. Level 2 - 4	0.92	0.04	0.04	0.90	0.05	0.04
Level 1 - 2 vs. Level 3 - 4	0.94	0.03	0.03	0.95	0.03	0.02
Level 1 - 3 vs. Level 4	0.98	0.01	0.01	0.98	0.01	0.01

Note. Classification accuracy is reported for groups with more than 100 test takers.

Table 11.c. Classification Accuracy for SAT for Form 3

	ERW			MATH		
	Probability of correct classification	False positive	False negative	Probability of correct classification	False positive	False negative
Grade Level						
All	0.84	0.08	0.08	0.81	0.10	0.09
Gender						
Male	0.84	0.08	0.08	0.81	0.10	0.09
Female	0.83	0.08	0.08	0.80	0.10	0.09
Race/Ethnicity						
White	0.85	0.07	0.08	0.80	0.10	0.09
Black or African American	0.83	0.09	0.08	0.82	0.10	0.08
Hispanic	0.83	0.09	0.08	0.81	0.11	0.08
Asian	0.85	0.07	0.08	0.84	0.08	0.08
Two or more races	0.84	0.08	0.08	0.81	0.10	0.09
Individual cut points						
Level 1 vs. Level 2 - 4	0.95	0.02	0.03	0.93	0.03	0.04
Level 1 - 2 vs. Level 3 - 4	0.93	0.03	0.03	0.92	0.04	0.03
Level 1 - 3 vs. Level 4	0.96	0.02	0.02	0.96	0.03	0.02

Note. Classification accuracy is reported for groups with more than 100 test takers.

Table 11.d. Classification Accuracy for SAT for Form 4

	ERW			MATH		
	Probability of correct classification	False positive	False negative	Probability of correct classification	False positive	False negative
Grade Level						
All	0.84	0.08	0.08	0.81	0.10	0.08
Gender						
Male	0.84	0.08	0.08	0.82	0.10	0.08
Female	0.84	0.08	0.08	0.80	0.11	0.09
Race/Ethnicity						
White	0.85	0.07	0.07	0.81	0.10	0.09
Black or African American	0.82	0.10	0.08	0.82	0.11	0.07
Hispanic	0.83	0.09	0.08	0.81	0.11	0.08
Asian	0.85	0.07	0.08	0.84	0.08	0.08
Two or more races	0.84	0.08	0.08	0.80	0.11	0.09
Individual cut points						
Level 1 vs. Level 2 - 4	0.94	0.03	0.03	0.92	0.04	0.04
Level 1 - 2 vs. Level 3 - 4	0.93	0.03	0.03	0.93	0.04	0.03
Level 1 - 3 vs. Level 4	0.96	0.02	0.02	0.97	0.02	0.01

Note. Classification accuracy is reported for groups with more than 100 test takers.

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Table 12.a. Classification Consistency for SAT for Form 1

	ERW				MATH			
	Proportion of consistent decisions	Chance proportion of consistent decision	Kappa Statistic	Probability of misclass-ification	Proportion of consistent decisions	Chance proportion of consistent decision	Kappa Statistic	Probability of misclass-ification
Grade Level								
All	0.76	0.30	0.65	0.24	0.74	0.34	0.60	0.26
Gender								
Male	0.79	0.33	0.69	0.21	0.74	0.35	0.60	0.26
Female	0.74	0.28	0.64	0.26	0.71	0.32	0.57	0.29
Race/Ethnicity								
White	0.75	0.30	0.64	0.25	0.72	0.29	0.60	0.28
Black or African American	0.76	0.42	0.58	0.24	0.77	0.55	0.49	0.23
Hispanic	0.78	0.44	0.61	0.22	0.76	0.50	0.52	0.24
Individual cut points								
Level 1 vs. Level 2 - 4	0.90	0.52	0.78	0.10	0.87	0.51	0.74	0.13
Level 1 - 2 vs. Level 3 - 4	0.90	0.52	0.79	0.10	0.90	0.64	0.73	0.10
Level 1 - 3 vs. Level 4	0.96	0.82	0.75	0.04	0.96	0.89	0.66	0.04

Note. Classification consistency is reported for groups with more than 100 test takers.

Table 12.b. Classification Consistency for SAT for Form 2

	ERW				MATH			
	Proportion of consistent decisions	Chance proportion of consistent decision	Kappa Statistic	Probability of misclass- ification	Proportion of consistent decisions	Chance proportion of consistent decision	Kappa Statistic	Probability of misclass- ification
Grade Level								
All	0.78	0.32	0.68	0.22	0.78	0.39	0.63	0.22
Gender								
Male	0.80	0.35	0.70	0.20	0.80	0.43	0.64	0.20
Female	0.74	0.29	0.64	0.26	0.74	0.35	0.61	0.26
Race/Ethnicity								
White	0.77	0.29	0.68	0.23	0.76	0.32	0.64	0.24
Individual cut points								
Level 1 vs. Level 2 - 4	0.88	0.51	0.76	0.12	0.86	0.50	0.73	0.14
Level 1 - 2 vs. Level 3 - 4	0.91	0.53	0.82	0.09	0.93	0.70	0.78	0.07
Level 1 - 3 vs. Level 4	0.97	0.85	0.80	0.03	0.98	0.92	0.72	0.02

Note. Classification consistency is reported for groups with more than 100 test takers.

Table 12.c. Classification Consistency for SAT for Form 3

	ERW				MATH			
	Proportion of consistent decisions	Chance proportion of consistent decision	Kappa Statistic	Probability of misclass-ification	Proportion of consistent decisions	Chance proportion of consistent decision	Kappa Statistic	Probability of misclass-ification
Grade Level								
All	0.78	0.31	0.68	0.22	0.73	0.27	0.63	0.27
Gender								
Male	0.78	0.30	0.68	0.22	0.73	0.27	0.63	0.27
Female	0.77	0.33	0.65	0.23	0.72	0.28	0.62	0.28
Race/Ethnicity								
White	0.79	0.38	0.66	0.21	0.72	0.29	0.61	0.28
Black or African American	0.77	0.33	0.66	0.23	0.75	0.41	0.57	0.25
Hispanic	0.76	0.32	0.65	0.24	0.73	0.38	0.58	0.27
Asian	0.80	0.34	0.69	0.20	0.78	0.30	0.68	0.22
Two or more races	0.78	0.32	0.68	0.22	0.73	0.27	0.63	0.27
Individual cut points								
Level 1 vs. Level 2 - 4	0.93	0.67	0.77	0.07	0.90	0.61	0.74	0.10
Level 1 - 2 vs. Level 3 - 4	0.91	0.53	0.80	0.09	0.89	0.51	0.78	0.11
Level 1 - 3 vs. Level 4	0.94	0.74	0.78	0.06	0.94	0.78	0.74	0.06

Note. Classification consistency is reported for groups with more than 100 test takers.

Table 12.d. Classification Consistency for SAT for Form 4

	ERW				MATH			
	Proportion of consistent decisions	Chance proportion of consistent decision	Kappa Statistic	Probability of misclass-ification	Proportion of consistent decisions	Chance proportion of consistent decision	Kappa Statistic	Probability of misclass-ification
Grade Level								
All	0.77	0.30	0.68	0.23	0.73	0.28	0.63	0.27
Gender								
Male	0.77	0.29	0.68	0.23	0.75	0.27	0.65	0.25
Female	0.78	0.31	0.68	0.22	0.72	0.28	0.61	0.28
Race/Ethnicity								
White	0.80	0.35	0.69	0.20	0.73	0.29	0.63	0.27
Black or African American	0.75	0.31	0.63	0.25	0.74	0.38	0.58	0.26
Hispanic	0.76	0.31	0.65	0.24	0.74	0.37	0.58	0.26
Asian	0.79	0.33	0.69	0.21	0.77	0.30	0.67	0.23
Two or more races	0.77	0.31	0.67	0.23	0.72	0.27	0.62	0.28
Individual cut points								
Level 1 vs. Level 2 - 4	0.92	0.68	0.76	0.08	0.89	0.61	0.71	0.11
Level 1 - 2 vs. Level 3 - 4	0.91	0.53	0.80	0.09	0.90	0.52	0.80	0.10
Level 1 - 3 vs. Level 4	0.94	0.71	0.80	0.06	0.95	0.79	0.77	0.05

Note. Classification consistency is reported for groups with more than 100 test takers.

Appendix A: Target Specifications for the SAT Suite of Assessments

The target statistical specifications for the SAT Suite of Assessments describe the desired distribution or range of values on the assessment in terms of item difficulty, item discrimination, and overall reliability. Tables A1 - A3 outline exactly how many items are included at each difficulty level (i.e., easy, medium, hard).   The bounds for item difficulty levels are based on historical data. The current difficulty classifications based on p-values are used in combination with the target statistical specifications to identify the number of items per difficulty classification for each score tier.

Table A1. Target Number of Items per Difficulty Classification by Reading and Writing and Language Test Scores and Subscores

Score and difficulty level	Number of Items
Reading	
Hard (.03 ≤ p ≤ .45)	19
Medium (.46 ≤ p ≤ .81)	18
Easy (p ≥ .82)	15
Writing and Language	
Hard (.03 ≤ p ≤ .45)	9
Medium (.46 ≤ p ≤ .81)	16
Easy (p ≥ .82)	19
Expression of Ideas	
Hard (.03 ≤ p ≤ .45)	5
Medium (.46 ≤ p ≤ .81)	9
Easy (p ≥ .82)	10
Standard English Conventions	
Hard (.03 ≤ p ≤ .45)	4
Medium (.46 ≤ p ≤ .81)	7
Easy (p ≥ .82)	9
Words in Context	
Hard (.03 ≤ p ≤ .45)	3 R; 3 W/L
Medium (.46 ≤ p ≤ .81)	4 R; 2 W/L
Easy (p ≥ .82)	3 R; 3 W/L
Command of Evidence	
Hard (.03 ≤ p ≤ .45)	3 R; 3 W/L
Medium (.46 ≤ p ≤ .81)	4 R; 2 W/L
Easy (p ≥ .82)	3 R; 3 W/L

Table A2. Target Number of Items per Difficulty Classification by Math Test Score, Cross-Test Scores, and Subscores

Score and difficulty level	MC	SPR
Math		
Hard (.03 ≤ p ≤ .45)	19	6
Medium (.46 ≤ p ≤ .81)	15	4
Easy (p ≥ .82)	11	1
Any	0	2
Analysis in History/Social Studies		
Hard (.03 ≤ p ≤ .45)	8 R; 2 W/L; 2 M	2
Medium (.46 ≤ p ≤ .81)	7 R; 2 W/L; 2 M	1
Easy (p ≥ .82)	6 R; 2 W/L; 1 M	0
Analysis in Science		
Hard (.03 ≤ p ≤ .45)	8 R; 2 W/L; 2 M	2
Medium (.46 ≤ p ≤ .81)	7 R; 2 W/L; 2 M	1
Easy (p ≥ .82)	6 R; 2 W/L; 1 M	0
Heart of Algebra		
Hard (.03 ≤ p ≤ .45)	5	2
Medium (.46 ≤ p ≤ .81)	6	2
Easy (p ≥ .82)	4	0
Problem Solving and Data Analysis		
Hard (.03 ≤ p ≤ .45)	6	1
Medium (.46 ≤ p ≤ .81)	2	1
Easy (p ≥ .82)	5	0
Any	0	2
Passport to Advanced Mathematics		
Hard (.03 ≤ p ≤ .45)	7	1
Medium (.46 ≤ p ≤ .81)	6	1
Easy (p ≥ .82)	1	0

Table A3. Target Average Item Difficulty Estimates and Standard Deviations

Score	n	Mean	S.D.
Reading	52	0.579	0.285
Writing and Language	44	0.684	0.263
Math	58	0.520	0.279
Analysis in History/Social studies	35	0.564	0.273
Analysis in Science	35	0.564	0.273
Command of Evidence	18	0.592	0.303
Words in Context	18	0.592	0.303
Expression of Ideas	24	0.678	0.265
Standard English Conventions	20	0.691	0.261
Heart of Algebra	19	0.557	0.270
Problem Solving and Data Analysis	17	0.555	0.308
Passport to Advanced Mathematics	16	0.439	0.252

Table A4. Target Average Item Discrimination Bounds

Score	Lower	Upper
Reading	0.340	0.403
Writing and Language	0.475	0.538
Math	0.410	0.473
Analysis in History/Social studies	0.407	0.470
Analysis in Science	0.407	0.470
Command of Evidence	0.398	0.461
Words in Context	0.398	0.461
Expression of Ideas	0.490	0.551
Standard English Conventions	0.497	0.556
Heart of Algebra	0.444	0.501
Problem Solving and Data Analysis	0.458	0.512
Passport to Advanced Mathematics	0.454	0.509

Table A5. Target Reliability Bounds

Score	Minimum	Maximum
Reading	0.850	0.899
Writing and Language	0.920	0.943
Math	0.910	0.937
Analysis in History/Social studies	0.844	0.891
Analysis in Science	0.844	0.891
Command of Evidence	0.708	0.797
Words in Context	0.708	0.797
Expression of Ideas	0.863	0.900
Standard English Conventions	0.839	0.882
Heart of Algebra	0.774	0.835
Problem Solving and Data Analysis	0.730	0.800
Passport to Advanced Mathematics	0.743	0.809

Appendix B: Test Analysis Formulas

B1. Pearson Product Moment Correlation Coefficient

$$\rho_{XY} = \frac{\sum Z_X Z_Y}{N},$$

where Z_X and Z_Y represent z-scores of observed scores X and Y, respectively, and N represents the number of test takers (Crocker & Algina, 1986).

B2. Disattenuated Correlations/True Score Correlations

$$\rho_T = \frac{\rho_{XY}}{\sqrt{SA_X SA_Y}},$$

where ρ_{XY} is the correlation between observed scores X and Y, and SA_X and SA_Y represent the stratified alpha reliability of score X and Y, respectively (Schumacker & Muchinsky, 1996).

B3. Scale-score CSEM and Reliability Estimates

The reliabilities for scale scores were estimated from the average CSEM using the following equation:

$$Reliability_{SC} = 1 - \frac{MS(CSEM)_{SC}}{SD_{SC}^2},$$ where

SD_{SC}^2 is the variance of scale score. The mean squared *CSEM, MS(CSEM)* was obtained as the weighted average of the squared *CSEMs* for the scales directly established. Thus, the *MS(CSEM)* can be written as

$$MS(CSEM)_{SC} = \int CSEM_{SC(\tau)}^2 Prob(\tau)\,d\tau$$, where

$CSEM_{SC(\tau)}^2$ is the squared scale score *CSEM* at the true score, τ, and the average of these is obtained over the probability distribution of τ, *Prob(τ)*.

For the scores that were mathematically derived including Math Test, ERW, and Total scores, the following equations were used to compute the root mean squared *CSEM, RMS(CSEM)*:

$$RMS(CSEM)_{MTS} = \sqrt{\frac{MS(CSEM)_{MSS}}{20^2}},$$

$$RMS(CSEM)_{ERW} = \sqrt{MS(CSEM)_R \cdot 10^2 + MS(CSEM)_{WL} \cdot 10^2},$$

$$RMS(CSEM)_{Total} = \sqrt{MS(CSEM)_{ERW} + MS(CSEM)_{MSS}}.$$

B4. Standard Error of the Difference

The formula for computing the Standard Error of the Difference (SED) is:

$$SED = \sqrt{2 * SEM^2},$$

where it is assumed that scores of two students would be independent with equal SEMs across testing times, so that the variance of the score difference could be estimated by doubling the squared SEM.

When comparing scores between students for the same measure (Reading, Writing, Math), the standard error of the difference (SED) can be used to assess how much scores must differ in order to reflect true differences in ability. If two scores differ by at least SED times 1.65, it is unlikely that the two scores indicate that the two candidates are equal in ability since this level difference would occur 10 percent of the time or less. For example, when the SED is 40 points, you can be reasonably confident that if the score difference between two test-takers is greater than 66 points (40 x 1.65), the two test-takers are not likely to be equal in true ability.

B5. Mantel-Haenszel D-DIF Statistic

Based on the formulas from Dorans and Holland (1993), the Mantel-Haenszel D-DIF (MH D-DIF) statistics is calculated for subgroups of gender and ethnicity/race with the following formula:

$$MH \ D - DIF = -2.35 \ln[\alpha_{MH}],$$

where α_{MH} is an estimate of the odds ratio. "Positive values of MH D-DIF favor the focal group, whereas, negative values favor the reference group" (Dorans & Holland, 1993, p 41). The odds ratio is calculated as

$$\alpha_{MH} = \frac{\sum_m R_{rm} \frac{W_{fm}}{N_{tm}}}{\sum_m R_{fm} \frac{W_{rm}}{N_{tm}}},$$

where R_{rm} is the number correct in reference group at ability level m, W_{fm} is the number incorrect in the focal group at ability level m, N_{tm} is the number in total group at ability level m, R_{fm} is the number correct in the focal group at ability level m, and W_{rm} is the number incorrect in the reference group at ability level m. At the test development stage, the minimum sample size requirement for the focal group is 100 when calculating the statistics.

B6. Standardized Mean Difference

The formula for computing a standardized mean difference is:

$$Std. \ Diff. = \frac{\overline{X}_f - \overline{X}_r}{SD_{X,P}},$$

where $\bar{X}_f$ and $\bar{X}_r$ represent mean scores for the focal group and reference group (white or male), respectively, and $SD_{X,P}$ represents the total group (pooled) standard deviation (Cohen, 1988):

$$SD_{X,P} = \sqrt{\frac{(n_f - 1) SD_{X_f}^2 + (n_r - 1) SD_{X_r}^2}{n_f + n_r - 2}},$$

where n_f and n_r represent sample sizes for the focal group and reference group, respectively, and $SD_{X_f}^2$ and $SD_{X_r}^2$ represent standard deviations for the focal group and reference group, respectively (Cohen, 1988).

B7. False Positive Rate

The formula for computing the false positive rate is:

$$R_{fp} = \int_0^{\tau_0} \Pr(X \geq x_0 | \tau) g(\tau) d\tau,$$

where τ_0 is the true score, x_0 is the raw score cut point, X is the raw score obtained by a randomly selected test-taker, $g(\tau)$ is the true score density, which is obtained using the four-parameter beta-binomial model with effective test length (Brennan, 2004; Livingston & Lewis, 1995; Hanson & Brennan, 1990).

B8. False Negative Rate

The formula for computing the false negative rate is:

$$R_{fn} = \int_{\tau_0}^{1} \Pr(X \le x_0 - 1 \mid \tau) g(\tau) d\tau$$
,

where τ_0 is the true score, x_0 is the raw score cut point, X is the raw score obtained by a randomly selected test-taker, $g(\tau)$ is the true score density, which is obtained using the four-parameter beta-binomial model with effective test length (Brennan, 2004; Livingston & Lewis, 1995; Hanson & Brennan, 1990).

B9. Probability of Correct Classification

The formula for computing the probability of correct classification is:

$$P = 1 - R_{fp} - R_{fn}$$
,

where R_{fp} is the false positive rate and R_{fn} is the false negative rate.

B10. Effective Test Length

The formula for effective test length is:

$$\tilde{n} = \frac{(\mu_x - X_{min})(X_{max} - \mu_x) - r\sigma_x^2}{\sigma_x^2(1 - r)}$$
,

where X_{min} is the lowest score for raw score X, X_{max} is the highest score, μ_x is the mean, σ_x^2 is the variance, and r is the reliability (Brennan, 2004; Livingston & Lewis, 1995).

B11. Proportion of Consistent Decisions

The formula for computing the proportion of consistent decisions is:

$$p = \Pr(X_1 \le x_0 - 1, X_2 \le x_0 - 1) + \Pr(X_1 \ge x_0, X_2 \ge x_0)$$
,

where X_1 and X_2 are raw score random variables for two independent administrations and x_0 is the raw score cut point (Brennan, 2004; Livingston & Lewis, 1995; Hanson & Brennan, 1990).

B12. Proportion of Consistent Decisions by Chance

The formula for computing the proportion of consistent decisions by chance is:

$$p_c = \Pr(X_1 \le x_0 - 1)\Pr(X_2 \le x_0 - 1) + \Pr(X_1 \ge x_0)\Pr(X_2 \ge x_0)$$
,

where X_1 and X_2 are raw score random variables for two independent administrations and x_0 is the raw score cut point (Brennan, 2004; Livingston & Lewis, 1995; Hanson & Brennan, 1990).

B13. Kappa Statistic

The formula for computing the kappa statistic is:

$$k = \frac{p - p_c}{1 - p_c}$$
,

where p is the proportion of consistent decisions and p_c is the proportion of consistent decisions by chance (Brennan, 2004; Livingston & Lewis, 1995; Hanson & Brennan, 1990).

B14. Probability of Misclassification

The formula for computing the probability of misclassification is:

$$p_m = 1 - p ,$$

where p is the proportion of consistent decisions.

B15. Criterion-Referenced Reliability Coefficient

The criterion-reference reliability coefficient is computed as:

$$k^2(X, T_x) = \frac{\rho^2(X, T_x)\sigma^2(X) + (\mu_x - C_x)^2}{\sigma^2(X) + (\mu_x - C_x)^2} ,$$

where μ_x is the mean, $\sigma^2(X)$ is the variance, $\rho^2(X, T_x)$ is the norm-reference reliability, and C_x is the criterion score.

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