



Concordance of New SAT & PSAT/NMSQT[®] and Online Offerings

The College Board

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Michigan Educational Research Association (MERA)

When is concordance appropriate?

- + From a measurement perspective—are concordance tables defensible?
 - “Concordance: The Good, the Bad, and the Ugly” (Pommerich, 2007)
- + When similar assessments are used for similar purposes, stakeholders often need a way to compare scores across assessments.
- + Equating and concordance (both two types of linking) utilize the same methodologies, however:
 - *Equating* is appropriate for two measures designed to the same test specifications (content specifications and statistical specifications)
 - *Concordance* is appropriate for two measures that are similar but are not designed to the same test specifications
 - This is a particular type of linking where the goal is to produce a table that relates the scores from the two measures.

(e.g., Dorans, 2000; Dorans & Walker, 2007; Pommerich, 2007)

Need for SAT concordance tables

- + Why do we need concordance tables?
 - From a practical perspective, concordance tables are necessary during a transition.
 - If an assessment is redesigned, and users have been relying on various systems for many years, they need a tool to assist with the transition to the redesigned assessment.
- + The most common use that comes to mind for the SAT is in higher education admission offices.
 - During the transition, there will be scores submitted from the old SAT and the new SAT. A concordance table will assist with linking these two types of scores during this transition.
 - Careful communication and guidelines to users is critical!

Participants and Procedures

- + Single group design, target population: typical SAT cohort (11th and 12th graders)
 - Completed the pre-2016 SAT in either October, November, or December 2015 (if more than once, most recent score kept)
 - Completed the SAT on December 9th, 2015
- + School-level recruiting using a sampling plan with targets for:
 - Region
 - Location
 - Public vs. Private
 - % underrepresented minority students
 - Grade-level
- + School-level incentives:
 - \$15/student
- + Student-level incentives:
 - \$50 gift card
 - Reportable scores

Concordance Analyses

- + Prior to concordance analyses: Scaling the SAT
 - Nationally recruited sample of voluntarily participating high school students who took same test form as the concordance study form.
- + Step 1: Data Cleaning and Screening
 - $N = 9,267$ study participants
 - Cleaned for multiple records, student irregularities, students with disabilities, 10th graders removed, operational screening rules
 - Final cleaned data $N = 8,677$
- + Step 2: Determine representativeness of sample and weight the sample appropriately
 - Examinee case weights obtained using demographic variables of gender, grade, region, ethnicity, best language, first language
 - Scale score moments of mean and standard deviation to approximate target population
- + Step 3: Examine correlations

Concordance Analyses, continued

- + Step 4: Run linking analyses using LEGS software (Brennan, 2004)
 - Equipercentile linking method, with cubic spline post-smoothing
 - Multiple linking solutions were examined (smoothing values were varied, interpolation percentages adjusted).
 - Criteria for determining final concordance table included:
 - Coverage of full score scale (e.g., 200 to 800)
 - Reducing the number of many-to-one conversions
 - Minimizing gaps between scores
 - All concordance tables contain rounded scale score values

Which concordances will be released?

Pre-2016 SAT	SAT
Math (200-800)	Math Section Score (200-800)
Critical Reading (200-800)	Reading Test Score (10-40)
Writing (200-800)	Writing and Language Test Score (10-40)
Critical Reading + Writing (400-1600)	Evidence Based Reading and Writing (ERW) Section Score (200-800)
Critical Reading + Math (400-1600)	Total Score (EBRW + Math Section; 400-1600)
Critical Reading + Math + Writing (600-2400)	Total Score (EBRW + Math Section; 400-1600)

All tables will be conducted in two directions:

1. Pre-2016 SAT to new SAT
2. New SAT to pre-2016 SAT

Which concordances will be released?

Pre-2015 ACT	SAT
ACT Composite (1-36)	Total Score (ERW + Math Section; 400-1600)
ACT Writing (1-36)	Writing and Language Test Score (10-40)

All tables will be conducted in two directions:

1. Pre-2015 ACT to new SAT
2. New SAT to pre-2015 ACT

Which concordances will be released?

Pre-2015 PSAT/NMSQT	PSAT/NMSQT
Math (20-80)	Math Test Score (8-38) & Math Section (160-760)
Critical Reading (20-80)	Reading Test Score (8-38)
Writing (20-80)	Writing and Language Test Score (8-38)
Critical Reading + Writing (40-160)	Evidence Based Reading and Writing (ERW) Section Score (160-760)
Critical Reading + Math + Writing (60-240)	Total Score (ERW + Math Section; 320-1520)

All tables will be conducted in two directions:

1. Pre-2015 PSAT/NMSQT to new PSAT/NMSQT
2. New PSAT/NMSQT to pre-2015 PSAT/NMSQT

Prelim PSAT Concordance

Total to Total Concordance

PSAT/NMSQT (2014 and earlier) to Redesigned PSAT/NMSQT (2015 and future)

PSAT/NMSQT (2014 and earlier) to Redesigned PSAT/NMSQT (2015 and future)		PSAT/NMSQT (2014 and earlier) to Redesigned PSAT/NMSQT (2015 and future)		PSAT/NMSQT (2014 and earlier) to Redesigned PSAT/NMSQT (2015 and future)	
Critical Reading + Math + Writing (60–240)	Total ERW + Math; (320–1520)	Critical Reading + Math + Writing (60–240)	Total ERW + Math; (320–1520)	Critical Reading + Math + Writing (60–240)	Total ERW + Math; (320–1520)
240	1520	178	1230	116	870
239	1520	177	1230	115	860
238	1520	176	1220	114	860
237	1510	175	1220	113	850
236	1510	174	1210	112	850
235	1510	173	1200	111	840
234	1500	172	1200	110	840
233	1500	171	1190	109	840
232	1500	170	1180	108	830
231	1490	169	1180	107	830
230	1490	168	1170	106	820
229	1490	167	1170	105	820
228	1490	166	1160	104	810
227	1480	165	1160	103	800
226	1480	164	1150	102	800
225	1480	163	1150	101	790
224	1470	162	1140	100	790
223	1470	161	1140	99	780
222	1470	160	1130	98	760
221	1460	159	1130	97	750

2014 and earlier
2015 and future

Total to Total Concordance

Redesigned PSAT/NMSQT (2015 and future) to PSAT/NMSQT (2014 and earlier)

Redesigned PSAT/NMSQT (2015 and future) to PSAT/NMSQT (2014 and earlier)		Re
Redesigned PSAT/NMSQT Total (320–1520)	Prior PSAT/NMSQT CR + M + W (60–240)	Re PSA Total
1520	239	
1510	236	
1500	233	
1490	229	
1480	226	
1470	223	
1460	220	
1450	217	
1440	214	
1430	211	
1420	209	
1410	208	
1400	206	
1390	204	

Example SAT and Pre-2016 SAT Concordance

CURRENT SAT CRITICAL READING + WRITING TO REDESIGNED SAT EVIDENCE-BASED READING AND WRITING

Current SAT (CR+W)	Redesigned SAT (EBRW)
**	**
10WW	550
10XX	560
10YY	560
10ZZ	570
**	**

REDESIGNED SAT EVIDENCE-BASED READING AND WRITING TO CURRENT SAT CRITICAL READING + WRITING

Redesigned SAT (EBRW)	Current SAT (CR+W)
**	**
550	10WW
560	10XX
570	10YY
580	10ZZ
**	**

Numbers are provided for example only and do not represent real scores.

ACT- SAT Concordance table snapshot

TOTAL CONCORDANCE: CURRENT 2400 TO REDESIGNED 1600

Current SAT (CR+M+W)	Redesigned SAT (EBRW+M)	ACT
**	**	**
15WW	1050	2W
15XX	1060	2X
15YY	1070	2Y
15ZZ	1080	2Z
**	**	**

TOTAL CONCORDANCE: REDESIGNED 1600 TO CURRENT 2400

Redesigned SAT (EBRW+M)	Current SAT (CR+M+W)	ACT
**	**	**
1050	15WW	2W
1060	15XX	2X
1070	15YY	2Y
1080	15ZZ	2Z
**	**	**

Numbers are provided for example only and do not represent real scores.

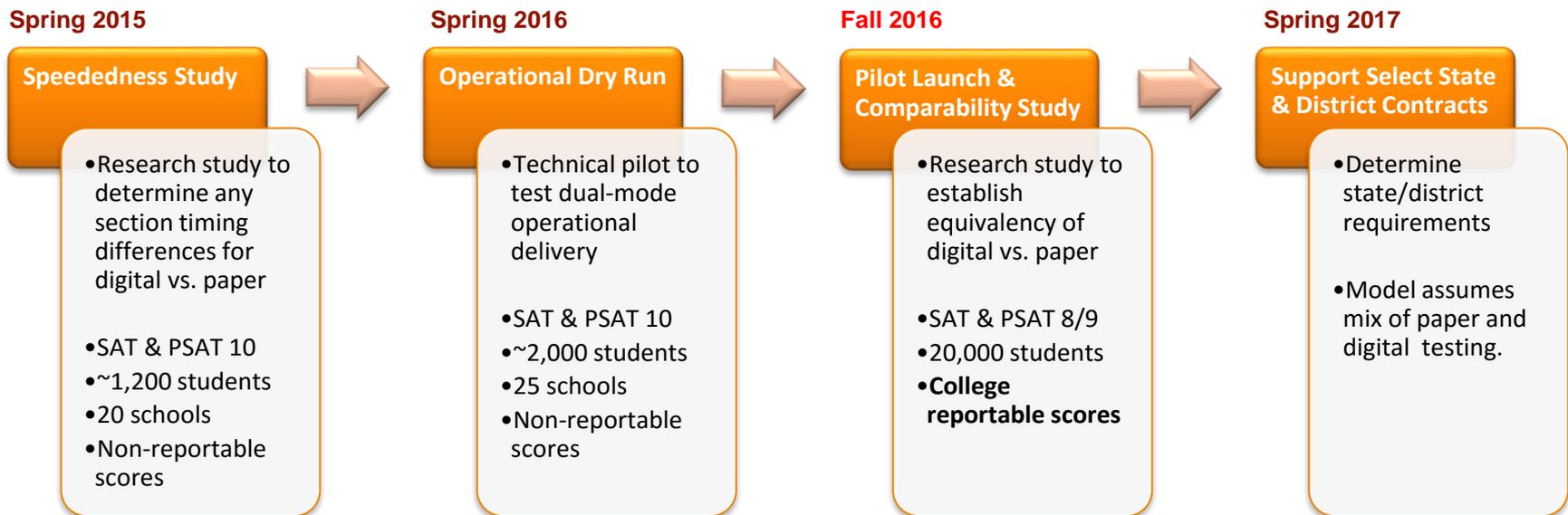
- + <https://collegereadiness.collegeboard.org/educators/higher-ed/scoring-changes/concordance>
- + <https://collegereadiness.collegeboard.org/pdf/college-board-guide-implementing-redesigned-sat-concordance-installment-3.pdf>

Study limitations

- + Order effect of study design cannot be ignored
 - Counterbalancing and/or equivalent group design not feasible
 - All students took pre-2016 first, then SAT
- + Concordances are sample-dependent
 - The sample comprised only students who took pre-2016 SAT in either October, November, or December.
 - Subgroup invariance will also be examined.
- + Rounded scale scores = less precision

Digital Pilot Launch Overview

- + The College Board plans to pilot a digital version of the SAT to select districts in fall 2016, in preparation for supporting select state/districts in spring 2017.



Study Results

- + Spring 2015 Speededness
 - No significant meaningful differences
- + Fall 2015 Dry Run
 - Continue improvement of training and preparation for digital offering
 - Work with schools to complete infrastructure trials
 - Work with schools to meet seating configuration requirements
- + Fall 2016 Online Pilot
 - Recruiting continuing with goal to be representative of digital users nationwide
 - Administration in October 2016
 - Online vs Paper comparability study
 - Multiple choice comparability
 - Essay comparability