Validity of the SAT for Predicting First-Year Grades:

2008 SAT Validity Sample

Brian F. Patterson & Krista D. Mattern

The College Board

Executive Summary

The College Board formed a research consortium with four-year colleges and universities to build a national higher education database with the primary goal of validating the revised SAT, which consists of critical reading (SAT-CR), mathematics (SAT-M) and writing (SAT-W) for use in college admission. The first sample examined was the first-time, first-year students entering college in fall 2006, with 110 institutions providing students' first-year coursework, grades, and retention to the second-year. Results from the initial research were presented in Kobrin, et al. (2008) and Mattern, et al. (2008). The following year, previously participating as well as new colleges and universities were invited to provide first-year performance data on the first-time, first-year students that began in the fall of 2007 and all analyses were replicated with that cohort (Patterson, Mattern & Kobrin, 2009). The results were very consistent from the previous year. Additionally, a third cohort of data has been collected for students entering college in fall 2008.

This report presents the findings from a replication of the Kobrin, et al. (2008), Mattern, et al. (2008), and Patterson, et al. (2009) reports based on the 2008 cohort. For the 2008 sample, a total of 70 of the original 110 institutions and 59 new institutions provided data. The 129 institutions in the 2008 sample contained 246,652 students. Please see Appendix A for a list of participating institutions. Students who were missing at least one of the following were excluded from the analyses: SAT scores, a self-reported high school grade point average (HSGPA), and a valid first-year GPA (FYGPA); this resulted in a final sample size of 173,963.

The findings for the 2008 sample are largely consistent with the previous reports. SAT scores were found to be correlated with FYGPA ($r = 0.54$), with a magnitude similar to HSGPA ($r = 0.56$). The best set of predictors of FYGPA remains SAT scores and HSGPA ($r = 0.63$), as the addition of the SAT sections to the correlation of HSGPA alone with FYGPA leads to a substantial improvement in prediction ($\Delta r = 0.07$). This finding was consistent across all subgroups of the sample, by both institutional characteristics and demographics ($\Delta r \geq 0.06$). All correlations presented here have been corrected for restriction of range, but the same basic patterns hold for the raw correlations.

References

College Board. (2008). 2008 College-Bound Seniors: Total Group Profile Report. New York, NY: The College Board.

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Kobrin, J. L., Patterson, B. F., Shaw, E. J., Mattern, K. D., & Barbuti, S. M. (2008). Validity of the SAT® for Predicting First-Year College Grade Point Average (College Board Research Rep. No. 2008-5). New York, NY: The College Board.

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Table 1
Institutional Characteristics

Institutional Characteristic		%
U.S. Region	Midwest	17
	Mid-Atlantic	22
	New England	15
	South	14
	Southwest	11
	West	21
Control	Public	44
	Private	56
Admittance Rate	Under 50%	21
	50 to 75%	57
	Over 75%	22
Undergraduate Enrollment	Small	20
	Medium	42
	Large	16
	Very large	22

Note. K = number of institutions = 129. Percentages may not sum to 100 due to rounding. Institution sizes were categorized by the number of undergraduates as follows: small = 750 to 1,999; medium = 2,000 to 7,499; large = 7,500 to 14,999; and very large = 15,000 or more.

- The sample of 129 institutions was diverse with respect to region of the U.S., control, size, and selectivity.

Table 2
Descriptive Statistics on the Total Sample

Variable	Mean	SD
HSGPA	3.60	0.49
SAT-CR	554	94.0
SAT-M	573	95.8
SAT-W	548	94.3
FYGPA	2.98	0.71

Note.　N = number of students = 173,963.

- The 2008 sample performed very similarly to the previous samples in terms of mean HSGPA, SAT scores, and FYGPA (Kobrin, et al., 2008 and Patterson, et al., 2009).

- Similar to the previous reports, the 2008 sample outperformed the 2008 graduating seniors, whose mean SAT-CR, SAT-M and SAT-W were 502, 515, and 494, respectively, (College Board, 2008).

Table 3

Corrected (Raw) Correlation Matrix of SAT, HSGPA, and FYGPA

Variable	HSGPA	SAT-CR	SAT-M	SAT-W	FYGPA
HSGPA		0.45	0.48	0.48	0.56
SAT-CR	(0.21)		0.71	0.84	0.48
SAT-M	(0.24)	(0.50)		0.72	0.48
SAT-W	(0.24)	(0.71)	(0.51)		0.52
FYGPA	(0.37)	(0.29)	(0.28)	(0.35)	

Note. N = 173,963. Pooled within-institution, restriction of range corrected correlations are presented. The raw correlations are shown in parentheses.

- The correlations between all predictors were similar to the previous reports (Kobrin, et al., 2008 and Patterson, et al., 2009).

Table 4
Corrected (Raw) Correlations of Predictors with FYGPA

Predictor(s)	Correlation
1. HSGPA	0.56 (0.37)
2. SAT-CR	0.48 (0.29)
3. SAT-M	0.48 (0.28)
4. SAT-W	0.52 (0.35)
5. SAT-M, SAT-CR	0.52 (0.33)
6. HSGPA, SAT-M, SAT-CR	0.62 (0.45)
7. SAT-CR, SAT-M, SAT-W	0.54 (0.37)
8. HSGPA, SAT-CR, SAT-M, SAT-W	0.63 (0.47)

Note. N = 173,963. Pooled within-institution, restriction of range corrected correlations are presented. The raw correlations are shown in parentheses.

- The raw and corrected correlations of SAT scores and HSGPA with FYGPA among the 2008 sample are similar to results for the 2007 and 2006 cohorts.

- As was found in the previous samples, the SAT writing section has the highest correlation with FYGPA among the three sections (0.52).

- The corrected correlation of SAT scores and FYGPA (0.54) is similar to the correlation of HSGPA and FYGPA (0.56).

- Similar to previous results, the increment in predictive validity attributable to SAT scores over HSGPA is 0.07.

Figure 1
Mean FYGPA by SAT Score Band
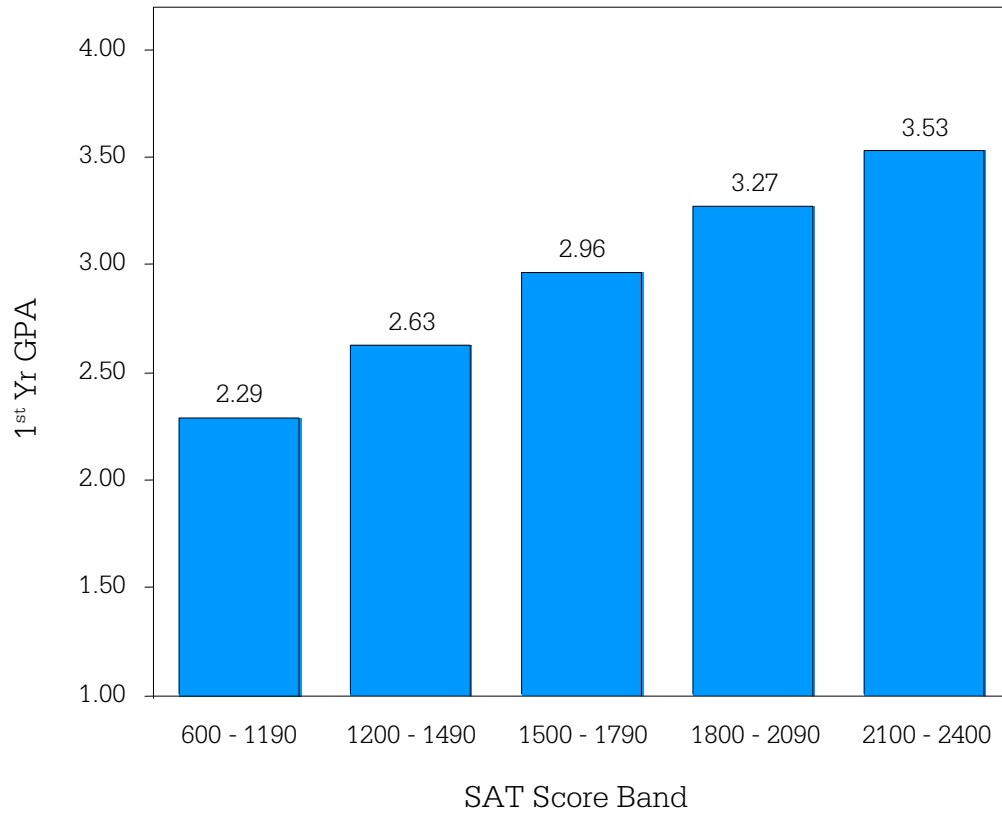
Note.   SAT score bands based on the sum of SAT-CR, SAT-M, and SAT-W.
Sample sizes by SAT score band were as follows:

SAT	n
600-1190	5,107
1200-1490	37,289
1500-1790	74,927
1800-2090	48,572
2100-2400	8,068

- Figure 1 presents the mean FYGPA of students by SAT score band. This graphically demonstrates the strong positive relationship between SAT scores and FYGPA.

Figure 2

Percent of Students Earning a FYGPA of a B or Higher by SAT Score Band
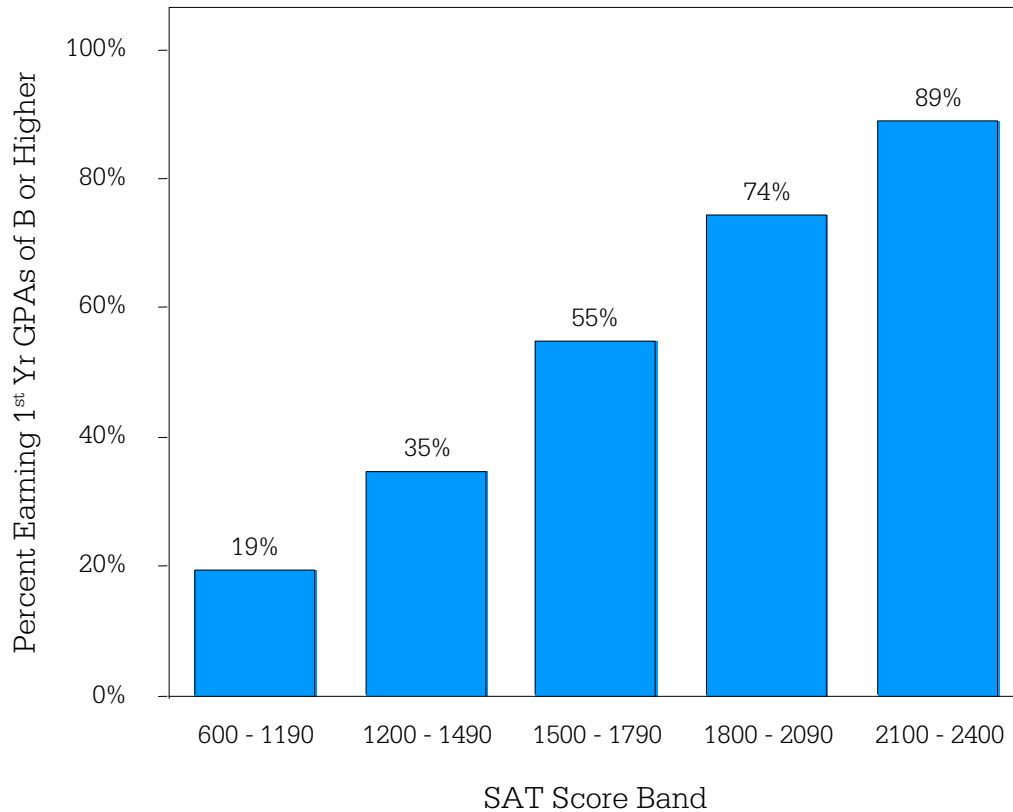
Note. SAT score bands based on the sum of SAT-CR, SAT-M, and SAT-W.
Students with FYGPAs $\geq$ 3.00 were considered to have earned a B or better.
Sample sizes by SAT score band were as follows:

SAT	n
600-1190	5,107
1200-1490	37,289
1500-1790	74,927
1800-2090	48,572
2100-2400	8,068

- Figure 2 presents the percent of students who had a FYGPA of B (3.0) or higher by SAT score band and again the strong positive relationship between SAT scores and first-year college performance is evident.

Figure 3

Incremental Validity of the SAT: Mean FYGPA by SAT Score Band Controlling for HSGPA
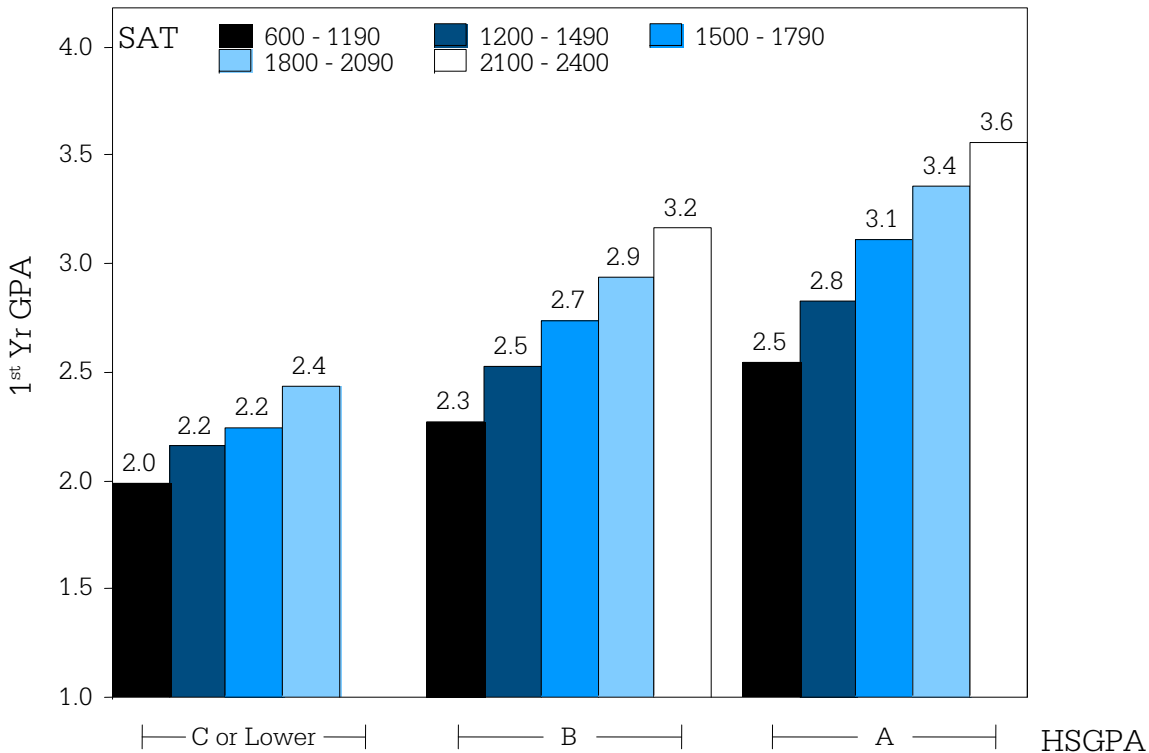
Note. SAT score bands based on the sum of SAT-CR, SAT-M, and SAT-W.

HSGPA ranges were defined as follows:

"A" range:	4.33 (A+), 4.00 (A), and 3.67 (A-);
"B" range:	3.33 (B+), 3.00 (B), and 2.67 (B-); and
"C or Lower" range:	2.33 (C+) and lower.

Sample sizes by SAT score band were as follows:

SAT	C or Lower	B	A
600-1190	845	3,135	1,127
1200-1490	2,003	20,423	14,863
1500-1790	1,181	27,163	46,583
1800-2090	223	9,378	38,971
2100-2400	13*	697	7,358

*: 13 students with HSGPA of C or lower and SAT of 2100-2400 were excluded for failing to meet the minimum sample size of 15.

- Figure 3 presents students' mean FYGPA by SAT score band, controlling for HSGPA, graphically demonstrating the unique information provided by SAT, controlling for HSGPA. Even within HSGPA levels, there is still a strong positive relationship between SAT and FYGPA. For example, of the students with a HSGPA equivalent to an A, those with an SAT total score between 600 to 1190 had a mean FYGPA of 2.5 as compared to a mean FYGPA of 3.6 for students with an SAT total score between 2100 and 2400.

Table 5

Descriptive Statistics of Study Variables by Institutional Characteristics

Institutional Characteristic		k	n	SAT-CR		SAT-M		SAT-W		HSGPA		FYGPA	
				Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Control	Private	72	47,722	578	95.0	591	95.4	577	95.9	3.63	0.48	3.12	0.59
	Public	57	126,241	545	92.0	566	95.1	537	91.4	3.59	0.50	2.93	0.75
Admittance Rate	Under 50%	27	33,549	602	90.6	621	90.8	602	92.4	3.77	0.41	3.20	0.55
	50 to 75%	73	114,619	548	89.7	569	92.0	542	89.0	3.60	0.48	2.96	0.72
	Over 75%	29	25,795	514	91.5	527	92.0	506	88.9	3.40	0.55	2.81	0.82
Undergraduate Enrollment	Small	26	7,044	549	108.1	549	105.3	543	106.7	3.46	0.57	2.95	0.70
	Medium	54	33,452	550	99.0	561	100.0	547	99.9	3.54	0.53	3.02	0.71
	Large	20	33,143	551	96.0	569	98.3	545	96.2	3.54	0.51	2.92	0.74
	Very large	29	100,324	556	90.5	580	92.1	550	90.7	3.65	0.46	2.99	0.71
Total		129	173,963	554	94.0	573	95.8	548	94.3	3.60	0.49	2.98	0.71

Note. k = number of institutions, n = subgroup sample size.

- Students at private institutions had higher mean SAT scores, HSGPA and FYGPA than those from public institutions.

- Students' mean SAT scores, HSGPA, and FYGPA increased as institutional selectivity increased (i.e., as admittance rate decreased).

- Students attending very large institutions tended to have the highest mean SAT scores, HSGPA, and FYGPA compared to smaller institutions, with the exception of mean FYGPA for students attending medium sized and very large institutions, with means of 3.02 and 2.99, respectively.

Table 6

Corrected Correlations of SAT and HSGPA with FYGPA by Institutional Characteristics

Institutional Characteristic		k	n	SAT-CR	SAT-M	SAT-W	SAT*	HSGPA	SAT*, HSGPA
Control	Private	72	47,722	0.52	0.52	0.56	0.59	0.58	0.67
	Public	57	126,241	0.46	0.47	0.51	0.53	0.55	0.62
Admittance Rate	Under 50%	27	33,549	0.53	0.53	0.57	0.60	0.55	0.66
	50 to 75%	73	114,619	0.47	0.47	0.51	0.53	0.56	0.63
	Over 75%	29	25,795	0.45	0.46	0.49	0.52	0.55	0.61
Undergraduate Enrollment	Small	26	7,044	0.51	0.52	0.56	0.59	0.58	0.67
	Medium	54	33,452	0.49	0.48	0.53	0.55	0.57	0.65
	Large	20	33,143	0.47	0.47	0.51	0.53	0.56	0.63
	Very large	29	100,324	0.48	0.48	0.52	0.54	0.55	0.62
Overall		129	173,963	0.48	0.48	0.52	0.54	0.56	0.63

Note. The correlations were corrected for restriction of range within institutions and pooled. Institution sizes were categorized by the number of undergraduates as follows: small = 750 to 1,999; medium = 2,000 to 7,499; large = 7,500 to 14,999; and very large = 15,000 or more.

k = number of institutions, n = subgroup sample size.

* SAT refers to the inclusion of all three sections in the relevant multiple correlation.

- The correlation of scores on each SAT section with FYGPA was generally:

  o slightly higher in private institutions compared to public institutions;

  o higher in more selective institutions (those admitting fewer than half of applicants) compared to those that admit at least half of applicants; and

  o higher in small institutions compared to larger institutions.

- The same pattern emerges for the correlations of HSGPA with FYGPA, albeit with smaller differences among institutions with varying characteristics.

- Across these three institutional characteristics, the addition of the SAT sections to the correlation of HSGPA alone with FYGPA leads to a substantial, consistent increase ($\Delta r \geq 0.06$).

- For correlations by institutional characteristics that have not been corrected for restriction of range, see Appendix B.

Table 7

Descriptive Statistics of Study Variables by Student Characteristics

	Student Characteristic	n	SAT-CR		SAT-M		SAT-W		HSGPA		FYGPA	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Gender	Male	79,233	559	94.8	596	94.7	544	94.4	3.55	0.51	2.89	0.74
	Female	94,730	549	93.1	553	92.5	552	94.1	3.64	0.47	3.06	0.68
Race/	African American	11,696	491	90.7	491	89.8	484	88.6	3.38	0.56	2.58	0.78
Ethnicity	American Indian	852	544	91.5	552	93.2	527	85.8	3.55	0.49	2.83	0.73
	Asian	18,183	554	101.4	621	97.0	559	100.4	3.67	0.44	3.03	0.67
	Hispanic	14,961	516	90.9	528	90.6	509	89.1	3.57	0.50	2.75	0.76
	Other	4,523	553	96.2	569	98.4	551	97.0	3.57	0.49	2.98	0.70
	White	119,651	564	89.6	579	89.9	557	90.5	3.62	0.48	3.04	0.69
	Not Stated	4,097	578	99.5	583	97.0	568	99.6	3.61	0.53	3.02	0.71
Best	English Only	157,217	558	92.4	573	94.4	551	93.2	3.60	0.49	2.99	0.71
Language	English and Another	11,142	520	96.6	555	105.1	524	97.7	3.62	0.48	2.86	0.74
	Another Language	2,571	460	97.6	623	112.9	486	100.8	3.66	0.46	3.04	0.69
	Not Stated	3,033	559	98.8	577	103.0	555	102.3	3.57	0.52	3.01	0.70
Household	< $40,000	19,236	508	95.4	529	99.4	501	91.9	3.56	0.53	2.76	0.80
Income	$40,000-80,000	33,872	542	91.8	557	93.8	532	91.0	3.60	0.50	2.92	0.74
	$80,000-120,000	33,268	559	89.7	577	90.8	550	89.2	3.62	0.48	3.01	0.69
	$120,000-160,000	13,806	566	87.7	585	88.5	561	87.9	3.61	0.48	3.04	0.68
	$160,000-200,000	7,131	570	88.3	590	89.7	566	89.2	3.60	0.48	3.06	0.67
	> $200,000	11,706	580	86.0	602	86.3	581	87.8	3.57	0.47	3.08	0.62
	No Response	54,944	563	95.3	584	97.1	560	96.3	3.61	0.48	3.04	0.69
Highest	No High School Diploma	3,970	482	87.6	517	97.0	478	84.2	3.54	0.51	2.73	0.76
Parental	High School Diploma	35,744	515	88.6	534	92.3	508	87.2	3.53	0.52	2.77	0.78
Educ. Level	Associate Degree	11,433	527	86.1	543	90.0	518	86.1	3.56	0.51	2.86	0.75
	Bachelor Degree	57,564	558	88.1	578	90.4	552	88.2	3.62	0.48	3.02	0.68
	Graduate Degree	55,475	586	90.2	603	90.7	582	90.6	3.65	0.47	3.12	0.65
	No Response	9,777	547	103.3	571	104.3	544	104.1	3.55	0.51	2.96	0.72
Total		173,963	554	94.0	573	95.8	548	94.3	3.60	0.49	2.98	0.71

Note.   n = subgroup sample size.

- The descriptive statistics are largely similar to previous findings (Mattern, et al., 2008 and Patterson, et al., 2009):

  o Males had higher SAT-CR and SAT-M scores whereas females had higher SAT-W scores, HSGPA, and FYGPA.

  o Asian and White students outperformed Hispanic, Black and American Indian students on all academic measures.

  o Students whose best spoken language was a language other than English had higher SAT-M scores and lower SAT-CR and SAT-W scores relative to the other two best language subgroups.

  o As parental income and education level increase, so did mean performance on all academic indicators. The one exception was HSGPA, where there was very little variability in performance across parental income bands. Because HSGPA is not a standardized measure of performance across high schools in the U.S., these results are not surprising given that high schools vary in terms of the mean family income of their student body.

  o As highest parental education level increased, so did performance on all academic measures (i.e., SAT, HSGPA, FYGPA).

Table 8
Corrected Correlation of SAT Scores and HSGPA with FYGPA by Student Subgroups

Student Characteristic		k	n	SAT-CR	SAT-M	SAT-W	SAT*	HSGPA	SAT*, HSGPA
Gender	Male	125	79,233	0.46	0.47	0.49	0.52	0.54	0.61
	Female	129	94,730	0.52	0.53	0.55	0.59	0.55	0.65
Race/	African American	90	11,412	0.41	0.41	0.45	0.47	0.46	0.53
Ethnicity	American Indian	16	433	0.46	0.45	0.48	0.51	0.44	0.55
	Asian	89	17,916	0.45	0.49	0.48	0.52	0.53	0.60
	Hispanic	100	14,750	0.43	0.43	0.47	0.49	0.48	0.56
	Other	74	4,104	0.44	0.44	0.48	0.50	0.48	0.56
	White	126	119,633	0.48	0.47	0.52	0.54	0.57	0.64
	Not Stated	84	3,777	0.47	0.46	0.50	0.52	0.53	0.60
Best	English Only	129	157,217	0.49	0.48	0.53	0.55	0.56	0.64
Language	English and Another	93	10,851	0.42	0.46	0.47	0.50	0.49	0.57
	Another Language	41	2,267	0.39	0.45	0.43	0.47	0.48	0.55
	Not Stated	58	2,491	0.46	0.45	0.50	0.52	0.54	0.61
Household	< $40,000	125	19,193	0.41	0.44	0.45	0.48	0.50	0.56
Income	$40,000-80,000	129	33,872	0.46	0.46	0.50	0.52	0.55	0.62
	$80,000-120,000	128	33,255	0.48	0.47	0.52	0.54	0.57	0.64
	$120,000-160,000	112	13,632	0.49	0.48	0.53	0.55	0.58	0.65
	$160,000-200,000	83	6,746	0.48	0.46	0.51	0.53	0.56	0.63
	> $200,000	99	11,525	0.46	0.44	0.50	0.52	0.56	0.62
	Not Stated	129	54,944	0.49	0.49	0.53	0.56	0.56	0.64
Highest	No High School Diploma	57	3,588	0.41	0.46	0.45	0.49	0.46	0.55
Parental	High School Diploma	126	35,707	0.44	0.44	0.48	0.50	0.52	0.59
Educ. Level	Associate Degree	109	11,266	0.45	0.45	0.49	0.51	0.55	0.61
	Bachelor Degree	129	57,564	0.47	0.47	0.51	0.54	0.57	0.63
	Graduate Degree	128	55,472	0.49	0.48	0.53	0.55	0.58	0.65
	Not Stated	109	9,577	0.46	0.47	0.50	0.53	0.52	0.60
Overall		129	173,963	0.48	0.48	0.52	0.54	0.56	0.63

Note. The correlations were corrected for restriction of range within institutions and pooled. Computations were made within institutions for subgroups with at least 15 members. k = number of institutions, n = subgroup sample size.

* SAT refers to the inclusion of all three sections in the relevant multiple correlation.

- Overall, SAT scores and HSGPA are approximately equally predictive of FYGPA, with corrected correlations of 0.54 and 0.56, respectively. Within subgroups, SAT scores were more predictive of FYGPA as HSGPA for females, African American students, American Indian students, Hispanic students, students whose best language was English and another language, and students whose highest parental education level was less than a high school diploma. On the other hand, HSGPA was more predictive of FYGPA than SAT scores for males, Asian students, White students, students whose best language was English only or another language alone, and for each level of household income and for highest parental education level above high school diploma only.

- Similar to previous results (Mattern, et al., 2008 and Patterson, et al., 2009), of the three SAT sections, SAT-W scores were most predictive of FYGPA, overall and for all subgroups, except for Asian students, students whose best language was another language, and students whose highest parental education level was less than a high school diploma, where SAT-M was slightly more predictive.

- For correlations by student characteristics that have not been corrected for restriction of range, see Appendix C.

Table 9

Average Over-prediction (-) and Under-prediction (+) of FYGPA for SAT Scores and HSGPA (Raw FYGPA)

	Student Characteristic	k	n	SAT-CR	SAT-M	SAT-W	SAT*	HSGPA	SAT*, HSGPA
Gender	Male	125	79,233	-0.10	-0.14	-0.08	-0.10	-0.06	-0.07
	Female	129	94,730	0.09	0.12	0.07	0.09	0.05	0.06
Race/	African American	128	11,696	-0.21	-0.18	-0.19	-0.14	-0.23	-0.12
Ethnicity	American Indian	113	852	-0.13	-0.12	-0.10	-0.10	-0.13	-0.10
	Asian	126	18,183	0.04	-0.04	0.03	0.00	0.02	0.01
	Hispanic	129	14,961	-0.10	-0.09	-0.08	-0.06	-0.15	-0.06
	Other	127	4,523	0.00	0.01	-0.01	0.00	0.01	0.01
	White	128	119,651	0.03	0.04	0.03	0.02	0.04	0.02
	Not Stated	129	4,097	-0.03	0.00	-0.02	-0.02	0.01	-0.02
Best	English Only	129	157,217	0.00	0.00	0.00	0.00	0.01	0.00
Language	English and Another	129	11,142	-0.02	-0.05	-0.02	-0.01	-0.09	-0.03
	Another Language	114	2,571	0.24	-0.04	0.21	0.16	0.02	0.14
	Not Stated	128	3,033	0.00	0.00	0.00	0.00	0.02	0.02
Household	< $40,000	129	19,236	-0.08	-0.08	-0.06	-0.04	-0.15	-0.07
Income	$40,000-80,000	129	33,872	-0.02	-0.01	-0.01	0.00	-0.04	-0.02
	$80,000-120,000	129	33,268	0.02	0.02	0.02	0.01	0.02	0.01
	$120,000-160,000	129	13,806	0.02	0.02	0.01	0.01	0.04	0.02
	$160,000-200,000	128	7,131	0.02	0.02	0.01	0.01	0.06	0.03
	> $200,000	126	11,706	0.00	-0.01	-0.02	-0.02	0.06	0.03
	Not Stated	129	54,944	0.02	0.02	0.01	0.01	0.03	0.02
Highest	No High School Diploma	124	3,970	-0.03	-0.07	-0.01	0.01	-0.15	0.00
Parental	High School Diploma	129	35,744	-0.08	-0.08	-0.07	-0.06	-0.12	-0.07
Educ. Level	Associate Degree	129	11,433	-0.04	-0.04	-0.03	-0.02	-0.08	-0.04
	Bachelor Degree	129	57,564	0.02	0.02	0.02	0.02	0.03	0.02
	Graduate Degree	129	55,475	0.04	0.04	0.03	0.02	0.08	0.03
	Not Stated	129	9,777	-0.01	-0.02	-0.01	0.00	-0.01	0.01
Overall		129	173,963	0.00	0.00	0.00	0.00	0.00	0.00

Note. k = number of institutions, n = subgroup sample size. Negative and positive values indicate over- and under-prediction, respectively. FYGPA regressions were estimated for each institution separately. Residuals were the difference of predicted and observed raw FYGPA.

* SAT refers to all three sections being entered as separate predictor.

- Similar to previous findings (Mattern, et al., 2008 and Patterson, et al., 2009), SAT scores over-predicted FYGPA for males and under-predicted FYGPA for females. The same pattern of results was found for HSGPA, however, with smaller absolute prediction error.

- SAT scores and HSGPA both over-predicted FYGPA for African American, American Indian, and Hispanic students; however, the use of SAT scores resulted in less prediction error than HSGPA for all ethnic subgroups and the combination of SAT scores and HSGPA as predictors resulted in the least amount of prediction error.

- Relative to HSGPA, the use of SAT scores resulted in less prediction error for students who best language was English only and English and another language, but resulted in greater prediction error for students whose best language was another language.

- When considering differential prediction by household income, using SAT alone yielded substantially smaller prediction error than using either only HSGPA or both SAT and HSGPA. Additionally, HSGPA, and to a lesser extent SAT scores, over-predicted FYGPA for low income students (<$40,000).

- Similar to the results by household income, analysis of highest parental education level revealed that the prediction error associated with using only SAT to predict FYGPA was smaller than using either only HSGPA or both SAT and HSGPA.

- Also, HSGPA, and to a lesser extent SAT scores, over-predicted FYGPA for students whose highest parental education level was an Associate degree or less.

Appendix A

Institutions Providing First-Year Outcomes Data for the 2008 Cohort

Institution Name		
Albany College of Pharmacy and Health Sciences	Florida State University	Long Island University, Brooklyn
Austin College	Fordham University	Long Island University, C. W. Post
Baldwin-Wallace College	Framingham State College	Lycoming College
Belmont University	Franklin Pierce University	Marywood University
Boston College	Furman University	Meredith College
Boston University	Georgia Institute of Technology	Messiah College
Brandeis University	Gonzaga University	Missouri State University
Canisius College	Indiana University, Bloomington	Moravian College
Chapman University	Indiana University, East	Mount Ida College
Claremont McKenna College	Indiana University, Kokomo	Ohio State University, Columbus
Clemson University	Indiana University, Northwest	Oral Roberts University
Coastal Carolina University	Indiana University-Purdue University Indianapolis	Penn State, University Park
Colby College	Indiana University, South Bend	Point Loma Nazarene University
College of Charleston	Indiana University, Southeast	Purdue University
Cornell College	Iona College	Quinnipiac University
Drake University	Kenyon College	Reinhardt College
Drew University	Kutztown University of Pennsylvania	Rutgers, The State University of New Jersey
Earlham College	Lafayette College	Saint Anselm College
Eastern Connecticut State University	Lasell College	Salve Regina University
Eastern Washington University	Lincoln University	Schreiner University
Elon University	Linfield College	Scripps College
Emory University	Lock Haven University of Pennsylvania	Seattle University

Appendix A (continued)
Institutions Providing First-Year Outcomes Data for the 2008 Cohort

Institution Name		
Siena College	University of Illinois, Urbana-Champaign	Washington State University, Pullman
Smith College	University of Mary Washington	Washington State University, Vancouver
Spelman College	University of Massachusetts, Dartmouth	Western Washington University
St. John Fisher College	University of Michigan	Wheaton College
St. Michael's College	University of New Haven	Whittier College
State University of New York, Binghamton	University of North Texas	Wilkes University
Stephen F. Austin State University	University of Oregon	Williams College
Syracuse University	University of Pittsburgh	Anonymous A
Temple University	University of Portland	Anonymous B
Texas A&M International University	University of Rhode Island	Anonymous C
Texas A&M University	University of San Francisco	Anonymous D
Texas A&M University, Commerce	University of South Carolina	Anonymous E
Texas Christian University	University of Southern California	Anonymous F
Texas State University, San Marcos	University of Southern Indiana	Anonymous G
Tufts University	University of Texas, Austin	Anonymous H
University of Arizona	University of Texas, Pan American	Anonymous I
University of California, Merced	University of the Pacific	Anonymous J
University of California, Santa Barbara	University of Utah	Anonymous K
University of Cincinnati	University of Washington	Anonymous L
University of Delaware	University of Washington, Bothell	
University of Denver	Valdosta State University	
University of Houston	Vanderbilt University	

Appendix B

Raw Correlations of SAT and HSGPA with FYGPA by Institutional Characteristics

Institutional Characteristic		k	n	SAT-CR	SAT-M	SAT-W	SAT*	HSGPA	SAT*, HSGPA
Control	Private	72	47,722	0.31	0.28	0.36	0.39	0.39	0.49
	Public	57	126,241	0.29	0.28	0.34	0.36	0.37	0.46
Admittance Rate	Under 50%	27	33,549	0.32	0.29	0.37	0.40	0.31	0.46
	50 to 75%	73	114,619	0.28	0.27	0.34	0.36	0.38	0.46
	Over 75%	29	25,795	0.30	0.30	0.35	0.37	0.42	0.49
Undergraduate Enrollment	Small	26	7,044	0.31	0.30	0.38	0.40	0.41	0.51
	Medium	54	33,452	0.29	0.27	0.34	0.37	0.40	0.48
	Large	20	33,143	0.27	0.25	0.32	0.34	0.38	0.46
	Very large	29	100,324	0.30	0.29	0.35	0.37	0.36	0.46
Overall		129	173,963	0.29	0.28	0.35	0.37	0.37	0.47

Note. The correlations were computed within institution and pooled. Institution sizes were categorized by the number of undergraduates as follows: small = 750 to 1,999; medium = 2,000 to 7,499; large = 7,500 to 14,999; and very large = 15,000 or more.

k = number of institutions, n = subgroup sample size.

* SAT refers to the inclusion of all three sections in the relevant multiple correlation.

Appendix C

Raw Correlation of SAT Scores and HSGPA with FYGPA by Subgroups

	Student Characteristic	k	n	SAT-CR	SAT-M	SAT-W	SAT*	HSGPA	SAT*, HSGPA
Gender	Male	125	79,233	0.27	0.29	0.31	0.35	0.37	0.45
	Female	129	94,730	0.33	0.35	0.37	0.41	0.36	0.48
Race/	African American	90	11,412	0.22	0.21	0.27	0.28	0.30	0.38
Ethnicity	American Indian	16	433	0.28	0.30	0.31	0.36	0.30	0.41
	Asian	89	17,916	0.23	0.26	0.27	0.32	0.30	0.41
	Hispanic	100	14,750	0.23	0.23	0.28	0.30	0.30	0.39
	Other	74	4,104	0.26	0.25	0.33	0.34	0.29	0.41
	White	126	119,633	0.28	0.24	0.33	0.35	0.39	0.46
	Not Stated	84	3,777	0.31	0.27	0.35	0.37	0.36	0.46
Best	English Only	129	157,217	0.30	0.28	0.35	0.37	0.38	0.47
Language	English and Another	93	10,851	0.23	0.28	0.29	0.33	0.30	0.40
	Another Language	41	2,267	0.14	0.26	0.20	0.28	0.28	0.37
	Not Stated	58	2,491	0.32	0.27	0.36	0.38	0.38	0.47
Household	< $40,000	125	19,193	0.23	0.27	0.29	0.33	0.34	0.42
Income	$40,000-80,000	129	33,872	0.28	0.27	0.34	0.36	0.39	0.46
	$80,000-120,000	128	33,255	0.29	0.26	0.34	0.36	0.39	0.47
	$120,000-160,000	112	13,632	0.29	0.26	0.34	0.36	0.39	0.47
	$160,000-200,000	83	6,746	0.28	0.23	0.33	0.35	0.37	0.45
	> $200,000	99	11,525	0.25	0.20	0.29	0.31	0.37	0.44
	Not Stated	129	54,944	0.30	0.28	0.36	0.38	0.37	0.47
Highest	No High School Diploma	57	3,588	0.20	0.27	0.25	0.31	0.29	0.38
Parental	High School Diploma	126	35,707	0.26	0.26	0.31	0.33	0.37	0.44
Educ. Level	Associate Degree	109	11,266	0.27	0.26	0.32	0.34	0.39	0.45
	Bachelor Degree	129	57,564	0.28	0.26	0.33	0.35	0.39	0.46
	Graduate Degree	128	55,472	0.28	0.25	0.33	0.35	0.38	0.46
	Not Stated	109	9,577	0.30	0.28	0.35	0.37	0.34	0.45
Overall		129	173,963	0.29	0.28	0.35	0.37	0.37	0.47

Note. The correlations were computed within institution and pooled. Computations were made within institutions for sub-groups with at least 15 members. k = number of institutions, n = subgroup sample size. SAT was the multiple correlation for all three sections.

* SAT refers to the inclusion of all three sections in the relevant multiple correlation.