Examining the Relationship Between Digital SAT Practice in Bluebook and SAT Performance

Evidence from Digital SAT Practice in Bluebook

Briana Chang
Bercem Akbayin-Sahin
Jessica Howell

College Board Research

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Executive Summary

College Board offers full-length practice tests for the digital SAT in the Bluebook testing application. Digital SAT practice resources help students prepare for adaptive testing, gain familiarity with the Bluebook application, and prepare for the content tested on the SAT. This study examines the relationship between completing one or more digital SAT practice tests in Bluebook and performance on the SAT as well as how that relationship varies with students' prior academic achievement and demographic characteristics. The results suggest digital SAT practice in Bluebook offers meaningful benefits for students across a wide range of achievement levels and backgrounds.

- **Completing full-length digital SAT practice tests in Bluebook is associated with higher SAT scores.** Students who completed 1, 2, and 3 or more full-length digital SAT practice tests scored approximately 25, 45 and 60 points higher, respectively, than similar SAT takers who did not complete any full-length digital practice tests in Bluebook.
- **Students with lower prior academic achievement experience larger SAT gains from completing practice tests.** The SAT score benefit of completing practice tests is greater among students with lower PSAT scores, with gains from completing additional practice tests gradually tapering off as PSAT scores increase. These patterns generally hold across different student subgroups.

Contents

Introduction....4

Data and Methodology....5

Results....7

Discussion....9

References....11

Appendix....12

About the College Board....16

College Board Research....16

List of Tables and Figures

Table 1. Sample Characteristics.... 6

Figure 1. SAT Score Gain Associated with Digital SAT Practice Test Completion, by Prior Achievement.... 8

Figure 2. SAT Score Gains Associated with Digital SAT Practice Test Completion, by Prior Achievement and Race/Ethnicity.... 9

Table A1. Model 1: Regression Coefficients for 1 Practice Test Completion.... 13

Table A2. Model 2: Regression Coefficients for 2 Practice Test Completion.... 14

Table A3. Model 3: Regression Coefficients for 3+ Practice Test Completion.... 15

Introduction

Students who practice for the SAT tend to earn higher scores than students who do not practice. Previous research examining Official SAT Practice (OSP) on Khan Academy (Weatherholtz et al., 2020) demonstrates that spending six or more hours practicing on OSP is associated with earning 20-40 additional points on the SAT compared to students that did not use OSP. Additional time practicing is associated with additional score gains. Students following best practice behaviors while using these resources (e.g., taking a full-length practice test) experience larger score gains than similar students who do not engage in best practice behaviors.

Prior research on the benefits of SAT practice activities provides useful evidence to support student preparation for the paper-and-pencil SAT, but the recent introduction of the digital SAT creates new opportunities to understand tools and practice approaches relevant to a digital testing environment. The digital SAT is administered on a platform called Bluebook, which is also where students can complete official full-length digital practice tests. These digital practice tests differ in format and delivery from prior practice resources supporting paper-based testing and also offer students opportunities to engage in an authentic preview of the actual digital testing experience and tools within Bluebook.

Practice and Prepare features in Bluebook include several options for students to explore in advance of their SAT administration. Full-length practice tests mimic real digital test administrations and are scored. At the time of this study, eight digital SAT Suite practice exams were available to students: SAT practice tests numbered 1 through 6, a PSAT 8/9 practice test, and a PSAT/NMSQT practice test.[1] Other practice resources include a *Test Preview* that allows students to experience digital testing and tool usage as well as *Set Up*, which allows students to ensure digital requirements for testing are met.

Survey data from recent SAT takers reveal widespread usage and satisfaction with the digital SAT practice resources available. Roughly two-thirds (64%) of SAT takers reported using full-length practice tests, 93% of whom report finding the practice tests helpful. Additionally, half (48%) of SAT takers report using the *Test Preview* feature, a resource that three-quarters (76%) report is helpful. Many SAT takers noted that digital SAT practice tests mirrored the real exam, offering qualitative feedback like, "*It went better than I thought it would, practice tests were accurate to the real test, and I knew how to use all the tools."* and *"It's very similar to the practice tests posted on Bluebook, which is undeniably helpful."*

[1] Since this research was conducted, additional digital practice resources have been added (see https://satsuite.collegeboard.org/practice/practice-tests).

To complement the survey data on strong student engagement and satisfaction with digital SAT practice resources, this study examines the relationship between completing one or more digital SAT practice tests in Bluebook and performance on the SAT as well as how that relationship varies with students' prior academic achievement and demographic characteristics. Specifically, we examine the following research questions:

1. What is the relationship between completing 1, 2, and 3 or more digital practice tests in Bluebook and performance on the digital SAT?
2. How does the relationship between practice test completion and SAT score vary with students' prior academic achievement (as measured by PSAT score)?
3. How does the relationship between practice test completion and SAT score vary with student demographic characteristics (e.g., race/ethnicity)?

Data and Methodology

We utilize data from students in the high school graduating class of 2025 who took the SAT as juniors during the March 2024 SAT administrations in their high schools.[2] The analysis sample includes students who also took the PSAT in the prior year and complete demographic information on gender, race/ethnicity, and parental education. To create a sample appropriate for this analysis, several conditions were applied. Because our research questions are focused on comparisons between similar students who completed at least one full-length digital practice test on Bluebook and those who did not, we remove observations who engaged in some digital SAT practice but had not completed a full-length digital practice test.

The first column of Table 1 presents descriptive statistics for this analytic sample. Students in the full analytic sample have an average SAT score of 1160 with prior academic achievement on the PSAT slightly lower (1106). One-in-five had previously taken an SAT. The full analytic sample includes more White and Asian students than in the full sample of SAT takers in the prior high school graduating class.[3] Half of the analytic sample did not complete any full-length digital SAT practice tests, while 30% took one practice test, 10% took two, and 10% took three or more practice tests. Note that students are allowed to complete the practice tests in more than one sitting, and they were included in the analyses regardless of whether they completed them in one session or across multiple sittings. Digital SAT readiness measures—completing Test Preview, finishing Set Up, and registering further in advance—suggest many students took active steps to prepare for the digital test in addition to digital SAT practice tests. Column (2) of Table 1 describes the attributes of SAT takers who completed at least one full-length digital practice test for the SAT on Bluebook.

[2] Two-thirds of SAT takers—more than one million students—participate in an SAT School Day administration that occurs on a weekday in their home high school. The one-third of SAT takers who take the test in a weekend administration have slightly different demographics and results may not generalize to weekend test takers.

[3] See https://reports.collegeboard.org/media/pdf/2024-total-group-sat-suite-of-assessments-annual-report-ADA.pdf for data on all SAT takers.

Table 1. Sample Characteristics

	Mean/Percentage (by Practice Test Completion)				
	(1) Full Analytic Sample	(2) Any Practice Test	(3) 1 Practice Test	(4) 2 Practice Tests	(5) 3+ Practice Tests
Mean SAT Score (2024)	1160	1133	1129	1224	1309
Mean PSAT Score (2023)	1106	1097	1068	1146	1220
Took Previous SAT	19.6%	18.1%	15.0%	23.7%	36.2%
Gender					
Female	52.4%	52.8%	52.8%	52.8%	48.8%
Male	47.6%	47.2%	47.2%	47.2%	51.2%
Race/Ethnicity					
AIAN/NHPI	1.1%	1.1%	1.4%	1.0%	0.8%
Asian	19.4%	17.0%	14.4%	24.9%	39.5%
Black	9.2%	9.1%	10.8%	8.2%	5.8%
Hispanic	19.5%	19.4%	22.0%	18.6%	13.9%
Two+ Races	3.2%	3.1%	3.2%	3.1%	3.6%
White	47.6%	50.3%	48.1%	44.2%	36.4%
Parent Ed (% with BA/BS)	71.8%	71.4%	67.6%	75.2%	82.0%
Practice Behaviors					
Completed 0 Practice Tests	50.0%	0%	0%	0%	0%
Completed 1 Practice Tests	29.4%	58.9%	100%	0%	0%
Completed 2 Practice Tests	10.2%	20.3%	0%	100%	0%
Completed 3+ Practice Tests	10.4%	20.8%	0%	0%	100%
Completed Test Preview	34.7%	33.3%	33.5%	37.1%	42.7%
Completed Exam Set up 1+ Day Prior to Test Day	58.1%	59.9%	58.6%	53.8%	52.5%
Completed Registeration 50+ Days Prior to Test Day	25.0%	25.3%	26.4%	23.2%	21.4%
N	148,154	74,077	43,623	15,053	15,401

Note: We exclude a small number of students who identify a gender other than male or female due to small sample sizes. AIAN/NHPI includes American Indian/Alaska Native students as well as Native Hawaiian/Other Pacific Islander students.

Columns (3), (4), and (5) of Table 1 demonstrate that students who completed 1, 2 and 3 or more full-length digital practice tests are observationally different on dimensions related to both demographics and academic attributes. Students who engage in more practice tests tend to have stronger prior academic achievement, are more likely to have already taken an SAT, and are more likely to have at least one parent with a four-year degree. To account for these differences and reduce the effect of selection bias in our analyses, we create three matched comparison samples from the full analytic sample with students who had not completed any full-length digital practice tests but who closely match on relevant background characteristics and prior academic achievement.

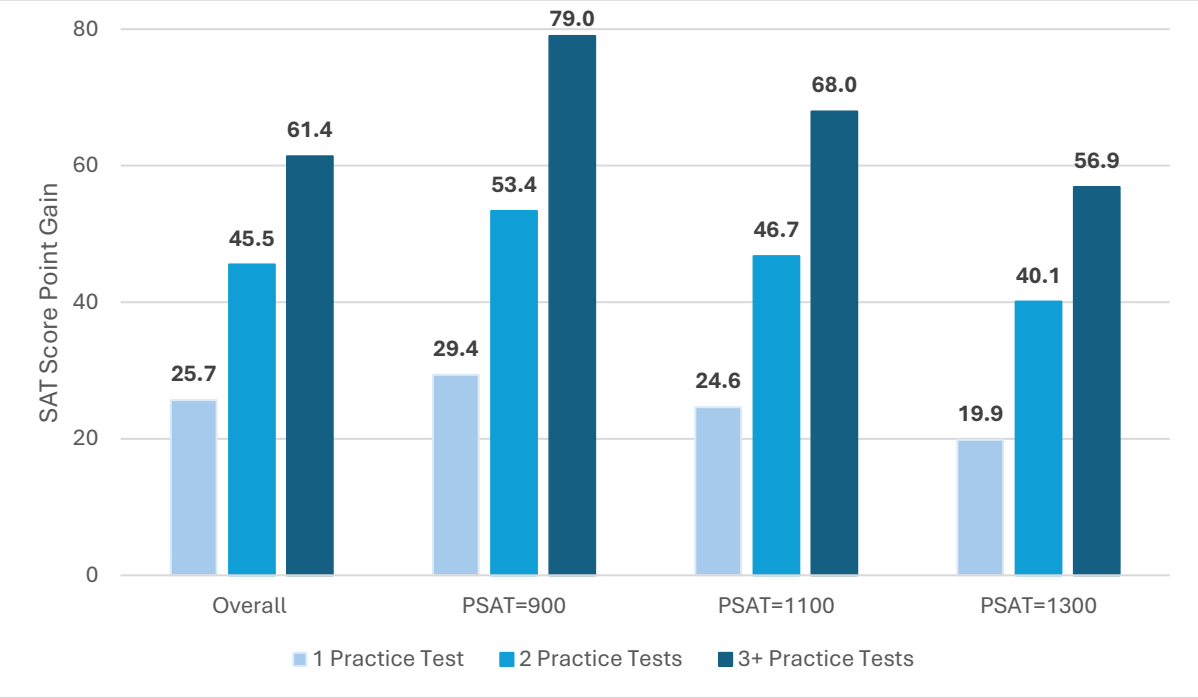
Results

The estimated models find that SAT scores are positively associated with prior academic achievement (as measured by PSAT scores), completing more full-length digital practice tests on Bluebook, and having college-educated parents. Please see the appendix for the full set of parameter estimates. The model results are more readily interpreted in the figures below.

Figure 1 shows the overall estimated relationship between completing full-length digital practice tests and SAT score gains. Students who completed 1, 2, and 3 or more full-length digital SAT practice tests scored 25.7, 45.5 and 61.4 points higher, respectively, than similar SAT takers who did not complete any full-length digital practice tests in Bluebook.[4] Figure 1 also demonstrates that the estimated score increases associated with completing practice tests are larger for students with lower prior academic achievement. For example, among students with PSAT scores of 900, those who completed 1, 2, and 3 or more full-length digital SAT practice tests scored 29.4, 53.4 and 79.0 points higher, respectively, than similar SAT takers who did not complete any full-length digital practice tests in Bluebook. Because of ceiling effects, SAT score gains are slightly more muted among students with higher prior academic achievement who mechanically have less room to increase their scores.

[4] Estimates are not causal. Although statistical matching techniques are employed to create appropriate comparison groups, unobserved differences between students who completed practice tests and those who did not may still influence outcomes.

Figure 1. SAT Score Gain Associated with Digital SAT Practice Test Completion, by Prior Achievement

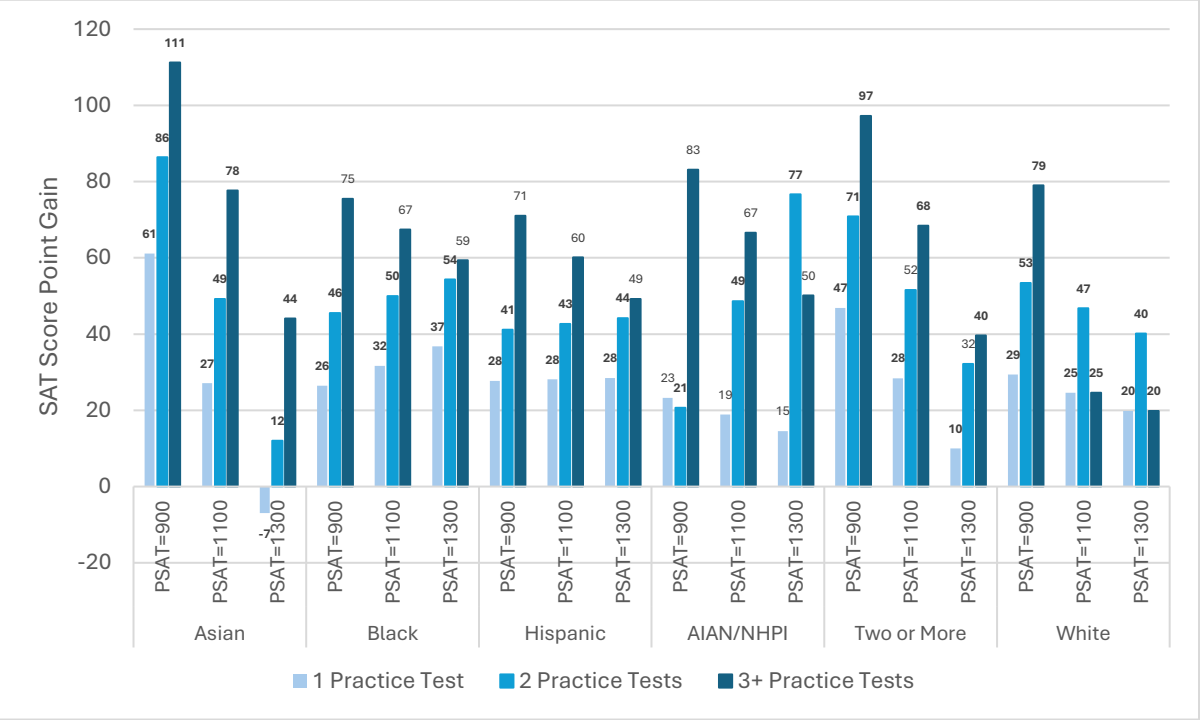


Note. All estimates are statistically significant at the 0.01 level (indicated by bold data labels).

The relationship between SAT practice test completion and score gains also varies with student background characteristics. Figure 2 shows that completing more digital practice tests on Bluebook is associated with greater SAT score gains across racial/ethnic student subgroups. Patterns of larger SAT score gains among students with lower prior academic achievement that are visible in Figure 1 are maintained within each racial/ethnic student subgroup in Figure 2. For example, among Asian students with PSAT scores of 900, those who completed 1, 2, and 3 or more full-length digital SAT practice tests scored 61, 96, and 111 points higher, respectively, than similar SAT takers who did not complete any full-length digital practice tests in Bluebook.

Several other interesting patterns emerge from the analyses of the intersection of prior academic achievement and race/ethnicity depicted in Figure 2. Black and Hispanic students with higher prior academic achievement (e.g., PSAT scores of 1300) increased their SAT scores by 54 and 44 points, respectively when completing two full-length digital practice tests compared to no practice tests, but experienced few additional point gains from completing a third practice test. White students with moderate (1100) and higher (1300) prior achievement gained most from completing two practice tests, but those completing three practice tests experienced gains, on average, that were no larger than similar White students who completed only one full-length digital practice test.

Figure 2. SAT Score Gains Associated with Digital SAT Practice Test Completion, by Prior Achievement and Race/Ethnicity



Notes. Most differences are statistically significant at the 0.01 level (bold data labels), although small sample sizes among some subgroups (e.g., AIAN/NHPI and Two or More Races students) result in larger standard errors. AIAN/NHPI includes American Indian/Alaska Native students as well as Native Hawaiian/Other Pacific Islander students.

Discussion

This study examines the relationship between completing full-length digital SAT practice tests in Bluebook and SAT performance among a large sample of SAT takers in the high school graduating class of 2025. The results show that students who completed more practice tests scored significantly higher than their observationally similar peers who did not complete any full-length practice tests. We also find that students with lower prior academic achievement experience larger SAT score gains when they complete practice tests. These results suggest that more sustained engagement with full-length digital SAT practice has the potential to help all students improve their SAT performance.

These findings provide practical guidance for educators, counselors, and families seeking to support SAT readiness among high school students. Meaningful score gains from a single practice exam, particularly among students with lower prior achievement, suggest that low-barrier efforts can have real benefits. The larger score benefits of practice that accrue to students with lower PSAT scores implies an opportunity for schools to narrow performance gaps visible among PSAT takers. Students don't need extensive, time-consuming, expensive preparation to experience score improvement and unlock additional college and career opportunities.

This research focuses on the quantity of full-length digital practice tests completed, but quality of practice—effort, engagement, support from educators and families—also likely matter. The students in our sample who complete three or more full-length practice tests are potentially different in unobservable ways that might include structured guidance and targeted academic support from adults. Our research design is unable to separate out these effects, but we acknowledge that the substantial SAT score gains associated with the completion of three or more practice tests are likely to include the effects of these additional factors that could be a critical component of supporting student success. Research suggests that students benefit from psychological supports to build confidence and reduce anxiety (Zeidner, 1998), targeted academic supports (White, Groom-Thomas, & Loeb, 2022), and motivational interventions that increase student engagement in academic endeavors (Yeager & Walton, 2011).

Future research can deepen our understanding of who benefits under what circumstances from various digital SAT practice resources. Future work might explore the academic, social-emotional, and motivation factors that influence SAT practice behavior for students with different underlying characteristics. Research on confidence, anxiety, and persistence with practice activities might examine more fine-grained student behaviors like time spent reviewing mistakes, pacing, or other strategies. Future research might examine the attributes of the learning environment that shape student engagement with digital SAT practice resources. School-level context measures could help disentangle individual and family measures from the contributions of the high school environment. Finally, as SAT practice resources evolve, so too must our understanding of what constitutes effective and meaningful engagement with those new resources. Future studies can explore how students engage with evolving tools and the extent to which different SAT practice behaviors become more or less important to their academic achievement.

References

Weatherholtz, K., Grimaldi, P., Hicks, C., Hill, K.M., Freeman, C., Akbayin-Sahin, B., Coker, C., Ma, J., & Henneman, L. (2020). Use of Khan Academy Official SAT Practice and SAT Achievement: An Observational Study. Mountain View, CA: Khan Academy. https://research.collegeboard.org/reports/sat-suite/osp-technical-report

White, S., Groom-Thomas, L., & Loeb, S. (2022). *Undertaking complex but effective instructional supports for students: A systematic review of research on high-impact tutoring planning and implementation* (EdWorkingPaper No. 22-652). Annenberg Institute at Brown University. https://doi.org/10.26300/wztf-wj14

Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They're not magic. *Review of Educational Research, 81*(2), 267–301. https://doi.org/10.3102/0034654311405999

Zeidner, M. (1998). *Test anxiety: The state of the art*. Springer. https://www.researchgate.net/publication/284501454_Test_anxiety

Appendix

Regression Models Predicting March 2024 SAT Scores

To examine the association between SAT practice and performance, three separate linear regression models are estimated. Each model corresponds to a different level of practice—completing 1, 2, or 3 or more full-length digital SAT Practice Tests in Bluebook—and compares outcomes to a matched group of students who did not complete any practice tests. While the practice variable differs across models, all other predictors and interactions are the same.

Model Specifications

All models included the following predictors:

- Prior academic achievement: Student total PSAT score administered in 2023. If student took PSAT multiple times, the max score is used in the analysis. Potential score range for the PSAT is 320-1520 and it is centered at the sample mean. This variable is a control for student prior achievement.
- Demographic characteristics: Gender, race/ethnicity (dummy-coded; White = reference), and parental education (Bachelor's degree or higher)
- SAT experience: Binary indicator for whether the student previously took the SAT
- Digital SAT administrative behaviors (all variables are binary) included
    - Preview completion
    - Setup completion, and
    - Registration timing: more than 50 days vs. within 50 days
- Practice indicator: Binary indicator for completing 1, 2, or 3+ full-length practice tests compared to matched students with no practice). Practice test is considered 'complete' if all items are answered.
- Interaction terms:
    - Practice × PSAT
    - Practice × Race
    - PSAT × Race
    - Three-way interaction: Practice × PSAT × Race

PSAT scores are centered at the sample mean. Each model is estimated using a matched analytic non-practice comparison group. Practice effects represent the difference between students who completed 1, 2, and 3 or more full-length tests and their matched peers who do not complete any digital practice tests on Bluebook.

The full regression output for each of the three models are shown below.

Table A1. Model 1: Regression Coefficients for 1 Practice Test Completion

Predictors	B	SE	t	p
Intercept	1086.387	0.851	1276.319	0.000
Centered PSAT 2023	0.984	0.003	320.176	0.000
Previous SAT	11.232	0.816	13.757	0.000
Female	-6.023	0.515	-11.689	0.000
AIAN/NHPI	-10.022	3.551	-2.822	0.005
Asian	11.905	1.314	9.064	0.000
Black	-18.233	1.420	-12.837	0.000
Hispanic	-7.958	0.972	-8.185	0.000
Two or More Races	-0.928	2.191	-0.423	0.672
Parent has Bachelor's+	17.341	0.596	29.093	0.000
Preview Done	2.613	0.558	4.684	0.000
Completed Exam Set Up 1+ Day Prior to Test Day	-1.816	0.547	-3.323	0.001
Completed Registration 50+ Day Prior to Test Day	-1.225	0.592	-2.069	0.039
Completed 1 Practice Test	25.657	0.732	35.067	0.000
Practice x AIAN/NHPI	-5.804	5.092	-1.140	0.254
Practice x Asian	8.872	1.860	4.771	0.000
Practice x Black	4.847	1.986	2.441	0.015
Practice x Hispanic	2.389	1.357	1.760	0.078
Practice x Two or More Races	6.795	3.112	2.184	0.029
PSAT x AIAN/NHPI	0.025	0.019	1.339	0.181
PSAT x Asian	0.015	0.011	1.371	0.170
PSAT x Black	0.002	0.007	0.221	0.825
PSAT x Hispanic	0.009	0.005	1.603	0.109
PSAT x Two or More Races	0.018	0.013	1.435	0.151
PSAT x Practiced	-0.024	0.004	-5.747	0.000
PSAT x Practiced x AIAN/NHPI	0.002	0.025	0.087	0.931
PSAT x Practiced x Asian	-0.146	0.012	-11.826	0.000
PSAT x Practiced x Black	0.050	0.010	5.116	0.000
PSAT x Practiced x Hispanic	0.026	0.007	3.502	0.000
PSAT x Practiced x Two or More Races	-0.068	0.017	-4.103	0.000

Table A2. Model 2: Regression Coefficients for 2 Practice Test Completion

Predictors	B	SE	t	p
Intercept	1162.327	1.445	804.488	0.000
Centered PSAT 2023	0.960	0.005	194.291	0.000
Previous SAT	8.436	1.090	7.740	0.000
Female	-7.386	0.835	-8.845	0.000
AIAN/NHPI	-16.556	6.945	-2.384	0.017
Asian	14.880	1.576	9.442	0.000
Black	-13.236	2.671	-4.956	0.000
Hispanic	-4.851	1.656	-2.930	0.003
Two or More Races	0.286	3.670	0.078	0.938
Parent has Bachelor's+	15.488	1.025	15.114	0.000
Preview Done	3.973	0.884	4.496	0.000
Completed Exam Set Up 1+ Day Prior to Test Day	-0.796	0.866	-0.919	0.358
Completed Registration 50+ Day Prior to Test Day	2.426	0.994	2.441	0.015
Completed 2 Practice Test	45.527	1.214	37.500	0.000
Practice x AIAN/NHPI	8.222	9.591	0.857	0.391
Practice x Asian	-3.113	2.249	-1.384	0.166
Practice x Black	5.214	3.657	1.426	0.154
Practice x Hispanic	-2.581	2.348	-1.099	0.272
Practice x Two or More Races	2.460	5.288	0.465	0.642
PSAT x AIAN/NHPI	-0.065	0.033	-1.941	0.052
PSAT x Asian	0.011	0.012	0.931	0.352
PSAT x Black	0.010	0.012	0.833	0.405
PSAT x Hispanic	-0.002	0.009	-0.187	0.852
PSAT x Two or More Races	0.002	0.022	0.068	0.946
PSAT x Practiced	-0.033	0.007	-4.793	0.000
PSAT x Practiced x AIAN/NHPI	0.173	0.046	3.765	0.000
PSAT x Practiced x Asian	-0.153	0.015	-10.291	0.000
PSAT x Practiced x Black	0.055	0.017	3.222	0.001
PSAT x Practiced x Hispanic	0.041	0.012	3.316	0.001
PSAT x Practiced x Two or More Races	-0.064	0.031	-2.084	0.037

Table A3. Model 3: Regression Coefficients for 3+ Practice Test Completion

Predictors	B	SE	t	p
Intercept	1240.345	1.508	822.612	0.000
Centered PSAT 2023	0.917	0.005	180.509	0.000
Previous SAT	6.315	0.936	6.747	0.000
Female	-7.107	0.805	-8.827	0.000
AIAN/NHPI	-17.002	8.463	-2.009	0.045
Asian	8.828	1.330	6.640	0.000
Black	-9.391	3.236	-2.902	0.004
Hispanic	-3.298	1.896	-1.739	0.082
Two or More Races	9.432	3.251	2.901	0.004
Parent has Bachelor's+	12.462	1.097	11.361	0.000
Preview Done	1.429	0.819	1.745	0.081
Completed Exam Set Up 1+ Day Prior to Test Day	-0.132	0.826	-0.160	0.873
Completed Registration 50+ Day Prior to Test Day	7.037	0.983	7.159	0.000
Completed 3 Practice Test	61.383	1.280	47.969	0.000
Practice x AIAN/NHPI	-4.586	11.717	-0.391	0.695
Practice x Asian	-3.658	1.876	-1.950	0.051
Practice x Black	1.252	4.274	0.293	0.770
Practice x Hispanic	-7.725	2.652	-2.913	0.004
Practice x Two or More Races	-10.060	4.571	-2.201	0.028
PSAT x AIAN/NHPI	0.010	0.035	0.283	0.777
PSAT x Asian	-0.043	0.008	-5.296	0.000
PSAT x Black	0.039	0.015	2.620	0.009
PSAT x Hispanic	0.041	0.010	4.139	0.000
PSAT x Two or More Races	0.027	0.020	1.345	0.179
PSAT x Practiced	-0.055	0.007	-7.678	0.000
PSAT x Practiced x AIAN/NHPI	-0.027	0.046	-0.593	0.553
PSAT x Practiced x Asian	-0.112	0.011	-10.162	0.000
PSAT x Practiced x Black	0.015	0.021	0.734	0.463
PSAT x Practiced x Hispanic	0.001	0.014	0.052	0.959
PSAT x Practiced x Two or More Races	-0.089	0.027	-3.289	0.001

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