

# SAT<sup>®</sup> Scores and High School Grades: The Benefits of Multiple Academic Measures

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## Introduction

Amidst the backdrop of a largely test-optional college admissions environment, we analyze SAT scores for the class of 2023 to determine the extent to which SAT scores would affirm, exceed, or fall short of their HSGPAs. We find that for most students – including underrepresented minority students – submitting a score would likely only strengthen their application. When we analyze the size and composition of these student SAT-HSGPA performance groups over time, we see very stable trends. This analysis can inform discussions of the importance of multiple measures in the college application process.

## Data and Analyses

### Data

More than 1.5 million students from the 2023 high school graduating class have both SAT scores and a self-reported HSGPA. With this data, we examine how test scores compare to HSGPA, specifically, how frequently students in the 2023 high school graduating class have SAT scores that affirm their HSGPA, have SAT scores that are much stronger than their HSGPA, or have SAT scores that are much weaker than their HSGPA.

### Analytic Method

SAT scores and HSGPAs are not on the same scale, but can become comparable metrics when standardized to both have a mean of 0 and standard deviation of 1. Standardization is accomplished by subtracting the cohort mean for the SAT and the cohort mean of HSGPA from each student's SAT score and HSGPA, respectively, and then dividing by the cohort standard deviation for each corresponding measure. A student's standardized HSGPA is subtracted from their standardized SAT score to generate a discrepancy measure for each student. When this discrepancy measure is greater than 1, the student's standardized SAT score is more than 1 standard deviation above their standardized HSGPA, and the student is categorized in the *Higher SAT* group. When the discrepancy measure was less than -1, the student's standardized HSGPA is more than 1 standard deviation above their standardized SAT, and the student is categorized in the *Higher HSGPA* group. All other students, whose standardized SAT and HSGPA are within 1 standard deviation of each other are placed in the *Consistent SAT and HSGPA* group.<sup>1</sup>

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<sup>1</sup> Studies examining discrepant SAT score and HSGPA information date back to at least 1990 (College Board, 1997) and typically identify the frequency and demographic characteristics of students in the three discrepancy groups: discrepant performance in favor of test scores, consistent performance on the two measures, and discrepant performance in favor of HSGPA (Kobrin, Camara, & Milewski, 2002; Mattern & Allen, 2016; Mattern, Shaw, & Kobrin, 2010; Sanchez & Mattern, 2018). Research also examines the college outcomes of students in these three groups, as well as the utility of different academic predictors for students in the three groups (Edmunds, 2010; Mattern et al., 2010; Mattern, Shaw, & Kobrin, 2011; Sanchez & Mattern, 2018). For a recent thorough review of studies in this area, see Sanchez and Mattern (2018).

## Results

Table 1 shows that 1,073,578 of all students (70%) in the 2023 cohort have consistent SAT and HSGPA information, while 227,192 (15%) have stronger performance based on the SAT, and 228,488 (15%) have stronger performance based on the HSGPA. In other words, 85% of students in the high school class of 2023 (with an SAT score and HSGPA on record) have an SAT score that affirms their high school performance or provides a more favorable view of their academic readiness for college.

**Table 1: Distribution of Students by SAT-HSGPA Discrepant Groups, 2023 SAT Cohort**

Discrepant Groups	<i>n</i>	%
Higher SAT	227,192	15
Consistent SAT and HSGPA	1,073,578	70
Higher HSGPA	228,488	15
	1,529,258	100

Many traditionally underrepresented students in higher education can put their best foot forward with colleges using multiple academic measures. Table 2 shows that, in the 2023 cohort, there were more than 75,000 underrepresented minority students<sup>1</sup> with stronger performance on the SAT than HSGPA and more than 500,000 underrepresented minority students whose SAT score affirmed the information provided by their high school grades about their readiness for college. More than 350,000 first-generation students and more than 250,000 students from small towns and rural communities earned SAT scores that would likely only strengthen their college application.

**Table 2: SAT-HSGPA Discrepant Groups and Student Subgroups, 2023 SAT Cohort**

Discrepant Groups	Underrepresented Minority Students	First Generation Students	Students from Small Towns and Rural Communities
Higher SAT	77,981	55,418	33,437
Consistent SAT and HSGPA	428,914	294,653	219,458
Higher HSGPA	131,006	89,759	53,644
	637,901	439,830	306,539

Note: Students may belong to more than one subgroup.

For students with stronger relative performance on the SAT than HSGPA, SAT scores provide a means of putting their best academic foot forward on college applications – an option they are inclined to exercise in a test-optional environment. Given that HSGPAs reflect many different grading scales and varying levels of rigor depending on the high school (Shaw & Mattern, 2009; Zwick, 2019), admissions offices find it very helpful to know that a student's test scores affirm their high school grades. Students with stronger relative HSGPAs compared to test scores benefit the most from colleges' test-optional policies because they are not required to share an academic measure that may not be putting their best foot forward. Research shows, however, that students in this *Higher HSGPA* group have lower college persistence rates and higher college dropout rates than students in the *Higher SAT* or *Consistent SAT and HSGPA* groups (Sanchez & Mattern, 2018). Institutions interested in best positioning all entering college students for success can utilize test scores and high school grades to most accurately identify and then support students at-risk for not returning (Westrick, et al., 2019).

<sup>1</sup> The underrepresented minority student grouping includes students who self-identified as American Indian/Alaska Native, Black/African American, Hispanic/Latino, Native Hawaiian/Other Pacific Islander, and Two or More Races.

Table 3 builds on the information shared in Table 1 to display the numbers and percentages of students in the 2023, 2022, and 2021 high school graduating cohorts that have either consistent SAT and HSGPA performance, stronger performance based on the SAT, or stronger performance based on the HSGPA. It is apparent that the relative size of the different performance groups is stable across student cohorts, over time.

**Table 3: Stability of SAT-HSGPA Discrepant Groups and Student Subgroups, 2020-2023 SAT Cohorts**

Discrepant Groups	2023 Cohort		2022 Cohort		2021 Cohort	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Higher SAT	227,192	15	223,631	15	187,879	14
Consistent SAT and HSGPA	1,073,578	70	1,049,634	70	973,926	72
Higher HSGPA	228,488	15	222,318	15	189,341	14
	1,529,258	100	1,495,583	100	1,351,146	100

## Conclusion

We examined how many students earn SAT scores that affirm, exceed, and fall short of their high school grades.

**Results based on the high school class of 2023 show that more than 1.3 million students (85% of 2023 high school graduates), earned SAT scores that affirmed or substantially exceeded their HSGPA.** Thus, for at least 85% of a high school graduating class, SAT scores would likely only strengthen their college applications. This is a stable percentage across the three student cohorts examined in this paper. For those with stronger HSGPAs than SAT scores, prior research indicates that access to these students' test scores would help institutions more accurately understand retention risk and corresponding supports to put in place as they tend to have lower persistence rates than the other groups of students. This analysis confirms both conventional wisdom and recommendations by educational measurement professionals (AERA, APA, NCME, 2014; Anderson & Fulton, 2015) that access to and use of multiple academic measures support informed decision-making by colleges.

## References

- American Educational Research Association (AERA), American Psychological Association (APA), & National Council on Measurement in Education (NCME) (Eds.). (2014). *Standards for educational and psychological testing*. American Educational Research Association.
- Anderson, L., & Fulton, M. (2015). *Multiple measures for college readiness* (ECS Education Trends). Denver: Education Commission of the States.
- College Board (1997). *Students with discrepant high school GPA and SAT® Scores* (College Board Research Summary - 01). New York: The College Board.
- Edmunds, A.O. (2010). *An examination of the likelihood of persistence of students with discrepant high school grades and standardized test scores* (doctoral dissertation). University of Alabama, Tuscaloosa, Alabama. Retrieved from: [https://ir.ua.edu/bitstream/handle/123456789/891/file\\_1.pdf?sequence=1](https://ir.ua.edu/bitstream/handle/123456789/891/file_1.pdf?sequence=1).
- Kobrin, J.L., Camara, W.J., & Milewski, G.B. (2002). *Students with discrepant high school GPA and SAT I scores* (College Board Research Note-15). New York: College Board.
- Mattern, K. D., Shaw, E. J., & Kobrin, J. L. (2010). *A case for not going SAT-optional: Students with discrepant SAT and HSGPA performance*. Paper presented at the 2010 annual conference of the American Educational Research Association Conference, Denver, CO. Retrieved from: <https://files.eric.ed.gov/fulltext/ED563419.pdf>.
- Mattern, K. D., Shaw, E. J., & Kobrin, J. L. (2011). An Alternative Presentation of Incremental Validity Discrepant SAT and HSGPA Performance. *Educational and Psychological Measurement*, 71(4), 638–662.
- Mattern, K. & Allen, J. (2016). *More information, more informed decisions: Why test-optional policies do not benefit institutions or students*. Retrieved from: [https://www.act.org/content/dam/act/unsecured/documents/MS487\\_More-Information-More-Informed-Decisions\\_Web.pdf](https://www.act.org/content/dam/act/unsecured/documents/MS487_More-Information-More-Informed-Decisions_Web.pdf).
- Sanchez, E., & Mattern, K. (2018). When high school grade point average and test scores disagree: Implications for test-optional policies. In J. Buckley, L. Letukas, & B. Wildavsky (Eds.), *Measuring success: Testing, grades, and the future of college admissions* (pp. 118-141). Baltimore: Johns Hopkins University.
- Shaw, E. J. & Mattern, K. D. (2009). *Examining the Accuracy of Self-Reported High School Grade Point Average*. (College Board Research Report No. 2009-5). New York: The College Board.
- Westrick, P., Marini, J. P., Young, L., Ng, H., Shmueli, D., & Shaw, E. J. (2019). *Validity of the SAT® for predicting first-year grades and retention to the second year* (College Board Research Report). New York: College Board.
- Zwick, R. (2019). Assessment in American Higher Education: The Role of Admissions Tests. *The ANNALS of the American Academy of Political and Social Science*, 683(1), 130–148.