

University Readiness Assessments and Equity in College Admissions

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Executive Summary

University readiness assessments have been integral to college admissions since the turn of the 20th century. However, these exams’ popularity has wavered in recent decades, and the COVID-19 pandemic created test administration challenges that barred many college hopefuls from taking these exams. As a result, hundreds of four-year, degree-granting institutions went “test-optional” in 2020, meaning applicants were not required to report scores to be considered for admission. Now, many colleges are deciding whether to remain test-optional.

A key point of debate is whether test-optional policies improve equity in college admissions. That is, do test-optional policies allow colleges to successfully enroll greater shares of historically marginalized students, such as students from underrepresented racial/ethnic and socioeconomic backgrounds? Advocates for using tests in college admissions argue tests serve an important role: predicting whether students will earn strong college GPAs, stay enrolled, and graduate. From this perspective, admitting students whose scores would typically make them non-competitive for admission is a disservice and sets up those students for academic failure. Testing advocates also argue tests are less biased against historically marginalized students than other admissions criteria and that, in fact, test scores can help signal historically marginalized students are college-ready even if they have not had access to rigorous coursework. I describe these claims below:

Table 1. Claims and Findings for Test-Required Policies

<u>Claim 1</u>	<u>Claim 2</u>	<u>Claim 3</u>	<u>Claim 4</u>
Tests predict important outcomes such as college performance and eventual graduation.	Tests differentiate between students attending different high schools and with similarly high GPAs.	Tests are less biased than other criteria on which applicants are evaluated, such as extracurriculars.	Tests allow promising students to show readiness even when they cannot access rigorous coursework.
<u>Finding</u>	<u>Finding</u>	<u>Finding</u>	<u>Finding</u>
Yes, tests predict college performance, even after controlling for HS GPA and SES background. Scholars disagree about how useful this additional predictive power is.	Yes, tests are one of the only ways to compare students from widely different contexts on the same scale.	Maybe. There is likely bias in every college application criterion. However, there is less research on bias in other application components.	Maybe. While testing can identify college-ready low-income students who may have otherwise gone overlooked, it is unclear whether these students apply and are admitted to selective colleges.

Advocates for test-optional policies focus more specifically on the potential bias in tests and how test-optional policies allow students to create the application that best captures them. They argue less emphasis on test scores means more equitable admissions because students are less intimidated to apply, and once students arrive on campus, students who did and did not submit test scores have similar postsecondary outcomes. I describe these claims below:

Table 2. Claims and Findings for Test-Optional Policies

<u>Claim 1</u>	<u>Claim 2</u>	<u>Claim 3</u>	<u>Claim 4</u>
Standardized tests are biased against underrepresented minority (URM) and low-SES students.	Students are less intimidated to apply to test-optional colleges.	Students who do not submit scores earn similar GPAs and graduate at similar rates as those who do submit scores.	Going test-optional increases campus racial/ethnic and socioeconomic diversity.
<u>Finding</u>	<u>Finding</u>	<u>Finding</u>	<u>Finding</u>
It depends on how you conceptualize bias. If bias is about how well tests predict later college outcomes, then no. If bias is about score differences (including using stringent score cut-offs), then yes.	Mostly yes. Most studies find increases in application submissions after adopting test-optional policies.	Mostly yes. Studies find either no differences or small differences (favoring submitters).	Yes, but not very much. Test-optional admissions alone cannot serve as the lever for equity many imagine it to be.

Broadly, test-optional policies seem to have net positive effects on the admission of Black, Hispanic, Native American, and low-income students, without the academic concerns test-required advocates cite. However, the effects are small and heterogeneous, with possible mechanisms relating to how institutions use test-optional policies in their admissions processes, how colleges communicate these policies to students, institutions’ perceived prestige before adopting test-optional policies, and other factors.

Overall, my analyses suggest test-optional admissions can be a step toward equity—but they are not a panacea for vast racial and social class inequalities in pre-college resources and preparation.

Contents

- Background 2
 - The Entering Class of 2025..... 2
 - Problem Scope 3
- Why Require Tests? 6
 - The Rise of Standardized Tests 6
 - Benefits of Admissions Testing 8
- Why Go Test-Optional?..... 14
 - The Origin of Test-Optional..... 14
 - The Case for Test-Optional 15
- Test Optional in Practice 27
 - Student Profiles..... 27
 - Implementation 27
 - Implications for Selectivity..... 32
- What’s Next?..... 34
 - Alternative Policies 34
 - Future Directions 37
- References 40

Background

The Entering Class of 2025

In 2020, rising high school seniors found themselves scrambling for a chance to take the SAT. More than one million registrations were canceled as testing centers closed or reduced capacity to comply with the COVID-19 pandemic’s social distancing requirements. In all, 700,000 fewer seniors took the SAT¹ than in 2019—meaning many prospective applicants had no scores to report. In fact, among students using the Common App (through which students can use a single application for multiple colleges), fewer than half submitted standardized test scores.²

This left many colleges with an important question: Should they continue to require test scores for admission? Drove of institutions decided no. Before the COVID-19 pandemic began, just over 1,000 schools were test-optional or “test-blind”³; after the pandemic onset, this number nearly doubled, with 85% of four-year, degree-granting colleges suddenly using test-optional policies. This includes 90 of the top 100 in the U.S. News and World Report rankings.⁴

This trend did not begin with the pandemic. Requiring test scores has been falling out of favor for decades (see Figure 1). Instead, colleges have leaned in to “holistic admissions,” through which admission is based on comprehensive reviews of a student’s application essays, teacher recommendations, extracurriculars, leadership, awards, and transcript (with GPA, coursework, and class rank).

Test-Optional or Test-Blind?

Test-optional admissions mean students are not required to submit test scores. Test scores are considered for admission if students choose to submit them.

Test-blind admissions means students are not required to submit scores, and scores are not considered for admission.

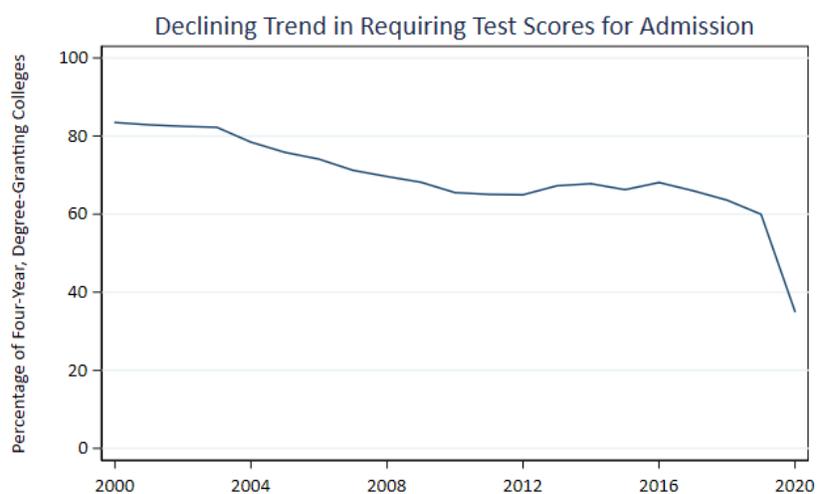


Figure 1. Share of Four-Year, Degree-Granting Colleges Requiring Test Scores for Admission
Source: U.S. Department of Education, 2022

Notes: Excludes institutions with open admissions and those that do not admit first-time undergraduates

¹ Jaschik, 2021a

² Jaschik, 2021b

³ Note that “test-blind” is not my phrasing of choice, as this uses ability-based language to describe a phenomenon unrelated to physical ability. However, this is the most frequently used terminology for this practice.

⁴ FairTest. 2022

Importantly, adopting a test-optional policy is not an indication that academics no longer matter for admission. Consider, for example, the following excerpts from admissions webpages. All three colleges here have test-optional policies (as of fall 2022), cite holistic admissions processes on their websites, and emphasize academic achievement as paramount in admission:⁵

Admissions Webpages

Holistic review: While we look at many factors in reviewing applications for admission, academic preparation and performance are still primary. **University of Washington**

We evaluate each applicant in terms of criteria that measure the merit of academic achievement* as well as personal interests, talents, accomplishments and challenges... **We evaluate each applicant holistically.*** We don't select applicants based on any single criterion. All criteria are considered as part of our review of the whole person. **The Ohio State University**

[We practice] holistic admission review...academic performance in context, recommendation letters, essays, leadership experience and potential, and extracurricular involvement are thoroughly reviewed by the Admissions Committee. The most important part of your application is something you've already been working on throughout high school: your academic performance! **Macalester College**

*Text bolded in original

Retrieved August 18, 2022

Academic performance in admissions, then, is not under scrutiny. Rather, it is the extent to which tests are a useful metric of academic performance and how their usefulness weighs against the widely understood drawbacks of testing: racial/ethnic, economic, and gender biases.

Takeaways

- **Over time, fewer four-year colleges have been requiring test scores for admission**
- **The pandemic encouraged many more to adopt test-optional policies**
- **These colleges are now considering whether to keep test-optional policies**

Problem Scope

The question of whether to adopt test-optional admissions is only relevant for a subset of colleges and universities. More than 90% of community and technical colleges, for instance, practice open admissions, meaning they will accept any student who applies.⁶ These colleges do not require students to submit SAT or ACT scores.

⁵ Retrieved August 18, 2022 from the following websites:

<https://admit.washington.edu/apply/freshman/holistic-review/>
<http://undergrad.osu.edu/apply/freshmen-columbus/who-gets-in>
<https://www.macalester.edu/admissions/us-admissions/faq/>

⁶ U.S. Department of Education, 2022

Whether to adopt a test-optional admissions policy is particular to four-year institutions. But what share of students attend these types of colleges? Among students enrolling in college immediately after high school, two-thirds start at a four-year institution (see Figure 2).

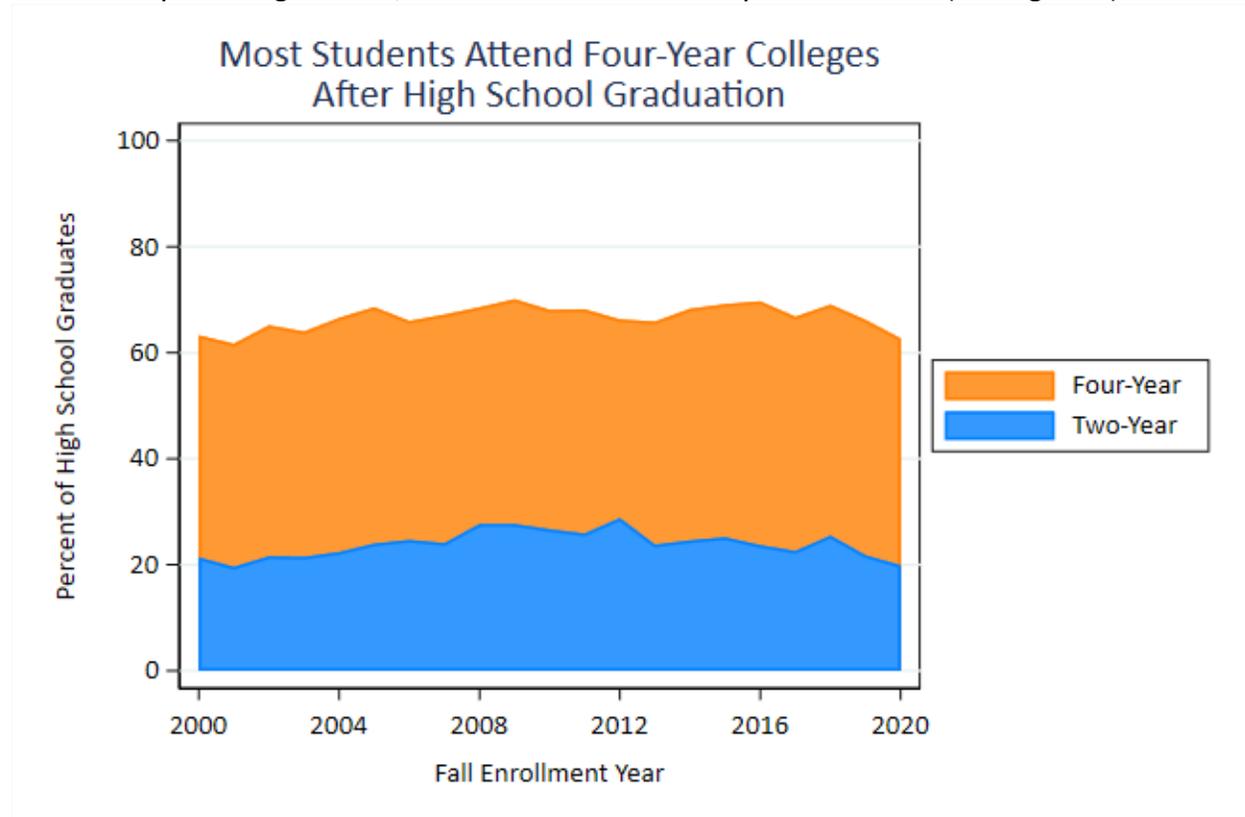


Figure 2. Percentage of High School Graduates Attending Two- and Four-Year Colleges Immediately After Graduation

Source: U.S. Department of Education, 2022

Notes: Excludes institutions that do not admit first-time undergraduates

Open admissions are not exclusive to two-year colleges. Approximately 25% of four-year colleges also use open admissions. This share has grown somewhat since 2000 (see Figure 3). However, most four-year colleges still admit students on a competitive basis, meaning only a subset of students are admitted from the broader applicant pool. These are the types of colleges that might require test scores and that largely went test-optional during the pandemic.

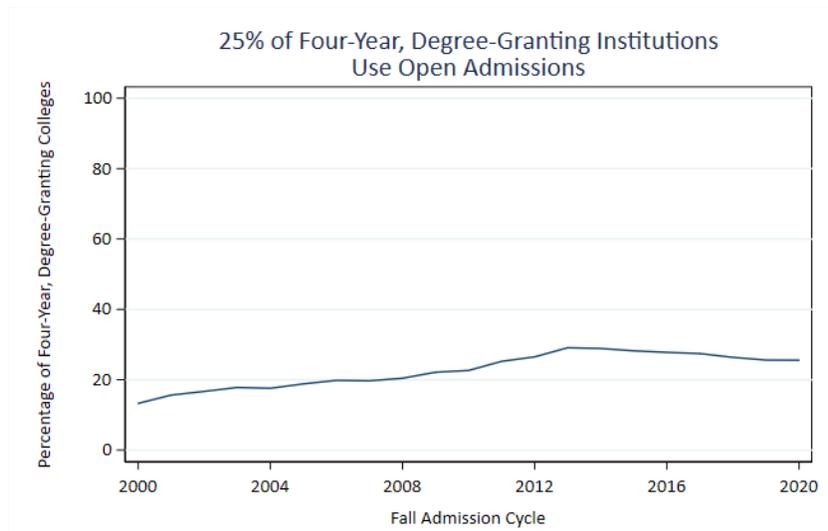


Figure 3. Trend in Using Open Admissions at Four-Year, Degree-Granting Institutions

Source: U.S. Department of Education, 2022

Notes: Excludes institutions that do not admit first-time undergraduates and institutions that did not submit a valid response to this question in IPEDS (less than 5%)

Most students begin college at a four-year institution, most of which practice selective admissions. This means the changing landscape of application requirements has implications for millions of students graduating from high school each spring.

The change in requiring test scores marks the most dramatic shift in admission requirements over the past 20 years (see Figure 4). Standardized test scores, once the most ubiquitous requirement, are now only required for students applying to one-third of four-year colleges with selective admissions. Other criteria have fallen in popularity, as well, including the Test of English as a Foreign Language (an assessment of English proficiency) and high school class rank.

Open or Selective Admission?

Open admission means that the only requirement for admission is a high school diploma (or GED certificate) and a complete application. It is practiced at most community and technical colleges.

Selective admission means that students' applications are evaluated competitively using criteria set forth by the college, such as high school GPA and standardized test scores. Typically, admissions officers use this process to allocate a limited number of enrollment spots to students.

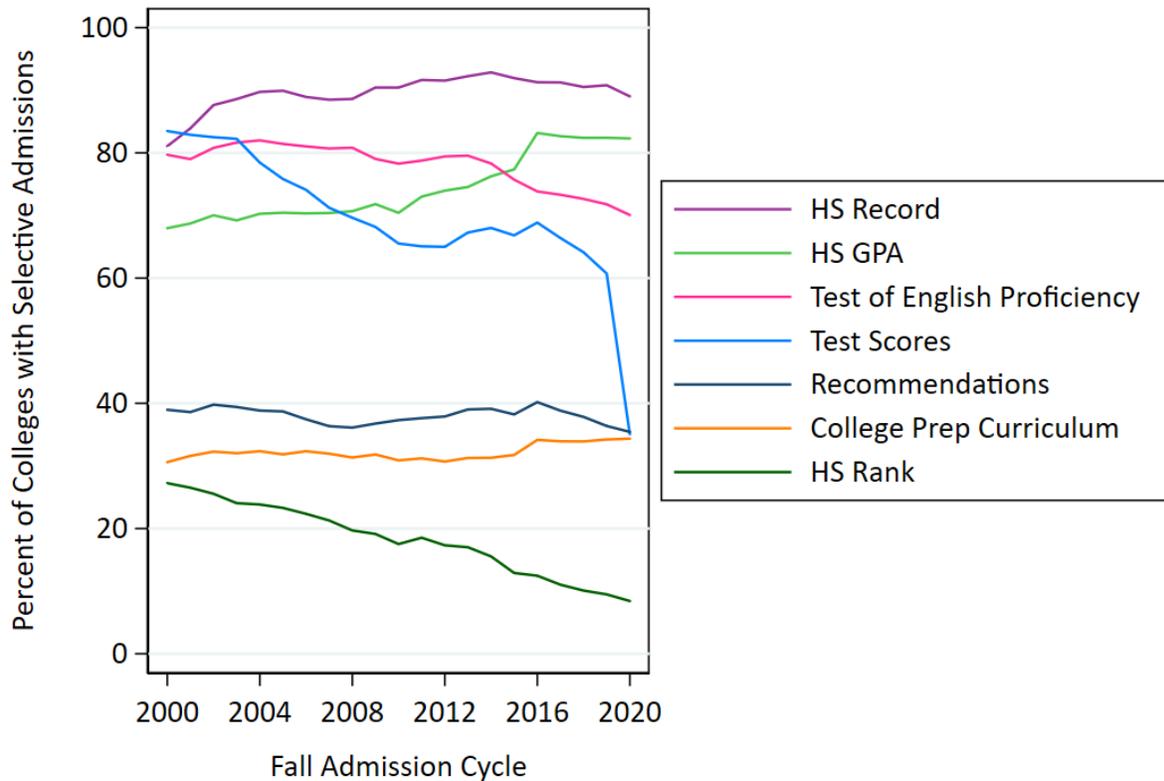


Figure 4. Trends in Application Requirements Among Colleges with Selective Admissions

Source: U.S. Department of Education, 2022

Notes: Excludes colleges that do not admit first-time undergraduates or that did not submit a valid response (less than 5%)

Takeaways

- Requiring test scores has declined more than for any other application component
- Test score policies for admission impact millions of prospective applicants

Why Require Tests?

The Rise of Standardized Tests

Before 1900, admission to what would become today's selective colleges was not a very competitive process. To the extent that colleges used specific criteria for admissions decisions, the primary consideration was a student's prior coursework. Importantly, these course requirements varied across colleges.⁷ As higher education expanded and attending college became more common, high schools and prospective applicants demanded uniformity in admissions requirements.⁸ At the same time, Harvard University sought to expand the geographic diversity of its admitted classes, with aims of identifying and admitting high-achieving students outside of the Northeast. An answer to both came in the form of a new, multiple-choice assessment of verbal and mathematic proficiency: the SAT.

In some ways, using tests to assess intelligence was an equity-motivated goal. For example, the first such test, created in 1905, was designed to identify students in need of academic remediation. Administrators at Harvard University envisioned the SAT as a window of merit, allowing admissions to recognize talented high school students from outside the Boston area who would have otherwise gone unnoticed. This vision casts the SAT as serving equity and broadening opportunities for students from working class backgrounds. Others saw the SAT as a sieve, differentiating between high-performing students deserving of a college education and lower-performing students meant for more menial jobs. Still others saw it as a formal, scientific substantiation of objective intelligence, fueling ideologies of eugenics and White supremacy.⁹ Stakeholders with dramatically different philosophies on education and opportunity found something appealing in the SAT. In this way, the origin and early use of the SAT served as a revolutionary innovation in both equity and inequality. The extent to which the SAT serves these goals today is a central tension in the test-optional movement.¹⁰

120 Years of Admissions Testing

1900

The College Board is founded and develops the first admissions exam, an essay-based assessment, adopted by multiple colleges

1926

The Scholastic Aptitude Test (SAT) is administered to college applicants for the first time

1942

The College Board replaces its essay-based exam with the SAT and standardizes the SAT

1946

Stanley Kaplan begins SAT tutoring, launching the test preparation industry

1947

The Educational Testing Service (ETS) is founded in part to operate the SAT

1959

The ACT, designed to better reflect high school curricula, debuts as an SAT competitor

1964

The SAT surpasses one million test-takers

⁷ Broome, 1903

⁸ Thelin, 2011

⁹ I capitalize racial categories "Black" and "White" in accordance with the rationale described here:

<https://www.macfound.org/press/perspectives/capitalizing-black-and-white-grammatical-justice-and-equity>

¹⁰ Lemann 2000

Today, standardized admissions tests serve many more purposes than they did 100 years ago. These exams have become deeply embedded in American life. Average SAT and ACT scores factor into national college rankings, which in turn shape students' application behaviors; determine students' eligibility for state and national scholarships; and in some states, determine whether students graduate from high school.¹¹ Even real estate websites list school quality scores for local public schools that are based in part on SAT and ACT test performance.¹²

At the same time, these exams are expensive, stressful, and time-consuming. They also suffer from longtime notoriety due to correlations with family socioeconomic status and racial/ethnic background. While standardized test scores may help admissions officers sort through ever-growing piles of applications, the test-optional movement serves as a trial run to determine how useful tests actually are—and whether colleges can admit highly qualified, more-diverse cohorts without them.

How have testing companies responded to increasing test-optional policies?

In response to many of the complaints levied against testing companies during (and even before) the COVID-19 pandemic, the SAT and ACT have begun making changes, including the following:

- Offering exams electronically at testing centers and high schools (SAT & ACT)
- Offering more test dates (SAT & ACT)
- Shortening the SAT exam time to two hours, with no optional essay
- Eliminating SAT subject tests
- Allowing ACT superscoring (combining subsection scores from different exams for a composite score)
- Providing unlimited free ACT score reports for testers using a fee waiver

1965
Affirmative Action is passed through executive order

1967
The University of California, the largest college system in the U.S., begins requiring the SAT for admission

1969
Bowdoin becomes the first college to go from test-required to test-optional

1971
The PSAT is first used to determine students' eligibility for National Merit Scholarships

1979
The Federal Trade Commission determines standardized admissions exams are coachable, refuting test-makers' claims

2001
Colorado and Illinois partner with the ACT to become the first states with universal admissions testing for high school juniors

2005
The SAT is revised to better reflect what students learn in high school coursework

2020
The number of colleges requiring standardized admissions exam scores drops precipitously due to the COVID-19 pandemic

Takeaways

- Whether college admission exams serve equity or inequality is a longtime debate
- College admission exams are entrenched in many areas of everyday life

¹¹ Soares, 2012

¹² GreatSchools, 2022

Benefits of Admissions Testing

The staying power of college admissions tests is due in large part to a few key claims:

<u>Claim 1</u>	<u>Claim 2</u>	<u>Claim 3</u>	<u>Claim 4</u>
Tests predict important outcomes such as college performance and eventual graduation.	Tests differentiate between students attending different high schools and with similarly high GPAs.	Tests are less biased than other criteria on which applicants are evaluated, such as extracurriculars.	Tests allow promising students to show readiness even when they cannot access rigorous coursework.

This section describes each claim and presents the associated evidence.

Claim 1: Tests such as the SAT and ACT predict important outcomes such as college performance and eventual graduation.

Colleges want to admit students who will succeed on campus. This is true for a few reasons: Colleges practicing selective admissions often aim to curate a specific student experience, typically one including academic rigor and intellectual growth; admission is a scarce resource, and admissions officers want to be good stewards of that resource; and colleges themselves are judged according to characteristics such as retention and graduation rates.¹³ Thus, colleges are incentivized to admit students likely to succeed.

But how can colleges predict whether a student will succeed at their school? This is where university readiness assessments come in. One of the most-cited reasons for continuing to use standardized test scores in admissions is that they are a useful predictor of students' college performance. Certainly, there are other factors that matter: study time; resources; health and well-being. However, many of these factors are subjective and difficult to measure. A test score is often considered to be a less subjective indicator of how students will fare in their college years—and especially how one applicant will fare compared to another.

Research generally supports Claim 1. Standardized test scores predict grades assigned in college courses,¹⁴ first-year and cumulative college GPAs,¹⁵ college retention,¹⁶ college graduation,¹⁷ and even whether a student will eventually earn patents and publish scholarly and literary works.¹⁸ Although earning a high score on a university readiness assessment is unlikely to directly cause any of these outcomes, many of the same factors associated with test performance are

¹³ Stevens, 2009

¹⁴ Mattern, Patterson, & Kobrin, 2012

¹⁵ Burton & Ramist, 2001; Kuncel & Hezlett, 2007; Sackett, Borneman, & Connelly, 2008; Zwick, 2006, 2007

¹⁶ Mattern & Patterson, 2014

¹⁷ Burton & Ramist, 2001; Carnevale & Rose, 2003; Mattern and Patterson, 2014

¹⁸ Lubinski, 2009

associated with other kinds of academic success. This makes test scores a useful proxy for how a student will perform in college.

Test scores are only one component of a student's college application, however. Students also submit essays, letters of recommendation, lists of extracurricular activities, transcripts indicating high school GPA and coursework, and awards. Of these, high school GPA is the best predictor of later college GPA.¹⁹ However, standardized test scores are often the second-best predictor, and they offer additional predictive value even after accounting for students' high school GPAs.²⁰

Consider the following example. In a large-scale study of first-year college students from 2006 through 2010, high school GPA and SAT scores each only have a correlation of .55 with students' first-year college GPAs. When high school GPA and SAT scores were considered together, however, the correlation increased to .62.²¹ While only a .07 increase, this difference in the correlation indicates statistically distinguishable differences in student outcomes. Scholars disagree, though, about the substantive implications of these differences. Some argue the SAT offers meaningful information about which students will succeed, particularly for students who have similar high school GPAs but for whom the SAT tells a different story. Others argue this additional predictive power is not valuable enough to warrant the use of standardized tests in admissions.

It is also worth considering the factors underlying the relationship between test scores and college performance. For example, SAT scores are associated with student SES background, and SES background matters for the resources to which students have access.²² These resources not only impact students' test preparation, but also the extent to which students are able to succeed in college. In this way, it is actually a third factor—the resources students have available to them—that shapes both test scores and college performance. In addition, accounting for college selectivity dramatically reduces the relationship between SAT scores and eventual graduation.²³ Finally, one could argue that instead of using test scores to filter out students, colleges could use test scores as early indicators of who might need academic support in later semesters—and then allocate resources to support these students' academic success.

Claim 2: Tests differentiate between students attending different high schools and with similarly high GPAs.

Another common rationale for the use of standardized test scores in admissions is that while high school GPA is a better predictor of eventual college performance, standardized test scores improve upon high school GPA in a few ways: Test scores distinguish between students attending different high schools (with different grading norms), distinguish between students at the top of the GPA distribution, and are not subject to grade inflation.

¹⁹ Geiser & Santelices, 2007; Murphy et al., 2009; Rosinger, Ford, & Choi, 2021

²⁰ Agronow & Studley, 2007; Berry & Sackett, 2009; Kuncel, Hezlett, & Ones, 2001; Shaw et al., 2016

²¹ Mattern & Patterson, 2014

²² Dixon-Román, Everson, & Mcardle, 2009

²³ Bowen & Bok, 1998

Research generally supports Claim 2. University readiness assessments are one of the only ways to reliably compare applicants from different high schools. Because these assessments put students on the same performance scale, they allow for comparisons between students in different states and with different high school curricula.²⁴ Further, the relationship between SAT score and college GPA is monotonic: SAT scores predict college GPA just as well at the top of the GPA distribution as at the middle of the GPA distribution.²⁵ This means SAT scores predict differences in college GPA even among the highest achievers.

Another benefit is that university readiness assessments are resistant to “grade inflation.” Grade inflation refers to a pattern in which students’ grades are higher than they would be if grades were based on underlying performance alone. Indeed, most students earn relatively high GPAs (see Figure 5). Further, grades have become more concentrated at the upper end of the distribution—students today, on average, earn higher high school GPAs than in previous years. This means it is getting more difficult to distinguish between high-performing students using GPA alone, and the SAT may become increasingly useful.²⁶

On the other hand, some scholars argue that rising GPAs are not an artifact of inflation but indicate real increases in student academic proficiency.²⁷

If this is the case, the work of college admissions is more about making finer distinctions

between increasingly qualified cohorts of applicants rather than predicting whether a student will succeed on campus. This means the SAT may simply be differentiating between two students who will both earn high college GPAs, maintain continuous enrollment, and graduate on time. Because the number of applicants to selective colleges have far outpaced the number of spots for admitted students, test scores may help filter applications more efficiently. At the same time, such fine distinctions suggest that even small score differences become consequential—and due to factors such as measurement error, small score differences are often arbitrary. Overall, the evidence for Claim 2 is strong. However, the substantive implications of this claim are worth considering.

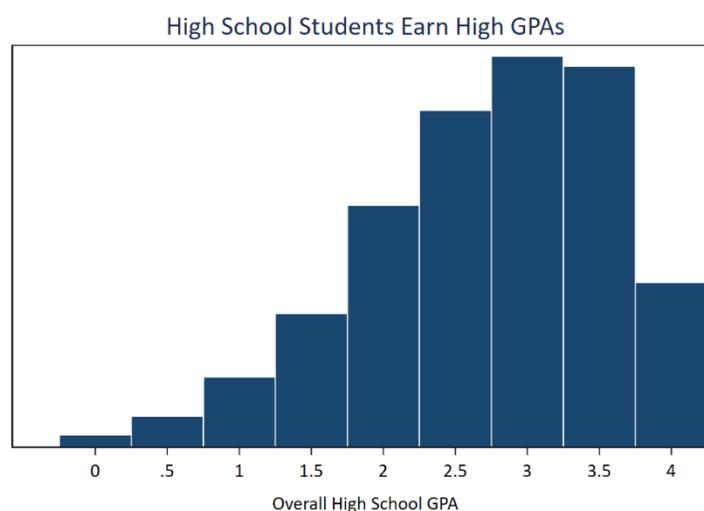


Figure 5. Distribution of High School Students' Overall GPA

Source: High School Longitudinal Study, 2014

Notes: Excludes students with missing GPAs (about 7% of respondents)

²⁴ Shaw, 2015

²⁵ Arneson, Sackett, & Beatty, 2011

²⁶ Hurwitz & Lee, 2018; McCarty, 2001

²⁷ Jephcote, Medland, & Lygo-Baker, 2021

Claim 3: Tests are less biased than other criteria on which applicants are evaluated, such as extracurriculars.

Tests are often considered to be biased against historically marginalized students, including Black, Indigenous, and Hispanic students, as well as students from low-socioeconomic status (SES) backgrounds. I discuss this perspective in a later section since it is primarily used by test-optional proponents. However, advocates for using test scores in admissions argue that while test scores may appear biased in some ways, they are actually *less* biased than other college admissions criteria.

Research provides some evidence for Claim 3. Selective colleges that put greater emphasis on factors considered to be subjective, such as essays, letters of recommendation, interviews, and an applicant’s demonstrated interest, tend to have lower shares of Pell Grant recipients (though this study found greater emphasis on test scores was *also* associated with lower shares of Pell Grant recipients).²⁸ Further, students’ household incomes are more correlated with the content and style of students’ college admissions essays than with students’ SAT scores.²⁹ This does not necessarily mean that low-income students are less likely to gain admission due to their essays—indeed, the authors are not able to report on students’ eventual admission—but the point remains that socioeconomic factors are salient in other components of students’ applications. The salience of an applicant’s socioeconomic status has proven to be a risk factor in other selective contexts, so it is possible SES salience impacts how admissions officers read students’ applications.³⁰

Cheating scandals, such as 2019’s Varsity Blues, have called into question how reliable test scores might be as indicators of student performance.³¹ Still, standardized testing companies go to extensive lengths to ensure the integrity of their exams. There are far fewer measures to ensure authenticity and independent authorship of admissions essays and student resumes. This raises concerns for potential bias in these materials.³² At the extremes, some students have their essays written for them, while other students write their essays entirely on their own. However, there is a broad spectrum of support in between, with some students benefitting from private college counseling, paid editing services, teachers offering feedback, or parents reviewing their work. There is considerably less research on these types of support, though from a resource perspective alone, these supports are more available to students from high-SES backgrounds.

There may also be bias in letters of recommendation written for students. Although there is little research to this point, a few recent studies suggest there are differences in letters written for White applicants and those written for applicants from underrepresented racial/ethnic backgrounds. For example, recommenders more frequently use communal language (such as

²⁸ Rosinger, Ford, & Choi, 2021

²⁹ Alvero et al., 2021

³⁰ Rivera & Tilcsik, 2016

³¹ Kasakove, 2021

³² Laird, 2015

empathy and interpersonal skills) to describe applicants from underrepresented backgrounds.³³ It is unclear whether this impacts college admission, but research suggests it does impact academic hiring.³⁴ Further, recommenders are more likely to use doubt-raising language (e.g., “seems to be” instead of “is”) and weak or premature descriptors (e.g., “worked on” instead of “designed”) in letters for applicants from underrepresented racial/ethnic backgrounds.³⁵

Overall, the evidence for this point is limited. Research has only just begun to explore the bias in other application requirements and how these requirements impact students’ chances of admission. Still, the evidence we have suggests test scores are not the only criteria that may disadvantage low-SES students and students from underrepresented racial/ethnic backgrounds in the admissions process.

Claim 4: Tests allow promising students to show readiness even when they cannot access rigorous coursework.

This claim is based on the idea that tests help identify exceptional students who, without tests, might otherwise be overlooked in college admissions. **There is limited research to support this claim.** Rather, most evidence consists of assertions or anecdotes from admissions offices, with little systematic analysis. Consider, for example, the following excerpt from MIT’s Admissions Blog, in which the Dean of Admissions describes the importance of using tests to identify MIT-ready applicants:³⁶

On MIT’s Decision to Reinstate Standardized Testing Requirements

“At the same time, **standardized tests also help us identify academically prepared, socioeconomically disadvantaged students who could not otherwise demonstrate readiness** because they do not attend schools that offer advanced coursework, cannot afford expensive enrichment opportunities, cannot expect lengthy letters of recommendation from their overburdened teachers, or are otherwise hampered by educational inequalities. By using the tests as a tool in the service of our mission, we have helped improve the diversity of our undergraduate population while student academic outcomes at MIT have gotten better, too; our strategic and purposeful use of testing has been crucial to doing both simultaneously.”

The evidence provided for the assertion above is based on the benefits of universal screening for identifying academically gifted students in k-12 settings. While universal screenings (whether gifted assessments or the SAT) do identify high-scoring students who may not have been considered otherwise, we know almost nothing about how this impacts the student composition at a school as selective as MIT. Further, while the decision to return to testing cites that using tests has “helped improve the diversity of our undergraduate population,” an accompanying note clarifies this: “For our purposes here, by ‘improving diversity,’ we mean we work to improve the

³³ Akos & Kretchmar, 2016; Zhang, Blissett, Anderson, O’Sullivan, & Qasim, 2021

³⁴ Madera, Hebl, & Martin, 2009

³⁵ Zhang et al., 2021

³⁶ Schmill, 2022

recruitment and enrollment of well-matched and academically prepared students from a range of under-represented populations.” This is not so much evidence that requiring tests increases the diversity of incoming classes; rather, it suggests test scores help guide the admissions office in fulfilling its values of pursuing student diversity. Essentially, there is no evidence this strategy provides tangible or statistically observable benefits for students from underrepresented racial/ethnic backgrounds or for low-SES students. MIT is not alone, however. University of California directors of undergraduate admissions were reported as making a similar argument in the Academic Council’s Standardized Testing Task Force final report in 2020.³⁷

Still, the idea of universal screening is an important one, especially as it has become a trend in the last two decades—high schools in some states have begun offering university readiness assessments for free during school hours, with some even adopting these assessments as their graduation exams. While this practice is not a college admissions policy per se, states that adopted universal testing saw about 50% more low-income students earn scores high enough to merit selective college admission.³⁸ These states also saw small increases in four-year college attendance. It is unclear whether this policy resulted in more students attending colleges with selective admissions. However, the findings indicate universal testing *can* identify college-ready low-income students who might have otherwise gone unnoticed.

Takeaways			
<u>Claim 1</u>	<u>Claim 2</u>	<u>Claim 3</u>	<u>Claim 4</u>
Tests predict important outcomes such as college performance and eventual graduation.	Tests differentiate between students attending different high schools and with similarly high GPAs.	Tests are less biased than other criteria on which applicants are evaluated, such as extracurriculars.	Tests allow promising students to show readiness even when they cannot access rigorous coursework.
<u>Conclusion</u>	<u>Conclusion</u>	<u>Conclusion</u>	<u>Conclusion</u>
Yes, tests predict college performance, even after controlling for HS GPA and SES background. Scholars disagree about how useful this additional predictive power is.	Yes, tests are one of the only ways to compare students from widely different contexts on the same scale.	Maybe. There is likely bias in every college application criterion. However, there is less research on bias in other application components.	Maybe. While testing can identify college-ready low-income students who may have otherwise gone overlooked, it is unclear whether these students apply and are admitted to selective colleges.

³⁷ Sánchez & Comeaux, 2020

³⁸ Hyman, 2017

Why Go Test-Optional?

The Origin of Test-Optional

Bowdoin College, a selective liberal arts institution located in Brunswick, Maine, became the first college to transition from test-required to test-optional. The rationale was as follows:³⁹

- The college could commit to a personalized admissions process expected of a liberal arts college
- Test scores were already not that useful in determining admission
- Many people believed tests primarily reflected students' SES backgrounds and thus presented barriers to college entry
- The evidence was not clear that the SAT was useful in predicting academic performance



Figure 6. Cape Elizabeth, ME

Source: Unsplash Free Images

Notes: Cape Elizabeth is about 45 minutes from Bowdoin College

Since Bowdoin went test-optional in 1969, many other selective, private liberal arts colleges followed suit. These types of institutions provide most of the evidence on test-optional policies, including case studies and quasi-experimental analyses. However, test-optional policies have been growing in popularity over time, and most colleges draw on similar reasons as did Bowdoin: Test scores too often simply reflect students' background characteristics, and focusing on other criteria can increase equity in college admissions and diversify incoming cohorts.

On Test-Optional Policies

As a university we recognize that not all students' abilities are reflected by a standardized test score. In offering a no test option we hope to allow qualified academic applicants to highlight their qualifications. **University of Massachusetts – Boston**

[Our] decision to go test-optional through Fall 2025 is to ensure that no student is denied the opportunity to be considered for admission, particularly in light of ongoing challenges with access to SAT and ACT test centers. **University of Pittsburgh**

After enrolling one of the most academically qualified and most diverse first year classes...[we] will continue [our] "test free" admissions policy for the 2023 admissions cycle. **San Diego University**

³⁹ Schaffner, 1985

Before the pandemic, universities adopting test-optional policies often made appeals to equity and diversity. These same appeals are apparent in universities' explanations for keeping test-optional policies even as testing resumes in the wake of the pandemic. The above excerpts from university websites on the continued use of test-optional policies illustrate this.⁴⁰

But do standardized tests represent the threat to equitable admissions that many claim? And to what extent might test-optional admissions increase the racial/ethnic and socioeconomic diversity of incoming cohorts of students? The next section presents the claims and evidence associated with support for test-optional policies.

The Case for Test-Optional

Advocates for test-optional policies often make a few key claims:

<u>Claim 1</u>	<u>Claim 2</u>	<u>Claim 3</u>	<u>Claim 4</u>
Standardized tests are biased against underrepresented minority (URM) and low-SES students.	Students are less intimidated to apply to test-optional colleges.	Students who do not submit scores earn similar GPAs and graduate at similar rates as those who do submit scores.	Going test-optional increases campus racial/ethnic and socioeconomic diversity.

This section describes each claim and presents the associated evidence.

Claim 1: Standardized tests are biased against underrepresented minority (URM) and low-SES students.

There are a few ways to conceptualize bias. The first is about how the test is made: Are tests developed with biased questions (called “items”) and biased methods of question selection? The second is about how the test is used: Are students below a certain score threshold not considered for admission? And if tests are supposed to predict student performance in college, do tests predict performance similarly well for underrepresented minority students and low-SES students as for White students and high-SES students? I discuss each of these to evaluate this claim.

How the test is made. Each SAT and ACT item undergoes rigorous pre-testing. After test developers create an item, they include it on real exams administered to students to understand how the item functions. These items are not scored; instead, they are evaluated to determine

⁴⁰ Retrieved September 2, 2022 from the following websites:
<https://admissions.umb.edu/freshman-students/apply/no-test-option>
<https://admissions.pitt.edu/test-optional/>
https://www.sandiego.edu/news/detail.php?_focus=84666

whether they should be included in, modified for, or excluded from future exams. One way this occurs is through examining whether the item shows DIF, or differential item functioning.⁴¹

Consider pre-testing a complex math question. In DIF analyses, researchers compare how two students from different subgroups, who earn the same overall math score, perform on this question. If this question systematically advantages one group over another—say, if White students consistently answer this question correctly more often than Black students of the same ability level—then this question is not included on the test.⁴²

At the same time, student performance distributions vary by subgroup. On the SAT math section, boys score higher than girls, and White students score higher than Black, Hispanic, Native American, and Native Hawaiian students (and lower than Asian students).⁴³

This means that for any given question, boys and White students are expected to perform better than girls and most students of color, respectively. This is not because the item assesses students of the same ability level differently, but because, based on performance on the rest of the test, these students are determined to have higher latent ability. Let us suppose there are four students who answer a series of experimental questions:

Student A Race: Black SAT Score: 1400	Student B Race: White SAT Score: 1400
Student C Race: Black SAT Score: 800	Student D Race: White SAT Score: 800

Question 1 is a question that students C and D (with lower scores) answer correctly but students A and B (with higher scores) answer incorrectly. This question will be excluded from future tests because such questions do not discriminate between high and low ability students in the expected direction.

Test Question Considerations

When developing items, test-makers are often concerned with the following:

- a) How difficult is this question?
- b) How well does this question discriminate between students with high and low ability?
- c) To what extent does this question discriminate between students with *similar* ability but from different subgroups? That is, how much DIF does a question have?

In general, test-makers want questions of varying difficulty levels; questions that do a good job of discriminating by ability; and questions that do not discriminate by subgroup, controlling for ability.

⁴¹ Clauser & Mazor, 2005

⁴² Note that when I (and most contemporary test-makers) use the terms “ability level” or “latent ability,” this refers to a student’s “true” level of performance at the time of taking the test. For example, on average, low-SES students have lower latent ability levels than high-SES students. This is not because there are differences in latent ability when students are born, but rather, that there are differences in latent ability due to differences in the cumulative sets of opportunities available to students up to the point of taking the test.

⁴³ The College Board, 2020

Question 2 is a question that students B and D (White students) answer correctly and students A and C (Black students) answer incorrectly. This question will also be excluded from future tests, as such questions have differential item functioning. This means students at the same measured ability level but in two different subgroups tend to answer the question differently.

Question 3 is a question that students A and B (with higher scores) answer correctly but students C and D (with lower scores) answer incorrectly. This question will be included on future tests. This is because it differentiates between high and low ability students, and it does not differentiate by student subgroups (controlling for ability).

It is important to make two notes: (1) latent ability is determined by the scored questions on the test, which have gone through a similar evaluation process, and (2) score distributions differ by student subgroup (see Figure 7). Therefore, if a test consists entirely of questions like Question 3, each question will be answered correctly by more White students than Black students.

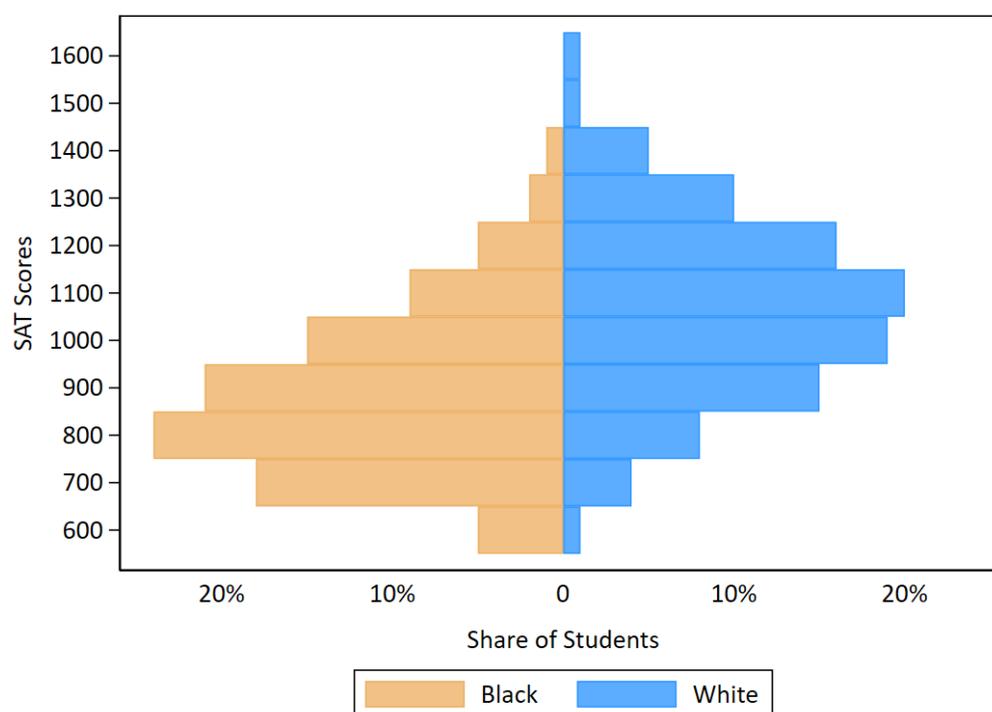


Figure 7. SAT Score Distributions for Black and White Students
Source: The College Board, 2020

This is what some studies have found. For example, one study using items from the October 1998 and 2000 iterations of the SAT found that 99% of items were more often answered correctly by White students than Mexican American students, and by male students than female students. All 100% of items were more often answered correctly by White students than Black students.⁴⁴ This does not control for latent ability—the construct the test is created to measure—but latent ability is itself estimated based on scored items that have gone through a similar evaluation process. In this way, some people consider item selection to be biased, since selected items must align with expected parameters—which are based on score distributions that favor advantaged students.

⁴⁴ Rosner, 2012

In addition, you can imagine multiple possible reasons student A (the high-scoring Black student) earns the same score as student B (the high-scoring White student). The test-makers would argue this is because student A and student B have the same latent ability in mathematics and critical reading. This may indeed be the case. One way to think about this is to consider the following:

For Student A: *Score of 1400 = Latent Ability*

For Student B: *Score of 1400 = Latent Ability*

In this first case, the equations are identical. However, some scholars might argue student B's latent ability is *overestimated* because student B earned the same score as student A, but student B gained a boost from being familiar with dominant cultural norms reflected in test items in a way student A is not. If this is the case, then student A's score is simply a function of latent ability, and student B's score is a function of latent ability *and* familiarity with dominant cultural norms—to achieve the same score. The following equations show how this difference might manifest:

For Student A: $1400 = \text{Latent Ability}$

For Student B: $1400 = \text{Latent Ability} + \text{Familiarity with Dominant Cultural Norms}$

Because student B's score is not *just* a function of latent ability but also a function of familiarity with dominant cultural norms, the 1400 score the student earned is an overestimate of their latent ability.

In a separate scenario, if student A and student B happen to be from high-poverty backgrounds, then it is possible student A's latent ability is *underestimated* compared to student B's: Research suggests coming from a low-SES background is more detrimental to Black students' test performance than White students' test performance.⁴⁵ One way to think about this is to recognize that low-SES students generally suffer a test score penalty—in part because of cumulative differences in educational opportunities, such as time spent reading independently, and in part due to more immediate circumstances, such as not sleeping well the night before, not eating a nutritious breakfast, not feeling prepared for the test, or other events that might occur on the test day itself. If student A and student B both have these experiences, they have a greater negative impact on student A (via the multiplier x in the equation below)—which contributes to a more dramatic under-estimation of student A's latent ability than student B's (as estimated through standardized test scores).

For Student A: $1400 = \text{Latent Ability} - (\text{HighPoverty} * x)$

For Student B: $1400 = \text{Latent Ability} - \text{HighPoverty}$

There are other factors, as well, that impact students' scores, including stereotype threat.⁴⁶ It is outside the scope of this report to argue for the “correct” equation accounting for students' scores. However, it is worth noting that despite rigorous item evaluation, tests remain imperfect indicators of students' scholastic aptitude.

⁴⁵ Dixon-Román, Everson, & Mcardle, 2013

⁴⁶ Walton & Spencer, 2009

Still, test score disparities on university admissions exams are not unique to those exams: They are similar to disparities on other large-scale standardized tests, in high school performance, and in high school graduation.⁴⁷ In this way, racial and socioeconomic biases in the SAT reflect many of the same biases evident in other educational contexts.

How the test is used. Tests are one of many application components admissions officers consider in their evaluation processes. In some cases, evaluation is based on a threshold score, and students who score below this value are not considered for admission. One study found that among 250 colleges, about 20% of those accepting the SAT used scores as thresholds “at least in some cases”; this share was 25% for colleges accepting the ACT.⁴⁸ These practices appear to be falling out of favor as testing requirements decline and universities commit to holistic application evaluations. In fact, a recent study found that 95% of admissions officers reported using holistic admissions.⁴⁹ Definitions of “holistic,” however, varied: In most cases, admissions officers described this as reading and considering all parts of a student’s file. However, some went further, describing getting to know “the whole person” and considering not just an applicant’s materials but also what those materials suggest about the kind of impact that applicant will have on campus. Others went further still, describing how it was not enough to know the student; it was also important to understand a student in their context, including the opportunities they had available to them in their families and communities.

Using test scores as thresholds for admission is harmful to equity because underrepresented minority students and low-income students tend to earn lower scores than their White and higher-income peers. In fact, if college admission were determined entirely by test scores, the share of White and wealthy students at the most selective institutions would increase dramatically.⁵⁰ This is evident from Figure 8 (below): Excluding students below any score threshold means disproportionately excluding Black and Hispanic students from admissions consideration.

This type of threshold scoring is not used often. In part, this is because many consider it incompatible with the idea of holistic admissions. For example, consider the following excerpt from the University of Chicago’s undergraduate admissions Frequently Asked Questions:⁵¹

Holistic Review and Test Score Thresholds

Is there a score cut off at which I should opt out of submitting my ACT or SAT?

We review applications holistically, which means there is never a score “cutoff” that would determine the fate of a student’s application. *University of Chicago*

⁴⁷ Aud et al., 2013; Kobrin, Sathy, & Shaw, 2007

⁴⁸ Steinberg, 2009

⁴⁹ Bastedo et al., 2018

⁵⁰ Baker & Bastedo, 2022

⁵¹ Retrieved September 4, 2022 from the following website:

<https://collegeadmissions.uchicago.edu/contact/frequently-asked-questions>

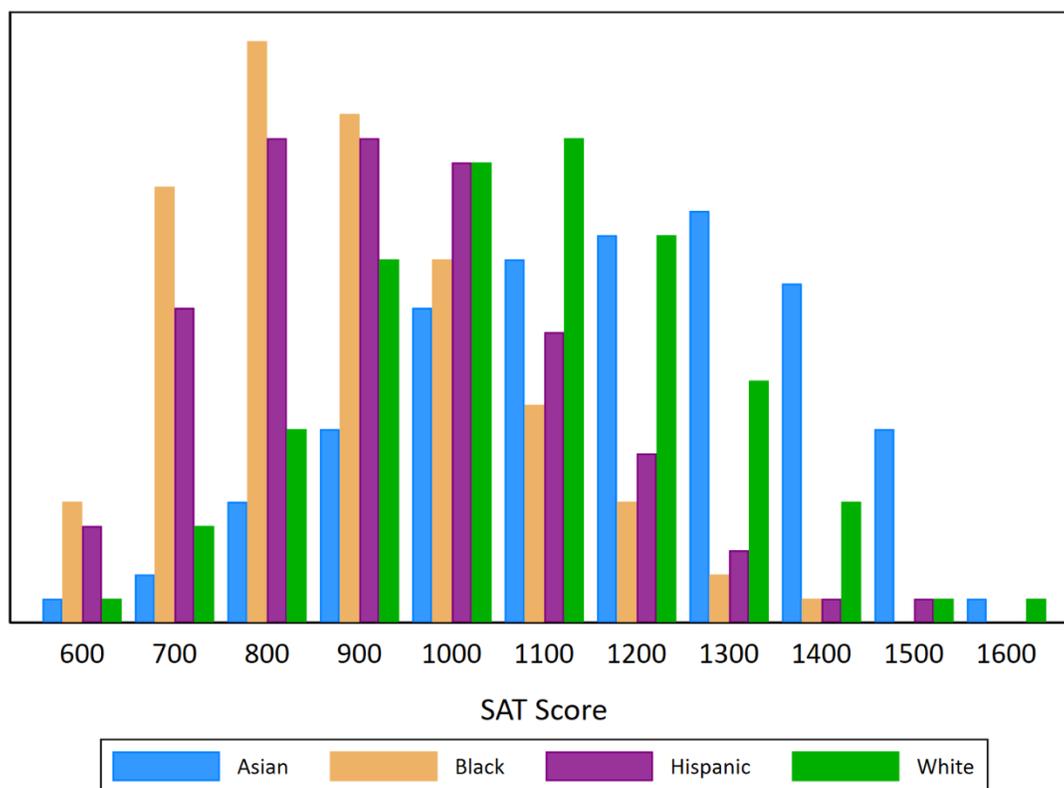


Figure 8. SAT Score Distributions by Race/Ethnicity

Source: The College Board, 2020

Notes: This chart depicts the SAT score distributions for each of the four largest racial/ethnic subgroups of student test-takers

The most prevalent rationale for using standardized tests in admissions is that tests predict later college outcomes, meaning tests help admissions offices determine whether a student will succeed on their campus. Another way of conceptualizing bias, then, is whether tests do similarly well in predicting college outcomes for historically disadvantaged students as for historically advantaged students. On this measure, the SAT is not biased against underrepresented minority students. In fact, the SAT overestimates the GPAs these students eventually earn in college.⁵²

Regarding SES, many test-optional advocates argue the SAT is simply a reflection of the educational resources to which a student has had access rather than a reflection of student ability. This is another area where scholars disagree about the statistical and substantive relationships between test scores and student backgrounds. On the one hand, SAT scores are moderately correlated with SES.⁵³ On the other hand, even after accounting for SES, the SAT maintains most of its predictive value when estimating students' college outcomes, such as college GPA.⁵⁴ This is because most of the shared variance between SES and SAT scores is *also* related to students' college outcomes. Thus, the argument goes, it is not that the SAT is especially biased toward high-SES students; rather, the resources that come with a high-SES background yield real learning advantages, which are then reflected in both the SAT and later college outcomes. Further, scores vary substantially even at the same level of household income.

⁵² Mattern & Patterson, 2013; Young, 2001

⁵³ Sackett et al., 2009

⁵⁴ Sackett & Kuncel, 2018

Both parties are correct. Figure 9 illustrates the narrative often put forth by test-optional advocates: Household income is associated with SAT scores. Specifically, family income of an additional \$10,000 is associated with a 15-point increase in composite SAT score.

Figure 10 illustrates the argument often put forth by test advocates, which is that while the SAT is correlated with household income, there is substantial variation within each income band. Here, the box plots show the 25th percentile, median, and 75th percentile of SAT scores at each additional \$10,000 of family income. A similar pattern is evident from the median in Figure 10 as for the mean in Figure 9: Household income predicts SAT scores. However, Figure 10 shows the substantial variation in scores within each income band, which advances the argument that household income is not the sole determinant of students' scores.

Still, the predictive power of the SAT *does* decline by about 10% after controlling for family income, which test-optional advocates say further affirms there is SES bias in test scores.⁵⁵

In addition, high school GPAs are more predictive of college outcomes than are standardized test scores, and GPAs are less correlated with social background characteristics.⁵⁶ While test scores and GPAs are themselves highly correlated, the students most likely to have high or moderate high school GPAs and low ACT composite scores are underrepresented minority students, low-income students, and women students.⁵⁷ In terms of evaluating students according to either GPA or test scores, then, evaluations of test scores will favor White, higher-income, and men students.

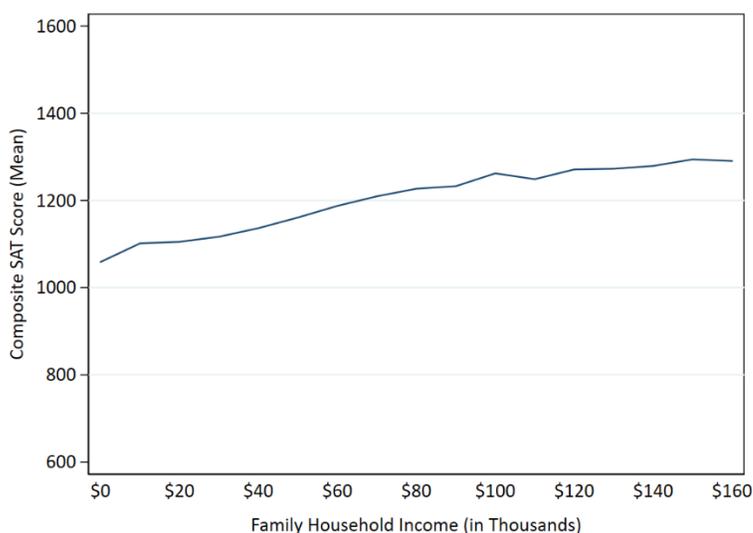


Figure 9. Average SAT Composite Scores by Household Income
Source: Alvero et al., 2022

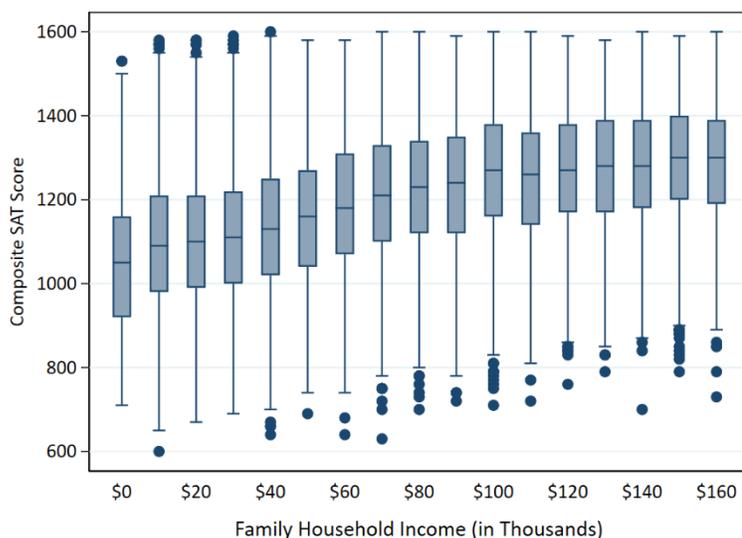


Figure 10. SAT Score Distributions by Household Income
Source: Alvero et al., 2022

⁵⁵ Rothstein, 2004

⁵⁶ Geiser & Santelices, 2007

⁵⁷ Sanchez & Mattern, 2018

There is limited support for Claim 1, though the answer depends somewhat on how bias is defined. Tests do not, for example, underestimate underrepresented minority students' eventual college GPAs. As a tool for predicting outcomes, then, tests are not biased. However, White and wealthier students tend to earn higher test scores. This means that as a tool for limiting admission eligibility based on to a stringent score cut-off, tests are indeed biased—or, rather, tests reflect prior institutional and individual biases in who has access to educational opportunities. In this case, tests themselves are no more biased than other measures of academic proficiency. The unequal score distributions by student demographics are symptomatic of broader inequalities in educational provision.

Claim 2: Students are less intimidated to apply to test-optional colleges.

A second claim is that by requiring tests, colleges are excluding droves of qualified applicants who either do not have admissions tests available to them, are not able to adequately prepare for admissions tests, or do not feel a test score is the best indication of their academic potential. Going test-optional, then, makes it possible for these students to apply.

The evidence supports Claim 2: Across most case studies, test-optional policies mean larger applicant pools.⁵⁸ This is also the case among more rigorous, multi-site studies, though these typically find smaller and marginally significant impacts on application rates.⁵⁹ In addition, recent trends align with this claim. For example, in fall 2020, the first admissions cycle after the onset of the COVID-19 pandemic, CommonApp applications had declined by about 8%; in Florida, the only statewide university system that still required test scores for admission, applications to public universities were down by 50%.⁶⁰

Test-optional policies seem to impact how applicants narrow their college choices. In a 2022 survey of first-time freshmen, 15% of all students surveyed reported applying to a college because it was test-optional.⁶¹ These shares were even greater for underrepresented minority students, with 24% of Black students and 21% of Hispanic students reporting the same.

Indeed, many case studies—including of Bates College,⁶² Mount Holyoke,⁶³ Wake Forest,⁶⁴ and Ithaca College⁶⁵—find that adopting a test-optional policy increases the number of applications a college receives, especially from underrepresented minority students. From an equity perspective, this is the intended outcome: to lower barriers that prevent underrepresented minority students and low-income students from applying to colleges.

⁵⁸ Syverson, 2007

⁵⁹ Belasco, Rosinger, & Hearn, 2015; Bennett, 2022; Saboe & Terrizzi, 2019

⁶⁰ Florida Board of Governors, 2020; Jaschik, 2020

⁶¹ EAB, 2022

⁶² Hiss & Neupane, 2004

⁶³ Robinson & Monks, 2005

⁶⁴ Allman, 2012

⁶⁵ Maguire, 2018

At the same time, colleges must manage the increased volume of applications that come with going test-optional. This was the case for Bowdoin College, where the dramatic increase in applications after going test-optional meant greater burden on admissions officers. This prompted the college to make a small change to the language through which it communicated its policy: Rather than telling students that test scores were *optional*, the college transitioned to telling students that test scores were *recommended*. In the admissions office, practices did not change; however, this did somewhat reduce the number of applications submitted, making the policy manageable for the admissions office.⁶⁶ This suggests that how the policy is communicated impacts students' application behaviors.

Claim 3: Students who do not submit scores earn similar GPAs and graduate at similar rates as those who do submit scores.

One concern is that after eliminating the SAT, colleges lose an important signal for how students will perform in college. This means potentially admitting students who may not be academically prepared for college coursework, which is a disservice to both the students and the college.

This is not what studies find. Rather, **research generally supports Claim 3**, with most case studies finding similar college GPAs and graduation rates for submitters and non-submitters.⁶⁷ This does not mean there are no differences: Cases studies of Bowdoin College,⁶⁸ Mount Holyoke,⁶⁹ and Lafayette⁷⁰ all found that students who submitted their SAT scores earned slightly higher college GPAs than students who did not submit their scores. These differences, however, were not very substantive. At Bates, 20 years of test-optional policies yielded differences so small that the dean of admissions referred to them in this way: "In a college generally regarded as a highly demanding academic environment, non-submitters earn exactly the same grades, and graduate at exactly the same rates, as do submitters."⁷¹ Although there may be small differences in these outcomes for submitters and non-submitters, test-optional policies do not result in admitting students who are substantially less prepared, as some have feared.

Claim 4: Going test-optional increases campus racial/ethnic and socioeconomic diversity.

Finally, the thrust of the argument: Adopting a test-optional admissions policy increases campus diversity. Research on this subject is mixed. Case studies offer some support,⁷² but more rigorous,

⁶⁶ Schaffner, 1985

⁶⁷ Allman 2012; Hiss & Neupane, 2004; Hiss & Franks, 2014; Syverson, 2007

⁶⁸ Schaffner, 1985

⁶⁹ Robinson & Monks, 2005

⁷⁰ McCarty, 2001

⁷¹ Hiss & Neupane, 2004

⁷² Allman 2012; Hiss & Neupane, 2004; Schultz & Backstrom, 2021; Syverson, 2007

multi-site studies suggest small or no impacts.⁷³ This is somewhat surprising considering diversity is a primary reason colleges cite for transitioning to test-optional. In this section, I describe how applications may be evaluated under a test-optional admissions policy, provide important context for admissions decision-making, and offer possible explanations for the general lackluster findings for student diversity.

File Evaluation. Without testing, college admissions officers are still responsible for admitting students who will earn strong GPAs, engage in intellectual enrichment, and graduate on time. Even when test scores are required, admissions officers consider other metrics of prior academic performance, such as high school GPA and course rigor; going test-optional may translate to greater emphasis on these factors.⁷⁴

Considering course rigor in admissions is strongly associated with enrolling higher shares of Pell recipients and students from underrepresented racial/ethnic backgrounds.⁷⁵ In addition, holistic admissions practices that include considerations of students' backgrounds, including their family, high school, and community contexts, improve chances of admission for low-SES students and students from underrepresented racial/ethnic backgrounds.⁷⁶ This is a key mechanism through which test-optional admissions may result in a more diverse admitted class.

Still, without test scores, high school GPA likely receives greater emphasis. Despite GPA being less related than test scores to students' social background characteristics, GPA and test scores are still highly correlated.⁷⁷ From this perspective, excluding one's test scores may not impact admissions officers' perceptions of a student's academic performance. There is some evidence for this, with at least one study illustrating that admissions officers can reasonably infer non-submitting students' SAT scores.⁷⁸

Decisions. Under test-optional policies, students typically either submit or withhold test scores. If adopting test-optional admissions means that historically marginalized students are more likely to apply, then these students are likely overrepresented among non-submitters

If test-optional policies mean historically marginalized students are more likely to apply, then theoretically, historically marginalized students should be more represented among non-submitters than among submitters. Studies suggest this is the case: Non-submitters, relative to submitters, include larger proportions of first-generation students, Pell Grant recipients, and students from underrepresented racial/ethnic backgrounds.⁷⁹ These students, then, are taking advantage of the policy.

⁷³ Belasco, Rosinger, & Hearn, 2015; Bennett, 2022; Rubin & González Canché, 2019; Saboe & Terrizzi, 2019; Sweitzer, Blalock, & Sharma, 2018

⁷⁴ Hossler et al., 2019

⁷⁵ Rosinger, Ford, & Choi, 2021

⁷⁶ Bastedo et al., 2021; Bastedo & Bowman, 2017; Gaertner & Hart, 2013

⁷⁷ Mattern & Patterson, 2014

⁷⁸ Conlin & Dickert-Conlin, 2017

⁷⁹ Hiss & Neupane, 2004; Maguire, 2018; Syverson, Franks, & Hiss, 2018

At the same time, students who opt to submit test scores tend to have higher high school GPAs and have taken more rigorous coursework than students who do not submit scores. This results in higher admission rates for students who submit test scores. Further, because submitters are more academically competitive, they are also probably admitted to more colleges. There is suggestive evidence for this, as submitters tend to enroll in test-optional colleges at lower rates than non-submitters.⁸⁰

Enrollment. Some colleges offer compelling narratives of how enrolled classes became more diverse after adopting test-optional admissions. Bates College, for example, more than doubled the share of its enrolled students who were from underrepresented racial/ethnic backgrounds.⁸¹ Wake Forest went from a first-year cohort with 18% of students from underrepresented racial/ethnic backgrounds to a cohort with 23%.⁸² Although these changes are substantial, they leave much to be desired if the goal is for student demographics at selective institutions to mirror those of high school graduates.⁸³

And yet, Bates and Wake Forest represent best-case scenarios. Many multi-institution studies find no discernible changes in the shares of historically marginalized students.⁸⁴ Others find small changes.⁸⁵ Consider Figure 11, which summarizes findings from the most recent rigorous study evaluating test-optional policies:

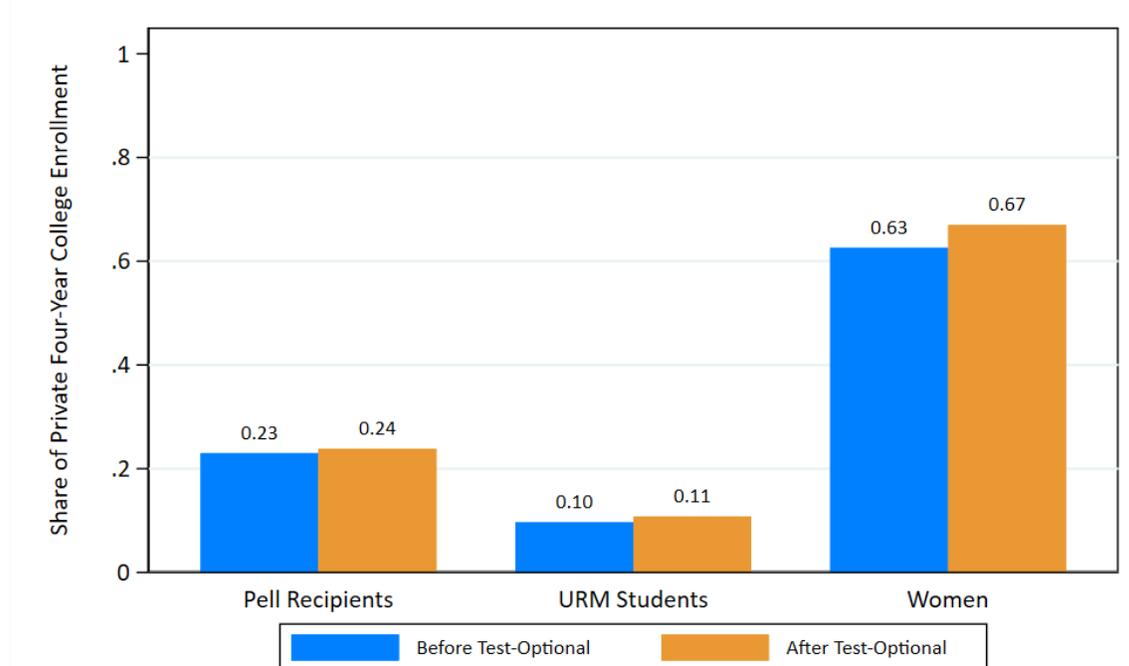


Figure 11. Effects of Test-Optional Policies on Enrolled Student Demographics

Source: Adapted from Bennett, 2022 (with pre-adoption values from p. 198 in blue; estimated post-adoption results in orange)

Note: "URM" refers to underrepresented minoritized students—Black, Hispanic, and Native American students

⁸⁰ Schaffner, 1985; Syverson, Franks, & Hiss, 2018

⁸¹ Hiss & Neupane, 2004

⁸² Allman, 2012

⁸³ U.S. Department of Education, 2016

⁸⁴ Belasco, Rosinger, & Hearn, 2015; Ruben & Gonzalez Canche; Saboe & Terrizzi, 2019; Sweitzer, Blalock, & Sharma, 2018

⁸⁵ Bennett, 2021; Syverson, Franks, & Hiss, 2018

This study analyzed the effects of adopting test-optional policies for all private institutions through the 2015-16 school year. These policies increased the share of enrolled Pell Grant recipients by 3-4%, enrolled students from underrepresented racial/ethnic backgrounds by 10-12%, and enrolled women by 6-8%. Importantly, these are *percent* changes—so, for example, a 10-12% increase in enrollment among students from underrepresented racial/ethnic backgrounds means that, in practice, the share of these students on campus increased by 1 percentage point, from about 10% of enrolled students to 11%.⁸⁶

Research offers some evidence for Claim 4, but it is important to put this evidence in context. Average effects are small: Going test-optional is not a panacea for dramatic inequalities in SAT scores, as many of these inequalities are still reflected in other educational opportunities on which admissions decisions are made. Consider, for example, Figures 12 and 13, which illustrate similar patterns in racial/ethnic inequalities in academic performance. However, test-optional policies can be a step toward equity—it is just that the path is much longer than a single step.

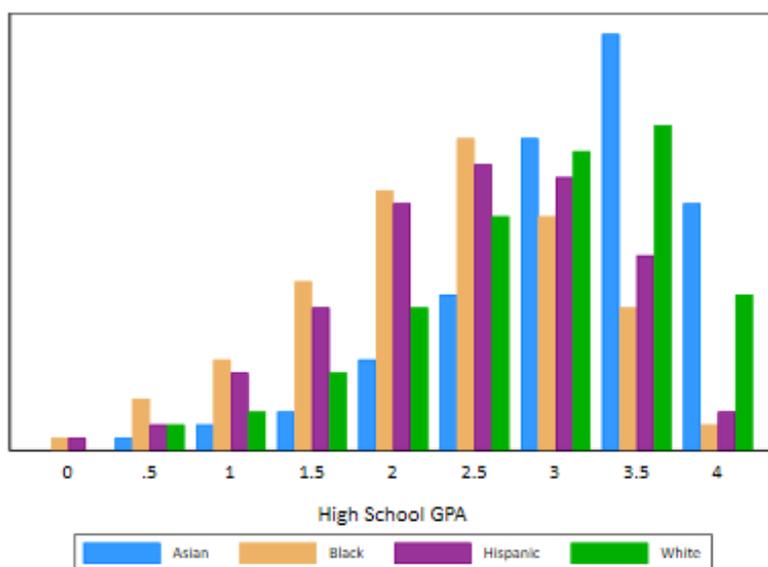


Figure 12. Distribution of High School GPAs by Race/Ethnicity

Source: High School Longitudinal Study, 2014
Notes: Excludes students with missing GPAs (about 7% of respondents)

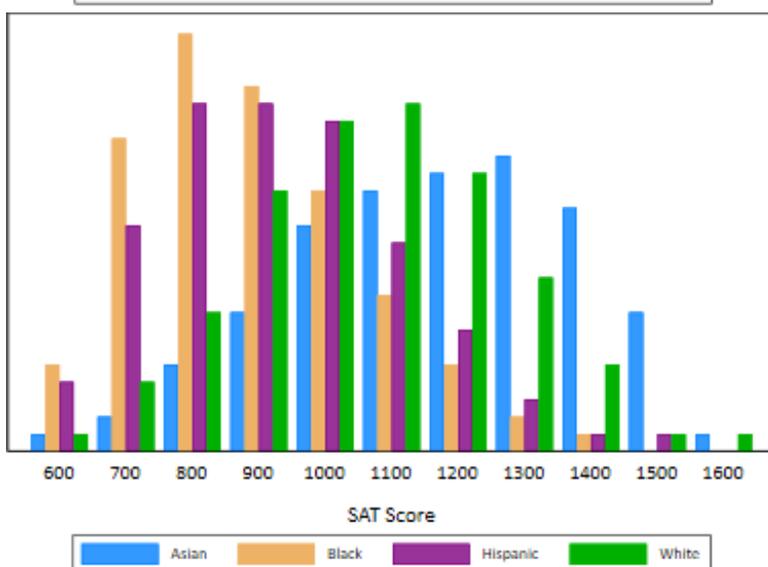


Figure 13. Distribution of SAT Scores by Race/Ethnicity

Source: The College Board, 2020
Notes: This chart depicts the SAT score distributions for each of the four largest racial/ethnic subgroups of student test-takers

⁸⁶ Bennett, 2022

Test Optional in Practice

Student Profiles

Students who do not submit test scores differ in several ways from those who do. Specifically, score submission is related to financial need and intended major, both of which could impact admission. These are important considerations as colleges consider adopting or modifying test-optional policies.

Financial Aid. Students who do not submit their test scores require more financial support. At Bates College, non-submitters applied for financial aid at higher rates and qualified for larger awards.⁸⁷ At Franklin & Marshall, students who did not submit test scores were much more likely to qualify for Pell Grants.⁸⁸ While many selective colleges are “need blind,” meaning admissions decisions are made without regard to a student’s financial need, admissions offices still have budgets to balance.⁸⁹ This means colleges may not be able to offer students the financial aid they need in order to enroll. For example, Franklin & Marshall originally went test-optional in the early 1990s, but the shares of Pell-eligible students in enrolled classes only increased after the financial aid budget increased and the college began allocating dollars from merit to need-based aid.⁹⁰ For test-optional policies to be effective, then, it may be prudent for colleges to consider not only how they might admit a more diverse cohort, but also how they plan to support those students in arriving on campus.

Intended Major. There is limited research on how major selection differs by score submission status. However, a case study of Bates College found that non-submitting students were more likely to pursue an education major, and submitting students were more likely to pursue computing majors and scientific research.⁹¹ There is some evidence that major impacts probability of admission, though this evidence is also limited.⁹² If this is the case, submitters’ preferences for majors in science, technology, engineering, and math may offer an advantage in the admissions process.⁹³ This is another important consideration as colleges use test-optional admissions as a way to craft a more diverse cohort of incoming students.

Implementation

Conceptually, the idea of being “test-optional” is simple: Students can choose either to submit test scores or not to submit test scores. However, the ways students make this choice and how

⁸⁷ Hiss & Neupane, 2004

⁸⁸ Maguire, 2018

⁸⁹ Stevens, 2009

⁹⁰ Maguire, 2018

⁹¹ Hiss & Neupane, 2004

⁹² Bruggink & Gambhir, 1996

⁹³ Rask, 2010

admissions offices account for this choice vary dramatically across places. Sometimes test scores may be recommended, and sometimes they may not matter much at all. In addition, test-optional policies are sometimes implemented as a one-off policy with little guidance, and at other times, they are part of a broader, philosophical commitment or a series of changes aimed at greater equity in admissions. These factors impact the nature of test-optional policies, which in turn likely impact how well these policies accomplish their intended aims.

Types of “Optional.” In some cases, test-optional colleges do not require students to submit test scores to be considered for admission, but test scores are still recommended. This may be because admissions officers can make decisions more efficiently when test scores are available, test scores are useful indicators for if a student will be successful in their intended major, or test scores add important context that the college values.

Most colleges using test-optional admissions instead follow a “considered but not required” model, where test scores are considered if students submit them but do not penalize students if they are excluded from an application. In these cases, admissions officers make decisions based on the rest of a student’s academic profile. This is the “test-optional” line in Figure 14, which indicates that test scores are not necessarily recommended but that, if students submit them, they are considered in admissions decisions.

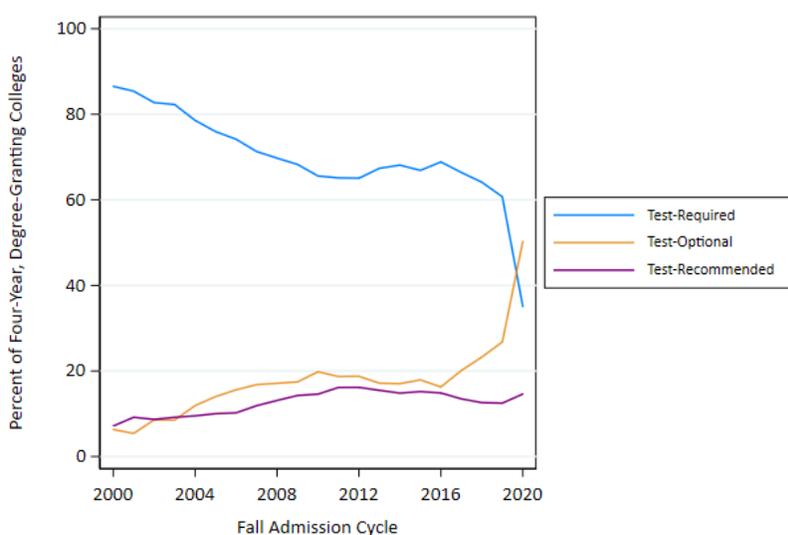


Figure 14. Types of Test Score Policies in College Admissions

Source: U.S. Department of Education, 2022

Notes: Excludes institutions with open admissions and those that do not admit first-time undergraduates. Pools responses “Neither recommended nor required” and “Considered but not required” into a single “Test-Optional” variable.

In rare cases, colleges adopt policies referred to as “test-blind,” meaning they do not consider test scores in admissions. Only a handful of postsecondary institutions have taken up this policy.⁹⁴

⁹⁴ Importantly, in the Integrated Postsecondary Data System (IPEDS), there is currently (as of fall 2022) no way to discern whether a college is “test-blind,” meaning it no longer considers standardized tests in admissions. The category “Neither required nor recommended” includes both test-blind and test-optional colleges. Consider Hampshire College, Baylor University, and Scripps College. In practice, Hampshire College has been “test-blind” since 2014; Baylor University and Scripps College are both test-optional. However, in IPEDS 2020-21, Hampshire College and Baylor University both report standardized test scores are “Neither required nor recommended,” and Scripps College reports standardized test scores as “Considered but not required.”

Retrieved October 10, 2022 from the following websites:

Baylor: <https://admissions.web.baylor.edu/admission/incoming-freshman/test-optional-process>

Hampshire: <https://www.hampshire.edu/no-sats/acts-not-even-optional>

Scripps: <https://www.scrippscollege.edu/admission/apply/first-year-applicants>

As Bowdoin’s first few years of test-optional admissions illustrate, policy impact is not just a function of the policy itself, but also of the language used to describe a policy and how that policy is communicated to prospective applicants. Consider the following excerpt:

“Major changes occurred in 1975. A sharp decrease in overall applications was entirely due to a 51 percent drop in [non-submitters]... Minutes from the faculty admissions committee in spring 1974 show concern that increasing numbers of withholding applicants threatened to overwhelm the committee's ability to review folders adequately and to provide the personalized attention promised in college publicity...**A slight policy shift was adopted, changing the wording in application materials to recommend that SAT scores be submitted.** Apparently this one change had an immediate, substantial, and lasting effect.” (Schaffner, 1985, pp. 59–60)

There are different types of test-optional policies, and the language around these policies matters. In addition, even the same policy may be enacted differently depending on the institution.⁹⁵ For example, to take advantage of the policy, some colleges require students to indicate on their application whether their test scores should be considered for admission. Other colleges simply conduct admissions based on whether they receive students’ scores or not. In rare cases, students must contact a college via phone call, letter, or email to request their scores not be considered. Some colleges allow students to apply test-optional as long as they exceed a GPA threshold or are willing to not be considered for merit scholarships, Honors programs, or certain majors.⁹⁶ These options present different barriers for students and likely impact the efficacy of test-optional policies.

In some cases, students do not know their SAT or ACT scores before they send their score reports to colleges. It is cheaper to send score reports this way.⁹⁷ However, this means colleges may receive a student’s scores, but that student may later decide they would prefer their scores not be considered. Colleges differ in how they manage this. In some cases, colleges will destroy students’ test score information such that it is inaccessible when reviewing a student’s application. In other cases, scores may still be included in an application, but admissions officers are instructed to ignore them.⁹⁸ These practices may be conducted with different levels of fidelity, which likely impact students’ chances of admission.

Test Score Submission

When a student registers for either the SAT or the ACT, they can select up to four colleges to receive their test scores at no additional cost to the student. In this case, the student will not see their scores before submission. If a student waits to send their scores until after their scores have been released, they may do so for a fee.

Because students may be unsure of how they will do on the test, they may elect to send scores to colleges at registration and later decide they would prefer their scores not be considered.

Note that students who qualify for fee waivers (including students eligible for free-or-reduced-price lunch, students in foster care, and students living in federally subsidized housing) have unlimited free score reports, even after they have received their scores.

⁹⁵ Syverson, 2007

⁹⁶ Arnold & Turner, 2020

⁹⁷ Retrieved October 15, 2022 from the following websites:

<https://www.act.org/content/act/en/products-and-services/the-act/scores/sending-your-scores.html>

<https://satsuite.collegeboard.org/sat/scores/send-scores-to-colleges/sending-scores>

⁹⁸ Syverson, 2007

Motivations. One important factor shaping how effective a test-optional policy might be at increasing diversity in incoming cohorts is a college's motivation for going test-optional in the first place. Because SAT scores often reflect inequalities in other educational opportunities, supplanting the emphasis on test scores with greater emphasis on other measures of academic performance may not yield the results colleges initially imagine. Test scores are more correlated with student background characteristics than are students' high school GPAs; however, high school GPAs are still correlated with students' social backgrounds.⁹⁹ This even more so the case within high schools, which is often the level at which students' course rigor is evaluated.¹⁰⁰

Access to rigorous coursework is also stratified. Advanced Placement (AP), International Baccalaureate (IB), and honors classes are more available to greater shares of White and high-SES students, both within and between schools.¹⁰¹ This is also the case for extracurricular activities, another metric considered in admission.¹⁰²

This is not to suggest colleges should exclude academic considerations in admission. Rather, it is to argue that test-optional, by itself, is not a commitment to diversity. In case studies of test-optional policies with subsequent increases in student diversity, colleges took other strides to fulfill their philosophical commitment to broadening access. For example, the University of Chicago, Franklin & Marshall, Wake Forest, and Ithaca College expanded access to financial aid.¹⁰³ Ithaca College and Wake Forest even evaluated their recruitment strategies and adopted Early Action policies.¹⁰⁴ Test-optional admissions alone are not enough. They may open the door a bit wider for students, but more is required to spur dramatic improvements in postsecondary access.

Institution Type. Institution type may matter for how effective test-optional policies are. One study found few differences by overall selectivity, which suggests the policy may be just as effective for highly selective institutions as for moderately selective institutions.¹⁰⁵ Other studies have found that test-optional policies were associated with greater increases in the share of underrepresented minoritized, first-generation, and Pell-receiving students at private colleges, with small or no changes for public colleges.¹⁰⁶ Institutional characteristics may serve as important explanatory mechanisms for future analyses.

Margins of Possibility. Overall, test-optional policies are associated with small or no impacts on student diversity. Although historically underrepresented students are more likely to take advantage of test-optional submission policies, students who take advantage of these policies are less likely to be admitted.¹⁰⁷ Non-submitters also tend to have lower academic performance on other metrics, not just SAT scores. Admissions officers are reasonably able to infer a student's SAT score even without including it in a student's application.¹⁰⁸ The marginal benefit a student

⁹⁹ Geiser & Santelices, 2007

¹⁰⁰ Zwick & Green, 2007

¹⁰¹ Espenshade & Radford, 2009; Iatarola, Conger, & Long, 2011; Klugman, 2013; Tyson, 2011

¹⁰² Stearns & Glennie, 2010

¹⁰³ Allman, 2012; Einhorn, 2022; Maguire, 2018

¹⁰⁴ Allman, 2012; Maguire, 2018

¹⁰⁵ Bennett, 2022

¹⁰⁶ Espenshade & Chung, 2012; Hiss & Franks, 2014

¹⁰⁷ Syverson, Franks, & Hiss, 2018

¹⁰⁸ Conlin & Dickert-Conlin, 2017

receives from excluding their SAT score from consideration may be overshadowed by the greater number of applicants against which they are competing for a small number of admission spots.

There are a few other details with important implications for diversity, as well. Students from underrepresented racial/ethnic backgrounds are more prevalent among non-submitters than among submitters. However, racial/ethnic differences in the applicant pools are not as different as one might expect: One study of 20 private, test-optional colleges between the years of 2003 and 2010 found that among students submitting scores, 72% were White; among those who did not submit their scores, 63% were White.¹⁰⁹ This study also examined patterns for six private universities, in which White students constituted 79% of non-submitters. The former dean of admissions at Bates College described the take-up of test-option in the following way:

“Optional testing is often assumed to be a device for an affirmative action policy, to open the admissions process from a narrow statistical review to a more complex and subtle reading. And it does that. But white students using the policy outnumber the students of color by about five to one. We have found that the policy appeals to *all* the subgroups of students which folk wisdom would tell you are the students not being much helped by standardized testing in admissions: women, rural and blue collar students, immigrants, learning disabled students, students with spike talents in something (arts, chemistry, athletics, debate, theatre, dance, political or campus leadership), and students who speak a second language, no matter what their ethnicity or citizenship. We found heavy percentages of non-submitters from Maine, because so many are rural or low-income, and have neither the money nor even the physical access to be coached for tests. But we also found an intriguing pattern of high percentages of non-submitters across the top of Maine, New Hampshire and Vermont: they turned out largely to be young people of French-Canadian heritage. They may have been US Citizens for several generations, but still speak French at home, and are carrying two grammars, vocabularies and syntaxes in their heads.” (Hiss & Neupane, 2004, Slide 6)

This excerpt suggests test-optional policies appeal to students along a variety of characteristics—and to the extent White students are overrepresented in these demographics, White students may also find test-optional policies to be a fairer representation of their own potential in higher education. This means that the potential for test-optional policies alone to yield greater racial/ethnic diversity may be smaller than many realize.

This excerpt also raises another important consideration: geographic variation. Specifically, Bates College is in Lewiston, Maine, just a few hours from the Canadian border. This means that test-optional admissions expanded access for students with French-Canadian backgrounds who may not have had the opportunity to attend college. However, Pitzer College’s decision to go test-optional in 2004 likely did not have similar appeal or offer comparable access to these students, given Pitzer’s location in Southern California. Geography, from this lens, is a little-considered factor in how test-optional policies are implemented. However, geography matters: Maine’s population of school-aged children in 2010 was 92.5% White; by 2020, it had declined to 87.9% White.¹¹⁰ This further underscores the importance of pairing test-optional admissions with re-

¹⁰⁹ Based on author’s calculations using statistics from Hiss & Franks, 2014, pp. 20-21

¹¹⁰ U.S. Department of Education, 2021

evaluating recruitment practices, since many selective institutions will need to consider how to attract students from out-of-state.¹¹¹

Timing and Equilibrium. Most case studies are based on colleges that adopted test-optional policies between the 1970s and 2010s. As student demographics continue to change, applicant pools grow, and more and more colleges go test-optional, existing evidence for the effects of test-optional policies offer limited guidance. Students who are aiming for college but uncertain about their test scores have vastly more test-optional institutions to choose from today—more than 1,800 institutions, in fact—than they did even just 10 years ago.¹¹² It may be the case that as more and more institutions shift toward test-optional admissions, requiring test scores becomes a liability for attracting historically marginalized students—and colleges begin to go test-optional simply to stem the loss of these students from their campuses as these students seek out colleges they find more accessible. The future is uncertain, but we must continue to consider how the broader context of higher education impacts test-optional policies.

Implications for Selectivity

When colleges practice test-optional admissions, students who earn higher test scores are more likely to submit score reports. Some studies suggest this process increases average reported test scores, which subsequently increases a college’s selectivity.¹¹³ Other studies do not find the same patterns.¹¹⁴ However, it is possible selectivity is a motivating factor for colleges going test-optional, as evidenced by the following op-ed excerpt by the former president of Reed College:¹¹⁵

“I sometimes think I should write a handbook for college admission officials titled ‘How to Play the U.S. News & World Report Ranking Game, and Win!’ I would devote the first chapter to a tactic called ‘SAT optional.’

The idea is simple: tell applicants that they can choose whether or not to submit their SAT or ACT scores. Predictably, those applicants with low scores or those who know that they score poorly on standardized aptitude tests will not submit. Those with high scores will submit. When the college computes the mean SAT or ACT score of its enrolled students, voilà! its average will have risen. And so too, it can fondly hope, will its status in the annual U.S. News & World Report’s college rankings.

My college requires applicants to submit their test scores, and it refuses to cooperate with the rankings. But among our peers, more and more institutions are adopting the SAT-optional strategy. This is not surprising. Once a few colleges adopt the tactic, their competitors feel pressure to follow suit, lest they suffer a drop in rank. And so a new front opens in the admissions arms race.”

Reed College has since become one of the few colleges to adopt a “test-blind” admissions policy.¹¹⁶ However, the sentiment is clear: selectivity matters, especially when compared to peer institutions. Sarah Lawrence University, one of the first colleges to go “test-blind,” transitioned to test-optional in 2013 in part because considering test scores for at least some students meant

¹¹¹ Salazar, Jaquette, & Han, 2021; Klasik, Blagg, & Pekor, 2018; Turley, 2009

¹¹² FairTest, 2022

¹¹³ Belasco, Rosinger, & Hearn, 2015; Sweitzer, Blalock, & Sharma, 2018

¹¹⁴ Bennett, 2022; Saboe & Terrizzi, 2018

¹¹⁵ Diver, 2006

¹¹⁶ Retrieved October 15, 2022 from <https://www.reed.edu/apply/admission-coronavirus-faq.html>

it could be ranked on the U.S. News and World Report—and as one university administrator put it, “It does not hurt to have that kind of recognition.”¹¹⁷

The Bates Story.¹¹⁸ In 1984, Bates College became one of the first to make the SAT optional. The policy seemed to work so well that in 1990, Bates made *all* admissions testing optional. These efforts resulted in more submitted applications, especially from women, students of color, and international students. Racially minoritized students increased from 4% to 9% of the entering class, and applications from international students rose enough to “fill the class twice over.” In his 2004 presentation at the Annual Meeting of the National Association for College Admissions Counseling, former dean of admissions William Hiss described going test-optional as a way to broaden access to higher education. He argued that not only did it seem to serve this purpose, but it also allowed the college to matriculate better classes—ones that included more rural students, immigrant students, and students with specific talents. Students who did not submit their scores earned dramatically similar GPAs and graduated at similar rates as students who did submit their scores, further affirming Bates’ decision.

“We weren’t trying to point a finger at standardized testing as though it came from the forces of darkness; it hasn’t. But at least in our judgment at the time, testing was occupying too much emotional space, and kids were being hurt, either in self-esteem or in actual admissions decisions, in their access to higher ed. So we were going to try another tack.”

William Hiss, Former Dean of Admissions

The Lafayette Story.¹¹⁹ In 1994, Lafayette College also went test-optional to attract talented students who may have been too intimidated to apply under a test-required policy. Lafayette, however, reported a markedly different experience. The college reported no change to the racial/ethnic composition of its applicants; instead, abandoning the SAT had resulted in “confusion in the market,” where families perceived the college as less selective. After five years of being test-optional, Lafayette reversed course, re-adopting the SAT. Over the next decade, their admissions rate fell by 20 percentage points, their yield rate (the share of admitted students who choose to enroll) increased, and their average SAT scores rose. The racial/ethnic composition of its applicant pool again did not change much, but the college’s perceived selectivity increased.

“Perhaps most damaging was the interpretation of some people that Lafayette might not be an academically serious institution if SATs were optional. The SAT has become such a widely recognized standard that they felt we might have compromised our selectivity. More than a few families of high-ability students told us of their assumption that the absence of an SAT requirement implied limited selectivity.”

Barry McCarty, Former Dean of Enrollment Services

¹¹⁷ Burd, 2015

¹¹⁸ Bates & Neupane, 2004; retrieved October 1, 2022 from the following website: <https://www.bates.edu/news/2004/10/01/sats-at-bates/>

¹¹⁹ McCarty, 2001; retrieved October 1, 2022 from the following website: <https://www.chronicle.com/article/lafayettes-comfort-level-is-higher-with-sats/>

What's Next?

Test-optional admissions are not the only policy shaping incoming college cohorts. In this section, I briefly summarize alternative admissions approaches and the extent to which they impact diversity in college admissions. I also discuss future directions for different stakeholders in higher education.

Alternative Approaches

Adjusting Admissions Criteria. Test-optional policies only directly impact how test scores are considered in admissions. However, admissions can also be a place in which colleges develop criteria that more closely reflect their own values. Franklin & Marshall College, for example, requires applicants to submit two graded writing samples so students can demonstrate their writing abilities, creativity, and argumentation.¹²⁰ When Wake Forest went test-optional, they made an interview with an admissions officer a strongly encouraged component of students' applications.¹²¹ Hampshire College allows students to submit an optional media supplement and a project sample.¹²² By re-evaluating application components, colleges might be able to admit students through processes more closely aligned with their mission and values. Still, it is critical to remember that many of these components are still likely biased by social background.

Percent Plans. Percent plans refer to statewide admissions approaches in which students exceeding a set percentile of their high school class gain automatic admission to the state's university system. Texas adopted this policy in 1997, and California did so in 2001. Studies of these policies in both states suggest percent plans can modestly increase on-campus student diversity.¹²³ These approaches also have long-term positive impacts on affected students' college and career outcomes.¹²⁴ Importantly, this solution is specific to public institutions given the nature of the policy. The evidence for this policy is also based on two of the largest university systems in the United States, so it is unclear whether the effects from previous analyses would apply to other contexts. Still, this is a policy lever that increases campus diversity and would be a useful consideration for state policymakers.

Universal Testing. Test-optional admissions purport to reduce the emphasis on standardized tests in admissions. Universal testing takes a different tack by expanding access to testing. In several states, all public high school students are required to take the SAT or ACT (at no cost to the student) as part of their school day. Studies suggest this modestly increases four-year college enrollment,¹²⁵ particularly among low-income students.¹²⁶

¹²⁰ Maguire, 2018

¹²¹ Allman, 2012

¹²² Retrieved October 15, 2022 from the following website:

<https://www.hampshire.edu/first-year-students>

¹²³ Bleemer, 2021; Long, Saenz, & Tienda, 2010

¹²⁴ Black, Denning, & Rothstein; Bleemer, 2018

¹²⁵ Goodman, 2016; Klasik, 2013

¹²⁶ Hyman, 2017

Alternative Tests. The SAT and ACT are norm-referenced tests, meaning they are designed such that test scores have a normal distribution. The idea of a normal distribution, or a bell curve, is that only small shares of test-takers will end up with very high or very low test scores; most students will end up somewhere in the middle. The goal is not so much to determine what an individual test-taker knows, but to determine what each test-taker knows *in relation to other test-takers*. This is useful for a few reasons, including that norm-referenced tests help distinguish between high-performing students who might otherwise look similar in terms of GPA or course rigor. However, some argue that criterion-referenced tests would be a better, more equitable solution.¹²⁷ Criterion-referenced tests are not about placing students on a distribution relative to one another; rather, test-makers identify a set of topics on which students should be tested, and scores are determined based on students' proficiency in those topics. Advocates argue this is a more equitable testing approach—once students have shown a particular level of mastery, admissions decisions should be made using other criteria. However, there are racial/ethnic and socioeconomic test score disparities in criterion-referenced tests, as well.¹²⁸ Because there are opportunity disparities by race/ethnicity and socioeconomic status at earlier stages in schooling, it is important to remember those disparities are often reflected in later assessments.¹²⁹

Admissions Lotteries. The rationale for admissions lotteries is somewhat like the rationale for criterion-referenced tests: Once students pass a particular score threshold, testing should no longer matter for admission. The idea is that once students have exceeded a designated score, those students are college-ready. Consider the following example: After evaluating how SATs have predicted student performance in the past, a college admissions office decides to set a score threshold of 1100. Applicants with scores of 1100 will have the same chance of admission as applicants with scores of 1500. Because this will increase the chances of admission for students with scores of 1100, who are more likely to be low-income students and underrepresented minoritized students, this approach should boost diversity. But a recent study finds the opposite: In most scenarios with different GPA and test score thresholds, lotteries would result in admitted classes with far more White students and wealthy students than there already are.¹³⁰ To understand why, look no further than Figures 12 and 13 from earlier in this report. Because White students are overrepresented among students with high test scores and high GPAs, White students will be overrepresented (relative to the full set of test-takers or GPA-earners) no matter the threshold. In addition, admissions lotteries would still incentivize test preparation and retaking, which disproportionately benefit White, Asian, and wealthy students.¹³¹

Adversity Scores. In spring 2019, the College Board announced that along with the SAT, it would begin including “adversity scores” on score reports sent to colleges.¹³² These scores would be averages of two numbers: one capturing a student’s neighborhood characteristics and one capturing a student’s school environment. This number would be a way of capturing information not always easily accessible to admissions officers, such as school poverty and neighborhood crime rates, that would put a student’s academic performance in context. According to David

¹²⁷ Atkinson & Geiser, 2009

¹²⁸ Furgione, Evans, Russell III, & Jahani, 2018

¹²⁹ Reardon, 2021; Reardon, Kalogrides, & Shores, 2019

¹³⁰ Baker & Bastedo, 2022

¹³¹ Park & Becks, 2015

¹³² Hartocollis, 2019a

Coleman, a senior leader at the College Board, the score would help identify promising students who might otherwise be overlooked: “This is about finding young people who do a great deal with what they’ve been given. It helps colleges see students who may not have scored as high, but when you look at the environment that they have emerged from, it is amazing.”¹³³ Within a few short months, however, the public backlash resulted in the College Board withdrawing this idea.¹³⁴ Some people were frustrated their children’s hard work would be discounted because they had resources; some opposed the idea that a single number could capture the varied contexts in which children learn; and still others critiqued the adversity score for failing to consider characteristics of the students themselves, including their family income, parents’ educational attainment, and racial/ethnic backgrounds. Although the College Board abandoned the idea of capturing student context in a single “adversity score,” they still provide contextual information to colleges in the form of a new dashboard, Landscape. Although there is limited research on how this specific tool has shaped admissions, research suggests considering students’ school and neighborhood contexts can improve chances of admission for students from low-income backgrounds.¹³⁵

Targeted Recruitment. Another strategy for increasing diversity among admitted students is to specifically target recruitment efforts toward these students. Research suggests admissions offices disproportionately recruit from wealthy public schools, private schools, and out-of-state schools.¹³⁶ However, race-targeted recruiting may have limited the outflow of students of color from colleges in Washington State after they were no longer allowed to practice affirmative action.¹³⁷ There is some evidence race- and SES-based targeted recruitment increase shares of historically underrepresented students on campus, especially when such approaches are paired with additional economic support for matriculating students.¹³⁸ These effects, too, tend to be relatively small.

SES-Based Affirmative Action. SES-based affirmative action can improve socioeconomic diversity.¹³⁹ More Americans support SES-based affirmative action than race-based affirmative action, arguing that SES-based approaches are fairer to students—particularly low-income White and Asian students—and still improve racial diversity on campus.¹⁴⁰ By itself, however, SES-based affirmative action has only small effects on racial/ethnic diversity among admitted students.¹⁴¹ The reverse is also true: Race-based affirmative action is not a sufficient lever of socioeconomic diversity, either.¹⁴² To make SES-based affirmative action a reliable lever of both socioeconomic *and* racial diversity, universities would also need to invest heavily in race-targeted recruitment. However, SES-based affirmative action comes with substantial costs, potentially making it infeasible.

¹³³ Hartocollis, 2019a

¹³⁴ Hartocollis, 2019b

¹³⁵ Bastedo et al., 2021

¹³⁶ Salazar, Jaquette, & Han, 2021

¹³⁷ Brown & Hirschman, 2006

¹³⁸ Andrews, Imberman, & Lovenheim, 2020; Brown & Hirschman, 2006; Reardon, Baker, Kasman, Klasik, & Townsend, 2018

¹³⁹ Gaertner & Hart, 2013; Andrews, Imberman, & Lovenheim, 2020

¹⁴⁰ Kahlenberg, 2018; PBS NewsHour, 2017

¹⁴¹ Cancian, 1998; Gaertner & Hart, 2013; Kahlenberg, 2018; Reardon et al., 2018

¹⁴² Reardon et al., 2018

Race-Based Affirmative Action. Many policies, including test-optional admissions, percent plans, admissions lotteries, and SES-based affirmative action, are pitched as race-neutral efforts to replicate the racial/ethnic diversity achieved through affirmative action.¹⁴³ However, the preponderance of evidence suggests this may not be possible. Legacies of racism and persistent prejudice shape opportunities even beyond racial/ethnic differences in socioeconomic resources. In places where there are no observed differences in socioeconomic background by race, there are still racial achievement disparities.¹⁴⁴ Teachers exhibit racial/ethnic bias in student evaluations.¹⁴⁵ Communities with more anti-Black bias tend to have larger achievement disparities.¹⁴⁶ White students get a greater achievement advantage from having highly educated parents than Black students do, illustrating the countervailing impact of racism even for relatively advantaged Black students.¹⁴⁷ Children’s experiences in school are not “race-neutral”—so it is unreasonable to expect that effective equity-motivated policies would be.

Future Directions

Test-optional policies alone are insufficient levers for making substantial changes to the racial/ethnic or socioeconomic student composition at college campuses. However, studies suggest they can be effective when paired with other policies that help universities meet diversity commitments. This work offers several implications and future directions for stakeholders from different perspectives. These future directions are generally as follows:

- Conduct research to **evaluate whether stated benefits of testing help historically marginalized students** (e.g., whether tests allow promising students to emerge when they otherwise may not have)
- Expand analyses of other admissions criteria, such as interviews, student essays, and letters of recommendation, to **assess the extent to which bias may be present in other college application components**
- Continue to **assess diversity-focused policy mechanisms** supporting racial/ethnic and socioeconomic diversity, including how different initiatives may be implemented simultaneously
- Conduct research to **identify explanations for heterogeneity** in test-optional policy impact
- Expand financial aid to **support diverse cohorts of students** that colleges hope to attract

People in many different roles—from college administrators and practitioners, to researchers, to funders—have a role to play as we continue to evaluate how to expand postsecondary access.

¹⁴³ Baker & Bastedo, 2022; Bleemer, 2021; Lucido, 2018; Reardon et al., 2018

¹⁴⁴ Reardon, 2015

¹⁴⁵ Quinn, 2020

¹⁴⁶ Pearman II, 2022

¹⁴⁷ Assari, Mardani, Maleki, Boyce, & Bazargan, 2021

College Practitioners. The best way to know if a policy will fulfill aims of increasing diversity and postsecondary access is to implement that policy. Colleges would do well to consider the different factors that shape students' matriculation patterns and develop approaches accordingly. For example, colleges in states with relatively fewer students of color might consider how to expand their reach; colleges with fewer financial resources might consider how to secure investments from alumni to support equity initiatives in admissions; and colleges requiring test scores might consider how to create reliable avenues for low-SES students and students of color to be eligible for admission, given these students' lower average test scores.

Colleges should also rigorously document how admissions practices change with the adoption of new policies, such as test-optional. This includes considering how students' test scores are managed, how applicants are recruited, how applications are evaluated, and what factors become most salient when marginal cases are debated. Understanding how bias may manifest in non-test-score application components is a critical next avenue for study. In addition, colleges must partner with researchers to establish a plan for how they will evaluate whether new policies meet intended aims. It will also be important to share best practices as colleges begin to iterate on their policies, such as how some institutions have begun looking for strategies that will help them more efficiently and consistently assess non-academic factors in admissions.¹⁴⁸

Researchers. Many studies have evaluated the predictive validity of test scores, or how well test scores predict subsequent college outcomes. These types of analyses remain evergreen as tests continue to change. Still, other components of applications have garnered far less attention, and these components hold substantial weight in a higher education system with widely adopted test-optional admissions. It is critical to understand not only whether there are differences across students in admissions criteria—indeed, we already know low-SES students and students of color have differential access to rigorous courses, extracurricular activities, and other opportunities—but also the extent to which these differences matter for students' probability of applying and, conditional on applying, of admission.

Researchers must evaluate not only the effects of policies using experimental and quasi-experimental methods, but also implementation using qualitative methods. Understanding *that* a policy works is not particularly useful if we do not understand *why*. This is about far more than quantitative measures such as average financial aid awards or pre-policy student demographics, although these are important considerations; it is also about how policies hit the ground, how relevant stakeholders perceive and implement them, and how institutions manage bumps along the way.¹⁴⁹

In addition, there is limited research on the importance of understanding educational research through the lens of intersectionality and multiple marginalization, but scholars evaluating equity in college admissions must take this critical turn. Students who are from both marginalized racial/ethnic backgrounds and low-SES backgrounds receive little attention in equity-oriented policy debates. Policies supporting racial equity or socioeconomic equity alone may not reach these students. This requires broader consideration in contemporary policy discourse and design.

¹⁴⁸ Hossler et al., 2019

¹⁴⁹ Matheny, Forthcoming

Funders. Because test-optional admissions alone are not enough to reshape diversity on college campuses, colleges must consider how suites of policies can work together to improve access. Funders might consider initiatives to evaluate how multiple policies work together, how existing test-optional policies might be iterated on, and how test-optional policies might impact diversity in different types of postsecondary contexts and institutional types.

Other initiatives might include supporting pioneering admissions offices in developing and communicating best practices, evaluating the extent to which effective admissions approaches in one context would work in another, and supporting pipeline programs that would address inequalities in educational opportunities before students begin applying to college. Inequality in postsecondary access is more than about differences in academic preparation, though that certainly has a role. It is also about differences in access to other components in college applications. Identifying methods to expand these opportunities for students, as well as support college admissions offices in more equitably evaluating marginalized students' applications, may be worthwhile future directions.

Policymakers. There are a few approaches federal and state policymakers could take, including offering financial support for colleges to expand recruitment in settings with more low-income students and underrepresented minoritized students. This also includes expanding funding for higher education more generally, since it is important not only to bring these students to campus but also to support them once they have arrived.

States may also consider adopting universal SAT/ACT testing, working with public in-state institutions to develop criterion-referenced assessments, or offering more resources to k-12 students to support their test-taking. Aside from testing considerations, states might partner with colleges to develop alternative admissions criteria that might allow low-income students and students from minoritized racial/ethnic backgrounds to better demonstrate their academic readiness.

References

- Agronow, S., & Studley, R. (2007, November 16). Prediction of college GPA from New SAT test scores - a first look. *The Annual Meeting of the California Association for Institutional Research*.
- Akos, P., & Kretchmar, J. (2016). Gender and ethnic bias in letters of recommendation: Considerations for school counselors. *Professional School Counseling, 20*(1), 1096-2409-20.1. <https://doi.org/10.5330/1096-2409-20.1.102>
- Allman, M. (2012). Going test-optional: A first year of challenges, surprises, and rewards. In J. A. Soares (Ed.), *SAT wars: The case for test-optional college admissions* (pp. 169–176). Teachers College Press.
- Alvero, A., Giebel, S., Gebre-Medhin, B., Antonio, A. L., Stevens, M. L., & Domingue, B. W. (2021). Essay content and style are strongly related to household income and SAT scores: Evidence from 60,000 undergraduate applications. *Science Advances, 7*(42). <https://doi.org/10.1126/sciadv.abi9031>
- Andrews, R. J., Imberman, S. A., & Lovenheim, M. F. (2020). Recruiting and supporting low-income, high-achieving students at flagship universities. *Economics of Education Review, 74*. <https://doi.org/10.1016/j.econedurev.2019.101923>
- Arneson, J. J., Sackett, P. R., & Beatty, A. S. (2011). Ability-performance relationships in education and employment settings. *Psychological Science, 22*(10), 1336–1342. <https://doi.org/10.1177/0956797611417004>
- Arnold, J., & Turner, S. (2020). Combination of limited college admission testing and “test-optional” policies set off a scramble. *Education Next*. <https://www.educationnext.org/combination-limited-college-admission-testing-and-test-optional-policies-set-off-scramble/>
- Assari, S., Mardani, A., Maleki, M., Boyce, S., & Bazargan, M. (2021). Black-White achievement gap: Role of race, school urbanity, and parental education. *Pediatric Health, 12*, 1–11. <https://doi.org/10.2147/PHMT.S238877>
- Atkinson, R. C., & Geiser, S. (2009). Reflections on a century of college admissions tests. *Educational Researcher, 38*(9), 665–676. <https://doi.org/10.3102/0013189X09351981>
- Aud, S., Wilkinson-Flicker, S., Kristapovich, P., Rathbun, A., Wang, X., and Zhang, J. (2013). *The condition of education 2013 (NCES 2013-037)*. U.S. Department of Education, National Center for Education Statistics. <https://nces.ed.gov/pubs2013/2013037.pdf>

- Baker, D. J., & Bastedo, M. N. (2022). What if we leave it up to chance? Admissions lotteries and equitable access at selective colleges. *Educational Researcher*, *51*(2), 134–145.
<https://doi.org/10.3102/0013189X211055494>
- Bastedo, M. N., Bell, D., Howell, J. S., Hsu, J., Hurwitz, M., Perfetto, G., & Welch, M. (2021). Admitting students in context: Field experiments on information dashboards in college admissions. *Journal of Higher Education*, *93*(3), 327–374.
<https://doi.org/10.1080/00221546.2021.1971488>
- Bastedo, M. N., & Bowman, N. A. (2017). Improving admission of low-SES students at selective colleges. *Educational Researcher*, *46*(2), 67–77.
<https://doi.org/10.3102/0013189X17699373>
- Bastedo, M. N., Bowman, N. A., Glasener, K. M., & Kelly, J. L. (2018). What are we talking about when we talk about holistic review? Selective college admissions and its effects on low-SES students. *Journal of Higher Education*, *89*(5), 782–805.
<https://doi.org/10.1080/00221546.2018.1442633>
- Belasco, A. S., Rosinger, K. O., & Hearn, J. C. (2015). The test-optional movement at America's selective liberal arts colleges: A boon for equity or something else? *Educational Evaluation and Policy Analysis*, *37*(2), 206–223.
<https://doi.org/10.3102/0162373714537350>
- Bennett, C. T. (2022). Untested admissions: Examining changes in application behaviors and student demographics under test-optional policies. *American Educational Research Journal*, *59*(1), 180–216. <https://doi.org/10.3102/00028312211003526>
- Berry, C. M., & Sackett, P. R. (2009). Individual differences in course choice result in underestimation of the validity of college admissions systems. *Psychological Science*, *20*(7), 822–830. <https://doi.org/10.1111/j.1467-9280.2009.02368.x>
- Black, S., Denning, J., & Rothstein, J. (2020). *Winners and losers? The effect of gaining and losing access to selective colleges on education and labor market outcomes* (No. 26821; NBER Working Paper Series). <https://doi.org/10.3386/w26821>
- Bleemer, Z. (2018). *The effect of selective public research university enrollment: Evidence from California* (11.18; CSHE Research & Occasional Paper Series).
- Bleemer, Z. (2021). Affirmative action, mismatch, and economic mobility after California's Proposition 209. *The Quarterly Journal of Economics*, *137*(1), 115–160.
<https://doi.org/10.1093/qje/qjab027>
- Bowen, W. G., & Bok, D. (1998). *The shape of the river: Long-term consequences of considering race in college and university admissions*. Princeton University Press.

- Broome, E. C. (1903). *A historical and critical discussion of college admission requirements*. College Entrance Examination Board.
- Brown, S. K., & Hirschman, C. (2006). The end of affirmative action in Washington State and its impact on the transition from high school to college. *Sociology of Education*, 79(2), 106–130. <https://doi.org/10.1177/003804070607900202>
- Bruggink, T. H., & Gambhir, V. (1996). Statistical models for college admission and enrollment: A case study for a selective liberal arts college. *Research in Higher Education*, 37(2), 221–240. <https://doi.org/10.1007/BF01730116>
- Burd, S. (2015, August 26). The real reason that colleges go “test-optional.” *The Hechinger Report*. <https://hechingerreport.org/the-real-reason-that-colleges-go-test-optional/>
- Burton, N. W., & Ramist, L. (2001). *Predicting success in college: SAT studies of classes graduating since 1980*. <https://files.eric.ed.gov/fulltext/ED562836.pdf>
- Cancian, M. (1998). Race-based versus class-based affirmative action in college admissions. *Journal of Policy Analysis and Management*, 17(1), 94–105. [https://doi.org/10.1002/\(SICI\)1520-6688\(199824\)17:1<94::AID-PAM6>3.0.CO;2-C](https://doi.org/10.1002/(SICI)1520-6688(199824)17:1<94::AID-PAM6>3.0.CO;2-C)
- Clauser, B. E., & Mazor, K. M. (2005). Using statistical procedures to identify differentially functioning test items. *Educational Measurement: Issues and Practice*, 17(1), 31–44. <https://doi.org/10.1111/j.1745-3992.1998.tb00619.x>
- The College Board. (2020). *Total and section score user group percentile ranks by gender and race/ethnicity*. <https://satsuite.collegeboard.org/media/pdf/sat-percentile-ranks-gender-race-ethnicity.pdf>
- Conlin, M., & Dickert-Conlin, S. (2017). Inference by college admission departments. *Journal of Economic Behavior and Organization*, 141, 14–28. <https://doi.org/10.1016/j.jebo.2017.06.001>
- Diver, C. S. (2006, September 18). Skip the test, betray the cause. *The New York Times*. <https://www.nytimes.com/2006/09/18/opinion/18diver.html>
- Dixon-Román, E. J., Everson, H. T., & Mcardle, J. J. (2013). Race, poverty and SAT scores: Modeling the influences of family income on Black and White high school students’ SAT performance. *Teachers College Record: The Voice of Scholarship in Education*, 115(4), 1–33. <https://doi.org/10.1177/016146811311500406>
- EAB. (2022). *Gen Z’s evolving enrollment journey*. <https://pages.eab.com/GenZ-evolving-journey-freshmensurvey2022.html>

- Einhorn, E. (2022, April 10). Inside the vast national experiment in test-optional college admissions. *NBC News*. <https://www.nbcnews.com/news/us-news/college-admissions-test-sat-act-rcna23574>
- Espenshade, T. J., & Chung, C. Y. (2012). Diversity outcomes of test-optional policies. In J. A. Soares (Ed.), *SAT wars: The case for test-optional college admissions* (pp. 177–200). Teachers College Press.
- Espenshade, T. J., & Radford, A. W. (2009). *No longer separate, not yet equal*. Princeton University Press.
- FairTest. (2022). *1,835+ Accredited, 4-Year Colleges & Universities with ACT/SAT-Optional Testing Policies for Fall, 2022 Admissions*. <https://fairtest.org/university/optional>
- Florida Board of Governors. (2020, November 5). *11/5/20 Florida Board of Governors Meeting Part 1*. The Florida Channel. <https://thefloridachannel.org/videos/11-5-20-florida-board-of-governors-meeting-part-1/>
- Furgione, B., Evans, K., Russell III, W. B., & Jahani, S. (2018). Divided we test: Proficiency rate disparity based on the race, gender, and socioeconomic status of students on the Florida US History end-of-course assessment. *Journal of Social Studies Education Research*, 9(3), 62–96. www.jsser.org
- Gaertner, M. N., & Hart, M. (2013). Considering class: College access and diversity. *Harvard Law and Policy Review*, 367. <http://heinonline.org/HOL/License>
- Geiser, S., & Santelices, M. V. (2007). Validity of high-school grades in predicting student success beyond the freshman year: High school record vs. standardized tests as indicators of four-year college outcomes. *CSHE Research & Occasional Paper Series*, 35.
- Goodman, S. (2016). Learning from the test: Raising selective college enrollment by providing information. *Review of Economics and Statistics*, 98(4), 671–684. https://doi.org/10.1162/REST_a_00600
- GreatSchools. (2022). *About GreatSchools' ratings*. GreatSchools. <https://www.greatschools.org/gk/ratings/>
- Hartocollis, A. (2019a, May 16). SAT's new 'adversity score' will take students' hardships into account. *The New York Times*. <https://www.nytimes.com/2019/05/16/us/sat-score.html>
- Hartocollis, A. (2019b, August 27). SAT 'adversity score' is abandoned in wake of criticism. *The New York Times*. <https://www.nytimes.com/2019/08/27/us/sat-adversity-score-college-board.html>
- Hiss, W. C., & Franks, V. W. (2014). *Defining promise: Optional standardized testing policies in American college and university admissions*.

- Hiss, W. C., & Neupane, P. R. (2004, September). 20 Years of optional SATs at Bates, 1984-2004. *National Association for College Admissions Counseling National Conference*.
- Hossler, D., Chung, E., Kwon, J., Lucido, J., Bowman, N., & Bastedo, M. (2019). A study of the use of nonacademic factors in holistic undergraduate admissions reviews. *Journal of Higher Education, 90*(6), 833–859. <https://doi.org/10.1080/00221546.2019.1574694>
- Hurwitz, M., & Lee, J. (2018). Grade inflation and the role of standardized testing. In J. Buckley, L. Letukas, & B. Wildavsky (Eds.), *Measuring success: Testing, grades, and the future of college admissions* (pp. 64–93). Johns Hopkins University Press.
- Hyman, J. (2017). ACT for all: The effect of mandatory college entrance exams on postsecondary attainment and choice. *Education Finance and Policy, 12*(3), 281–311. https://doi.org/10.1162/EDFP_a_00206
- Iatarola, P., Conger, D., & Long, M. C. (2011). Determinants of high schools' advanced course offerings. *Educational Evaluation and Policy Analysis, 33*(3), 340–359. <https://doi.org/10.3102/0162373711398124>
- Jaschik, S. (2020, November 16). Applications are decreasing. *Inside Higher Ed*. <https://www.insidehighered.com/admissions/article/2020/11/16/college-applications-are-decreasing>
- Jaschik, S. (2021a, September 20). 700,000 fewer took the SAT. *Inside Higher Ed*. <https://www.insidehighered.com/admissions/article/2021/09/20/sat-annual-report-says-those-who-took-test-fell-700000>
- Jaschik, S. (2021b, September 13). Who didn't submit test scores? *Inside Higher Ed*. <https://www.insidehighered.com/admissions/article/2021/09/13/study-reveals-which-applicants-didnt-submit-test-scores>
- Jephcote, C., Medland, E., & Lygo-Baker, S. (2021). Grade inflation versus grade improvement: Are our students getting more intelligent? *Assessment & Evaluation in Higher Education, 46*(4), 547–571. <https://doi.org/10.1080/02602938.2020.1795617>
- Kahlenberg, R. (2018, September 4). Affirmative action should be based on class, not race. *The Economist*. <https://www.economist.com/open-future/2018/09/04/affirmative-action-should-be-based-on-class-not-race>
- Kasakove, S. (2021, October 9). The college admissions scandal: Where some of the defendants are now. *The New York Times*. <https://www.nytimes.com/2021/10/09/us/varsity-blues-scandal-verdict.html>

- Klasik, D. (2013). The ACT of enrollment: The college enrollment effects of state required college entrance exam testing. *Educational Researcher*, 42(3), 151–160. <https://doi.org/10.3102/0013189X12474065>
- Klasik, D., Blagg, K., & Pekor, Z. (2018). Out of the education desert: How limited local college options are associated with inequity in postsecondary opportunities. *Social Sciences*, 7(9), 165. <https://doi.org/10.3390/socsci7090165>
- Klugman, J. (2013). The Advanced Placement arms race and the reproduction of educational inequality. *Teachers College Record: The Voice of Scholarship in Education*, 115(5), 1–34. <https://doi.org/10.1177/016146811311500506>
- Kobrin, J. L., Sathy, V., & Shaw, E. J. (2007). *A historical view of subgroup performance differences on the SAT reasoning test*. <https://files.eric.ed.gov/fulltext/ED562569.pdf>
- Kuncel, N. R., & Hezlett, S. A. (2007). Standardized tests predict graduate students' success. *Science*, 315(5815), 1080–1081. <https://doi.org/10.1126/science.1136618>
- Kuncel, N. R., Hezlett, S. A., & Ones, D. S. (2001). A comprehensive meta-analysis of the predictive validity of the Graduate Record Examinations (GRE): Implications for graduate student selection and performance. *Psychological Bulletin*, 127(1), 162–181. <https://doi.org/10.1037//Q033-2909.127.1.162>
- Laird, R. (2015). What is it we think we are trying to fix and how should we fix it? A view from the admissions office. In W. Camara & E. W. Kimmel (Eds.), *Choosing students: Higher education admissions tools for the 21st century* (1st ed., pp. 13–32). Routledge.
- Lemann, N. (2000). *The big test: The secret history of the American meritocracy*. Farrar, Straus and Giroux.
- Long, M. C., Saenz, V., & Tienda, M. (2010). Policy transparency and college enrollment: Did the Texas Top Ten Percent Law broaden access to the public flagships? *The ANNALS of the American Academy of Political and Social Science*, 627(1), 82–105. <https://doi.org/10.1177/0002716209348741>
- Lubinski, D. (2009). Exceptional cognitive ability: The phenotype. *Behavior Genetics*, 39(4), 350–358. <https://doi.org/10.1007/s10519-009-9273-0>
- Lucido, J. A. (2018). Understanding the test-optional movement. In J. Buckley, L. Letukas, & B. Wildavsky (Eds.), *Measuring success: Testing, grades, and the future of college admissions* (pp. 145–170). Johns Hopkins University Press.
- Madera, J. M., Hebl, M. R., & Martin, R. C. (2009). Gender and letters of recommendation for academia: Agentic and communal differences. *Journal of Applied Psychology*, 94(6), 1591–1599. <https://doi.org/10.1037/a0016539>

- Maguire, E. (2018). Going test optional: A case study. In J. Buckley, L. Letukas, & B. Wildavsky (Eds.), *Measuring success: Testing, grades, and the future of college admissions* (pp. 171–192). Johns Hopkins University Press.
- Matheny, K. T. (Forthcoming). A seat at the table: Lessons from Tennessee’s rapid achievement and equity gains. *Education Policy Analysis Archives*.
- Mattern, K. D., & Patterson, B. F. (2013). Test of slope and intercept bias in college admissions: A response to Aguinis, Culpepper, and Pierce (2010). *Journal of Applied Psychology*, *98*(1), 134–147. <https://doi.org/10.1037/a0030610>
- Mattern, K. D., & Patterson, B. F. (2014). *Synthesis of recent SAT validity findings: Trend data over time and cohorts*. <https://files.eric.ed.gov/fulltext/ED556462.pdf>
- Mattern, K. D., Patterson, B. F., & Kobrin, J. L. (2012). *The validity of SAT scores in predicting first-year mathematics and English grades*. <https://files.eric.ed.gov/fulltext/ED563105.pdf>
- McCarty, B. W. (2001, October 26). Lafayette’s comfort level is higher with SATs. *The Chronicle of Higher Education*. <https://www.chronicle.com/article/lafayettes-comfort-level-is-higher-with-sats/>
- Murphy, S., Klieger, D., Borneman, M.J., & Kuncel, N.R. (2009). The predictive power of personal statements in admissions: A meta-analysis and cautionary tale. *College and University*, *84*(4), 83–86.
- Park, J. J., & Becks, A. H. (2015). Who benefits from SAT prep?: An examination of high school context and race/ethnicity. *Review of Higher Education*, *39*(1), 1–23. <https://doi.org/10.1353/rhe.2015.0038>
- PBS NewsHour. (2017, March 31). Should affirmative action be based on socioeconomic status? *PBS*. <https://www.pbs.org/newshour/show/affirmative-action-based-socioeconomic-status>
- Pearman II, F. A. (2022). Collective racial bias and the Black-White test score gap. *Race and Social Problems*, *14*(4), 283–292. <https://doi.org/10.1007/s12552-021-09347-y>
- Quinn, D. M. (2020). Experimental evidence on teachers’ racial bias in student evaluation: The role of grading scales. *Educational Evaluation and Policy Analysis*, *42*(3), 375–392. <https://doi.org/10.3102/0162373720932188>
- Rask, K. (2010). Attrition in STEM fields at a liberal arts college: The importance of grades and pre-collegiate preferences. *Economics of Education Review*, *29*(6), 892–900. <https://doi.org/10.1016/j.econedurev.2010.06.013>

- Reardon, S. F. (2015). *Racial and ethnic achievement gaps*. The Educational Opportunity Monitoring Project. <https://cepa.stanford.edu/educational-opportunity-monitoring-project/achievement-gaps/race/>
- Reardon, S. F. (2021). *The economic achievement gap in the U.S., 1960-2020: Reconciling recent empirical findings* (No. 21-09; CEPA Working Paper Series).
- Reardon, S. F., Baker, R., Kasman, M., Klasik, D., & Townsend, J. B. (2018). What levels of racial diversity can be achieved with socioeconomic-based affirmative action? Evidence from a simulation model. *Journal of Policy Analysis and Management*, 37(3), 630–657. <https://doi.org/10.1002/pam.22056>
- Reardon, S. F., Kalogrides, D., & Shores, K. (2019). The geography of racial/ethnic test score gaps. *American Journal of Sociology*, 124(4), 1164–1221. <https://doi.org/10.1086/700678>
- Rivera, L. A., & Tilcsik, A. (2016). Class advantage, commitment penalty: The gendered effect of social class signals in an elite labor market. *American Sociological Review*, 81(6), 1097–1131. <https://doi.org/10.1177/0003122416668154>
- Robinson, M., & Monks, J. (2005). Making SAT scores optional in selective college admissions: A case study. *Economics of Education Review*, 24(4), 393–405. <https://doi.org/10.1016/j.econedurev.2004.06.006>
- Rosinger, K. O., Ford, K. S., & Choi, J. (2021). The role of selective college admissions criteria in interrupting or reproducing racial and economic inequities. *The Journal of Higher Education*, 92(1), 31–55. <https://doi.org/10.1080/00221546.2020.1795504>
- Rosner, J. (2012). The SAT: Quantifying the unfairness behind the bubbles. In J. A. Soares (Ed.), *SAT wars: The case for test-optional college admissions* (pp. 104–117). Teachers College Press.
- Rothstein, J. M. (2004). College performance predictions and the SAT. *Journal of Econometrics*, 121(1–2), 297–317. <https://doi.org/10.1016/j.jeconom.2003.10.003>
- Rubin, P. G., & González Canché, M. S. (2019). Test-flexible admissions policies and student enrollment demographics: Examining a public research university. *Review of Higher Education*, 42(4), 1337–1371. <https://doi.org/10.1353/rhe.2019.0068>
- Saboe, M., & Terrizzi, S. (2019). SAT optional policies: Do they influence graduate quality, selectivity or diversity? *Economics Letters*, 174, 13–17. <https://doi.org/10.1016/j.econlet.2018.10.017>
- Sackett, P. R., Borneman, M. J., & Connelly, B. S. (2008). High-stakes testing in higher education and employment: Appraising the evidence for validity and fairness. *American Psychologist*, 63(4), 215–227. <https://doi.org/10.1037/0003-066X.63.4.215>

- Sackett, P. R., & Kuncel, N. R. (2018). Eight myths about standardized admissions testing. In J. Buckley, L. Letukas, & B. Wildavsky (Eds.), *Measuring success: Testing, grades, and the future of college admissions* (pp. 13–39). Johns Hopkins University Press.
- Sackett, P. R., Kuncel, N. R., Arneson, J. J., Cooper, S. R., & Waters, S. D. (2009). Does socioeconomic status explain the relationship between admissions tests and post-secondary academic performance? *Psychological Bulletin*, *135*(1), 1–22. <https://doi.org/10.1037/a0013978>
- Salazar, K. G., Jaquette, O., & Han, C. (2021). Coming soon to a neighborhood near you? Off-campus recruiting by public research universities. *American Educational Research Journal*, *58*(6), 1270–1314. <https://doi.org/10.3102/00028312211001810>
- 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. 118–144). Johns Hopkins University Press.
- Sánchez, H., & Comeaux, E. (2020). *Report of the UC Academic Council Standardized Testing Task Force*. https://senate.universityofcalifornia.edu/_files/committees/sttf/sttf-report.pdf
- Schaffner, P. E. (1985). Competitive admission practices when the SAT is optional. *The Journal of Higher Education*, *56*(1), 55. <https://doi.org/10.2307/1981722>
- Schmill, S. (2022, March 28). We are reinstating our SAT/ACT requirement for future admissions cycles. *MIT Admissions Blog*. <https://mitadmissions.org/blogs/entry/we-are-reinstating-our-sat-act-requirement-for-future-admissions-cycles/>
- Schultz, L., & Backstrom, B. (2021). Test-optional admissions policies: Evidence from implementations pre- and post-COVID-19. *Nelson A. Rockefeller Institute of Government*, 1–20.
- Shaw, E. J. (2015). *An SAT validity primer*. <https://files.eric.ed.gov/fulltext/ED558085.pdf>
- Shaw, E. J., Marini, J. P., Beard, J., Shmueli, D., Young, L., & Ng, H. (2016). *The redesigned SAT pilot predictive validity study: A first look*. <https://satsuite.collegeboard.org/media/pdf/redesigned-sat-pilot-predictive-validity-study-first-look.pdf>
- Soares, J. A. (2012). Introduction. In *SAT wars: The case for test-optional college admissions* (pp. 1–9). Teachers College Press.

- Stearns, E., & Glennie, E. J. (2010). Opportunities to participate: Extracurricular activities' distribution across and academic correlates in high schools. *Social Science Research*, 39(2), 296–309. <https://doi.org/10.1016/j.ssresearch.2009.08.001>
- Steinberg, J. (2009, May 20). Colleges acknowledge SAT and ACT score cut-offs in admissions. *The New York Times*.
<https://archive.nytimes.com/thechoice.blogs.nytimes.com/2009/05/20/cut-offs/>
- Stevens, M. L. (2009). *Creating a class: College admissions and the education of elites*. Harvard University Press.
- Sweitzer, K., Blalock, A. E., & Sharma, D. B. (2018). The effect of going test-optional on diversity and admissions: A propensity score matching analysis. In J. Buckley, L. Letukas, & B. Wildavsky (Eds.), *Measuring success: Testing, grades, and the future of college admissions* (pp. 288–308). Johns Hopkins University Press.
- Syverson, S. (2007). The role of standardized tests in college admissions: Test-Optional admissions. *New Directions for Student Services*, 2007(118), 55–70.
<https://doi.org/10.1002/ss.241>
- Syverson, S. T., Franks, V. W., & Hiss, W. C. (2018). *Defining access: How test-optional works*. <https://www.nacacnet.org/globalassets/documents/publications/research/defining-access-report-2018.pdf>
- Thelin, J. R. (2011). *A history of higher education* (2nd ed.). Johns Hopkins University Press.
- Turley, R. N. L. (2009). College proximity: Mapping access to opportunity. *Sociology of Education*, 82(2), 126–146. <https://doi.org/10.1177/003804070908200202>
- Tyson, K. (2011). *Integration interrupted: Tracking, Black students, and acting White after Brown*. Oxford University Press.
- U.S. Department of Education. (2016, January). *Public high school graduates, by race/ethnicity: 1998-99 through 2025-26*. Digest of Education Statistics, National Center for Education Statistics. https://nces.ed.gov/programs/digest/d15/tables/dt15_219.30.asp
- U.S. Department of Education. (2021, September). *Percentage distribution of enrollment in public elementary and secondary schools, by race/ethnicity and state or jurisdiction: Fall 2010, fall 2019, and fall 2020*. Digest of Education Statistics, National Center for Education Statistics. https://nces.ed.gov/programs/digest/d21/tables/dt21_203.70.asp
- U.S. Department of Education. (2022). *National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS)*. <https://nces.ed.gov/ipeds/datacenter/>

- Walton, G. M., & Spencer, S. J. (2009). Intellectual ability of negatively stereotyped students. *Psychological Science, 20*(9), 1132–1139. <https://doi.org/10.1111/j.1467-9280.2009.02417.x>
- Young, J. W. (2001). *Differential validity, differential prediction, and college admission testing: A comprehensive review and analysis*. <https://files.eric.ed.gov/fulltext/ED562661.pdf>
- Zhang, N., Blissett, S., Anderson, D., O'Sullivan, P., & Qasim, A. (2021). Race and gender bias in internal medicine program director letters of recommendation. *Journal of Graduate Medical Education, 13*(3), 335–344. <https://doi.org/10.4300/JGME-D-20-00929.1>
- Zwick, R., & Green, J. G. (2007). New perspectives on the correlation of SAT scores, high school grades, and socioeconomic factors. *Journal of Educational Measurement, 44*(1), 23–45. <https://doi.org/10.1111/j.1745-3984.2007.00025.x>