DEFINING PROMISE: OPTIONAL STANDARDIZED TESTING POLICIES IN AMERICAN COLLEGE AND UNIVERSITY ADMISSIONS

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Abstract: This study examines the outcomes of optional standardized testing policies in the Admissions offices at 33 public and private colleges and universities, based on cumulative GPA and graduation rates. The study also examines which students are more likely to make use of an optional testing policy, and how optional testing policies can offer important enrollment and financial planning benefits. Four cohorts of institutions are examined: twenty private colleges and universities, six public universities, five minority-serving institutions and two arts institutions, with a total of just under 123,000 student and alumni records. Few significant differences between submitters and non-submitters of testing were observed in Cumulative GPAs and graduation rates, despite significant differences in SAT/ACT scores. Optional testing policies also help build broader access to higher education: non-submitters are more likely to be first-generation-to-college students, minorities, Pell Grant recipients, women and students with Learning Differences.

Executive Summary

Previous research on standardized testing in admissions has examined the predictive value of testing and its fairness across widely differing pools of students. For over thirty years but increasingly in the last decade, hundreds of institutions have made admissions testing optional. This three-year study is the first major published research to evaluate optional testing policies in depth and across institutional types.

With various forms of optional testing policies, the thirty-three colleges and universities in this study make admissions decisions without standardized testing as a credential for all students. Deliberately, the study reaches beyond the various "top 25" or "most competitive" lists. We include institutions in four categories: twenty private colleges and universities, six public universities, five minority-serving institutions, and two arts institutions, a total of approximately 123,000 student records at institutions with enrollments from 50,000 students to 350, located in twenty-two US states and territories. They vary widely, from a large scientific and technical university to a Native American college, from traditional liberal arts colleges and universities to fine arts/design institutions to urban and rural minority-serving institutions. We tried to ask, "Who is doing the heavy lifting, serving broad constituencies? Who is exploring the breadth of human intellect and promise in imaginative ways? Who is reaching out to serve students most desperately in need of access to higher education?"

A fundamental question is: "Are college admissions decisions reliable for students who are admitted without SAT or ACT scores?" Many national educational research and philanthropic organizations such as the Lumina Foundation have presented findings to demonstrate that America will need to find successful paths to higher education for hundreds of thousands of additional first-generation-to-college, minority, immigrant and rural students, in order to grow America's economy and social stability. This study provides the research support for optional testing as at least one route by which that can happen.

Test scores contribute to college guidebook rankings. Perhaps equally important is self-selection by students who do not apply to colleges based on perceptions of testing or on advice from their high schools or parents. The National Association of College Admission Counseling (NACAC) "Report on the Commission on the Standardized Tests in Undergraduate Admissions" urged colleges and universities to "take back the conversation" about testing from the various groups for whom testing was either a profession or a cause.[i] This study is a contribution to that discussion.

Does standardized testing produce valuable predictive results, or does it artificially truncate the pools of applicants who would succeed if they could be encouraged to apply? At least based on this study, it is far more the latter. In a wide variety of settings, non-submitters are out-performing their standardized testing. Others may raise the more complex issues of test bias, but we are asking a much simpler and more direct question: if students have an option to have their admissions decisions made without test scores, how well do these students succeed, as measured by cumulative GPAs and graduation rates?

Below are the major findings of the study:

- With approximately 30% of the students admitted as non-submitters over a maximum of eight cohort years, there are no significant differences in either Cumulative GPA or graduation rates between submitters and non-submitters. Across the study, non-submitters (not including the public university students with above-average testing, to focus on the students with below-average testing who are beneficiaries of an optional testing policy) earned Cumulative GPAs that were only .05 lower than submitters, 2.83 versus 2.88. The difference in their graduation rates was .6%. *With almost 123,00 students at 33 widely differing institutions, the differences between submitters and non-submitters are five one-hundredths of a GPA point, and six-tenths of one percent in graduation rates. By any standard, these are trivial differences.*
- College and university Cumulative GPAs closely track high school GPAs, despite wide variations in testing. Students with strong HSGPAs generally perform well in college, despite modest or low testing. In contrast, students with weak HSGPAs earn lower college Cum GPAs and graduate at lower rates, even with markedly stronger testing. *A clear message: hard work and good grades in high school matter, and they matter a lot.*
- Non-submitters are more likely to be first-generation-to-college enrollees, all categories of minority students, women, Pell Grant recipients, and students with Learning Differences (LD). But across institutional types, white students also use optional testing policies at rates within low single digits of the averages, so the policies have broad appeal across ethnic groups.
- Non-submitters support successful enrollment planning in a broad range of ways. They apply Early Decision at higher rates, increase enrollments by minority students, expand geographic appeal by enrolling at colleges far from their homes, and allow for success by Learning Difference students.
- In a surprise finding, non-submitters display a distinct two-tail or bimodal curve of family financial capacity. First-generation, minority and Pell-recipient students will need financial aid support, but large pools of students not qualifying for or not requesting financial aid help balance institutional budgets.
- Non-submitters may commonly be missed in consideration for no-need merit financial awards, despite better Cum GPAs and markedly higher graduation rates than the submitters who receive merit awards. Institutions may want to examine their criteria for merit awards, especially the use of standardized testing to qualify students for no-need merit funding.

Introduction

For more than thirty years but increasingly in the last decade, hundreds of institutions have adopted admissions policies that in various ways made admissions testing optional. The NACAC "Report on the Commission on the Standardized Tests in Undergraduate Admissions" offers recommendations about testing: "Regularly question and reassess the

foundations and implications of standardized test requirements," and "Understand differences in test scores among different groups of people, and continually assess the use of standardized test scores relative to the broader social goals of higher education." In particular, the NACAC Commission report urged colleges and universities to "take back the conversation" about testing from the various groups for whom testing was either a profession or a cause.[ii] This study is a contribution to that discussion.

Bates College made SATI's optional in 1984, and after a five-year study period, the College's faculty voted to make all testing optional in 1990. Bates has one of the longer time-lines with optional testing, and also one of the best-documented. The College has presented research reports on its optional testing policy at roughly five-year intervals, most recently in 2010 and 2011 with a 25-year look-back study at conferences at Yale and Stanford Business School.[iii] But there has been relatively little published research from institutions on their experiences with optional testing, and virtually no published research to evaluate optional testing policies across institutions and institutional types.

This paper is the outcome of a three-year, foundation-sponsored study of 33 colleges and universities with one form or another of optional testing: they make admission decisions without standardized testing being used as an admissions credential for all students. The thirty-three institutions in this study form approximately a 1% sample of all four-year American colleges and universities, and approximately a 5% sample of the institutions with optional testing policies.

Even with a wide research agenda, the study addresses five core questions with practical "deliverables":

1. What percentages of enrolled students are non-submitters?
2. Who uses an optional testing policy? What are the characteristics of submitters and non-submitters? Does an optional test policy have appeal across socioeconomic groups or support diversity efforts? Does it help public universities fulfill their missions to serve their state residents? Does it help private colleges reach out to students they have not historically enrolled in large numbers?
3. What are the high school GPAs (HSGPA) of submitters and non-submitters of testing? What majors or curricula do they choose?
4. What are the graduation rates of submitters and non-submitters, as segmented by institutional types?
5. What are the practical applications of an optional testing policy for enrollment planning? How can it help with effective recruiting of students who succeed and graduate? How can it extend institutional geographic reach, improve diversity, or contribute to accurate financial modeling?

Following the recommendations of the NACAC Commission study, we have also tried to examine some broader questions:

- A practical question: How do optional testing policies work, as they have evolved across institutional types?
- A predictive question: Without standardized testing, what *does* predict success across diverse populations of students?
- An ethical question, from the title of this paper: "Defining Promise." How can colleges and universities fulfill their charters and their obligations to society by encouraging and admitting students with the best and most accurate definitions of their promise?

Our research, looking across institutional types with a large database, has come to a parallel core finding as has other recent research. Despite lots of discussions about variation in high school grading, we find high school GPA (HSGPA) to be a broadly reliable predictor of college performance, and standardized testing to be very far from "standardized" in its predictive value. We commend the College Board for its decision to overhaul the SATs only a decade after the last overhaul, and hope that several of the questions we raise in this study will be part of CEEB deliberations and those of NACAC.[iv]

It would have been desirable to include post-college career or graduate degree outcomes. But we had limited data on outcomes, partly from the relatively few years that many institutions have had an optional testing policy, and partly from fragmentary alumni data on careers and graduate degrees in the first years after graduation.

America is unusual in having neither a national high school curriculum nor a single national entrance examination for college and university. There are substantial individual, institutional and national economic payoffs for successful completion of college degrees. But like a great deal of the rest of America's culture, its college entrance process, with thousands of four-year institutions, is often complex and unpredictable, both profoundly encouraging and discouraging to students. Without the most accurate and subtle understanding of students' capabilities, we will waste both their promise and our country's. This study is a response to the call to "take back the conversation," an attempt at *Defining Promise* in some broader and more hopeful ways.[v]

Methodology and Core Questions

We communicated with one hundred and twenty institutions and state systems to choose the thirty-three in the study. These thirty-three institutions supplied a total of 122,916 student and alumni records across a maximum of eight cohort years to allow for research on both recently graduated alumni and currently enrolled students (as of the time of data submission). Institutions normally submitted two graduated class cohorts and two currently enrolled cohorts as of the time of data submission. The study used pooled data from four institutional categories: twenty private colleges and universities (with a combined total of 37,611 student and alumni records), six public state universities (a total of 71,831 records), five minority-serving institutions (a total of 12,691 records), and two arts institutions (783 records). This study does not identify the 33 institutions, as the authors guaranteed them anonymity in return for sharing a great deal of internal data. The study largely presents findings by category of institution, and across the categories. To

support the institutions participating in the study, we provided each with a thorough analysis of their own data (with a formatted disc of their data to allow for additional research), a blind comparison analysis of the institutions in their category, and a copy of the full study. All thirty-three institutions in the study after reviewing their own report and their blind comparison study have signed off on the analysis we provided.

These institutions have quite different if philosophically parallel approaches to standardized testing in their admissions processes. Typically, the twenty private colleges and universities in the study have what could be called "pure optional testing,' in that the applicants can choose whether or not to submit their testing as part of their admissions application. In many cases, the private institutions never see the test scores of the students they admit as non-submitters, while others request the scores after the students enroll to be able to do follow-up research, a protocol which we recommend for institutions with optional testing policies. The institutions will never get all the scores, but generally a heavy majority of students are willing to share the tests after they enroll. [vi] (The Common Application mechanism might help with this issue, to collect test scores but also allow students to indicate if the scores are to be submitted.) Now with over 800 test-optional colleges and universities out of America's approximately 2800 four-year institutions, it may be only a matter of time before many students and families, with careful college planning, make a considered decision to skip the testing process entirely and apply only to test-optional colleges and universities, of which there are now dozens with legitimate national reputations for excellence.

In contrast, the six public universities require that testing be submitted by all applicants, but have a state or university policy to offer admission to students with certain high school GPAs or class ranks, policies which are often called "automatic" or "guaranteed" admission. All students who meet the criteria on HS performance are admitted, no matter what their scores. For consistency of terminology, this study calls these students who are admitted on their HSGPA or rank "non-submitters," in that they are being admitted without test scores being considered, even when the scores are being collected from all applicants. Since these state systems are generally made up of many institutions, the state legislatures or state-level boards of trustees are concerned with access as well as excellence. In some states the admissions criteria are focused more on access for a broad range of students, and in others the admissions requirements are more stringent than many of the private institutions in this study. Thus these public institutions offer an opportunity to examine the predictive value of testing in settings with a broad range of credentials.

The third group of institutions includes five minority-serving colleges and universities, with a wide range of approaches: pure optional testing, open-access, requiring testing only for course placement after admission (with sometimes the Accuplacer or parallel tests rather than SAT or ACT tests), or requiring testing for a decision between admission to the university or to an internal community college.

The fourth group includes two arts institutions with specialty curricula, with optional testing but also with strong weights placed on the evaluation of a submitted portfolio of student work.[vii]

Finally, we conducted three sub-studies, the results of which are at the end of this paper: an examination of students receiving merit financial aid awards, a look at aggregate data in the study using multivariate R-square analyses, and a study of Learning Difference students from eight private institutions, to examine how the test-optional movement intersects with our much-improved understanding of LD students who succeed in higher education.

Throughout this study, the authors present data using consistent formats across four categories of institutions and with large N's and multiple cohort years. For most of the simpler comparative data we use bar charts. For more complex data, we use Cohen's d and chi-square analyses, with color coding in the charts to reflect levels of statistical difference. The two charts below, while reflecting broad aggregate study findings, are also illustrative of our presentations. Figure 1 below reflects a calculation of graduation rates, using a simple bar chart with the "N" listed at the right of the bar, and any explanatory comments placed in a box next to the bar. In all graphs in this paper, the "N" to the right of bars is the number of students represented in that bar.

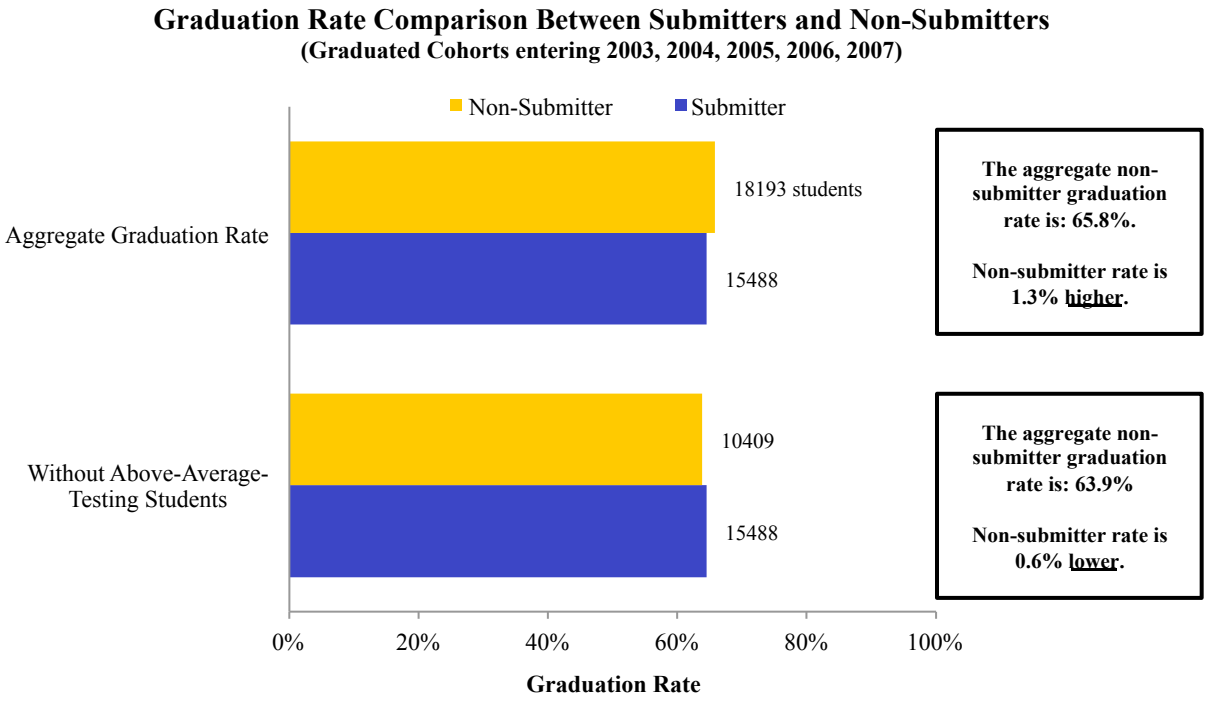


Figure 1.

Figure 2 below uses Cohen's d and chi-square analyses, with two parallel charts of data with color coding to reflect degrees of statistical variance and importance. When all students are included, there is a moderate difference in high school GPAs (HSGPAs) and only trivial differences between submitters and non-submitters in SATs, college cumulative GPAs and graduation rates. When those students at public universities with SATs above the average for their institution are removed, the statistically large difference is in the

remaining students' SATs, with only trivial, small or insignificant differences in HSGPA, college Cum GPA and graduation rates.

(Normally an explanatory comment belongs in an endnote. But because so many of our analyses involve SAT and ACT scores submitted by the colleges and universities, the issue of submitted scores needs to be explained. At the public universities in our study, admissions policies require the submission of test scores, even as a majority of most enrolling classes are awarded "automatic admission" or "guaranteed admission" based on the students' HSGPA or class rank. So the public universities in our study were generally able to supply test scores for virtually all of their enrolled students. But at the private, minority-serving and arts institutions, which typically have pure optional testing policies, students can choose whether to submit their test scores. Many institutions with pure optional testing policies either collect scores given to them during the Admissions process in a separate blind file not seen by the deans reading applications, or try to collect as many scores as possible after students enroll for later research. But none of these institutions have test scores for 100% of their students, and some have reasonably low percentages. In this study, we include all test scores which were submitted in calculating averages, but also identify in the notes at the bottom of charts the percentages of the test scores from non-submitters that were submitted to the study.)

Summary of Key Statistics
(Students entering 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010)

	Non-Submitters	Submitters	
n	*62067*	*60743*	
High School GPA	3.45	3.28	*Cohen's d*
SAT (See caveat below)	1129	1154	*Cohen's d*
Cumulative GPA	2.92	2.88	*Cohen's d*
Graduation Rate	65.8%	64.5%	*Chi-Square*

COLOR KEY
Cohen's D

< 0.1 = trivial difference
0.1 - 0.3 = small difference
0.3 - 0.5 = moderate difference
> 0.5 = large difference

Without Above-Average-Testing Non-submitters at public universities

n	36648	*60743*	
High School GPA	3.35	3.28	*Cohen's d*
SAT (See caveat below)	1041	1154	*Cohen's d*
Cumulative GPA	2.83	2.88	*Cohen's d*
Graduation Rate	63.9%	64.5%	*Chi-Square*

COLOR KEY
Chi-Square Tests

No Significant Difference
Statistically Significant Difference p < 0.000

SAT Caveat: 82.0% of Non-Submitters still submitted score to their institution, either as part of an assured admission policy or after enrollment under a pure optional testing policy. The average SAT scores of non-submitters represent that 82.0%. All other data in this chart is taken from the full counts of students given at the top of the column. For the second chart, the results were calculated with those students at the six public universities removed who had testing above the average of their institution. In this way, the data reflect only those students in public institutions with testing below their institutional averages--i.e., those who were beneficiaries of an automatic admission program based on HSGPA or HS rank, or who chose to apply as a non-submitter in an institution that had a pure optional testing policy.

Figure 2.

The study also attempts to present data to address certain core questions. A fundamental question is: "Are college admissions decisions reliable for students who are admitted without SAT or ACT scores?" Many national educational research and philanthropic organizations, such as the Lumina Foundation, have presented findings to demonstrate that America will need to find successful paths to higher education for hundreds of thousands of additional first-generation-to-college, minority, immigrant and rural students, in order to grow America's economy and social stability. This study provides the research support for at least one route by which that can happen.

As readers will see throughout this paper, the research finds HSGPA to be a consistent and reliable predictor of college Cumulative GPA. Across widely differing cohorts of institutions, college Cumulative GPA seems reliably and closely to track HSGPA. Using the full data set of all students in the study for whom we had both a HSGPA and a college Cumulative GPA, Figure 3 below graphs these two variables against each other. With 88,460 students from the 33 institutions and with above-average-testing non-submitters and below-average-testing non-submitters graphed separately, the graph is a tight 45-degree slope: college Cumulative GPA closely tracks HSGPA. Also, the slope lines for both submitters and non-submitters are not only close to each other, but of almost exactly the same shape--there is little variation for either submitters or non-submitters. This frankly was one of our research questions: would HSGPA prove to be a much stronger predictor for non-submitters and less of a predictor for submitters? At least from this snapshot, that hypothesis can be discounted: HSGPA predicts strongly for both submitters and non-submitters. (The vertical pattern of HSGPA's at the extreme right side of the graph is created by groups of students with HGPAs at or in excess of 4.0, the result of weighting HSGPAs for honors/AP/IB courses.)

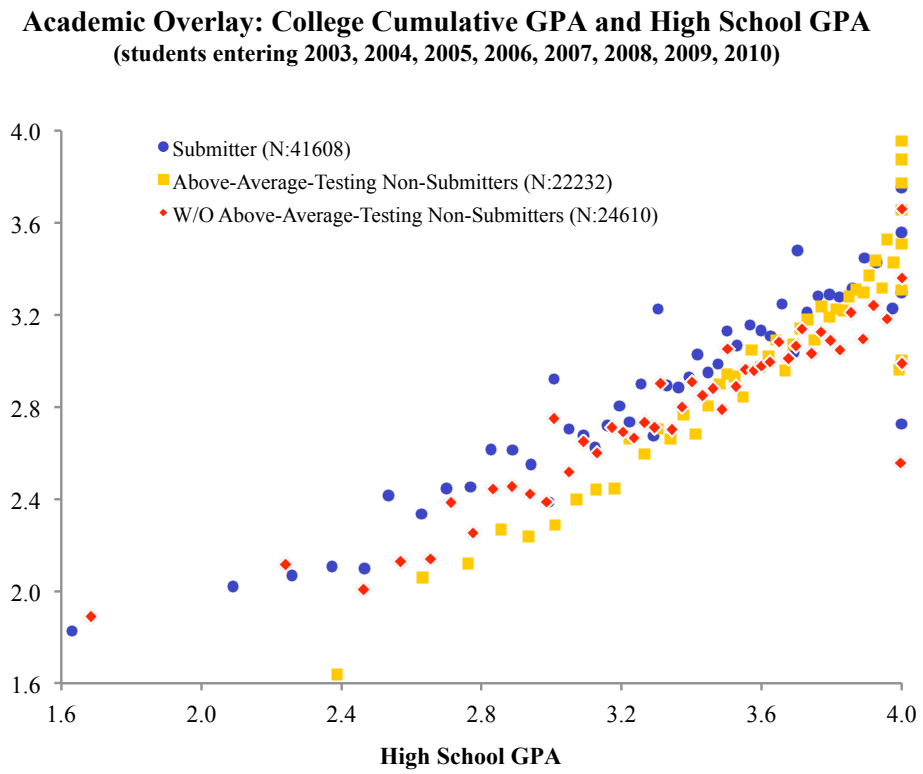


Figure 3.

In contrast (Figure 4, below), when college Cumulative GPA is graphed against SAT scores, with over 105,000 student records, the graph has the much broader, semi-spherical shape of a football that suggests a much-less-reliable prediction of college Cumulative GPA. While neither submitters nor non-submitters have a tight predictive line, non-submitters seem more dramatically to expand the oval shape of the graph--for them, SATs seem particularly unlikely to closely predict their college performance. Also worth noting is that neither submitters nor non-submitters dominate the top or the bottom of these graphs. (Note that because of the N sizes, each blue dot for submitters includes roughly twice as many students as an orange dot for either of the two groups of non-submitters.)

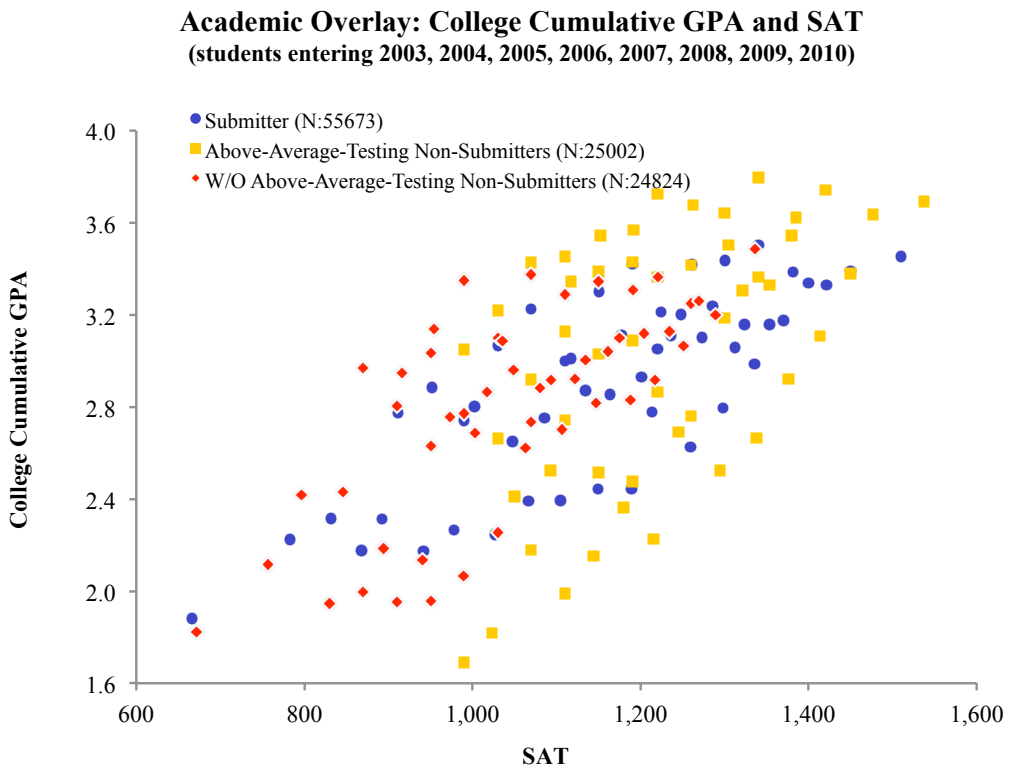


Figure 4.

Readers should not attach too much precision to these two graphs.[viii] With tens of thousands of students in each graph, each dot (50 dots for submitters, 50 for above-average-testing non-submitters and 50 for below-average-testing non-submitters) represents hundreds of students. As with all research, it will be important for other scholars to examine and retest our findings. One skilled statistician on our Advisory Committee commented in his peer review of the draft study that the HSGPA tight 45 degree slope was a "leptokurtic" scatterplot, with the data very tightly bunched, while the football-shaped SAT scatterplot was a more typical, broadly spread set of data. Many of us who have spent our careers as secondary or university faculty and administrators find compelling the argument that "what students do over four years in high school is more important than what they do on a Saturday morning." And to state the obvious, repeatedly seen in this study with various cohorts, the tightly parallel lines of the HSGPA/college Cum GPA chart reflect *two* four-year patterns of commitment and self-discipline. The broad illustrations of these graphs are consistent with the findings in this paper.

For just the value of seeing student performance over a long timeline, we also have chosen to base our principal analyses on the *Cumulative* college or university GPA, rather than First-year GPA. All college administrators are well aware of the multiple and sometimes profound adjustments that students must manage in their first year of college. In choosing the colleges and universities for this study, we tried to include some with reputations for working with students who had proven themselves to everyone except perhaps the testing

agencies. Almost by definition, test-optional colleges and universities will attract and enroll larger numbers of these committed and disciplined students. The reliance on FYGPA seems a systemic weakness of much validity research, as by definition it ignores the core mission of our colleges and universities: to graduate students who have learned how to succeed, often in the face of obstacles. Much of that learning, and the visible success that follows from it, occurs over the longer course of a college education. We hope that extending the lenses to track Cumulative GPA and graduation rates will be one of the key strengths of this study.

It is sometimes argued that the reason that standardized testing produces only very modest and uneven predictive results is restriction of range. Since students with lower scores are not admitted, so the argument runs, most of the enrolling students have stronger (and closely clustered) test scores, and therefore the predictive value of the tests is diminished. Given the data in this study, we can examine whether this argument for restriction of range is true. Because of the optional testing policies, we have tens of thousands of students in the study with modest scores, most of them with very sound HSGPAs. We have just the wide range of scores that supposedly would be needed to demonstrate whether restriction of range is the cause for the modest predictive value of testing. As will be seen, the very strong correlation of HSGPA with college Cumulative GPA versus the uneven and modest correlation with test scores is more than a scarlet thread in this study--it is the bright colored fabric of the entire study.

Summary of Principal Findings

The study addresses five core questions. Principal findings for these five questions are listed below.

1. **What percentage of enrolled students are non-submitters?**

Across the study, 51% of enrolled students were admitted under an optional testing policy. But a more reflective statistic is 30% of enrolled students. This 30% includes two groups. The first is all non-submitters from the twenty-seven private, minority-serving and arts institutions with pure optional testing policies. The second is only those students at the six public universities with test averages below their institutional averages, i.e., those who benefitted from an optional testing policy. To be sure, the students at public universities with test scores above their institutional average were admitted solely on the basis of their HSGPA or class rank, and thus are technically non-submitters. But common sense tells us that those students would almost certainly have been admitted with or without their institution's automatic or guaranteed admissions policy. Thus much of our research at the public universities divides the non-submitters into those with scores above and below their institutional averages, and examines the performance of both groups.

- At the twenty private colleges and universities, non-submitters comprised 33% of all enrollees, rising from 26% to 35% of entering classes over the years of the study.

- At the six public universities, 63% of all enrollees were admitted on the basis of their HSGPA or class rank without testing being taken into account. Thirty-five percent were students with testing above their institution's averages who presumably would be admitted if testing were considered, but 28% had test scores below class averages who were beneficiaries of the automatic admissions policy. We also examined a smaller sub-group of students (7.5% of all public university enrollees, a sub-set included in the 28% above) who met the HSGPA criteria but with dramatically lower SAT/ACT scores.
- At the five minority serving institutions, 28% of enrollees were non-submitters. A wide range of policies resulted in non-submitter rates from 15% to 64%.
- At the two arts institutions, non-submitters represented 54% of enrollees.

2. **What are the comparative HSGPAs and college Cumulative GPAs of submitters and non-submitters of testing?**

At all categories of institutions, college and university GPAs closely track HSGPA, even with wide variations in testing. Across the study, non-submitters (not including public university students with above-average testing) earned Cum GPAs that were only .05 lower than submitters, 2.83 versus 2.88.

- At the private institutions, submitters and non-submitters earn almost identical GPAs in both high school and college, with submitters only .04 higher in high school. At graduation, their college cumulative GPAs were still very close, only .10 apart, with submitters higher. Submitters had SATs (including converted ACTs) that were 149 points higher than non-submitters.
- At the public universities, non-submitters had high school GPAs that were significantly higher than submitters, both in high school and university, by .4 of a GPA point. Consistently, students who met the HSGPA requirement but with below-average testing earned higher university GPAs than students with lower HSGPAs but higher testing, by about .25 of a GPA point. These below-average-testing non-submitters have average SAT testing that is 93 points lower than the submitters.
- At the minority-serving institutions, submitters performed better in both high school and college, by about .3 of a GPA point. For both submitters and non-submitters, college GPAs track HSGPA, and non-submitters had markedly lower HSGPAs. Both submitters and non-submitters at these institutions have lower HSGPAs than at other institutions in the study, though there are hopeful signs of improvement in HSGPAs.
- In the aggregate of the two arts institutions, submitters and non-submitters had largely similar HSGPAs, portfolio ratings and college outcomes on GPA. We had hoped to see some predictive value in the portfolio ratings, but the N's were too small and data averages too close for a reliable analysis.

3. **What are the graduation rates and time-to-completion rates of submitters and non-submitters?**

Graduation rates of submitters and non-submitters at the private and public institutions in this study are extremely close, differing by only .6% across the study, again with above-average-testing students at public universities not included. Non-submitters with strong HSGPAs normally graduate at higher rates than students with weaker HSGPAs but much stronger testing. For the private, public and arts institutions in the study, time-to-completion rates for submitters and non-submitters are less than 1% apart. At the minority-serving institutions, time-to-completion rates for submitters were 3% higher than for non-submitters, with GPAs and time-to-completion rates at these minority-serving institutions largely mirroring HSGPAs. (The study did not try to break out four, five or six year graduation rates: if a student had received their degree at the time the data was collected, he/she was counted in the study as a graduate.)

- At the twenty private institutions, the overall aggregate graduation rate is 76.9%. Depending on the method of calculation (reached by averaging one aggregate pool of students or by averaging the institutional graduation rates), non-submitters graduate at rates either 1.1% higher or 1.9% lower than submitters, but in either case, with very similar graduation outcomes.
- In the public institutions, with an overall graduation rate of 66%, non-submitters graduate at rates 5% above submitters, 68% versus 63%. Non-submitters with below-average testing graduate at rates 4% above submitters.
- In the minority-serving institutions, submitters graduate at rates 13% higher than non-submitters, 37% versus 24%. At the minority-serving institutions, lower average graduation rates for non-submitters are driven by significantly higher percentages of non-submitters with markedly lower HSGPAs.

4. At the only arts institution with graduated cohorts, submitters graduate at rates 11% higher than non-submitters, 64% versus 55%, but this seems largely unrelated to academic credentials, which have no significant differences.

4. Who uses an optional testing policy?

Non-submitters are more likely to be women, first-generation-to-college, all categories of minority students, Pell Grant recipients, and students with Learning Differences (LD). But across institutional types, white students also use optional testing policies at rates within single digits of the averages for their institution, so the policies seem to have broad appeal across ethnic groups.

- There are not dramatic differences in enrollments by high school type. Public, parochial and private high school students use optional testing policies at rates within single digits of each other. In private colleges and universities, a slightly higher use of optional testing policies by students from parochial and private schools may reflect focused college counselors with lower student loads.
- There is modest evidence at private institutions of athletes who have been rated by coaches in the admissions process using an optional testing policy at higher rates.

- LD students, from a sample of 8 private institutions, were much more likely to apply as non-submitters.

5. What are the practical applications of an optional testing policy for enrollment planning?

Non-submitters support successful enrollment planning in multiple ways, from applying Early Decision at higher rates, to increased enrollments by minority students, to broad geographic appeal, to a two-tail curve of family financial capacity, to success by Learning Difference students. However, non-submitters may commonly be missed in consideration for merit awards, despite better Cum GPAs and markedly higher graduation rates than the submitters who receive merit awards.

- Non-submitters in private institutions are 10% more likely to use an Early Decision policy than apply for regular admission, not a trivial difference in competition for yield.
- In private institutions, optional testing has broad geographic reach, with non-submitting students enrolling from outside an institution's normal regional territories. In the public institutions, four of the six have made their guaranteed admissions policies available to out-of-state students, running counter to the pattern of having guaranteed admissions be an advantage for in-state students. Albeit with small numbers, there is some evidence of optional testing helping these public institutions increase their geographic reach.
- In a surprise finding, both private and public institutions reflect a broad pattern of both low-income and high-income students using optional testing policies at higher rates. This creates a "two-tail curve" with important financial planning implications. On the one hand, non-submitters were more likely to be first-generation-to-college, minority, or Pell recipients, and thus create needs for financial aid. On the other hand, a significant pool of non-submitters not asking for financial aid helps balance institutional budgets.
- In the first of three sub-studies, we examined almost 27,000 students who received merit financial awards. When all merit recipients were included, non-submitters and submitters received merit awards at almost exactly the same rates, but non-submitters earned markedly higher Cum GPAs of .25 over submitters and graduated at rates that were 11% higher, 81% versus 70%. When the above-average-testing non-submitters were removed from the comparisons, the number of merit awards to the remaining non-submitters dropped dramatically from 13,708 to 5,064, but these below-average-testing non-submitters still earned slightly higher Cum GPAs and graduated at rates 6% higher than the submitters. These non-submitters are also at statistically significant levels more likely to be underrepresented minorities, first-generation-to-college, women, Pell recipients, and STEM majors. While the rationales for merit awards vary widely, if a core assumption is that they should reward students with no-need funding who are more likely to do well and graduate, that assumption seems not to be borne out by the data. Institutions with optional

testing policies may want to examine their criteria for merit awards, especially the use of standardized testing to qualify students for no-need merit funding.

- In the second sub-study, a basic R-square found that HSGPA accounts for most of the variation in Cum GPA, with testing providing an additional few percentage points. At public institutions, testing seemed to add especially low percentages of correlation to HSGPA, often only 1% to 3%, while it added some additional correlation at private institutions. We did not observe that testing had markedly lower R-square values for non-submitters, and R-square analyses in general seem to produce mixed correlations for non-submitters. Our study chose to use other principal statistical tools, Cohen's d and chi-square, in our analyses, but since R-square is commonly used, we wanted to provide at least a baseline analysis.
- The third sub-study examined the records of 1059 students at eight private institutions with diagnosed Learning Differences. We found that LD students use optional testing policies at significantly higher rates, 50% versus 33% for non-submitters generally at the private institutions. The LD students, both submitters and non-submitters, earn GPAs and graduate at rates that are only slightly below non-LD students. A separate study at Bates found that given basic accommodations to which they are legally entitled, LD students dramatically improved their Cumulative GPAs and graduation rates over two decades from 50% to 90%, Bates' overall graduation rate.[ix] Over this time, Bates strengthened its administration of LD support, and LD students were more knowledgeable and open about their LDs. These changes in the success of LD students had the effect of raising Bates' overall graduation rate by several percentage points, not a trivial change for faculties, presidents and trustees. While acknowledging the issues of medical privacy, how colleges and universities can effectively serve LD students is worthy of much more attention and coordinated research than it seems to have gotten to date.

Here then are our results as organized by the four categories of institutions we studied, followed by concluding remarks.

I. Twenty Private Colleges and Universities: Principal Findings

The twenty private college and universities in the study include fifteen colleges and five universities, ranging in size from 350 to 7500 students. These findings are based on the aggregate data from 36,859 records at the twenty institutions.[x]

What Percentage of Enrolled Students Use an Optional Testing Policy?

From 2003 to 2010, non-submitter enrollees rose gradually from 26% to 35% in this aggregate cohort of the study. The 20 colleges and universities have a wide range of enrollee non-submitter rates, from 9% to 63%. (Figure 5.)

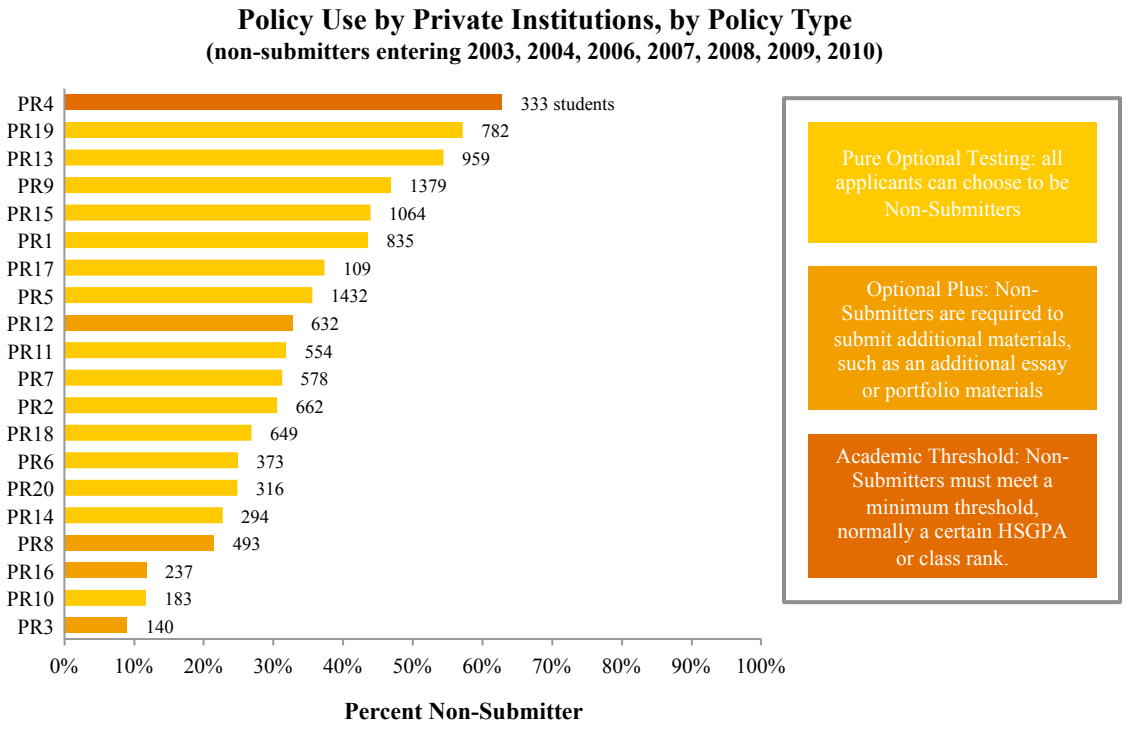


Figure 5.

While the number of private institutions with optional test policies continues to expand modestly, the share of students within these institutions choosing to be non-submitters is also climbing over time. (Figure 6.) We did not gather data to analyze admissions funnels, so do not know whether this increased share of non-submitters is due to larger pools of non-submitter applicants from which to choose stable enrollments, higher yield from admissions offers to non-submitters, reshaped admissions priorities by admissions staffs, or colleges using non-submitter applications to increase overall enrollments. As with several other facets of this study, the admissions funnel data is a promising topic for further study.

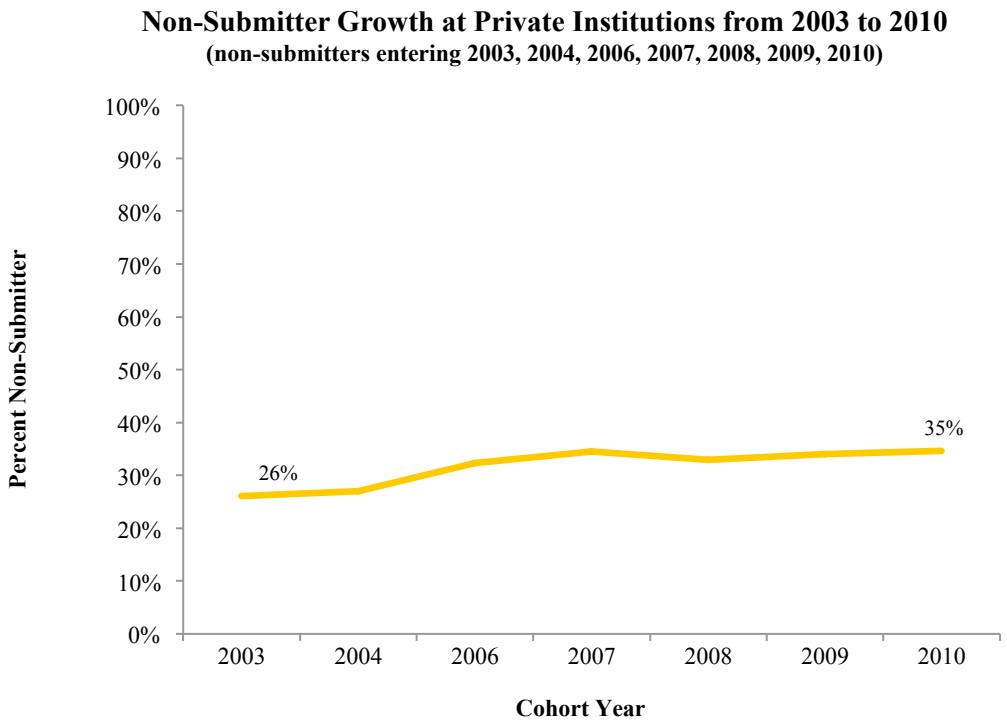


Figure 6.

Who Uses an Optional Testing Policy?

New England students have higher non-submitter rates than other geographic regions, perhaps because more colleges and universities in the study are located in New England or the Middle Atlantic states, and because these New England institutions have had optional testing policies for longer periods of time. But the policy has broad geographic appeal: percentage use within the national geographic regions ranges from 24% to 49%. At many colleges, we noticed a pattern of the institutions drawing higher percentages of non-submitters at long distances from their campus, so non-submitter policies seem to be helping colleges to raise their national appeal. Non-submitter rates vary modestly by high school type: 30% are from public schools, 37% from parochial, and 38% from private schools. (Figure 7.)

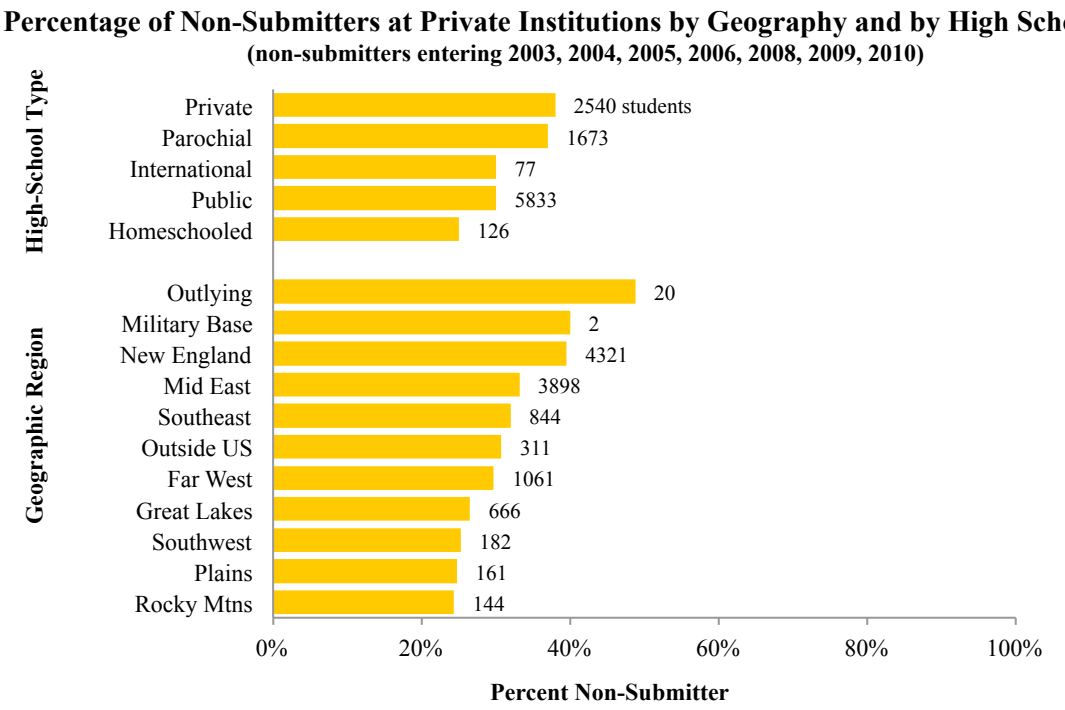


Figure 7.

It may seem a bit counterintuitive to find even modestly higher rates of non-submitters from parochial and private schools, given that many non-submitters are minority, first-generation-to-college or Pell recipients. But keep in mind the student-to-guidance-counselor ratios: at public schools across America, the ratio is over 470-1, while at most private schools there are college counselors with focused duties and generally with ratios well under 100-1. The core thesis of Jonathan Kozol's Savage Inequalities is that America spends substantially more per head on the public K-12 education of its wealthy students than on the public K-12 poor students. In each of the geographic areas Kozol studied, the top-funded suburban school system spent about twice per student what the nearby inner city school system spent, and Kozol's research deals only with public schools.[xi] In this focused study of optional testing, as in so many other facets of the admissions world, the painful disparities of services are visible at unexpected moments.

Optional testing also seems to support efforts to draw diverse student bodies. Women, first-generation-to-college students, Pell Grant recipients, all categories of minority students, athletes, and LD students all choose optional testing at higher rates. Non-submitters also choose to be early decision applicants at higher rates, another finding with important enrollment implications. (Figure 8.)

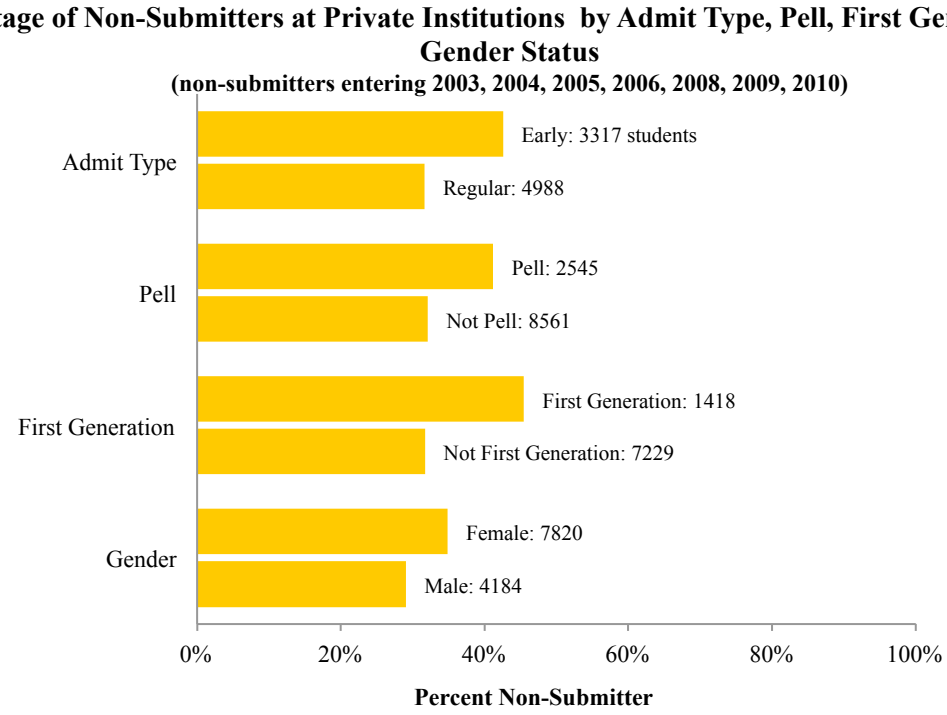
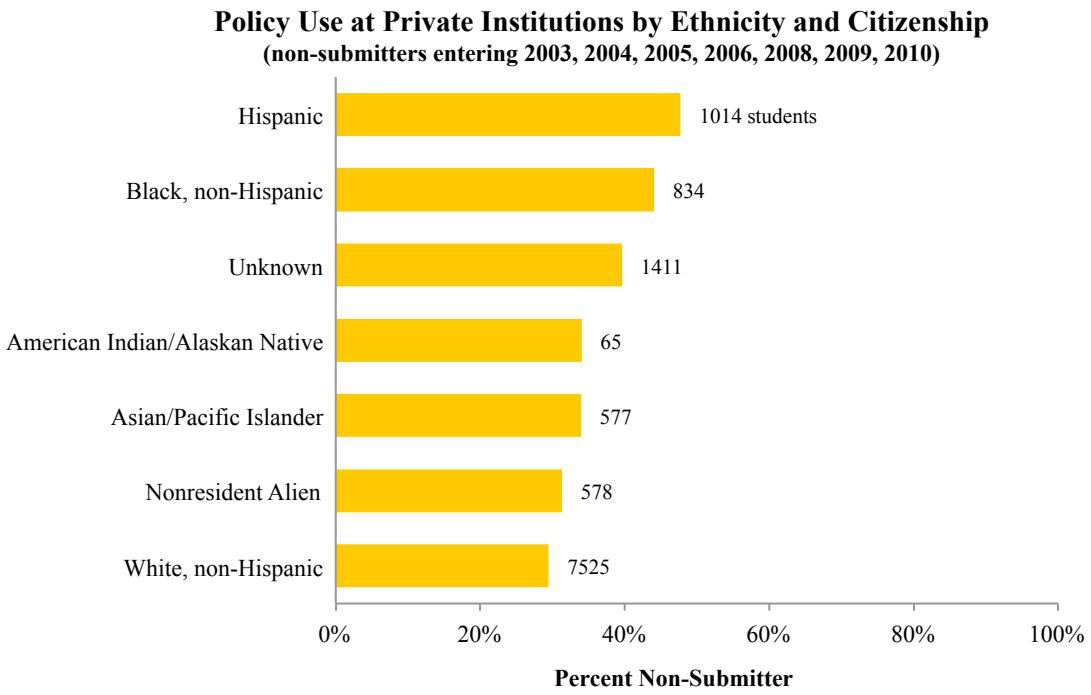


Figure 8.

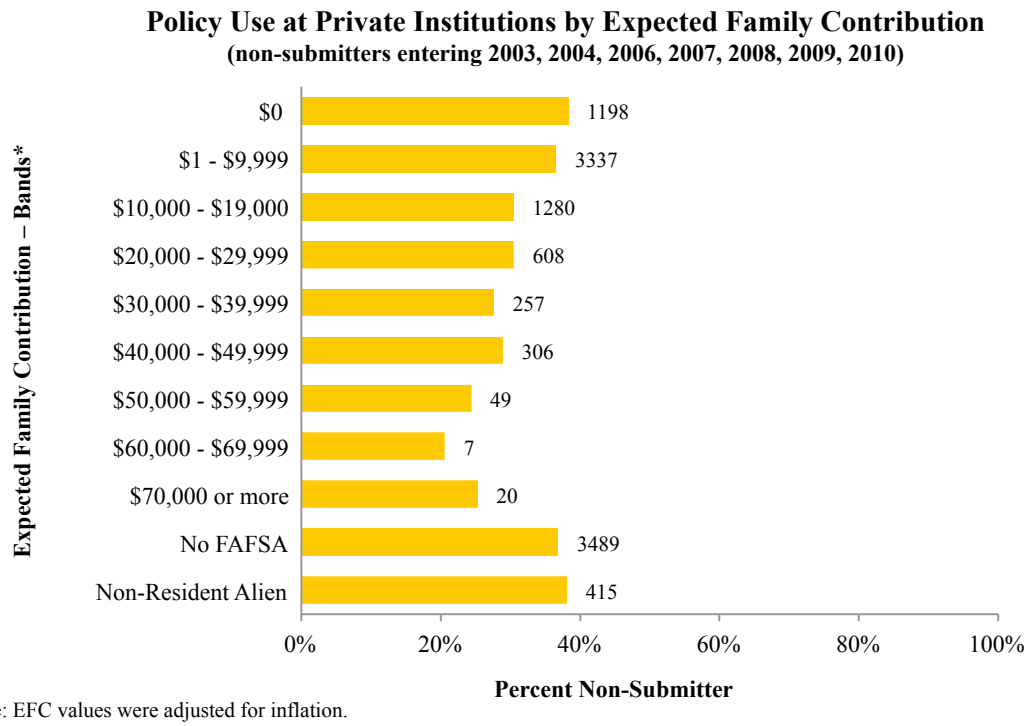
The optional testing policies seem to be supporting increases in underrepresented minority students at these twenty colleges and universities. But 29% of white students also chose to be non-submitters, only low single digits below the overall average of 32%. So while optional testing seems to work as an affirmative action device, the policy also has wide appeal across all ethnic categories, including white students, who very substantially outnumber all categories of minority and international students combined. To those who see reductions in emphasis on test scores as opening a back door for affirmative action, we would point out that no optional testing policy is based on race, ethnicity, citizenship, gender or any of the other category arguments that have bedeviled higher education. As we have been telling students applying to Bates for the last 30 years, "Make your own decision about the tests. If you think they accurately reflect your promise, submit them, and they will be considered as part of the decision. If you think they do not reflect your promise, don't submit them, and their absence will not be held against you." (Figure 9.)



Note: This is based on the former IPEDS categories. Students from cohorts 2009 and 2010 who selected multiple backgrounds were re-categorized as "unknown":

Figure 9.

One unexpected finding runs consistently across the institutional groupings in the study: both low-income and high-income students (including as high income the "No FAFSA" students not applying for Federal financial aid) use the policy at higher rates, creating a "two-tail" or "banana curve" financial pattern. While non-submitter policies support student diversity and thus create financial aid obligations, a roughly equal pool of students who are not financial aid recipients help maintain balanced institutional budgets. To put it mildly, there are extremely important enrollment planning and financial modeling implications in these findings, though institutions will need to examine their own comparisons between submitters and non-submitters. (Figure 10.)



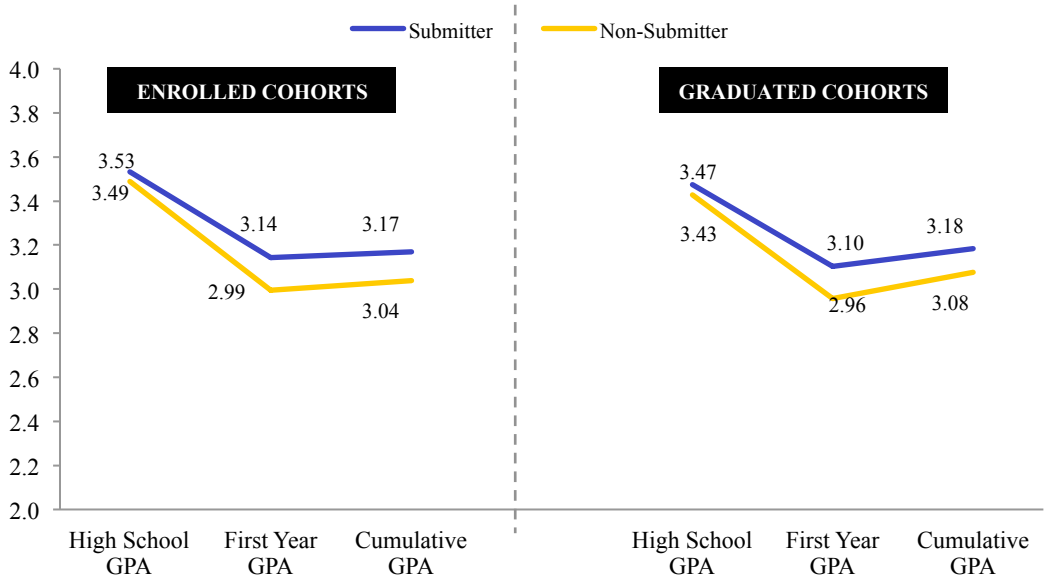
Note: EFC values were adjusted for inflation.

Figure 10.

What are the Academic Outcomes of Non-Submitter Policies?

Submitters and non-submitters enter college with very closely parallel HSGPAs (.04 apart) but reasonably large differences in SAT scores of 149 points. In college, non-submitters start with a first-year GPA difference of .13 below submitters, but at graduation the GPA gap is .10. So despite the test score differences, submitters and non-submitters in both high school and college are only separated by *a few hundredths of a GPA point.* May we pause in this mountain of statistics to underline a common-sense observation. If almost 37,000 students at twenty private institutions start with HSGPAs that are .04 apart and end with college Cum GPAs that are .10 apart, *a shift of .06 of a GPA point* is trivial. (Figure 11.)

Policy Use by GPA at Private Institutions - High School, College First Year, College Cumulative
(non-submitters entering 2003, 2004, 2005, 2006, 2008, 2009, 2010)



Note: The focus of this chart is on the difference between non-submitter and submitter means.

Figure 11.

The graduation rates of submitters and non-submitters are quite close, within a few percentage points. The overall graduation rate for this aggregate sample is 76.9%. The non-submitter graduation rate is 1.1% higher when calculated as one aggregate pool; when calculated as an average of the 20 institutional graduation rates, the non-submitter rate is 1.9% lower. In either case, with almost 37,000 records at twenty institutions, there is an insignificant difference. Aggregate time-to-completion rates, calculated by counting four-year graduations as 100% of a time line, are almost identical, differing by .8%. (Figure 12.)

Summary of Key Statistics at Private Institutions
(Students entering 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010)

	Non-Submitters	Submitters	
High School GPA	3.47	3.51	*Cohen's d*
Academic Rating	6.53	6.76	*Cohen's d*
SAT (See caveat below)	1096	1245	*Cohen's d*
First Year GPA	2.98	3.13	*Cohen's d*
Cum GPA (enrolled cohorts)	3.04	3.17	*Cohen's d*
Cum GPA (graduated cohorts)	3.08	3.18	*Cohen's d*
Graduation Rate**	77.7%	76.6%	*Chi-Square*
Completion Rate**	101.4%	102.2%	*Cohen's d*
Underrepresented Minority	16%	9%	*Chi-Square*
First Generation	16%	10%	*Chi-Square*
Gender (Female)	65%	59%	*Chi-Square*
Pell	23%	17%	*Chi-Square*
EFC	$21,790	$26,303	*Cohen's d*
EFC – Adjusted for Inflation	$10,570	$12,817	*Cohen's d*
STEM Major	24%	32%	*Chi-Square*

COLOR KEY
Cohen's D
< 0.1 = trivial difference
0.1 - 0.3 = small difference
0.3 - 0.5 = moderate difference
> 0.5 = large difference

COLOR KEY
Chi-Square Tests
No Significant Difference
Statistically Significant Difference p < 0.000

Academic Rating: All institutions submitted their respective scales, but for comparison purposes we converted all of them to a 10 point scale, where 10 is the highest rating.
SAT Caveat: Only 41% of Non-Submitters still submitted scores. This data on the average scores of non-submitters only represents that 41%. All other data in this chart represents the full set of non-submitter and submitters, with all the data that was submitted.

Figure 12.

Throughout this study, color coding in these comparative charts reflects statistical differences, with a Cohen's d analysis largely used in the top chart and a Chi-Square analysis largely in the bottom chart. In the top chart, the SAT differences of 149 points between submitters and non-submitters reflect a large statistical difference, and all other seven outcome characteristics being measured—including HSGPA, college GPA and graduation rate—are small or trivial differences. In contrast, in the lower chart, there are statistically significant differences in five of seven fields.

Non-submitters are less likely to be STEM majors, and to earn Latin honors with various "Cum Laude" awards. But as in so many data facets of this study, the percentage differences are small: submitters favor Biology/Life Sciences and non-submitters favor Psychology by differences of about 2%. The ratios are parallel in Physical Sciences, Math, Computing and Engineering. The real issue for these American private colleges and universities may be that low percentages of students, both submitters and non-submitters, are choosing STEM fields. Many studies have pointed out this issue of choice of majors, and the parallel issue of disproportionate percentages of STEM majors being international students. (Figure 13.)

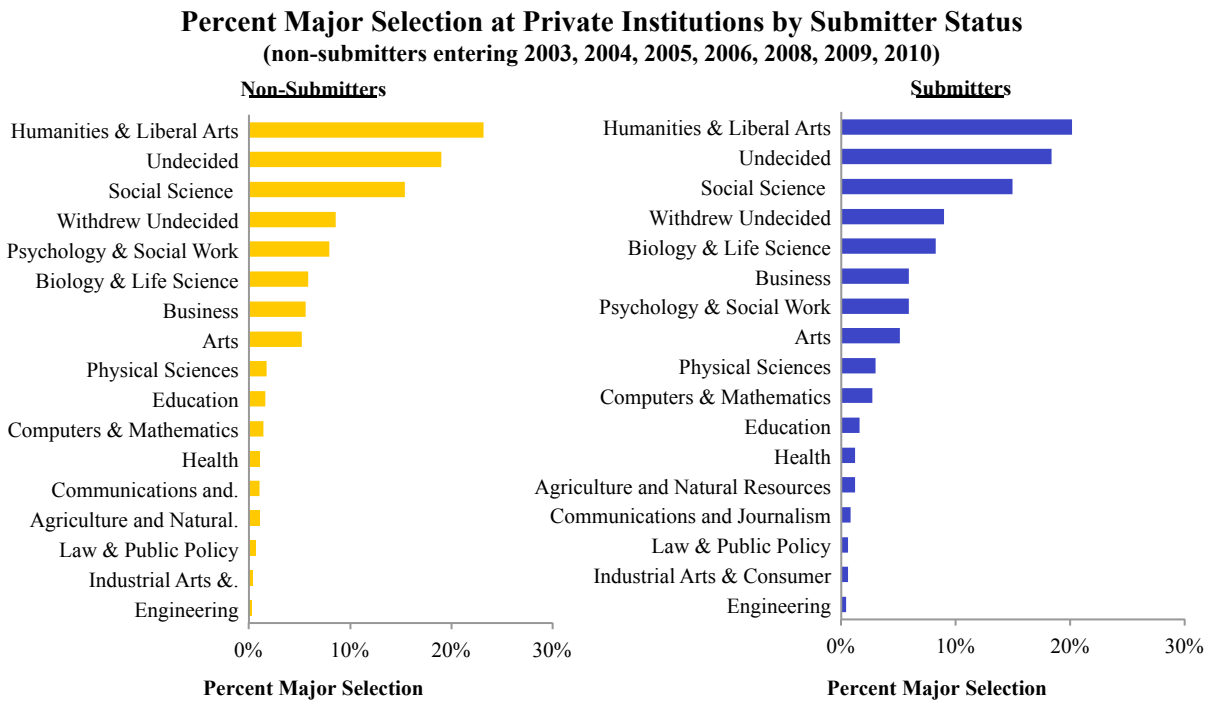


Figure 13.

With only recent graduated cohorts, we could offer no important conclusions about career outcomes or graduate study in any of the institutional groupings in the study.

The summary below, with key data from each of the 20 private institutions, reflects what readers will find throughout this study: *when non-submitters and submitters are compared across multiple criteria, the heaviest statistical differences are found in testing scores, but generally are not found in HSGPAs, first year GPAs, Cum GPAs or graduation rates.* In other words, most of the differences between the two pools of submitters and non-submitters are in their SAT scores. All other performance and outcome measures are essentially equal. (Figure 14.)

Private Institutions--Academic Comparison Summary

	High School GPA		SAT (CR + Math)		First Year GPA		Cumulative GPA (Graduated Cohorts)		Graduation Rate	
	Non-Sub	Sub	Non-Sub	Sub	Non-Sub	Sub	Non-Sub	Sub	Non-Sub	Sub
PR1	3.38	3.43	1146	1332	3.02	3.27	3.15	3.34	89.2%	89.4%
PR2	3.57	3.62	1112	1294	3.27	3.43	3.34	3.44	82.1%	82.6%
PR3	3.14	3.11	*No Data*	1098	2.83	2.73	2.92	2.74	56.0%	59.8%
PR4	3.86	3.54	1307	1265	3.44	3.22	3.45*	3.24*	*No Data*	*No Data*
PR5	3.38	3.45	1068	1213	2.90	3.10	3.18	3.29	82.6%	83.3%
PR6	3.49	3.63	1068	1283	2.83	3.13	3.03	3.26	69.2%	74.1%
PR7	3.22	3.39	1086	1283	2.89	3.18	2.91*	3.19*	*No Data*	*No Data*
PR8	3.63	3.49	1109	1276	2.96	3.07	3.24	3.06	88.3%	86.4%
PR9	3.71	3.73	1276	1275	3.03	3.19	3.16	3.30	90.6%	91.3%
PR10	3.34	3.44	*No Data*	1257	*No Data*	*No Data*	*No Data*	*No Data*	58.0%	62.8%
PR11	3.35	3.39	950	1107	2.67	2.85	2.72	2.87	55.1%	56.0%
PR12	3.25	3.37	981	1177	2.79	3.07	2.98	3.12	66.6%	66.5%
PR13	3.26	3.41	1045	1232	2.82	3.06	2.93	3.14	75.0%	77.1%
PR14	3.76	3.79	*No Data*	1297	3.19	3.37	3.22*	3.39*	*No Data*	*No Data*
PR15	3.55	3.62	*No Data*	1207	2.93	3.12	3.02	3.18	76.4%	79.8%
PR16	3.61	3.68	1233	1271	2.88	3.14	3.06	3.21	76.3%	77.9%
PR17	3.44	3.54	1061	1197	*No Data*	*No Data*	*No Data*	*No Data*	62.2%	69.0%
PR18	3.83	3.80	1176	1311	3.04	3.15	3.06*	3.17*	*No Data*	*No Data*
PR19	3.58	3.53	*No Data*	1242	3.41	3.36	3.37	3.41	76.9%	77.1%
PR20	3.38	3.50	1058	1266	2.77	3.09	2.77*	3.07*	*No Data*	*No Data*

*No graduated cohorts . This number represents enrolled cohorts.

Figure 14.

II. Six Public Universities: Principal Findings

This peer comparison is based on aggregate cohorts from six public universities, a combined total of 71,831 records. Two universities are public flagships, two are the principal state universities in states with a flagship, one is a principal scientific and technical university, and one is an urban minority-serving campus of a state university system (though counted in this study only as a public university, and not in the minority-serving section).

Each of the public universities has an admissions policy allowing for automatic admission with a certain HSGPA and/or class rank. So while they normally collect ACT or SAT testing from all applicants, students meeting the GPA or rank criteria are admitted regardless of testing scores, and thus are structurally test-optional, or as we have termed them for consistency with the private colleges and universities in this national study, "Non-Submitters." The public university portion of this study compares the outcomes of these students meeting the GPA/rank criteria with those with lower GPAs/ranks for whom testing was evaluated as part of the admissions decision ("Submitters").

To evaluate more precisely the outcomes in Cum GPAs and graduation rates of students with various levels of testing, we divided both non-submitters and submitters into sub-groups, especially to be able to evaluate students admitted on the basis of the GPA/rank criteria with testing both above and below the class averages at their university. From the non-submitters, we created three groups. "Above-Average-Testing Non-Submitters" have both the required HSGPA/rank and testing above their institution's average. "Below-Average-Testing Non-Submitters" have the required HSGPA/rank but testing below their institution's average testing. "Low-Testing Non-Submitters" have the required HSGPA/rank but testing well below their institution's average. The "Low-Testing Non-Submitters" are a subset of the "Below-Average-Testing Non-Submitters," so are included in the analyses of the "Below-Average-Testing" students. "Submitters", those who do not meet the HSGPA or rank criteria, were also divided into subgroups: those who met a lower standard of HSGPA/rank with testing ("Score Submitters"), and those who did not meet the HSGPA/rank or testing standards but who were admitted on the basis of individual readings ("Category admits").

There is considerable variation in state standards for automatic admission without testing being considered. One of the institutions in our study requires a top 10% HS rank, one requires a 3.5 HSGPA, one requires a 3.2, two require a 2.5, and one a 2.0. Two of the public institutions have more stringent standards for out-of-state students, but interestingly, four allow out-of-state students to be admitted as non-submitters. (One of these allows out-of-state students to be admitted without testing but with a higher GPA/rank requirement than for in-state.) In the chart below are the particular admissions criteria for each university, with the "N's" for each sub-category for each institution. As the outcomes analysis follows from this chart, a moment to look it over carefully will pay dividends. Figure 15 below provides the data on how each of the six universities was analyzed.

Public University Student Segments: Defining the Subgroups of Admit Category
(non-submitters entering 2003, 2004, 2009, 2010)

	Policy Non-Submitters	Above-Average-Testing Non-Submitters	Below-Average-Testing Non-Submitters	Low-Testing Non-Submitters
PU1	In-state GPA≥3.2 35.8% (3643 of 10183)	SAT≥1050 23.5% (2395 of 10183)	SAT<1050 or no SAT 12.2% (1248 of 10183)	SAT<950 4.5% (455 of 10183)
PU2	High School GPA≥3.5 44.4% (2799 of 6302)	SAT≥1095 25.9% (1634 of 6302)	SAT<1095 or no SAT 17.4% (1165 of 6302)	SAT<995 8.3% (524 of 6302)
PU3	In-state top 10% 51.3% (14239 of 27687)	SAT≥1300 12.7% (3507 of 27687)	SAT<1300 or no SAT 38.8% (10732 of 27687)	SAT<1050 9.1% (2506 of 27687)
PU4	HS GPA≥2.5 or top 50% 84.8% (7727 of 9115)	SAT≥1030 58.0% (5284 of 9115)	SAT<1030 or no SAT 26.8% (2443 of 9115)	SAT<900 7.7% (699 of 9115)
PU5	In-state GPA≥2.0 or top 50% Out-state GPA≥2.0 or top 33% 95.3% (14812 of 15550)	In-state SAT≥980 Out-state SAT≥1090 73.5% (11436 of 15550)	In-state SAT<980 or no SAT Out-state SAT<1090 or no SAT 21.7% (3376 of 15550)	SAT<900 5.8% (899 of 15550)
PU6	High School GPA≥2.5 75.3% (2175 of 2888)	SAT≥990 40.3% (1163 of 2888)	SAT<990 or no SAT 35.0% (1012 of 2888)	SAT<800 11.1% (321 of 2888)
Total	**63.3%** (45395 of 71725)	**35.4%** (25419 of 71725)	**27.9%** (19976 of 71725)	**7.5%** (5404 of 71725)

Figure 15.

- "Policy Non-Submitter": The institutional policies on standardized testing allowed these students to be admitted based only on HSGPA or Rank, regardless of SAT/ACT score. This represents a direct translation of each institution's policy. It includes all students admitted under the policy. For each institution, listed is the criteria for admission under that state's policy, the percentage share of the submitted records admitted under the policy, the N's of the numbers of non-submitters and the total size of the cohorts submitted, normally four class cohorts. This layout of information is continued across all four vertical columns.

- "Above-Average-Testing Non-Submitters": This group is a subset of the Policy Non-Submitters: students who were admitted based on HSGPA/rank, and whose standardized test scores were above that institution's average scores. These students probably would have gained entry to the university *even if* the current policy on testing did not exist. Listed for each university is the SAT score, normally either the SAT required for Admission if the GPA or Rank standards are not met, or the class average SAT score, that defines this group.

- "Below-Average-Testing Non-Submitters": This group is a subset of the "Policy Non-Submitters," students who were admitted based on HSGPA, but whose standardized test scores might not have gained them entry to the university *if* the current policy on testing did not exist. These students are the beneficiaries of the automatic or guaranteed admissions policy that does not consider standardized tests. They will be the principal focus of the discussion below.
- "Low-Testing Non-Submitters": This group is a subset of the "Below-Average-Testing Non-Submitters", also admitted on their HSGPA/rank, but with significantly lower testing than their classmates.

What Percentage of Enrolled Students Use an Optional Testing Policy?

From 2003 to 2010, non-submitter enrollees declined slightly from 66% to 62% of this aggregate cohort. The universities have a wide range of enrollee non-submitter rates, from 95% down to 39%, with these percentages shaped partly by the size and strength of their applicant pool, and partly by that institution's HSGPA or rank criteria. (Figure 16.)

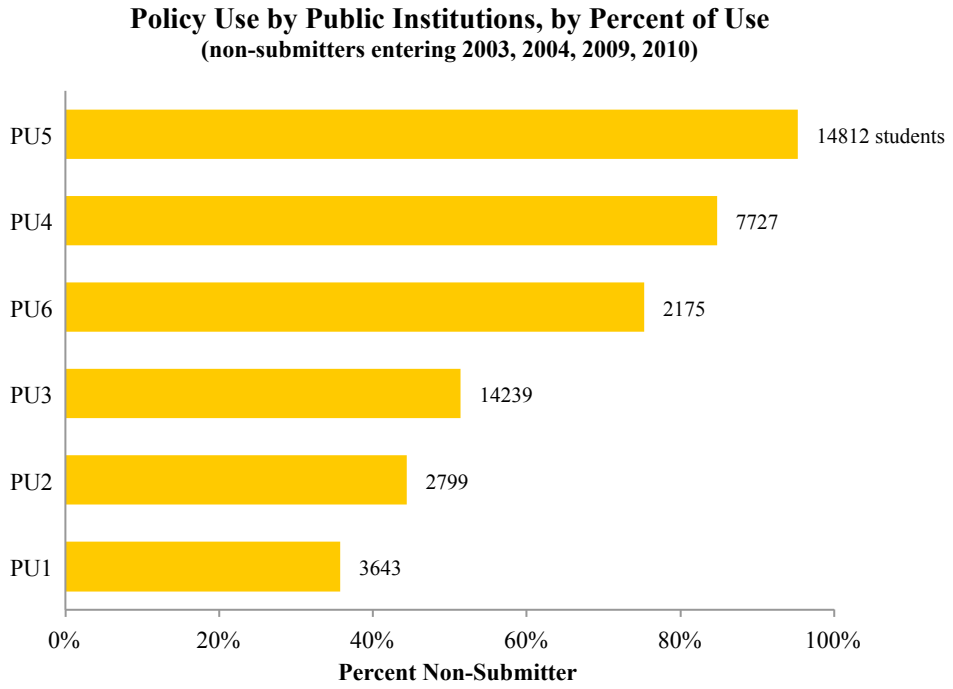
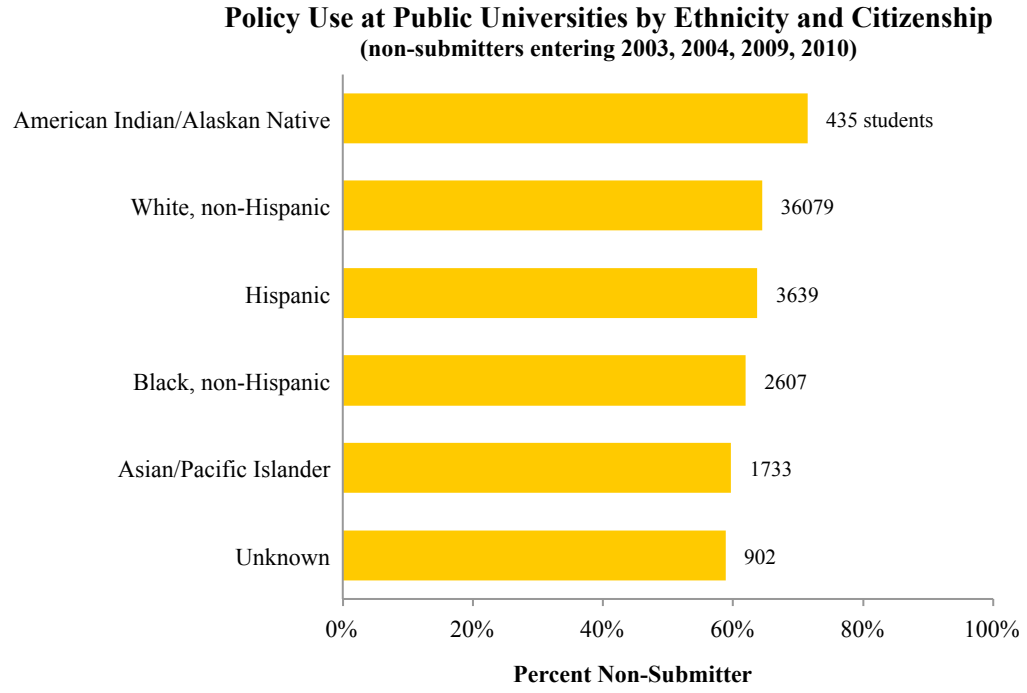


Figure 16.

Who Uses an Optional Testing Policy?

As at the private colleges and universities, at the public universities we see that higher percentages of enrolled students who are first-generation-to-college students, Pell Grant

recipients, all categories of minority students and women enrolled under the public universities' "guaranteed admission" optional testing policies tied to HSGPA or high school rank. The policy seems to be supporting increases in underrepresented minority students, but all ethnic categories of students are enrolling under these policies, at rates from 59% to 71%. So while optional testing seems to work as an affirmative action device, the policy also has wide appeal across all ethnic categories, including white students. As a policy based purely on HSGPA or rank, it favors those students who have performed well in their high schools. (Figure 17.)



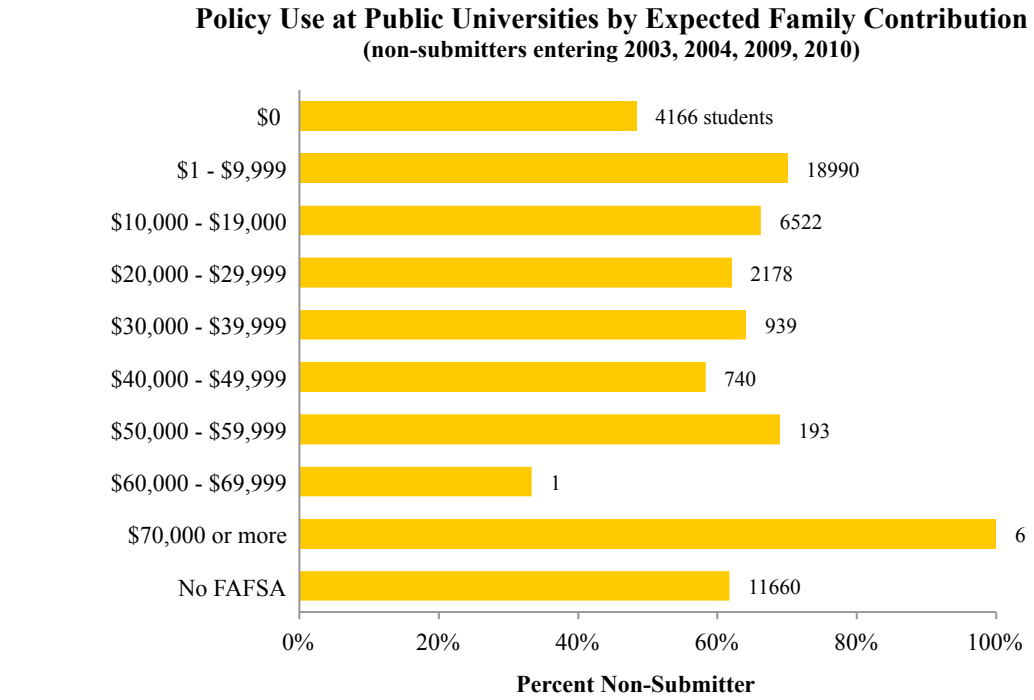
Note: This is based on the former IPEDS categories. Students from cohorts 2009 and 2010 who selected multiple backgrounds were re-categorized as "unknown":

Figure 17.

Since these public universities do not have Early Decision policies and we did not collect admissions funnel data, we were not able to calculate likelihood of non-submitters versus submitters applying and enrolling under the policy. But the data provided back to each university in the study should allow for those yield statistics to be calculated from Admissions office data.

Also parallel to the findings in the private colleges and universities, both low-income and high-income students use the policy at higher rates, creating a "two-tail" financial pattern. While a non-submitter policy supports student diversity and thus creates financial aid obligations, a large pool of students who are not financial aid candidates helps maintain balanced institutional budgets. The percentages of non-submitters are reasonably equal in the various bars, but the "N's" at the end of the bars reflect the clear two-tail curve. As in

private institutions, there would seem to be important enrollment planning and financial planning implications with these automatic admission policies. (Figure 18.)



Note: EFC values were adjusted for inflation.

Figure 18.

What are the Academic Outcomes of Automatic Admissions Policies Based on HSGPA and Rank?

Academic outcomes of submitters and non-submitters are markedly different. Non-submitters admitted under the HSGPA and Rank policies earn higher Cum GPAs and graduate at higher rates than students admitted under the other admissions protocols, with the exception of a small pool of international students. Over the entire aggregate pool, non-submitters graduate at rates from 4.8% to 17.6% higher than submitters, depending on how the averages are calculated. (Figure 19.)

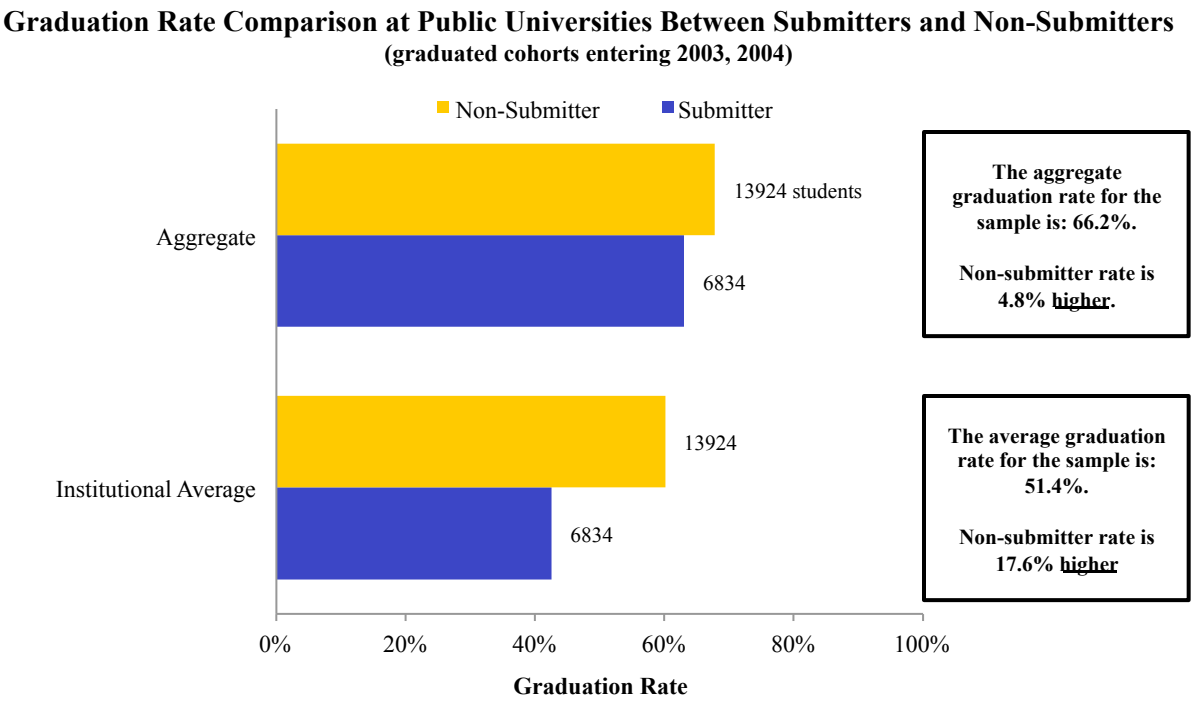


Figure 19.

Graduation rates also vary widely between the public universities. At each of the six public universities, non-submitters graduated at higher rates than submitters with lower HSGPAs, ranging from 9.8% higher to 28.9% higher. (It is worth noting that the averages are skewed to be closer by a large and highly competitive public university where both non-submitters and submitters graduate at high rates.) (Figure 20.)

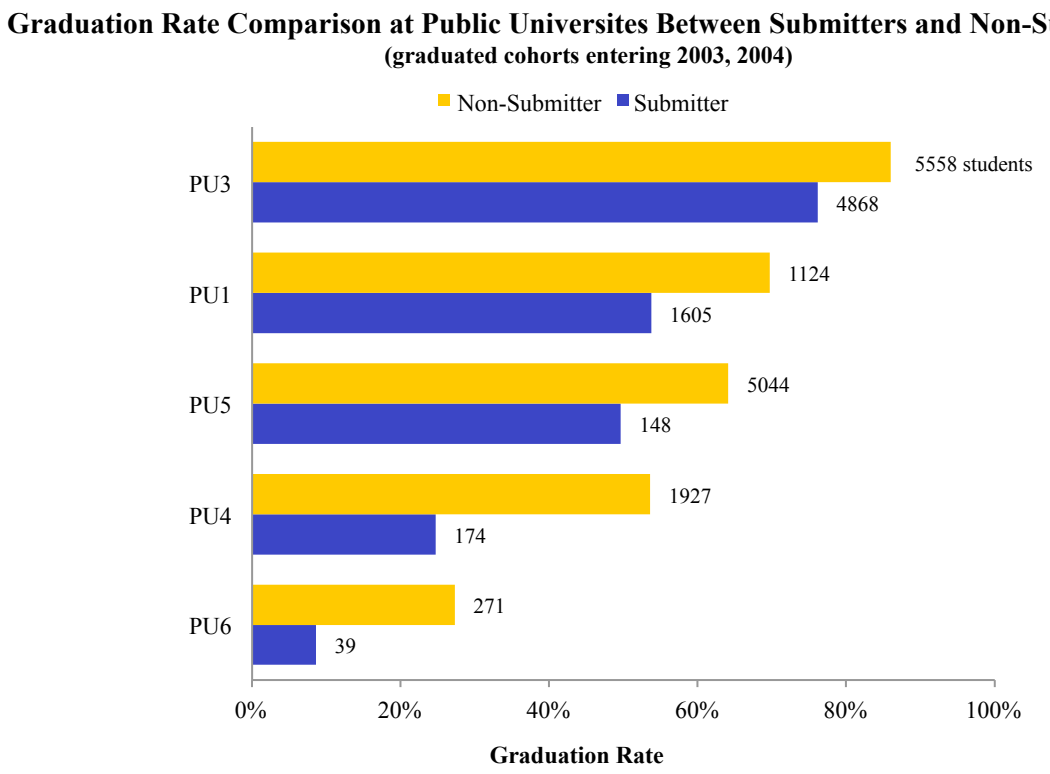
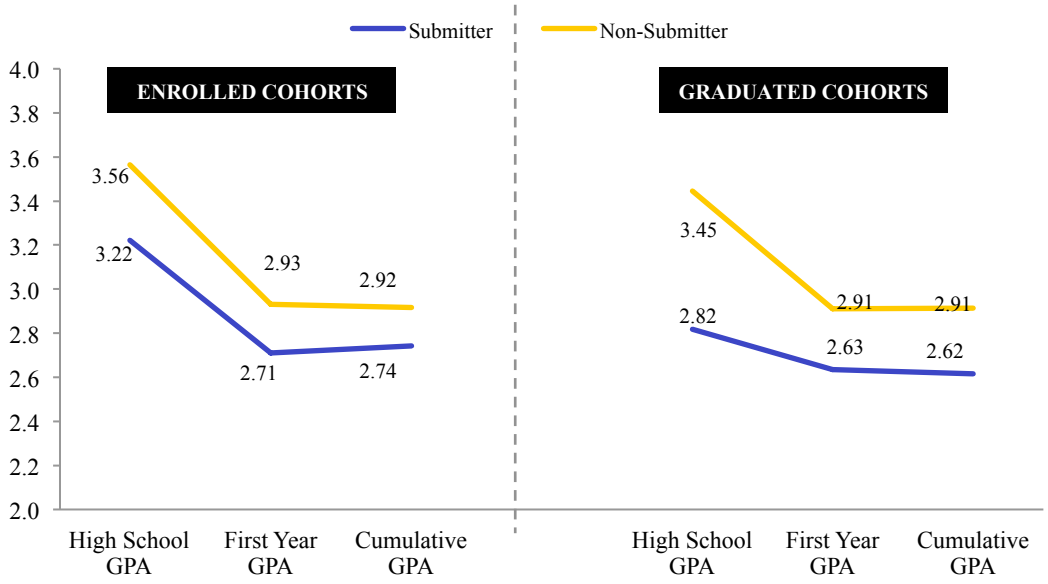


Figure 20.

As with graduation rates, non-submitters earn markedly better university GPAs, both while enrolled (by .18) and in their Cum GPAs at graduation (by .29). (Figure 21.)

Policy Use at Public Universities by GPA - High School, College First Year, College Cumulative
(non-submitters entering 2003, 2004, 2009, 2010)



Note: The focus of this chart is on the difference between non-submitter and submitter means.

Figure 21.

The chart below provides a comparison of key data at each of the six public universities in the study, reasonably consistent patterns that will help with further analysis. Because of the institutional policies for automatic admission with certain HSGPAs and ranks, non-submitters enroll with consistently stronger HSGPAs. SATs (including converted ACTs) vary: 5 of 6 have higher SATs from non-submitters, but 2 of the 5 are by small differences, and the most competitive institution has higher SATs from the submitters by a small difference. The only large difference in SATs is at the institution with comparatively low overall academic criteria, including testing. All six institutions have non-submitters earning consistently higher first-year and cumulative GPAs. Of the five institutions with graduated cohorts, all five have higher graduation rates for non-submitters. (Figure 22.)

Public Universities--Institutional Level Academic Comparison Summary

	High School GPA		SAT (CR + Math)		First Year GPA		Cumulative GPA (Students entering in Graduated Cohorts)		Graduation GPA (Graduates Only)		Graduation Rate	
	Non-Sub	Sub	Non-Sub	Sub	Non-Sub	Sub	Non-Sub	Sub	Non-Sub	Sub	Non-Sub	Sub
PU1	3.68	3.02	1135	1045	3.08	2.61	3.00	2.46	3.23	2.86	70%	54%
PU2	3.74	3.18	1124	1069	3.16	2.58	3.19*	2.66*	*N/A*	*N/A*	*N/A*	*N/A*
PU3	3.90	3.74	1189	1208	3.03	2.81	3.10	2.76	3.24	3.02	86%	76%
PU4	3.40	2.19	1111	1009	2.94	2.39	2.87	2.33	3.25	3.13	54%	25%
PU5	3.46	2.24	1127	1113	2.74	2.04	2.79	2.41	3.20	3.09	64%	50%
PU6	3.20	2.15	998	868	2.85	2.27	2.67	1.96	3.28	3.32	27%	9%

* No graduated cohorts. This number represents enrolled cohorts.

Figure 22.

In the pool of over 71,000 students, non-submitters have much better HSGPAs, and almost exactly the same average testing scores. As we will see repeatedly in this study, college and university Cum GPA's track HSGPAs: non-submitters enter with HSGPAs that are .3 better than submitters, and graduate with average Cum GPA's that are .3 higher than submitters. Graduation rates of non-submitters are 5% better than submitters. (Figure 23.)

Public Universities--Summary of Key Statistics
(Students entering 2003, 2004, 2005, 2009, 2010)

	Non-Submitters	Submitters	
n	*45395*	*26330*	
High School GPA	3.52	3.12	*Cohen's d*
SAT (See caveat below)	1138	1130	*Cohen's d*
First Year GPA	2.92	2.68	*Cohen's d*
Cum GPA (enrolled cohorts)	2.92	2.74	*Cohen's d*
Cum GPA (graduated cohorts)	2.91	2.62	*Cohen's d*
Graduation Rate**	68%	63%	*Chi-Square*
Completion Rate**	113.3%	113.8%	*Cohen's d*
Underrepresented Minority	15%	15%	*Chi-Square*
First Generation	24%	22%	*Chi-Square*
Gender (Female)	54%	45%	*Chi-Square*
Pell	22%	15%	*Chi-Square*
EFC	$17,547	$17,271	*Cohen's d*
EFC – Adjusted for Inflation	$8,759	$8,627	*Cohen's d*
STEM Major	47%	53%	*Chi-Square*

SAT Caveat: 99.3% of Non-Submitters still submitted scores. This data represents that 99.3%.
*** Graduated Cohorts Only*

COLOR KEY
Cohen's D

< 0.1 = trivial difference
0.1 - 0.3 = small difference
0.3 - 0.5 = moderate difference
> 0.5 = large difference

COLOR KEY
Chi-Square Tests

No Significant Difference
Statistically Significant Difference p < 0.000

Figure 23.

However, this overall comparison of non-submitter and submitters, while useful, is not the important snapshot, as it merges all students admitted under the HSGPA/rank criteria, which include a great many students who have both the required GPA and testing above the average for each institution.

In public universities with "academic threshold" admissions policies based on HSGPA or HS rank, it is important to compare sub-groups of non-submitters with submitters, to isolate in the large pools of non-submitters those students with testing below class averages who might not have been admitted if the policy did not exist, and to compare their outcomes with those of submitters who did not meet the HSGPA and HS rank criteria, and so were admitted with their testing being considered. That analysis follows on the next two charts.

Non-submitters in *both* the "Above-Average-Testing" and "Below-Average-Testing" subgroups earn higher GPAs and graduate at higher rates than any of the submitter groups. The key finding is the performance of the "Below-Average-Testing Non-submitters" who met the HSGPA criteria but had lower-than-average testing for their institution. Both in the aggregate data below (Figure 24.), and in each of the six public universities (Figure 25.), these "Below Average-Testing Non-submitters" had higher Cum GPAs and graduated at higher rates than did the submitters with lower HSGPAs but higher testing. With the above-average-testing students removed, the patterns of the remaining non-submitters are

in strong contrast with the submitters. The non-submitters enter with stronger HSGPAs, weaker testing by over 90 points, and graduate with higher Cum GPAs and higher graduation rates. As we have found consistently in the study, and heavily in this snapshot, they are more likely to be underrepresented minorities, first-generation-to-college, women and Pell recipients.

Public Universities--Summary of Key Statistics without Above-Average-Testing Students
(Students entering 2003, 2004, 2009, 2010)

	Non-Submitters	Submitters	
n	*19976*	*26330*	
High School GPA	3.40	3.12	*Cohen's d*
SAT (See caveat below)	1037	1130	*Cohen's d*
First Year GPA	2.76	2.68	*Cohen's d*
Cum GPA (enrolled cohorts)	2.74	2.74	*Cohen's d*
Cum GPA (graduated cohorts)	2.78	2.62	*Cohen's d*
Graduation Rate**	67%	63%	*Chi-Square*
Completion Rate**	112.2%	113.8%	*Cohen's d*
Underrepresented Minority	24%	15%	*Chi-Square*
First Generation	32%	22%	*Chi-Square*
Gender (Female)	60%	45%	*Chi-Square*
Pell	27%	15%	*Chi-Square*
EFC	$14,825	$17,271	*Cohen's d*
EFC – Adjusted for Inflation	$7,409	$8,627	*Cohen's d*
STEM Major	51%	53%	*Chi-Square*

COLOR KEY
Cohen's D

< 0.1 = trivial difference
0.1 - 0.3 = small difference
0.3 - 0.5 = moderate difference
> 0.5 = large difference

COLOR KEY
Chi-Square Tests

No Significant Difference
Statistically Significant Difference p < 0.000

SAT Caveat: 98.9% of Non-Submitters still submitted scores. This data represents that 98.9%.
*** Graduated Cohorts Only*

Figure 24.

Public Universities--Summary of Student Segment Statistics
(students entering 2003, 2004, 2009, 2010)

	N's	HS GPA	SAT (CR+Math)	FY GPA	Cum GPA (Graduates Only)	Cum GPA (Students entering in Graduated Cohorts)	Graduation Rate	First Gen	Minority
All Students	71725	3.40	1135	2.83	3.15	2.81	66%	23%	15%
Non-submitters	45395	3.52	1138	2.92	3.23	2.91	68%	24%	15%
Above-Average-Testing	25419	3.58	1217	3.05	3.33	3.03	69%	18%	7%
Below-Average-Testing	19976	3.40	1037	2.76	3.09	2.78	67%	32%	24%
Low-Testing	5404	3.33	895	2.49	2.90	2.47	56%	45%	41%
Submitters	26330	3.12	1130	2.68	2.99	2.62	63%	22%	15%
Score Submitters	11526	3.10	1199	2.74	3.04	2.65	61%	16%	9%
Category Admits	14031	3.12	1070	2.63	2.94	2.57	65%	26%	20%
International Submitter*	773	3.44	1140	2.63	3.28	2.93	72%	8%	N/A

Figure 25.

Students in the "Low-Testing Non-Submitter" group, with SAT averages that are 240 points below the overall cohort average, graduate at a 56% rate, 5% below Score Submitters with lower HSGPAs but SATs that are 300 points higher. These Low-Testing Non-Submitters are 45% first-generation and 41% minority, while the Score Submitters are 16% first-generation and 9% minority. There is considerable variation in the performance of the Low-Testing Non-Submitter groups in this study: at four of the six universities, they earn either Cum GPAs or graduate at rates equal to or above the Score Submitters.

In the three sub-categories above of Non-Submitter groups (Above-Average-Testing, Below-Average-Testing, Low-Testing), the percentages of First-Generation-to-College and minority students are sharply inverse to the average SAT scores in the three groups. But to repeat the key comparison, despite the major differences in SAT scores in this chart, the Below-Average-Testing student s graduate at higher rates (67%) and with better GPAs (2.78) than either the Score Submitters or the Category Admits.

The same inverse pattern is SAT scores is observed in the Submitters, but not at the dramatic levels of difference. Within the Submitter populations, there are only modest differences. Score Submitters who did not meet the HSGPA/Rank criteria but can meet the

testing criteria graduate with slightly higher Cum GPAs (2.65) and lower graduation rates (61%) than the "Category Admits" who met neither the GPA nor testing criteria but are admitted on a holistic reading. (There is wide variation by institution, largely created by the one large institution in the study with a very strong student body pulling up the averages of this aggregate cohort.) But as with other aspects of this study, it is worth noting the "N's" in various categories. The "Submitters", setting aside a relatively small pool of international students who perform well, represent over 25,000 students, or 35.6% of all the public university students in the study.

In sum, the automatic admission policies seem to be working well, with strong results from students with testing below their institutional averages, and reasonable results even for the students with the lowest SATs. There are wide institutional variations, but the patterns seem consistent across this quite diverse group of public universities. On campuses, there might be useful policy discussions to examine who is in these various categories, how they can be effectively taught, and whether admissions policies ought to be examined.

III. Five Minority-Serving Colleges and Universities: Principal Findings

This peer comparison is based on aggregate cohorts from five minority-serving colleges and universities, a combined total of 12,691 records. Two universities are public, one urban and the other in a US territory. Three colleges are private, one urban and large, one urban and small, and the third a Native-American college with multiple campuses for their widely scattered rural populations. At three of the campuses, minority students represent over 90% of their enrollment. But also included in this group are two relatively larger urban institutions with roughly 45% minority enrollments, one with a focused curricular strength. This college comprises about two-thirds of the records for this group, a statistical imbalance and also a curricular imbalance, with most of its students enrolling for its focused offerings. It is fair to say that the five minority-serving institutions in our study differ far more from each other than do the institutions in the private and public groupings previously examined, and therefore we must use caution in drawing conclusions.

These minority-serving institutions serve a wide range of students, from those with very strong academic records to others whom few would have expected to pursue a college degree. Often the students are managing multiple issues: relatively weak high school backgrounds, thin college counseling, low or non-existent standardized testing, finances, returning to college as an older student (the average entering age of these five institutions is 22.5), jobs or their own children. At one institution, the average EFC (Expected Family Contribution, from the FAFSA analysis) is $225, since virtually all students are of non-traditional ages, many of them supporting families of their own.

One must give substantial credit to both these students and to the institutions which have focused their mission on serving them. Their GPAs and graduation rates are not as high as

many of the other institutions in this study, but these minority-serving institutions are doing some of the heaviest of the heavy lifting in higher education, if one measures the accomplishments of an institution partly by how substantial are the changes and growth that students experience while enrolled. Too often, colleges are judged by the credentials of their entering students, with little attention or understanding given to the to the students' developed skills, imagination, discipline and self-confidence upon graduation. It is important that national studies like this one include some minority-serving institutions in their findings, partly for their crucially important work, and partly because they are far too often not noticed in the prestige and financial comparisons that dominate most of the college rankings and evaluations.

What Share of Enrolled Students Use an Optional Testing Policy?

At these five institutions in aggregate, 27.5% of enrollees are non-submitters.

Who Uses an Optional Testing Policy at these Minority Serving Institutions?

For many students, not submitting testing is more often a practical reality rather than a strategic decision (the common reason at the 20 private institutions in our study), or enrolling under a policy of automatic admission for certain HSGPA or class rank (as at the 6 public universities). Unlike the private and public universities in the study with reasonably consistent approaches to optional testing, these five minority-serving institutions have widely varying approaches to testing. One institution has a pure optional testing policy, two collect very few SAT or ACT scores but use the Accuplacer tests, one uses the SAT to help decide whether to admit students to the university or an internal community college, and one uses the SAT not for the admissions decision but as a trigger to require additional Accuplacer testing. (Figure 26.)

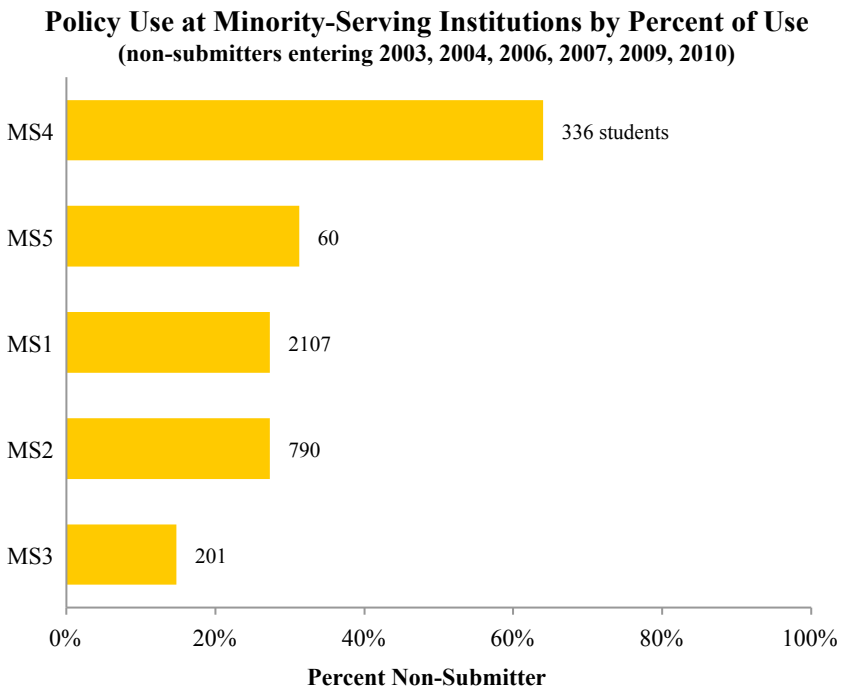
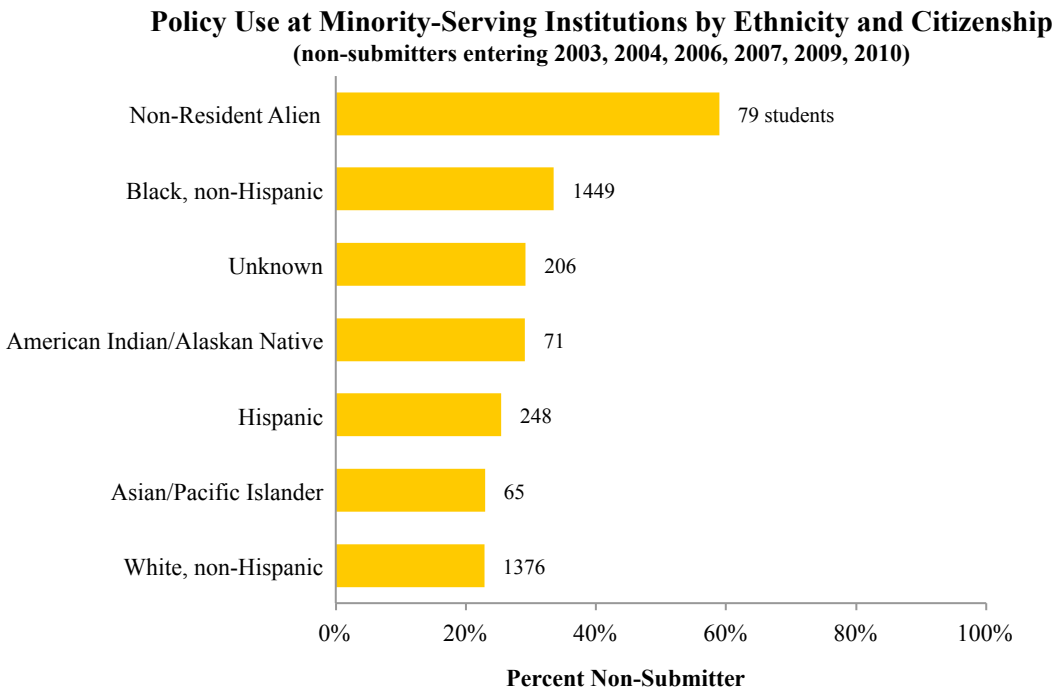


Figure 26.

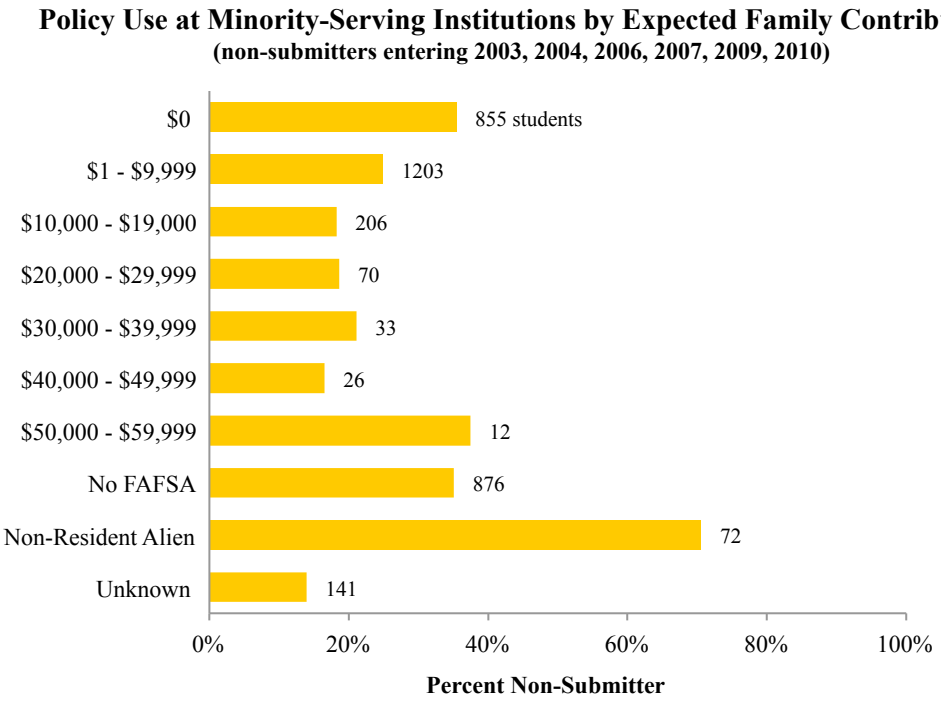
At these institutions, first-generation-to-college students, Pell Grant recipients, all categories of minority students and men generally enroll at higher rates under an optional testing policy. (Figure 27.)



Note: This is based on the former IPEDS categories. Students from cohorts 2009 and 2010 who selected multiple backgrounds were re-categorized as "unknown":

Figure 27.

As with the private and public groups of institutions already presented, at these minority-serving institutions both low-income and higher-income students use the policy at higher rates, creating a "two-tail" financial pattern. While a non-submitter policy supports student diversity and thus creates financial aid obligations, students who are not receiving financial aid help maintain balanced institutional budgets. (Figure 28.)



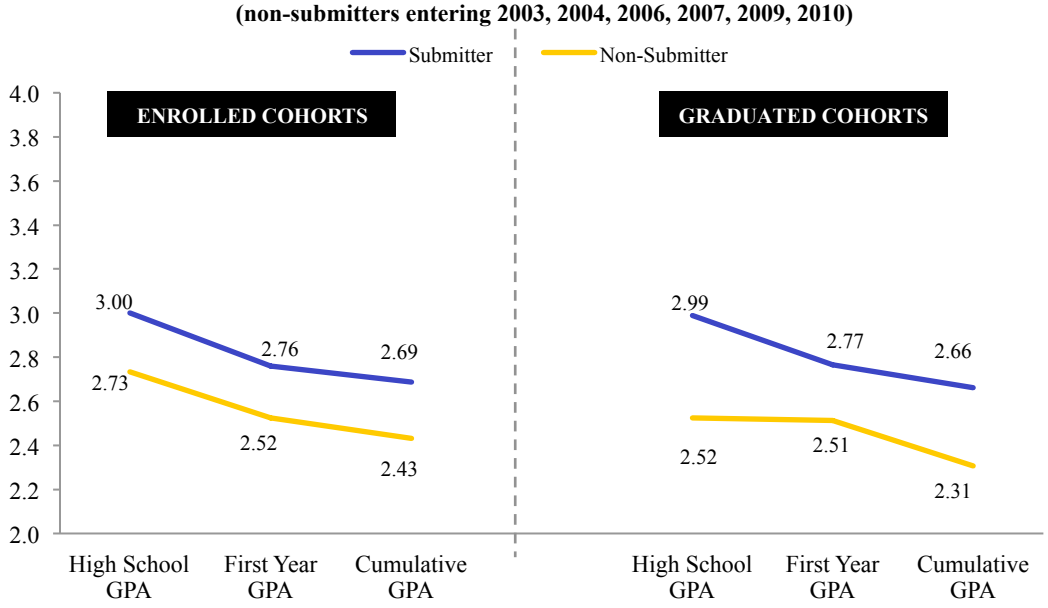
Note: EFC values were adjusted for inflation.

Figure 28.

What are the Academic Outcomes for Submitters and Non-Submitters?

Submitters and non-submitters enter these institutions with quite different HSGPAs (3.0 for submitters versus 2.61 for non-submitters), and also a significant difference in SATs (including converted ACT scores) of 183 points, though this represents non-submitter scores from only one institution out of the five. The differences in HSGPA are very closely mirrored in the college and university GPAs, with submitters averaging 2.66 and non-submitters at 2.31. (Figure 29, Figure 30.)

Policy Use at Minority-Serving Institutions by GPA - High School, College First Year, College Cumulative
(non-submitters entering 2003, 2004, 2006, 2007, 2009, 2010)



Note: The focus of this chart is on the difference between non-submitter and submitter means.

Figure 29.

Summary of Key Statistics at Minority-Serving Institutions
(Students entering 2003, 2004, 2006, 2007, 2009, 2010)

	Non-Submitters	Submitters	
n	*3494*	*9197*	
High School GPA	2.61	3.00	*Cohen's d*
SAT (See caveat below)	791	974	*Cohen's d*
First Year GPA	2.52	2.76	*Cohen's d*
Cum GPA (enrolled cohorts)	2.43	2.69	*Cohen's d*
Cum GPA (graduated cohorts)	2.31	2.66	*Cohen's d*
Graduation Rate**	24%	37%	*Chi-Square*
Completion Rate**	114%	117%	*Cohen's d*
Underrepresented Minority	51%	41%	*Chi-Square*
First Generation	42%	40%	*Chi-Square*
Gender (Female)	55%	59%	*Chi-Square*
Pell	49%	43%	*Chi-Square*
EFC	$8,966	$13,634	*Cohen's d*
EFC – Adjusted for Inflation	$4,586	$6,666	*Cohen's d*
STEM Major	5%	11%	*Chi-Square*

COLOR KEY
Cohen's D
< 0.1 = trivial difference
0.1 - 0.3 = small difference
0.3 - 0.5 = moderate difference
> 0.5 = large difference

COLOR KEY
Chi-Square Tests
No Significant Difference
Statistically Significant Difference p < 0.000

SAT Caveat: The average for non-submitters represents only one institution that had scores for non-submitters, so it is not an accurate comparison with submitters across the institutions.
*** Graduated Cohorts Only*

Figure 30.

Non-submitters graduate at rates 13% below submitters, 24% versus 37%. (Figure 31, Figure 32.)

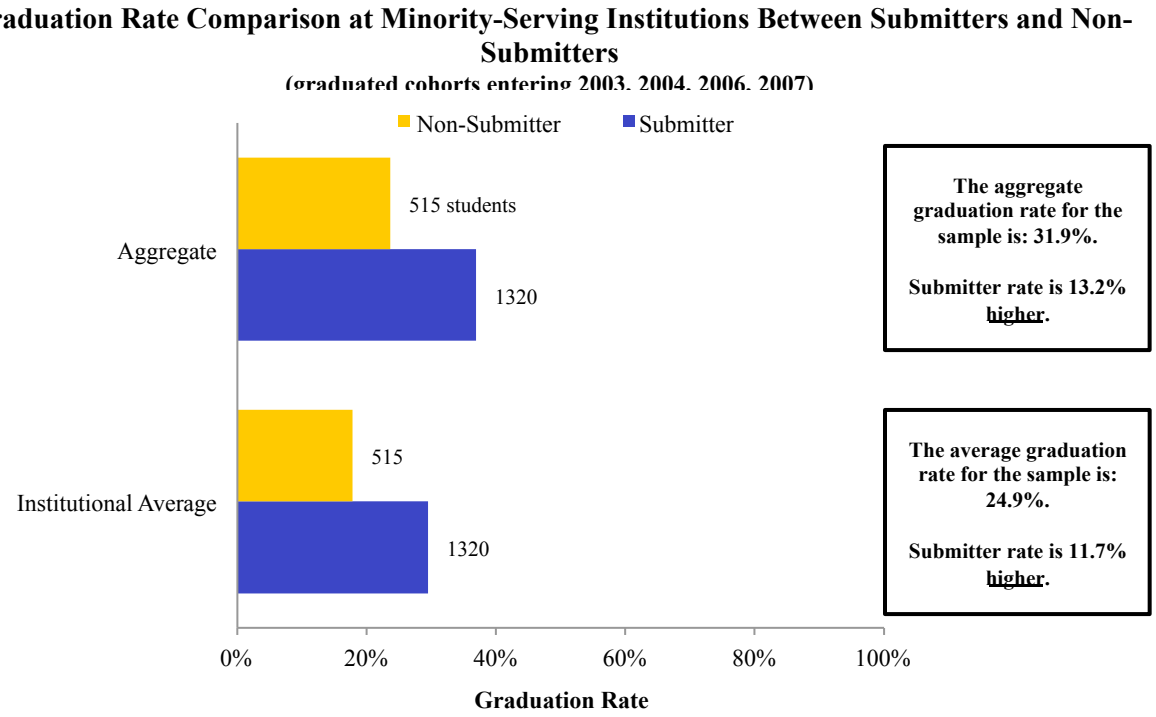


Figure 31.

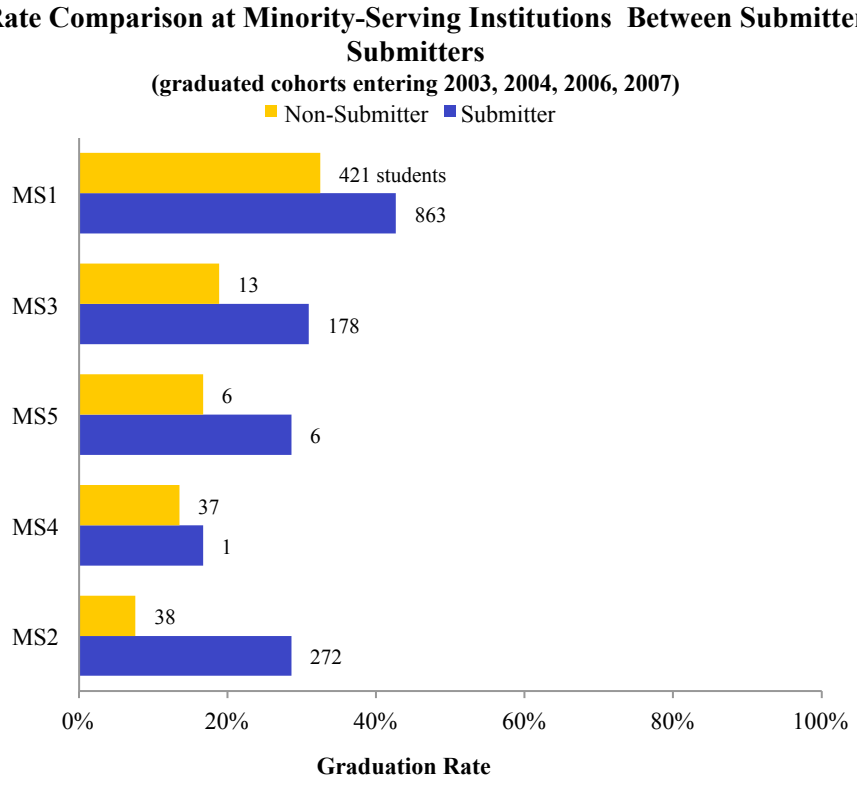


Figure 32.

College GPAs largely track HSGPAs, but also reflect a broad range of risk factors: weaker high schools, last-minute applications, less understanding of fields of study, low EFC's, older students, and those with jobs or families of their own. (Figure 33.)

Minority-Serving Institutional Level Academic Comparison Summary

	High School GPA		SAT (CR + Math)		First Year GPA		Cumulative GPA (Students entering in Graduated Cohorts)		Graduation GPA (Graduates Only)		Graduation Rate	
	Non-Sub	Sub	Non-Sub	Sub	Non-Sub	Sub	Non-Sub	Sub	Non-Sub	Sub	Non-Sub	Sub
MS1	2.70	2.94	No data available	991	2.61	2.87	2.55	2.80	3.23	3.29	33%	43%
MS2	2.38	3.17	791	1028	2.33	2.85	1.93	2.70	3.12	3.31	8%	29%
MS3	3.00	3.12	No data available	792	2.15	2.12	2.39	2.15	3.31	2.95	19%	31%
MS4	No data available	No data available	No data available	No data available	2.74	2.65	1.77	1.22	3.18	3.14	14%	17%
MS5	1.16	0.94	No data available	No data available	1.98	2.41	2.07	2.64	3.43	3.06	17%	29%

Figure 33.

Having a wide variation in both HSGPAs and testing over time can provide very helpful information, so in future studies, we would encourage a focus to gather more complete data, and a larger pool of institutions. As is visible in the chart above, only one institution of the five could submit testing data. We tried to enroll in the study some of the strongest and best-known of the minority-serving colleges and universities, but found to our surprise that virtually all of them required testing and did not seem to have considered an optional testing policy. The broad findings in this study and others show minority students are more likely to use an optional testing policy if offered, and also that graduation rates for minority students rise with the overall quality of the institution--that is, there is little evidence of "over-matching." So it may be sensible for more of the minority-serving institutions to examine carefully with independently conducted research the predictive value of testing versus other criteria for admission.

Examining the data in the charts below, it may not be submitter status that creates the differences in GPAs and graduation rates, but the numbers of students with dramatically different bands of HSGPAs. (Figure 34.)

Summary of Student Performance at Minority-Serving Institutions by High School GPA and Testing Score Categories
(students entering 2003, 2004, 2006, 2007, 2009, 2010)

High School GPA	SAT (CR+Math)	N'S	Cumulative GPA	First-year GPA	Graduation Rate
>3.5	>1000	1291	3.44	3.50	56%
	800-1000	465	3.15	3.20	47%
	<800	58	2.77	2.76	42%
>3.0 & ≤3.5	>1000	1188	3.08	3.16	46%
	800-1000	1140	2.71	2.81	43%
	<800	545	2.09	2.17	24%
>2.5 & ≤3.0	>1000	751	2.69	2.75	35%
	800-1000	1145	2.53	2.62	32%
	<800	556	2.18	2.33	21%
≤2.5	>1000	383	2.27	2.32	29%
	800-1000	940	2.16	2.26	21%
	<800	730	1.80	1.90	10%

Figure 34.

For students who persist to graduation, Cum GPAs are generally solid: both submitters and non-submitters at all levels of HSGPA above 2.5 achieve better than 3.0 university GPAs. The issue is graduation rates, with rates that range from 65% (earned by non-submitters with HSGPAs over 3.5) down to 15% (by non-submitters with HSGPAs under 2.5). At least based on this evidence, the issue is that there are so many students at these five institutions with HSGPAs under 2.5: 2883 students of the 12,691 total records, or 23%, have high school GPAs under 2.5.

In all eight categories of HSGPA bands—4 for submitters and 4 for non-submitters—both FYGPA and Cum GPA track the HSGPA.

At the high end of this chart, there is a clear pattern with no surprise: students who enter with strong GPAs and strong testing will earn stronger university GPAs and graduation rates. Students with HSGPAs over 3.5 and also those over 3.0, and with SATs in the 800-1000 range, get better university GPAs and graduate at higher rates than students entering with lower HSGPAs but higher scores. Students with greater than 3.5 HSGPAs and scores under 800 have moderate grades but graduation rates of 42%, higher than almost all the groups on the ladder below them. There are reasonably poor GPAs and graduation rates for students entering with less than a 2.5 HSGPA, even with a wide variation in SATs.

As with other institutional groups, for these minority-serving institutions HSGPA is a reasonably consistent predictor of college or university GPA and graduation rates, while testing seems to be less predictive. At least based on these quite limited data, students with HSGPAs over 3.0 and scores over 800 seem to have reasonable chances of success. But there is simply not enough data from these institutions to be confident about predicting success, except for the importance of HSGPA.

The higher graduation rates for submitters seem to be caused by a dramatic imbalance in the HSGPAs of the two groups. In fact, both non-submitters with HSGPAs over 3.5 and those over 3.0 graduate at higher rates than submitters with parallel HSGPAs. The higher graduation rates for submitters are caused by much higher numbers of submitters in the top two GPA categories, while non-submitters have much larger numbers with HSGPAs below 3.0 and especially below 2.5. Fifty-seven percent of submitters have HSGPAs over 3.0, while only 29% of non-submitters are over 3.0. In contrast, only 21% of submitters have a HSGPA below 2.5, while 45% of non-submitters are below 2.5. (Figure 35.)

Summary of Student Segment Statistics at Minority-Serving Institutions
(students entering 2003, 2004, 2006, 2007, 2009, 2010)

	N's	SAT (CR+Math)	FY GPA	Cum GPA (Graduates Only)	Cum GPA (Students entering in Graduated Cohorts)	Graduation Rate	First Gen	Minority
All Students	12691	960	2.70	3.24	2.53	32%	45%	44%
Submitters	9197	976	2.76	3.25	2.66	37%	45%	41%
>3.5	1808	1101	3.40	3.51	3.27	53%	46%	24%
>3.0 & ≤3.5	2827	971	2.84	3.22	2.70	40%	45%	42%
>2.5 & ≤3.0	2324	944	2.61	3.15	2.54	32%	44%	40%
≤2.5	1741	893	2.17	2.96	2.20	24%	44%	50%
No HSGPA record	497	903	2.58	3.20	2.41	34%	55%	72%
Non-Submitters	3494	790	2.52	3.23	2.31	24%	44%	5%
>3.5	224	658	3.25	3.44	3.31	65%	21%	23%
>3.0 & ≤3.5	513	713	2.84	3.38	2.95	43%	32%	39%
>2.5 & ≤3.0	651	697	2.56	3.17	2.48	30%	41%	45%
≤2.5	1142	774	2.10	2.97	1.97	15%	48%	55%
No HSGPA record	964	955	2.58	3.27	2.10	15%	51%	61%

Figure 35.

Some encouraging news comes from comparing the shares of these GPA groups in the enrolled and graduated cohorts. In the graduated cohorts, students with HSGPAs under 2.5 made up 25% of the students, while students over 3.5 made up only 17%. In the enrolled cohorts, about five years later, students with HSGPAs below 2.5 had dropped to 20% of the class cohorts, and students over 3.5 had increased to 21% of the cohorts. So at least at these institutions, there is visible progress at enrolling students with stronger high school records.

A working premise—based partly on these data and partly from the comments in interviews with Deans of Admission and Directors of Institutional Research at these institutions—is that raising the share of enrolling classes who have strong high school records may be the quickest and most effective way to strengthen the minority-serving institutions. A major goal for these colleges and universities, which they are all working to achieve, is to raise their overall graduation rates, and the clearest path to that goal is to encourage more students to achieve in high school.[xii]

IV. Two Arts Institutions: Principal Findings

With only two art institutes in our study and with 783 student records combined, a full Aggregate report was not sensible. We provided for the two arts institutions a copy of the

Aggregate Report for the 20 private colleges and universities in the study, to give them a large (37,611 student and alumni records) set of findings for institutions that, like the institutes, are private and often small.

As one might guess in an art curriculum with relatively small enrollments, statistical analysis of student outcomes does not show great predictive value for incoming measures, including testing. We observed very little difference in the respective GPAs of submitters and non-submitters of testing at both Institutes. Perhaps a set of Principal Findings ought to say, "No glaring findings." Virtually alone among the 33 institutions in the study, the art institutes have almost no green or dark green shadings indicating patterns of significant statistical differences. The obvious finding, at one level, is that both submitters and non-submitters are succeeding at parallel levels, and that is good news.

We had hoped to find some predictive value (in our fondest hopes, a predictive holy grail) in the submitted portfolio ratings, but the portfolio ratings of submitters and non-submitters were very close to each other at each institution, as were the enrolled Cum GPAs of students. Perhaps with a larger data sample, portfolio ratings could predict good performance at an art institute, but we saw no major differences. At one of the institutes, HSGPAs of submitters and non-submitters were very parallel, as were their Institute GPAs. At the other institute, the HSGPAs of non-submitters were quite low, but the non-submitters earned modestly higher GPAs than the submitters. We encouraged the Admissions staff at this second institute to look through the files of non-submitters, to see if perhaps these non-submitters were the "gambles" the admissions staff wanted to take, feeling the students had significant promise despite their low HSGPAs. If so, those "gambles" seemed to pay off.

With the small N's and a good deal of missing data (one institute could submit enrolled cohorts but not graduated cohorts), it is hard to be terribly confident about the findings. But we have listed in each Institute's report a set of our tentative findings, and suggestions for future research. For example, one Institute submitted data on their students with Learning Differences, and there was no correlation of LD with non-submitter status, a finding different than at the other private colleges and universities which submitted LD data. Our hypothesis had been that perhaps gifted LD students with spectacular artistic talents would use the non-submitter policies to enroll at Art Institutes. In this micro-sample from one Institute, the evidence does not support the hypothesis. But we encourage our colleagues to continue to explore LD students who are gifted artists, and to share the findings.

At one institute, there are some modest differences in graduation rates and the time-to-completion rates, with non-submitters lower on both. But the reasons do not seem to be the academic records of the students, so a topic for exploration. Admissions colleagues at the art institutes told us that often persistence to graduation came from the students' judgments that they were in the kind of art curriculum they wanted. The comparatively low graduation rates reflected students transferring, for example, from a fine arts curriculum to a design curriculum, or to a larger university with broader offerings.

It is worth noting that even with very small N's, higher percentages of non-submitters came from other parts of the country, a parallel pattern to other institutions in our study, that optional testing can have a wide geographic draw. It may be that an optional testing policy is proving to be an enrollment planning tool, helping these institutions to spread out geographically. We also encouraged the institutes to consider international students as an enrollment opportunity, as talented international artists may be in countries without suitable art training. Many of the private colleges have built extraordinarily fruitful connections with international schools, and the students from abroad are some of the very strongest on our campuses.[xiii]

Three Sub-Studies: Merit Awards, R-Square Analyses and LD Students

A. Financial Aid Merit Awards and Optional Testing

Many colleges and universities offer both need-based financial aid and merit awards, the latter defined as financial awards given in excess of demonstrated need or given to students not requesting financial aid. While many merit awards go to students who clearly would not qualify for need-based awards, some go to students who demonstrate need, and the merit award exists on top of the need-based award, helping to ease family finances. The rationales behind merit awards are numerous and varied: attracting more or stronger students with a lower net price, rewarding various forms of academic or non-academic achievement, or encouraging in-state students to attend a state institution. There are also a range of awards for particular extracurricular skills, or even particular academic fields.

Merit aid, while generally tied to academic promise, also supports enrollment goals by attracting students with desirable financial profiles. This use of merit awards or tuition discounting is commonly used in complex financial matrix systems to increase tuition revenue, by giving a student with a certain profile just enough merit money to cause them to enroll, bringing a higher rate of tuition revenue than the institution would otherwise receive. At the extreme, the college merit award matrix chart can look rather like the seat pricing matrix for commercial airlines, and function independently of need analysis altogether. [xiv]

Use of merit aid is widespread in our study: 14 of the 20 private colleges and universities reported merit aid data, as did 5 of the 6 public universities, while 2 of the 5 minority-serving institutions reported merit aid data. Usage ranges from the 12 institutions which reported no merit awards up to a high of merit awards given to 90% of students in one private institution and 65% of students in a public university.

This sub-study will explore whether non-submitters are more or less likely to get merit awards than their submitter classmates, whether those merit awards were reflected in improved academic performance in terms of Cum GPAs and graduation rates, and whether students getting merit awards have the same backgrounds as other students. That is to say, are the institutions spending their funds wisely, especially given that the funds by definition are in excess of students' demonstrated need?

Overall, 27,311 of the 102,763 students in our study for whom financial data was submitted received a merit award, or 26.6%. In general, counting all submitters and non-submitters, the percentages receiving merit awards are quite close. In the graph below, the percentages receiving merit awards are either 1.4% higher or 3% lower, depending on whether the averages are calculated from merged aggregates or by averaging the institutional rates, but in either case, reasonably close. (Figure 36.)

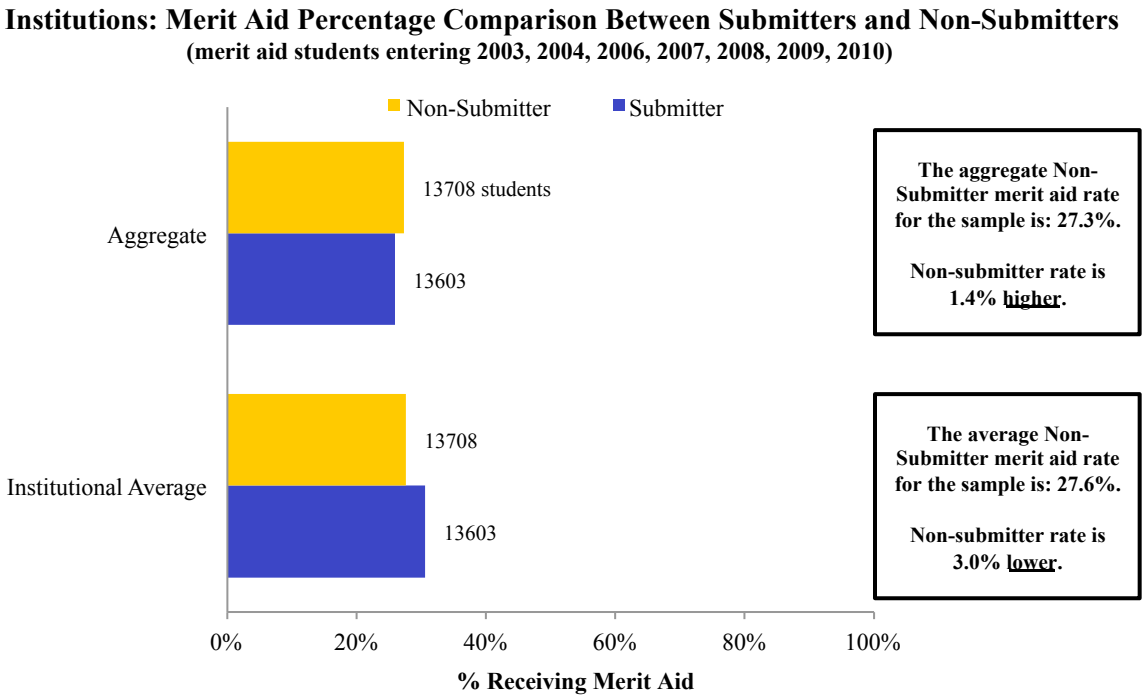


Figure 36.

But these calculations above include all the non-submitters at public universities whose testing is above their institutional averages. When we remove the above-average-testing non-submitters, as in other sections of this study, a quite different picture emerges. The number of non-submitters with a merit award drops precipitously, from 13,708 to 5064. The share of those receiving merit awards tips strongly to submitters, with non-submitters receiving merit awards at rates that are 9.6% or 6.5% lower than submitters, depending on how they are calculated. (Figure 37.)

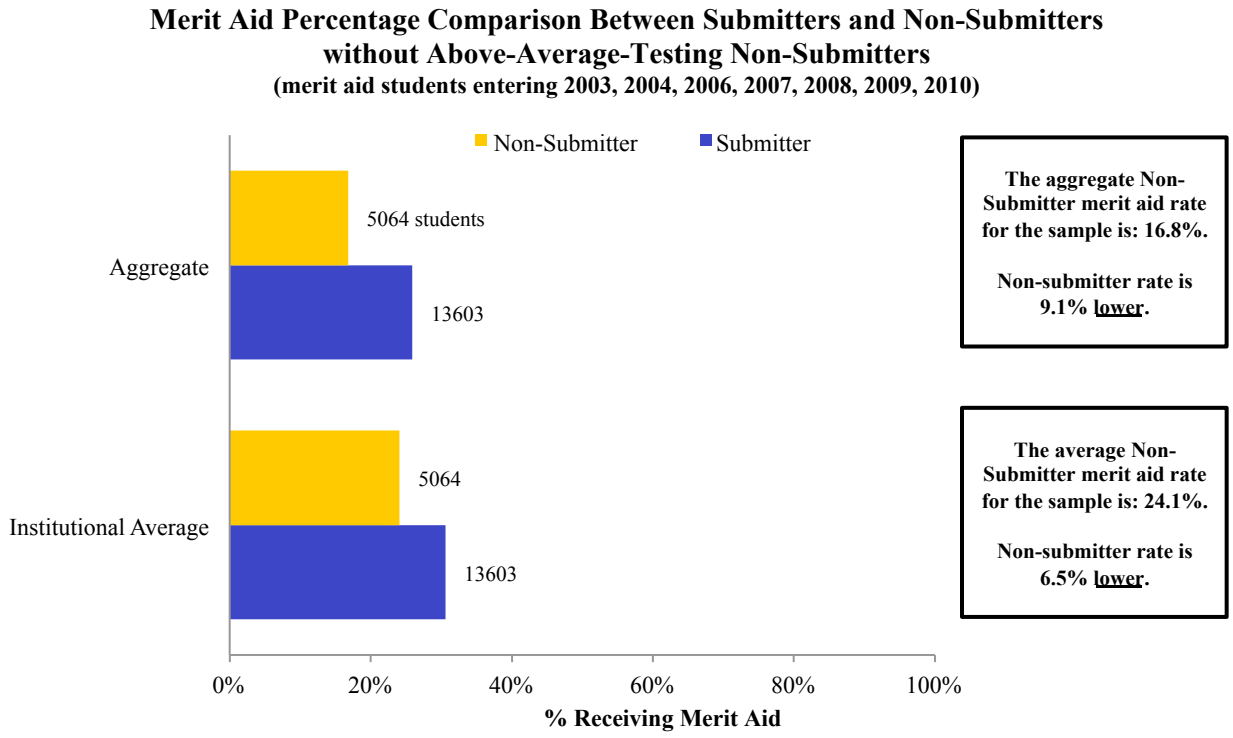


Figure 37.

The argument might be made that the below-average-testing non-submitters are less likely to do strong academic work or graduate at high rates, and therefore the much higher numbers of merit awards to the submitters are justified. We have seen in the other portions of this study that the below-average-testing non-submitters earned Cum GPAs and graduated at rates that were generally as strong as the submitters. But those earning merit awards, about a quarter of the overall pool of students in the study, are presumably a higher caliber of student, and perhaps in this smaller pool the submitters will outperform the below-average-testing non-submitters.

That is not what the data seems to tell us, both with all the non-submitters included in the first analysis below, and also in a second analysis with the above-average-testing non-submitters removed. With all the non-submitters included, the non-submitters enter the institutions with virtually identical SAT/ACT scores (1205 for non-submitters versus 1197 for submitters), and HSGPAs that are .25 higher than the submitters. The non-submitters graduate with Cum GPAs that are .22 higher, and with a graduation rate that is 11% higher than the submitters, 81% versus 70%.

Why, one might ask, do submitters get as many merit awards as non-submitters? That, presumably, involves the requirements in many states and in many private institutions for certain levels of testing to qualify for a merit award. But at least from these clear outcomes, the institutions might want to question whether the testing requirements are producing

the academic results that the merit awards are designed for, given the tight finances of most institutions. (Figure 38.)

Summary of Key Statistics for Students Receiving Merit Awards
(Students entering 2003, 2004, 2006, 2007, 2008, 2009, 2010)

	Non-Submitters	Submitters	
n	*13,708*	*13,603*	
High School GPA	3.69	3.44	*Cohen's d*
SAT (See caveat below)	1205	1197	*Cohen's d*
First Year GPA	3.21	3.07	*Cohen's d*
Cum GPA (enrolled cohorts)	3.19	3.13	*Cohen's d*
Cum GPA (graduated cohorts)	3.24	3.02	*Cohen's d*
Graduation Rate**	81%	70%	*Chi-Square*
Completion Rate**	109%	107%	*Cohen's d*
Underrepresented Minority	16%	14%	*Chi-Square*
First Generation	20%	18%	*Chi-Square*
Gender (Female)	57%	54%	*Chi-Square*
Pell	16%	15%	*Chi-Square*
EFC	$21,607	$24,364	*Cohen's d*
EFC – Adjusted for Inflation	$10,734	$12,045	*Cohen's d*
STEM Major	51%	44%	*Chi-Square*

COLOR KEY
Cohen's D
< 0.1 = trivial difference
0.1 - 0.3 = small difference
0.3 - 0.5 = moderate difference
> 0.5 = large difference

COLOR KEY
Chi-Square Tests
No Significant Difference
Statistically Significant Difference p < 0.000

SAT Caveat: 90.7% of Non-Submitter submitted scores. The average SAT scores for non-submitters represent that 90.7%. All other data in this chart is drawn from the full number of students in the chart.
*** Graduated Cohorts Only*

Figure 38.

We also examined the results of non-submitters with the above-average-testing non-submitters removed. This smaller set of non-submitters still has stronger HSGPAs than the submitters, albeit by a statistically trivial .1, with 3.54 for non-submitters versus 3.44 for submitters. Now the large statistical difference is in SAT scores, with the submitters higher by 143 points. These non-submitters and the submitters graduate with virtually identical Cum GPAs, but the non-submitters have graduation rates that are 6% higher than the submitters, 76% versus 70%. So the only statistically large differences are in SAT scores, in favor of the submitters, and in graduation rates, in favor of the non-submitters.

It is also worth noting, in the second portion of the chart, that there are statistically significant differences in minority status, first-generation-to-college, gender, Pell recipients, and STEM majors, with non-submitters higher in all categories. (Figure 39.)

Summary of Key Statistics without Above-Average-Testing Non-Submitters
(Students entering 2003, 2004, 2006, 2007, 2008, 2009, 2010)

	Non-Submitters	Submitters	
n	*5064*	*13,603*	
High School GPA	3.54	3.44	*Cohen's d*
SAT (See caveat below)	1054	1197	*Cohen's d*
First Year GPA	2.99	3.07	*Cohen's d*
Cum GPA (enrolled cohorts)	2.97	3.13	*Cohen's d*
Cum GPA (graduated cohorts)	3.05	3.02	*Cohen's d*
Graduation Rate**	76%	70%	*Chi-Square*
Completion Rate**	107.2%	106.9%	*Cohen's d*
Underrepresented Minority	26%	14%	*Chi-Square*
First Generation	24%	18%	*Chi-Square*
Gender (Female)	64%	54%	*Chi-Square*
Pell	18%	15%	*Chi-Square*
EFC	$22,702	$24,364	*Cohen's d*
EFC – Adjusted for Inflation	$11,267	$12,045	*Cohen's d*
STEM Major	49%	44%	*Chi-Square*

COLOR KEY
Cohen's D

< 0.1 = trivial difference
0.1 - 0.3 = small difference
0.3 - 0.5 = moderate difference
> 0.5 = large difference

COLOR KEY
Chi-Square Tests

No Significant Difference
Statistically Significant Difference p < 0.000

SAT Caveat: 74.9% of Non-Submitters submitted scores. The average SAT scores represent that 74.9%. All other data in this chart is drawn from the full number of students represented in the chart.
*** Graduated Cohorts Only*

Figure 39.

The same question must be asked: in times of tight resources, why are merit awards given in dramatically higher numbers to submitters of testing, despite slightly lower Cum GPAs and significantly lower graduation rates? We would hazard three guesses. First, as a criteria for merit awards, testing may be an unexamined and unfounded assumption. The awards are given to entering first year students and renewed each year with little examination of outcomes. Second, the awards may be designed to influence guidebook ratings that are partly driven by test scores. But since the guidebooks also include graduation rates in their ratings, this strategy may be internally working against itself, at great expense. Third, merit awards may be designed to increase tuition revenue by enrolling students who have the capacity to pay full costs, but will only enroll if the price is reduced. It is a complex analysis: do merit awards reduce operating funds that could otherwise improve the quality of everything from faculty to facilities, or by enrolling additional students, increase operating funds? In this as in other facets of this study, we hope that our analysis will spur examination of assumptions, at multiple levels from institutions to professional associations to testing agencies to state departments of education.

B. R-Square Analyses

Because many studies of college persistence have used R-square analyses, we also did a baseline R-square analysis of the principal comparisons in our study. Using the college

Cumulative GPA as the dependent variable, we conducted linear regression analyses to compute R-square values. Since we chose to use other statistical techniques as our principal tools, we offer these R-square analyses as only a supplemental and quite basic snapshot, albeit one with a large "N" of just under123,000 records across a wide variety of institutions. Our findings in these R-square analyses seem parallel to four core findings in Crossing the Finish Line: Completing College at America's Public Universties (Bowen, Chingos & McPherson): (1.) HSGPA seems to be a much better predictor of college cumulative GPA and graduation rates than SAT/ACT scores, accounting for all but a few percentage points of R-square value; (2.) favoring HSGPA over testing will benefit larger numbers of low SES, first-generation-to-college and minority students, and Pell recipients; (3.) comparing Cumulative GPAs and graduation rates is a more productive measure of college success than first-year GPAs; and (4.) there is little evidence of "over-matching" for low SES students, who graduate at higher rates in proportion as they enroll at stronger institutions.[xv]

Our R-square findings also support the conclusions in Crossing the Finish Line that testing seems to have particularly little predictive value at public universities.[xvi] In our R-square analyses, HSGPA produces the large share of predictive value across the entire aggregate study, with testing adding less than 3% of R-square to HSGPA. For reasons we do not pretend to understand, at the public universities in the study, testing adds less than 1.5% of R-square to HSGPA, a statistic that is remarkably consistent across both the aggregate group and five sub-groups. At the private colleges and universities, testing adds about 4.5% of R-square to HSGPA, and with higher R-square for non-submitters, though this does not line up with our findings of closely parallel graduation rates and GPAs of submitters and non-submitters. At the minority-serving institutions, we found that testing adds about 5% of R-square to HSGPA. (Figure 40.)

Summary of R-Square Analysis - Log Variables
(students entering 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010)

Aggregate Data (PR+PU+MSI+AR)	SAT Only	HSGPA Only	SAT+HSGPA
Aggregate	0.1214	0.2066	0.2358
Aggregate without Above-Average-Testing Students	0.1270	0.2017	0.2435
Non-Submitters	0.1166	0.1993	0.2313
Non-Submitter without Above-Average-Testing Students	0.1353	0.1684	0.2063
Submitters	0.1282	0.2267	0.2553
Private Institutions			
Aggregate	0.1262	0.1765	0.2317
Non-Submitters	0.1688	0.1594	0.2598
Submitters	0.1216	0.1830	0.2289
Public Institutions			
Aggregate	0.0897	0.2108	0.2247
Aggregate without Above-Average-Testing Students	0.0673	0.1606	0.1751
Non-Submitters	0.1069	0.2149	0.2296
Non-Submitter without Above-Average-Testing Students	0.1045	0.1379	0.1507
Non-Submitter Low-Testing	0.0633	0.1139	0.1185
Submitters	0.0663	0.1932	0.1997
Minority-Serving Institutions			
Aggregate	0.1164	0.1537	0.2065

Non-Submitters	0.0239	0.1297	0.1151
Submitters	0.1062	0.1461	0.1890

Figure 40.

The R-square calculations were performed in two ways, producing modestly different results. The grid above was created using a Log R-square analysis, which removed fewer than 1000 records out of 123,000 with a "zero" reading for either HSGPA or college Cum GPA. At the high school level, a zero HSGPA reflects home-schooled students or those at non-grading schools, while at the college level a zero GPA are mostly students who withdrew before completing any courses. The grid below was created using a basic R-square analysis, and includes all records. The R-square readings are modestly different, but the same patterns are visible, including lower predictive value for testing at public universities. (Figure 41.)

Summary of R-Square Analysis - Standard Variables
(students entering 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010)

Aggregate Data (PR+PU+MSI+AR)	**SAT Only**	**HSGPA Only**	**SAT+HSGPA**
Aggregate	0.1661	0.2544	0.3042
Aggregate without Above-Average-Testing Students	0.1723	0.2397	0.3088
Non-Submitters	0.1621	0.2534	0.3064
Non-Submitter without Above-Average-Testing Students	0.1782	0.1959	0.2588
Submitters	0.1743	0.2734	0.3218
Private Institutions			
Aggregate	0.1563	0.2086	0.2797
Non-Submitters	0.1920	0.1765	0.2890
Submitters	0.1491	0.2227	0.2776
Public Institutions			
Aggregate	0.1332	0.2807	0.3014
Aggregate without Above-Average-Testing Students	0.0987	0.2063	0.2265
Non-Submitters	0.1548	0.2899	0.3126
Non-Submitter without Above-Average-Testing Students	0.1456	0.1859	0.2008
Non-Submitter Low-Testing	0.091	0.1559	0.1605
Submitters	0.1026	0.2428	0.253
Minority-Serving Institutions			
Aggregate	0.1786	0.1847	0.2876
Non-Submitters	0.0456	0.1574	0.1052
Submitters	0.1666	0.1771	0.2699

Figure 41.

C. **LD: Students with Learning Disabilities and Optional Testing**

This peer comparison is based on an aggregate cohort of 1059 students and alumni from eight private colleges and universities, seven of them liberal arts institutions and one arts institution.

All institutions in the study were offered the opportunity to submit data on LD students from the class cohorts submitted for the study. Students had provided diagnostic evidence

to their home institutions which allowed them to be recognized as LD students. We did not ask the institutions for types of disabilities, nor were they shared. Based on a previous study of LD students over 30 years at Bates, it is perhaps reasonable to assume that the LD diagnoses in this sub-study are a broad mixture of dyslexia, math disability, ADHD, OCD, anxiety, executive or information processing, and a smaller number of physical disabilities in mobility, sight or hearing.[xvii] The details of what kinds of disabilities the colleges are seeing and effective remediation steps would be an excellent follow-up to this small sub-study.

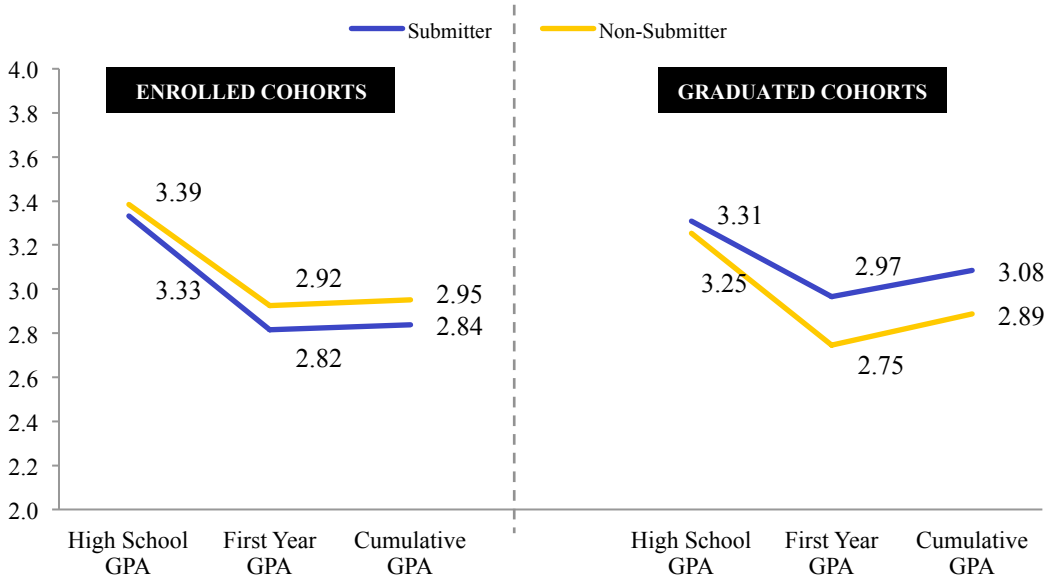
But again standardized testing becomes an issue: in most years, only about 2% of SAT takers are given an accommodation for any form of disability, a figure that does not seem to have changed even as schools and colleges understand LD issues more thoroughly and students are more open about seeking accommodations. Among the 2013 SAT test-takers, for example, 38,184 out of 1,660,047 total SAT takers, or 2%, were given accommodations.[xviii]

It is worth noting that, even though the study offered to reimburse institutions for any expenses of gathering LD data, only 8 of the 33 institutions in the study submitted information, even with the students' identities fully protected under the same "blind cross-walk" ID number as other data in the study. In some institutions, LD information is considered as confidential medical information, and in others, the data is held by a separate LD office, circumstances that caused the institution to decline to share it.

In this sub-study, LD students used optional testing policies at higher rates, approximately 50% in this sample versus the 33% in the aggregate sample of 20 private institutions. So offering an optional testing policy does seem to make it more attractive for LD students to enroll at an institution. There was wide variation in the eight institutions, from 76% to 0% of the LD students choosing to be non-submitters. (Yes, 0% is correct: at one institution, all the LD students were submitters.)

LD non-submitters earn GPAs and graduate at rates closely parallel to LD submitters. Enrolled LD non-submitters earned GPAs that were .09 higher than the LD submitters, while in the graduated cohorts the LD submitters were .19 higher. LD non-submitters earned GPAs that were .19 of a GPA point below other non-submitters in the private institutions in the study, and LD submitters earned GPAs that were .23 of a GPA point below other submitters. Graduation rates of LD students were close to the overall graduation rate for the 20 private institutions, which is 76.9%. LD non-submitters graduated at precisely the same rate, 76.9%, while LD submitters graduated at 73.6%. Time-to-completion rates were identical, and also virtually identical with non-LD students, with less than 1% variance. (Figures 42 and 43.)

Policy Use by LD Students: GPA - High School, College First Year, College Cumulative
(non-submitters entering 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010)



Note: The focus of this chart is on the difference between non-submitter and submitter means.

Figure 42.

Graduation Rate Comparison Between LD Submitters and Non-Submitters
(graduated cohorts entering 2003, 2004, 2005, 2006, 2007)

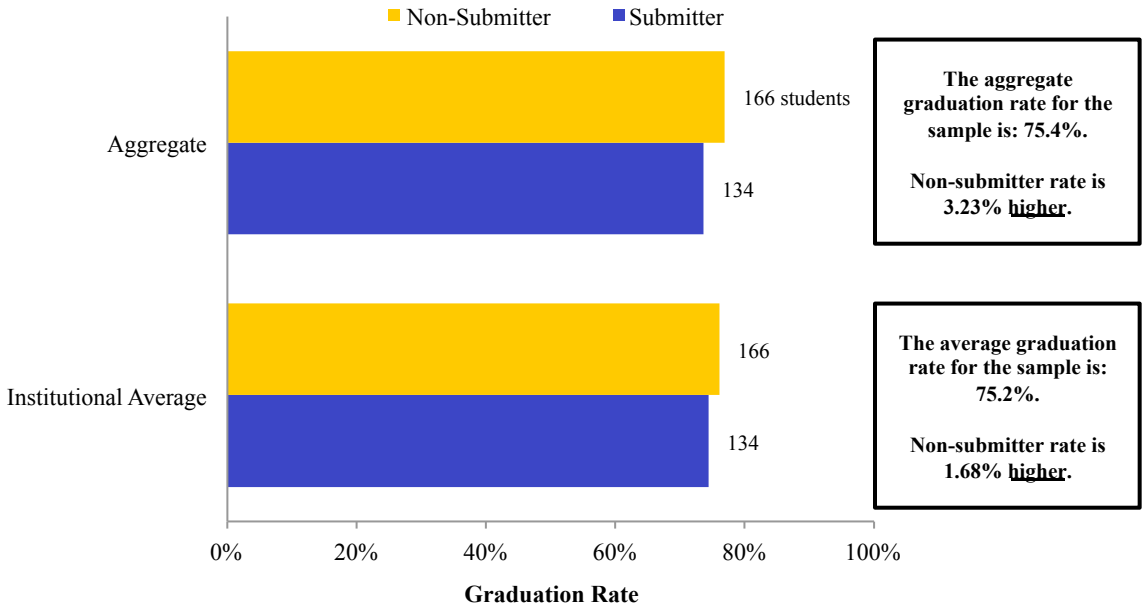


Figure 43.

Interestingly, findings for LD students paralleled those found more broadly in the study. There is the same "two-tail" financial capacity curve, with if anything, a higher

concentration of LD students not requesting financial aid, so that they outnumber the high-need students by about 3-1. Whether this reflects a pattern of more sophisticated families understanding LDs, identifying colleges where LD students succeed, or selecting non-submitter options to increase chances of admission, would require additional research.

There was a mixed pattern of minority students using LD diagnoses, with non-resident aliens, Hispanics and Asians more likely to be non-submitters at roughly 68%, whites (who heavily dominate numerically) at 49%, and Black and Native American students much less likely to be non-submitters at 25% and 33%. One can only speculate on the reasons for these large gaps, but it is not unreasonable to suggest that diagnoses of LD issues in minority populations ought to be getting more attention.[xix]

The same statistical tests for significant differences in these LD students as we have used for other cohorts produces the same finding: the statistically large difference between LD non-submitters and LD submitters is their SAT/ACT scores (and in this cohort, gender, with more women). (Figure 44.)

Summary of Key Statistics for LD Students
(Students entering 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010)

	Non-Submitters	Submitters	
n	*531*	*528*	
High School GPA	3.33	3.32	*Cohen's d*
SAT (See caveat below)	1087	1226	*Cohen's d*
First Year GPA	2.85	2.87	*Cohen's d*
Cum GPA (enrolled cohorts)	2.95	2.84	*Cohen's d*
Cum GPA (graduated cohorts)	2.89	3.08	*Cohen's d*
Graduation Rate**	76.9%	73.6%	*Chi-Square*
Completion Rate**	102.4%	102.8%	*Cohen's d*
Underrepresented Minority	9%	12%	*Chi-Square*
First Generation	7%	7%	*Chi-Square*
Gender (Female)	57%	45%	*Chi-Square*
Pell	15%	11%	*Chi-Square*
EFC	$26,425	$33,524	*Cohen's d*
EFC – Adjusted for Inflation	$12,778	$16,164	*Cohen's d*
STEM Major	18%	26%	*Chi-Square*

COLOR KEY
Cohen's D
< 0.1 = trivial difference
0.1 - 0.3 = small difference
0.3 - 0.5 = moderate difference
> 0.5 = large difference

COLOR KEY
Chi-Square Tests
No Significant Difference
Statistically Significant Difference p < 0.000

SAT Caveat: 33.3% of Non-Submitters submitted scores . This data on average SAT scores of Non-Submitters represents that 33.3%. All other data in this chart is based on the full number of students in the chart.
*** Graduated Cohorts Only*

Figure 44.

A study at Bates found that given basic accommodations, LD students dramatically improved their GPAs and graduation rates over a decade from 50% to 90%, Bates' overall graduation rate. In the large majority of cases, the only accommodation needed was additional time on course tests, which is easy to administer and inexpensive. As Bates

strengthened its administration of LD support and LD students were more knowledgeable and open about their LD's, this had the effect of raising Bates' overall graduation rate by several percentage points, not a trivial change for faculties, presidents and trustees.

We believe strongly that how colleges and universities can effectively serve LD students is worthy of much more careful attention than it has received to date. Acknowledging the confidentiality issues, there are significant reasons to examine the potential for academic success of LD students across institutions.

Conclusion: "Defining Promise"

We began with a question: does standardized testing support good decision making, or does it artificially truncate the pools of students who would succeed in college if they were given a chance? In this study, we have found optional testing policies will work successfully at broadly different kinds of institutions. A central conclusion: students with strong HSGPAs, even without testing, are likely to succeed in college, and students with low HSGPAs, even with a broad range of testing, have much lower college GPAs and graduation rates.

This might be a mildly interesting point of research, except that the economic health of our society will significantly depend on how many students develop professional and cultural skills through demanding educations. There are dramatic choices to be made: the numbers are quite large of potential students with strong HSGPAs who have proved themselves to everyone except the testing agencies. There is little evidence of "over-matching": even with lower scores and from lower socio-economic backgrounds, students succeed at higher rates at stronger and more competitive institutions where they are given both high expectations and support from faculty and staff.

To be blunt, also large is the share of college and university students who are currently admitted with low HSGPAs, and the outcomes for those enrolled students are clear in lower graduation rates. All students need to hear sustained, consistent messages from their high schools and from colleges and universities that the importance of a successful high school record cannot be overestimated.

We hope that this study will provide evidence of "Defining Promise," of how institutions can alter their admissions policies to admit students more likely to succeed. We also hope this study will serve as a prototype for many studies to follow, both within institutions and across institutional cohorts. As with any careful scholarly process, the research needs to be retested and duplicated in various settings. We hope that colleagues will find our work a helpful map to examine your own routes to "Defining Promise."

Acknowledgments

Bill Hiss' wise late predecessor as Dean of Admissions at Bates, Milton Lindholm, used to chuckle about "Lindholm's Mistakes," the students he admitted as gambles for one reason

or another. But Lindholm's Mistakes went on to practice law or medicine, found companies, lead school systems and colleges, and do useful research. Perhaps Bill's long commitment to research on optional testing is another of Lindholm's Mistakes, an acorn that didn't fall far from the tree. We offer a fond bow to his memory and wisdom, and to his example as a working dean who was also an in-the-trenches ethicist.

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The Authors

William C. Hiss, Principal Investigator, earned a B.A. in English at Bates, a M.T.S. in ethics at Harvard Divinity School, and a M.A. and Ph.D. in American literature and religion at Tufts. Bill was the Dean or VP in Bates' admissions and financial aid offices from 1978 to 2000, and has led the research on Bates' optional testing policy for over thirty years. He served for six years as an appointee from the U. S. Senate to the Federal Advisory Committee on Student Financial Assistance, and led for a decade the advisory committee of college admissions deans at U.S.News. For several years he taught a First Year Seminar in Asian Studies at Bates, studying literature and film in five countries that experienced 20th century cataclysms.

Valerie Franks, Co-author and Lead Researcher, earned her B.A. at Bates in Psychology, and for seven years afterwards in Europe, New York and Maine performed market research for transformational business and strategy initiatives. She served as an Assistant Dean of Admissions at Bates, and in 2008 founded her firm as a research consultant to college institutional research offices, designing and performing qualitative and quantitative research studies.

Our four student researchers have performed analyses under the direction of the study co-authors, and with frequent advice and support from their Bates faculty.

- Khin "Sophy" Min '12 graduated with double majors in Economics and Studio Art, and a minor in Mathematics. She served for 18 months as our principal student researcher, until she accepted a position with McKinsey. She has led tours from her native Burma to Japan and Korea, and done urban planning research in Ohio.
- Kyoung-June Lee'14 will graduate with double majors in Economics and Mathematics and a minor in Japanese. KJ earned his high school diploma in Switzerland, and took two years off from Bates for required Korean military service. After a summer internship with Analysis Group in Boston, he has accepted a position to begin with the firm after his Bates graduation.
- Qasim Mahmood '13 graduated with double majors in Economics and Mathematics. With two summers of work at Barclays Bank in Karachi and New York and a summer of research for a Bates Economics professor in housing markets, he accepted a position with Barclays in New York following graduation.

- Ghulam Awais Rana '15 is a major in Economics with a minor in Math, with interests in international politics and economics. He is studying at Oxford University for his Junior year.

Endnotes:

[i] National Association for College Admission Counseling, September, 2008. http://www.nacacnet.org/research/research-data/Documents/TestingComission_FinalReport.pdf, 7,10,21.

[ii] National Association for College Admission Counseling, September, 2008. http://www.nacacnet.org/research/research-data/Documents/TestingComission_FinalReport.pdf, 7,10,21.

[iii] William Hiss and Kate Doria, "Defining Promise: Twenty-five Years of Optional Testing at Bates College: 1984-2009". " Paper given at Conference: Diamonds in the Rough: Why Every Institution of Higher Learning Will Want to Attract and Admit Dyslexic Students, Stanford Business School, June 4, 2011. http://www.bates.edu/admission/optional-testing/

[iv] Several important recent books and studies have examined how testing can shape college admissions criteria: William G. Bowen and Derek Bok, *The Shape of the River: Long Term Consequences of Considering Race in College and University Admissions* (Princeton: Princeton University Press, 1998), William C. Bowen, Matthew M. Chingos & Michael S. McPherson, *Crossing the Finish Line: Completing College at America's Public Universities* (Princeton: Princeton University Press, 2009), "Report on the Commission on the Standardized Tests in Undergraduate Admissions" (NACAC, 2008), and most recently Joseph A Soares, Ed. *SAT Wars: The Case for Test Optional Admissions* (New York: Teachers College Press, Columbia University, 2012), an admirable collection of essays on optional testing from various researchers, thinkers and admissions professionals. Also related is a recent study on the low percentages of high talent-low income students who apply to our selective institutions: Caroline Hoxby and Christopher Avery, "The Missing 'One-Offs: The Hidden Supply of High-Achieving, Low Income Students" (National Bureau of Economic Research, 2012). Like many college admissions deans, we offer a deep bow of appreciation to Howard Gardner and Robert Sternberg for their seminal liberating work on multiple intelligences and good work, and to Jonathan Kozol for his books on the vastly different educational experiences of the rich and poor in America. For Bill Hiss as an admissions dean, Gardner and Kozol have been both lodestones and North stars.

[v] No single research paper should pretend to offer international solutions to the complex issues connected to standardized testing. But interestingly, there have been communications about this study with educational leaders, deans, college counselors, and journalists from several countries which have contentious national entrance examinations:

South Korea, Japan, China, Vietnam, India and Israel. They, like we, are trying to understand how to maximize the educational potential of their people.

[vi] One of the regular questions from institutions in the study was how effectively and ethically to collect scores from non-submitters. Surely this would be a useful topic for an NACAC Journal article or as part of a National Conference panel.

[vii] At some levels, our groupings are judgment calls: one of our minority-serving institutions is private, but larger than some of the public universities, and with a focused arts curriculum, so it could have been counted in three of our four categories. We have provided some institutions in the study with multiple aggregate data analyses when they fell into multiple categories.

[viii] As mentioned in the text, readers should not attach too much precision to these scatterplot graphs. There are approximately 88,500 student records in the first graph and 105,500 records in the second. All available data was used, so the N counts for the two graphs are different, largely due to larger numbers of students for whom colleges did not receive or record a final HSGPA, or for whom there was no college Cumulative GPA. To offer a readable format, on each graph there are 50 dots for submitters, 50 for above-average-testing non-submitters and 50 for below-average-testing non-submitters. The first graph was generated by aggregating all student data with HSGPA and College Cum GPA. Each student pool was divided into 50 groups, with a computed average HSGPA and Cum GPA for each group.

The second scatterplot graph, with SAT scores and college cumulative GPA, was generated in the same way, by aggregating all student data with SAT and College Cum GPA. Therefore, there are 50 data points for Submitters and 50 each for above-average-testing non-submitters and below-average-testing non-submitters.

[ix] Hiss and Doria, "Defining Promise: Twenty-five Years of Optional Testing at Bates College: 1984-2009."

[x] One private institution provided six class cohorts of data instead of four. For purposes of consistency, in calculating the findings for the aggregate analysis of the 20 private institutions, we used four class cohorts from this institution, so based our analysis on 36,859 records instead of 37,611.

[xi] Jonathan Kozol, *Savage Inequalities: Children in America's Schools* (New York: Harper Perennial, 1992), 236-237.

[xii] For perhaps understandable reasons, examination of standardized testing policy has not been a top priority at many minority-serving institutions. Given that testing generally does not work in favor of underrepresented minority students in competition for admission, we in recruiting institutions for the study were surprised to find that most well-known

minority-serving institutions require testing and don't seem to have considered a test-optional policy. So it will be important to examine the predictive value of both the SAT/ACT and Accuplacer tests. Who should perform this research is not a trivial issue. The CEEB has provided evaluation reports on the predictive value of their testing, and they have enormous historical files for comparison. But with the College Board committed to redesigning the SATs, it is not clear how the various predictive studies will be affected. A number of independent studies point to HSGPA as a very strong predictor of college success, with SAT/ACT testing as a minor factor. See, for example, Bowen, Chingos, and McPherson, *Crossing the Finish Line*, and Soares, Ed., *SAT Wars.* There may be wisdom in using the statistical methodologies in these volumes to design in-house studies, or contract with independent higher education research firms for the studies.

[xiii] All four of the student researchers who have worked on this study are international students at Bates. They are from Burma, South Korea and Pakistan, generally double majors in Economics and Mathematics with powerful statistical and analytic skills, and each able to work in four languages. See the biographical notes at the conclusion of this paper.

[xiv] Matthew Quirk, "The Best Class Money Can Buy: The Rise of the 'Enrollment Manager' and the Cutthroat Quest for Competitive Advantage. The Secret Weapon: Financial-Aid Leveraging." The Atlantic. *www.theatlantic.com/magazine/...**best-class-money-can-buy**/304307/*Nov 1, 2005

[xv] Bowen,. Chingos, and. McPherson, *Crossing the Finish Line: Completing College at America's Public Universities* (Princeton: Princeton University Press, 2009). For HSGPA as a stronger predictor than SAT/ACT scores, see pp. 43, 70, 113, 117,122-124. For HSGPA as a more accurate and advantageous credential for low SES students, pp. 116, 127. For four-year Cum GPA and graduation rate as a more accurate measure of college achievement than college first-year GPA, p. 113. For a lack of evidence for "over-matching" in college selection, pp. 100, 198, 209, 214. *Crossing the Finish Line* (p. 114) found that when controls were added for the quality of high schools, the predictive power of SAT/ACT testing disappeared, and often had a negative correlation with college performance. Our study did not attempt any analysis of the quality of high schools, but in our reports back to the institutions in our study, we often recommended that the college or university conduct their own study of the predictive power of testing, to test both for potential "false negatives" among low income and first-generation-to-college students, and potential "false positives" among high income students, who had raised their test scores through intensive coaching, but perhaps not their college grades and graduation rates.

[xvi] Bowen, Chingos and McPherson*, Crossing the Finish Line*, 114-116.

[xvii] Hiss and Doria. "Defining Promise: Twenty-five Years of Optional Testing at Bates College: 1984-2009."

[xviii] http://media.collegeboard.com/digitalServices/pdf/research/2013/TotalGroup-2013.pdf, 2.

[xix] Jonathon Kozol, *Amazing Grace: The Lives of Children and the Conscience of a Nation* (New York: Crown Publishers, 1995), pp 7-8, 155-156, 170-175. Bill Hiss began his teaching career in the Morrisania section of the South Bronx, assigned to teach 7th and 9th grade Mathematics in legal violation of his NYC license to teach English. He has never forgotten Jonathan Kozol's discussion in Amazing Grace of the high concentrations of lead paint in public housing and public schools, and of NYC public incinerators in South Bronx neighborhoods without the political or financial power to resist the placement of these incinerators, both of which contribute to very high rates of asthma and learning disabilities in children in these neighborhoods.

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