



## Center for the Study of Higher and Postsecondary Education

### Does Contextualized High School Performance Predict College Success?

Contextualized grades have a stronger, more consistent relationship with college success than contextualized test scores, and may be most helpful at test-optional, test-blind, and broader-access colleges that have yet to adopt holistic admissions practices.

Although *Brown v. Board of Education of Topeka* signified the end of *de jure* segregation, *de facto* segregation persists today, with low-income and minoritized students disproportionately concentrated in under-resourced schools. As these students participate in the college admissions process, they are evaluated against students with an abundance of resources that may include greater access to greater extracurricular offerings, more advanced college-level coursework, stronger social networks, and tailored college counseling.

To account for K-12 educational disparities, admissions offices have been putting an increasing emphasis on holistic review practices to become more equitable to all students. Recently, more institutions are implementing test-optional and test-blind policies, bringing high school GPA to the forefront as a method of measuring performance and evaluating applicants. However, most colleges tend to evaluate high school performance as *raw* achievement (e.g. raw high school GPA, raw SAT scores) rather than student achievement in relation to peers at the same high school (e.g. high school class rank, contextualized GPA or SAT scores). However, recently, colleges have begun to rely upon dashboards like College Board's Landscape to contextualize high school performance.

Evidence suggests that while some admissions officers account for the opportunities an applicant has in their high school and neighborhood, others simply read an applicant's whole file without considering context, which has the potential to inadvertently disadvantage applicants of underrepresented backgrounds. Even more astonishing— since the 1970s, growth among low-income students and students of color at selective institutions has remained stagnant, suggesting that more contextualized data is needed to truly provide equitable admissions. However, admissions officers who contextualize academic performance – such as considering an applicant's grade-point average (GPA) and standardized test scores in relation to others at their high school – are more likely to admit low-SES students.

One of the goals of a holistic admissions process is to admit highly qualified students who will succeed at their institutions. To better inform the adoption of contextualized, holistic admissions practices, we aimed to better understand students' academic performance in consideration of their high school environment. We sought to further understand the relationship between a student taking their school's most rigorous courses and achieving college success, as well as if contextualized measures are consistently associated with college success in both selective and less-selective institutions.

#### The Study

Our data are drawn from a medium-sized Midwestern state's Department of Education database (DOE). The data are provided by three separate sources: (1) all public high schools within the state, (2) the state's ACT test database, and (3) the state's fifteen public universities. The high school dataset, comprising over 2.3 million high school students, includes information such as courses and associated instructors, grades, credits, course type, and demographics. The ACT Test database includes scores for all ACT sections and subsections. The university data are similar to the high school data, additionally including enrollment status, choice of major, and Pell Grant eligibility as a proxy for low-income status.

This state was chosen because the DOE not only collected all high school transcripts for students graduating from public high schools from 2010 to 2015, but also mandated the ACT for all high school juniors during this time period. This allowed us to construct contextualized high school performance measures otherwise unavailable in any national dataset and match the state transcript data with public college records. Public universities within the state range in selectivity, location, and size, but only one university is highly selective.

## HIGHLIGHTS

- In a dataset of all public four-year college students in a Midwestern state, both raw and contextualized high school GPA overwhelmingly has the strongest association with all outcomes, followed by ACT scores and curriculum rigor.
- Despite its widespread use as a metric of academic potential in college admissions, weighted high school GPA was no better than unweighted GPA in association with college success outcomes.
- A student's raw and contextualized high school GPA showed the most consistent, positive relationship with college graduation within four years.
- Although prior research has shown holistic admissions is mostly practiced at highly selective institutions, our results show that contextualized measures of high school performance are also associated with college success at broader-access universities within our state, which accept over half of their students.

“ Contextualized high school GPA is significantly associated with the crucial measures of college success: first-year college GPA, retention during the first year, and graduation within four years. Thinking about achievement in high school context should play a key role in holistic admissions. ”

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In the final dataset, we used the first three years of transcript data from the high school database to calculate raw high school GPA (both unweighted and weighted). Our aim in constructing this GPA was to mimic the GPA most admissions counselors see when reviewing applications, typically the GPA acquired after junior year. We restricted our sample to in-state public university students, which accounted for 75% of college students in the state. Our concurrent analyses show that the 25% of missing students do not influence the demographic makeup of the sample.

We used first-year college GPA, first-year retention rates, and four-year graduation rates to assess college outcomes. First-year GPA is the grade point average of a student prior to beginning their second year of college, while first-year retention indicates whether a student was enrolled during the beginning of their second year of college.

To measure high school performance, we used high school GPA, ACT Composite scores, and curriculum (course selection and rigor). For each of these raw performance metrics (GPA, ACT, curriculum), we created a contextualized score using a formula that accounts for how far a student's scores are from the average score of peers at their high school. Contextualized measures were also created for math, science, and English course selection measures, respectively: these measures show how far (in standard deviations) a student progressed in math, science, and English offered by their school. The contextualized score for English curriculum rigor, for example, takes a student's maximum value for English course level, divides this by the maximum value of English course level offered within the student's school, and then standardizes this value.

### Results

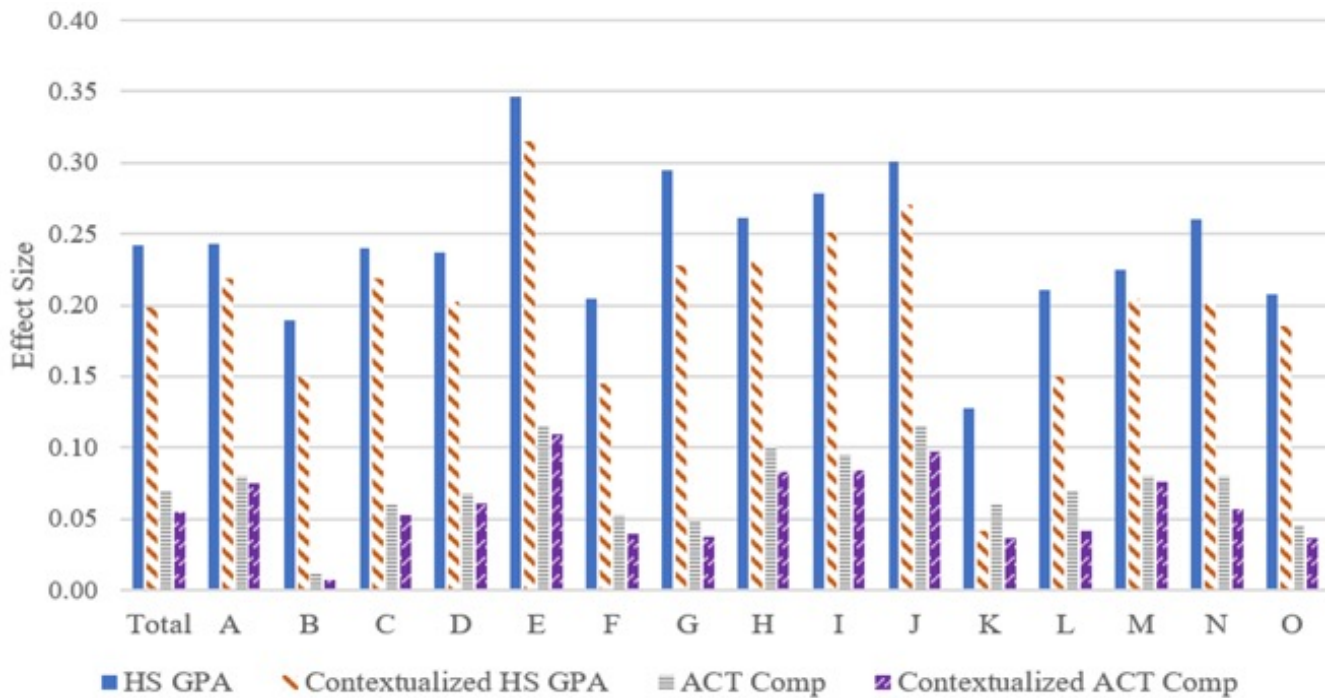
Our findings show that both high school GPA and ACT scores (raw and contextualized, unweighted and weighted) are positively associated with two measures of college success: first-year college GPA and graduation within four years.

Across all universities in our data set, both raw and contextualized ACT scores were positively associated with first-year college GPA, but our findings suggest that the relationship between high school GPA and college GPA is stronger. Although both raw and contextualized curriculum rigor variables (English, math, science) are positively associated with first-year college GPA, the relationships have the smallest effect sizes. In addition, our data showed that ACT scores and curriculum rigor were not consistently associated with first-year retention rates. In this case, both raw and contextualized high school GPA were most strongly and consistently associated with first-year retention rates.

As with both college GPA and retention, we observed that graduation within four years is most strongly related to high school GPA-related measures. Although ACT scores and curriculum rigor are also associated with graduation, they pale in comparison to how well high school GPA is associated with graduation. Our study found that students with a high school GPA far above the average of their peers could be as much as 2-4 times more likely to graduate within four years.

Finally, we note that contextualized measures of high school performance are more consistently associated with college success outcomes, as well as show larger effect sizes, which may be useful in a broader range of institutions (as opposed to only selective institutions). These findings could be attributed to the large range of high school performance that is measured in incoming college students.

## Effects of Raw and Contextualized Measures on First-Year College GPA



Effect sizes for (1) Raw high school GPA, (2) Contextualized high school GPA, (3) Raw ACT composite, and (4) Contextualized ACT composite on first-year college GPA. Letters A–O refer to each institution in our dataset.

### *Policy and Practice Implications*

This study highlights several strategies and implications – for both individual admissions offices and the wider field – to develop holistic review practices that more accurately predict college success in applicants.

#### **Reading applicants in context has validity in a holistic review process**

Initiatives such as the College Board’s Landscape tool currently offer substantial data on applicants’ backgrounds, including contextualized high school test score information, reduced or free lunch eligibility as a proxy for socioeconomic status, and high school and neighborhood indicators. Our results lend credibility to using contextualized high school performance to anticipate college success, which provides institutions with the opportunity to identify and admit students with the strongest likelihood of success and potentially increase the number of students they enroll from underrepresented backgrounds.

#### **Consider adopting contextualized review at broader-access institutions**

Our research showed contextualized measures of high school performance may be useful in a broader range of institutions, as opposed to only highly selective institutions. Thus, contextualized review could be beneficial for institutions in further identifying students who are more likely to demonstrate strong college academic achievement and successfully graduate. For institutions with lower undergraduate retention and graduation rates than their selective counterparts, the implementation of contextualized review may improve efforts to reduce attrition rates.

#### **Contextualized data is useful for both test-optional and test-blind institutions**

As a growing number of institutions adopt test-optional and test-blind admissions policies, they are likely to rely increasingly on holistic review practices to admit and enroll students. The days of relying upon a single formula or grid to admit students have long passed. To advance the quality of holistic practices, contextualized data are necessary to facilitate a “whole context” review of applicants and produce more equitable enrollment outcomes.



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## CSHPE POLICY BRIEF NO.4

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