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Status, Growth, and Perceptions of School Quality

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Abstract

States and districts are increasingly incorporating measures of achievement growth into their school accountability systems, but there is little research on how these changes affect the public's perceptions of school quality. We conduct a nationally representative online survey experiment to identify the effects of providing participants with information about their local school districts' average achievement status and/or average achievement growth. In the control group, participants who live in higher status districts tend to grade their local schools more favorably. The provision of status information does not fundamentally alter this relationship. The provision of growth information, however, reshapes Americans' views about educational performance. Once informed, participants' evaluations of their local public schools better reflect the variation in district growth.

Pre-Registration

This experiment has been pre-registered on the American Economic Association's registry for randomized controlled trials: https://www.socialscienceregistry.org/trials/4252.

Prior to the passage of the Every Student Succeeds Act (ESSA) in 2015, states' public K-12 school accountability systems focused almost exclusively on measures of student achievement *status* (i.e., the level of students' academic performance at a single point in time). ESSA's predecessor, the No Child Left Behind Act of 2002, required states to conduct annual assessments in math and reading in grades 3-8 and once in high school. The results of these assessments factored heavily in schools' accountability ratings, shaping states' efforts to improve educational outcomes as well as public perceptions of school quality. Critics argued that achievement status was a misleading indicator of school quality (Chingos & West, 2015; Rothstein, Jacobsen, & Wilder, 2008). Schools that served a larger proportion of disadvantaged students tended to perform poorly in terms of achievement status because of their students' lower initial achievement and additional out-of-school obstacles. Conversely, schools that served a larger proportion of more privileged students tended to perform well by this standard, regardless of the schools' actual contributions to student learning.

ESSA now requires states to use multiple measures to evaluate students and schools (Barone, 2017). The most significant change has been the widespread inclusion of student achievement *growth* (i.e., the rate of improvement in students' academic performance over time), which many education policy researchers consider a better—albeit still imperfect—indicator of school quality than achievement status (Stiefel, Schwartz, & Rotenberg, 2011). Forty-eight states and the District of Columbia now include or plan to include growth in their school accountability systems (Data Quality Campaign, 2019). There is considerable variation among states with respect to how they measure growth and how much emphasis they place on it. Among states that include growth in their accountability systems, the relative weight varies from 20 to 60 percent (Achieve, 2019).

The 2017 Senate confirmation hearing of US Secretary of Education Betsy DeVos brought national attention to the debate over these different measures of educational performance. During the hearing, Senator Al Franken asked, “I would like your views on the relative advantage of assessments and using them to measure proficiency and growth” (proficiency, or the proportion of students whose scores exceed a pre-determined threshold, is a common way to measure achievement status) (Wong, 2017). DeVos’ initial response, which appeared to conflate the two concepts, became the subject of articles in both mainstream publications like *The Atlantic*, *Time*, and *Vox* as well as education-centric outlets like *Chalkbeat*, *EducationNext*, *EdWeek*, and *The 74 Million*. Although this episode was the source of controversy in education circles, it is not clear whether the American public has a strong sense of the distinction between status and growth. There is a growing empirical literature on how the collection and dissemination of academic performance information—specifically about achievement status—affects the public’s attitudes towards the public schools (e.g., Barrows, Henderson, Peterson, & West, 2016; Chingos, Henderson, & West, 2012; Clinton & Grissom, 2015; Jacobsen, Snyder, & Saultz, 2014). However, there is relatively little research on how the public responds to information about growth.

The answer to this question has important implications for our understanding of the social, economic, and political consequences of the recent changes in states’ school accountability systems. We conducted an experiment embedded in a nationally representative online survey of attitudes on education issues. We first asked participants to estimate their local school districts’ performance in terms of both status and growth. Unsurprisingly, we find that Americans are more familiar with status (which states have used for many years to evaluate schools) than growth (which states have only recently begun to incorporate into their school accountability systems). Next, we randomly assigned participants to receive one or more elements of academic performance information about their local school district: either the district's national percentile in terms of status, the district's national percentile in terms of growth, both, or neither (to serve as a control group). We then asked participants to evaluate the quality of their local public schools. This research design allows us to identify the effects of providing status and/or growth information on participants' perceptions of local school quality.

Regardless of their experimental condition, individuals living in higher status districts tend to grade their local schools more favorably. On average, we observe a small negative effect of giving participants information about local achievement status. However, the slope of the relationship between district status and perceptions of school quality is unaffected by the provision of status information. In other words, Americans already have a rough comprehension of average achievement status in their community. Confronting this information directly may have a minor depressing effect, but it does not fundamentally change the public's understanding of the distribution of school quality.

By contrast, the provision of information about local achievement growth reshapes the public's perceptions of school quality. Among participants who receive only information about growth, the relationship between district status and perceptions of school quality becomes weaker, while the analogous relationship between district growth and perceptions of school quality becomes stronger. When we provide both types of academic performance information, the relationship between district status and perceptions of school quality is generally unaffected, while the relationship between district growth and perceptions of school quality is enhanced. In short, providing information about growth reorients the public's perceptions of school quality to be more in line with a measure that many scholars consider a more accurate indicator of schools' contributions to student learning. Because district growth bears a weaker relationship to the economic composition of the student body than district status, the provision of growth information also reorients the public's perceptions of school quality to be less tightly aligned with student demographics.

Our results also suggest that the collection and dissemination of status and growth information may affect more than just perceptions of school quality. It may also influence the public's attitudes about the importance of academic performance itself. Among those in lower growth districts, the provision of academic performance information of any kind—status, growth, or both—causes participants to indicate that they think schools should focus a little less on academics relative to other educational objectives. The reverse is true in higher growth districts. With respect to growth information, it may be the case that many participants in lower growth districts do not appreciate or accept this new negative depiction of their local schools, and they respond by deemphasizing the importance of academics. Similarly, many participants in higher growth districts may be surprised to receive such a positive portrayal, and they respond with additional enthusiasm for academics. It could also be the case that many participants living in lower growth districts are more skeptical of the measures of academic performance featured in our experiment than their peers in higher growth districts. Their response to the academic performance information may reflect this wariness.

To summarize, the public's current perceptions of school quality are largely consistent with the predominant indicator of academic performance over the last few decades: average achievement status as measured by state standardized tests. The provision of district-level information about average growth can shift the public's perceptions of school quality to be more in line with schools' contributions to student learning. However, portions of the public may be disinclined to embrace growth as a valuable metric. Especially among those living in lower growth districts, the provision of this information may reduce support for schools' academic objectives and/or this particular method of measuring success towards those objectives.

The Effects of Public Service Performance Information

In the last decade, there has been a surge of empirical research on the attitudinal effects of public service performance information in policy domains such as healthcare, policing, mail delivery, recycling/waste removal, and education (e.g., Baekgaard & Serritzlew, 2015; James, 2011; Marvel, 2016; Walker & Archibold, 2014). Three major findings are particularly relevant to our inquiry. First, recipients of public service performance information display a significant negativity bias. The public's satisfaction with local services declines with the provision of information about low performance, but the public is generally unmoved by the provision of information about high performance (James & Moseley, 2014). Second, information from an independent source (rather than the service provider itself) and information about performance relative to similar institutions (rather than an absolute level of performance) appear to be particularly influential (Barrow, Henderson, Peterson, & West, 2016; James & Moseley, 2014; James & Van Ryzin, 2017). Finally, individuals' prior beliefs about the quality of local public services shape their interpretation of the information they receive. When new information is inconsistent with these prior beliefs, recipients are more likely to misinterpret or discard it (Baekgaard & Serritzlew, 2015).

A handful of studies focus explicitly on information regarding the effectiveness of public schools. Many Americans already possess a nontrivial understanding of achievement status in their communities. Chingos, Henderson, and West (2012) asked a nationally representative sample of US adults to evaluate the quality of their local public schools. They find that these ratings are positively related to the percentage of students who scored above proficient on the state standardized test. This relationship is two to three times stronger among parents of school-age children, who might be expected to be more familiar with local schools. The provision of new information about achievement status can also shift attitudes towards the local public schools. Researchers have examined the effects of status information on perceptions of school quality in the context of online surveys (Barrows, Henderson, Peterson, & West, 2016; Clinton & Grissom, 2015; Jacobsen, Snyder, & Saultz, 2014), official school letter grades released by the state (Chingos, Henderson, & West, 2012), and shifts in performance outcomes following the introduction of new state tests (Jacobsen, Saultz, & Snyder, 2013). In most cases, when individuals encounter new information about achievement status, they tend to revise their appraisals of local education institutions downwards.

While there is substantial evidence regarding the effects of status information on perceptions of school quality, we are unaware of research that explicitly investigates the analogous effects of growth information. Three studies examine closely related issues. When exploring the relationship between perceptions of school quality and achievement status, Chingos, Henderson, and West (2012) also establish that individuals' ratings of local schools are weakly related to differences in growth. However, this relationship is largely explained by the fact that school-level average status and school-level average growth are moderately correlated; after controlling for achievement status, the relationship between growth and ratings is not statistically significant. In the second study, Schneider, Jacobsen, White, and Gehlbach (2018) reveal that individuals who are given access to more extensive measures of school quality than those typically offered by states—including a measure of academic performance that places greater emphasis on growth—tend to express greater confidence in their local schools. Lastly, in the context of an online survey experiment, Houston and Henig (2019) demonstrate that individuals who receive information about achievement growth tend to prefer higher growth school districts from a set of available options when asked to choose a district for their child. In sum, the available evidence suggests that Americans possess little prior knowledge about school performance in terms of growth, and the provision of this information may have considerable influence on their attitudes towards those educational institutions.

A related literature documents the effects of academic performance information on the local housing market. Multiple researchers have demonstrated that housing values reflect differences in student achievement status in nearby schools (Bayer, Ferreira, & McMillan, 2007; Black, 1999; Kane, Riegg, & Staiger, 2006). The release of new information about achievement status also appears to influence housing prices (Figlio & Lucas, 2014; Fiva & Kirkebøen, 2011). On the other hand, the release of Los Angeles Unified School District teacher and school value-added data (a type of growth metric) in the *Los Angeles Times* did not systematically affect the prices of homes in the following year (Imberman & Lovenheim, 2016). However, this situation may have been atypical given the controversial nature of the data release.

A consistent challenge with respect to measuring educational performance is the multiplicity of objectives that schools are expected to pursue (Jacobsen, 2009; Ladd & Loeb, 2013; Rothstein, Jacobsen, & Wilder, 2008). Previous work by Jacobsen, Snyder, and Saultz (2015) indicates that individuals with different normative expectations for schools—either a heavy emphasis on academics or a more equal balance between academics and other educational objectives—react differently to academic performance information. Those who place greater emphasis on academics tend to respond more negatively to indications of lackluster academic performance. By contrast, those who prefer more balance appear to be less critical of schools that underperform academically if they are strong in other departments. We are unaware of research that examines the converse relationship: how the provision of performance information can influence attitudes about the optimal balance between various educational objectives.

When studying the effects of public service performance information, it is important to consider whether the results we observe are due to participants learning something new or if they are merely the consequences of priming. Priming refers to the process through which individuals become temporarily attuned to different considerations when answering questions, making decisions, or performing actions (Sherman, Mackie, & Driscoll, 1990). Priming occurs when a stimulus (like a survey question) briefly increases the salience of one consideration (such as the importance of academic performance when evaluating school quality) at the expense of other relevant considerations (such as the importance of students' social and emotional well-being). The effects of priming disappear quickly as the newly salient consideration wanes in prominence. To differentiate between learning and priming, previous studies examined whether the effects of information were larger for individuals who under-estimated or over-estimated the value in question—a pattern that would be more consistent with learning than with priming (Clinton & Grissom, 2015; Schueler & West, 2016). We employ the same approach in our analysis. We also test the priming hypothesis directly by identifying the effects of academic performance information on the importance of academics relative to other educational objectives.

Methods

Pre-Registration

This experiment has been pre-registered on the American Economic Association's registry for randomized controlled trials. The research questions and the accompanying analyses presented here are consistent with the pre-analysis plan posted on the registry.

Research Questions

We divide our research questions into two categories: primary and secondary. As the number of statistical tests necessary to answer these questions increases, so does the likelihood of false positives. The reader should place more confidence in the results of the analyses associated with the primary research questions. The results of the analyses associated with the secondary research questions should be viewed as exploratory.

Primary Research Questions

1. To what extent are individuals able to estimate average achievement status and average achievement growth in their school districts?
2. Does the provision of status and/or growth information affect the grades that participants assign to their local public schools?
3. Does the provision of this information affect the importance of academic performance relative to other educational objectives?
4. Do these effects vary by the academic performance of participants' districts?

Secondary Research Questions

5. Do these effects vary by the racial/ethnic and economic compositions of participants' districts?
6. Could these effects be the result of participants updating their prior beliefs about academic performance in their districts?

Data

We embedded an experiment in the 2019 *EducationNext* Poll, an annual survey of Americans' attitudes towards education issues. The survey was conducted from May 14 to May 25, 2019, by the polling firm Ipsos Public Affairs via its KnowledgePanel®. In the

KnowledgePanel®, Ipsos Public Affairs maintains a nationally representative panel of more than 50,000 adults (obtained via address-based sampling techniques) who agree to participate in a limited number of online surveys, providing non-internet households with internet access and a device with which to participate. Ipsos then samples from this panel to obtain participants for particular surveys, such as the *EducationNext* Poll. This survey features a sample of 3,046 respondents, including a nationally representative, stratified sample of adults (age 18 and older) in the United States as well as representative oversamples of the following subgroups: teachers (667), African-Americans (597), and Hispanics (648). Survey weights are employed to account for non-response and the oversampling of specific groups. Respondents could elect to complete the survey in English or Spanish.

Ipsos Public Affairs provided us with extensive demographic information for each participant: race/ethnicity, teacher status, parent status, Spanish language status, political party identification, political ideology, household income, US Census region, age, educational attainment, gender, head of household status, housing type, marital status, and employment status. Based on participants' locations, we link them to their local school district. For participants living in areas with separate elementary and secondary districts, we link them to their elementary district.

For measures of district-level average status, average growth, free and reduced-price lunch (FRPL) eligibility, and racial/ethnic composition, we use the Stanford Education Data Archive v2.1 (SEDA). SEDA contains data from state standardized tests in reading and math in grades 3-8 administered from 2009-2015 for almost every school district in the US (Fahle et al., 2018). SEDA defines school districts in geographic terms: The dataset contains student performance data for all public schools located in the geographic boundaries of the district, including charter schools. For each district, SEDA contains average status and growth in reading and math as well as the average across both subjects (we employ these combined values in our experiment). The student test score data have been converted to a common scale that allows district-to-district comparisons across the country. We use the empirical Bayes grade cohort scale estimates for the measures of status and growth. To aid in the interpretability of these values for participants, we provide status and growth scores in terms of national percentiles. For example, we present growth information in the survey as follows: "The rate of growth in student academic performance in your school district is better than in [growth percentile] percent of districts and worse than in [100 – growth percentile] percent of districts" (see the following section for more details about the survey text).

Experimental Design

Participants are randomly assigned with equal probability to one of four experimental groups:

1. Participants in the *status group* receive their district's national percentile in terms of average achievement status.
2. Participants in the *growth group* receive their district's national percentile in terms of average achievement growth.
3. Participants in the *both group* receive both their district's national percentile in terms of average achievement status and their district's national percentile in terms of average achievement growth.
4. Participants in the *control group* do not receive academic performance information for their district.

At the beginning of the survey, all participants are asked to estimate how their local school district performs in terms of average achievement status. They receive the following prompt:

> The next few questions are about the ***current level*** of student academic performance and the ***rate of growth*** or improvement in student academic performance in your school district from one year to the next.
>
> Enter any number from 0 to 100.
>
> I think the ***current level*** of student academic performance in my school district is better than **[number box, range 0-100]** percent of other districts in the United States.

Next, they estimate how their district performs in terms of average achievement growth:

> Enter any number from 0 to 100.
>
> I think the ***rate of growth*** in student academic performance in my school district is better than **[number box, range 0-100]** percent of other districts in the United States.

Depending on their experimental assignment, some participants receive information about their district's academic performance. Those assigned to the status group receive:

> According to the most recent information available, the ***current level*** of student academic performance in your school district is better than in **[achievement percentile]** percent of districts and worse than in **[100 – achievement percentile]** percent of districts.

Those assigned to the growth group receive:

> According to the most recent information available, the ***rate of growth*** in student academic performance in your school district is better than in **[growth percentile]** percent of districts and worse than in **[100 – growth percentile]** percent of districts.

Those assigned to the both group receive both pieces of information displayed above, while those assigned to the control group receive neither.

All participants then receive the following question about the quality of their local public schools:

Students are often given the grades A, B, C, D, and Fail to denote the quality of their work. Suppose the public schools themselves were graded in the same way. What grade would you give the public schools in your community? (Answer options: A, B, C, D, or Fail)

This question employs the standard wording for measuring confidence in the public schools as tracked by Loveless (1997) and Bali (2016).

Lastly, all participants receive the following question about the relative importance of academic performance versus social and emotional well-being (the sequence of "student academic performance" and "student social and emotional well-being" is randomized to eliminate ordering effects):

How much should schools focus on student academic performance versus student social and emotional well-being?

Please give a percentage for each. Your answers should add to 100%.

1. Student academic performance	[number box, 0-100] %
2. Student social and emotional well-being	[number box, 0-100] %
Total	[show sum of boxes]

Analytic Approach

To check for balance between experimental groups, we compare the demographic composition of the control group with the demographic compositions of each of the other randomly assigned groups. To accomplish this, we use a series of weighted least squares (WLS) regressions:

$$X_i = a + bS_i + cG_i + dB_i + u_i,$$

where X_i is one of the available demographic covariates (from the set of individual-level demographic characteristics provided by Ipsos Public Affairs); S_i, G_i, and B_i are indicators of experimental group status (the status group, the growth group, and the both group); and u_i is the error term for individual i. Ipsos Public Affairs computed post-stratification statistical weights by age, gender, race/ethnicity, US Census region, metropolitan status, education, and household income. We incorporate these weights into all regression models to improve generalizability to the American public as a whole. The results are substantively similar with or without the use of weights.

To answer Research Question 1, we calculate a range of descriptive statistics for participants' estimates of status and growth as well as actual status and growth in their districts.

When calculating average treatment effects (Research Questions 2-3), we rely on the following general model:

$$Y_i = a + bS_i + cG_i + dB_i + \boldsymbol{eX_i} + u_i,$$

where Y_i is the outcome (local school grades or the relative importance of academic performance) and $\boldsymbol{X_i}$ is a vector of demographic characteristics. The default comparison is to the control group, but we also calculate average treatment effects with the status group as the comparison group.

When calculating heterogeneous treatment effects by individual-level and district-level characteristics (Research Questions 4-6), we rely on the following general model:

$$Y_i = a + bS_i + cG_i + dB_i + \boldsymbol{eX_i} + fZ_{id} + g(S_iZ_{id}) + h(G_iZ_{id}) + j(B_iZ_{id}) + u_i,$$

where Z_{id} is the value of the heterogeneous dimension for individual i in district d.

The treatment effect heterogeneity analyses associated with Research Question 5 are based on the premise that average status and average growth have different underlying relationships with districts' racial/ethnic and economic compositions: The relationships between student demographics and average growth are much weaker than the analogous relationships between student demographics and average status (Reardon, 2016). To corroborate this finding within our sample, we calculate a series of bivariate relationships between district-level demographic characteristics and academic performance.

Findings

Balance and Missing Data

Table 1 displays the frequencies of participants' demographic characteristics by experimental condition. Our use of random assignment establishes groups with similar demographic compositions. There are seven instances (out of 78 total comparisons) in which the demographic profile of an experimental group is statistically different from the control group. This rate is marginally higher than we would expect by chance alone. To adjust for these observable differences between groups, we include all individual-level covariates in subsequent analyses.

[Table 1 about here]

Roughly 4-7 percent of each group is missing answers to one or more of the survey questions that serve as outcomes in our study. If participants do not answer the district status estimation question, the district growth estimation question, the local public school grades question, or the relative importance of academic performance question, they are dropped from the analyses that rely on those values. About 1-2 percent of each group is missing one or more of the demographic covariates. If participants are missing demographic information, we recode the missing data with an arbitrary value and control for an indicator of missingness in subsequent analyses. Thirty-one participants (approximately one percent of the sample) live in areas where we do not have data on district status or growth. Depending on their experimental assignment, these participants receive the median academic performance value(s).

Estimating Status and Growth

Our first research question asks about the extent to which participants are able to estimate status and growth in their districts. The first and fourth plots in Figure 1 display the distributions of participants' estimates of their district status and district growth percentiles versus the actual district status and district growth percentiles. Participants' estimates of status and growth percentiles range from 0 to 100. The modal estimate for both status and growth is the 50th percentile. For both forms of academic performance, there is also a second, smaller spike at the 75th percentile. Because the survey features a nationally representative sample, the distributions of actual status and growth percentiles are roughly uniform.

[Figure 1 about here]

Table 2 describes the distributions of estimated and actual academic performance in greater detail. The average estimated achievement percentile is 54.05 while the average actual achievement status percentile is 48.46, suggesting that participants are somewhat over-optimistic about their districts' performance with respect to status. There is considerable variation in participants' responses. Their status estimates have a standard deviation of 24.97 percentile points (similar to the 29.22 percentile point standard deviation in actual achievement). Overall, participants' estimates of district status are related to and slightly predictive of actual district status. The correlation between the two is 0.29. This relationship is displayed visually in the second plot in Figure 1. In short, participants' estimates of achievement status reveal a modest understanding of how their districts perform in this regard.

[Table 2 about here]

The pattern with respect to growth is quite different. On average, participants accurately estimate their districts' growth percentiles. The average estimated growth percentile and the average actual growth percentile are 48.66 and 49.10 (with standard deviations of 25.77 and 26.59 percentile points). However, despite their accuracy on average, participants' estimates of district growth are essentially unrelated to their districts' actual growth. Estimated and actual growth are correlated at 0.06. This relationship is displayed visually in the fifth plot in Figure 1. While participants demonstrate some understanding of their districts' performance in terms of achievement status, they are largely unaware of how their districts perform in terms of achievement growth.

We also explore the extent to which district status and growth—both actual and estimated—are related (see the third and sixth plots in Figure 1). Among the participants in our sample, actual status and actual growth are correlated at 0.32. On average, higher status districts are also higher growth districts, but the relationship is modest. Estimated status and estimated growth, on the other hand, are correlated at a much stronger 0.79. This mismatch lends itself to two different interpretations. Perhaps participants understand the distinction between status and growth, but they incorrectly believe that a district that is strong on one dimension of academic performance is also overwhelmingly likely to be strong on the other. Alternatively, it is possible that participants simply do not distinguish between the two concepts. They may incorrectly view status and growth as different ways of measuring the same underlying construct. Our analysis is unable to adjudicate between these two possibilities.

The Effects of Academic Performance Information

Table 3 displays the results of the analyses associated with Research Questions 2-4, in which we estimate the effects of providing academic performance information on 1) the grades that participants assign to their local public schools and 2) participants' preferences about how much schools should focus on academic performance. Model 1 displays the average effects of providing information about status, growth, or both on participants' local school grades. Participants in the control group give an average grade of 3.64 on a 5-point scale (roughly a B-)

with a standard deviation of 0.91 points. For every experimental group, the receipt of academic performance information is a sobering experience. Compared to the grades in the control group, the grades in the status and growth groups decline on average by 0.28 points and 0.29 points, respectively. The grades in the both group decline by 0.18 points on average. When considering the sample as a whole, the provision of academic performance information of any kind reduces the grades that participants give to their local public schools.

[Table 3 about here]

A more complex story emerges when we consider how the effects of academic performance information vary by participants' local context. Figure 2 displays the relationships between actual district performance and participants' evaluations of their local public schools, disaggregated by experimental condition (equivalent to Models 3-4 in Table 3). The first three plots compare the control group with each of the other experimental groups at every point in the district status distribution. Participants in higher status districts tend to give higher grades, regardless of their experimental assignment. The provision of status information tends to reduce these grades at all points in the district status distribution, but the relationship between district status and participants' perceptions of school quality is generally unaffected. The provision of both status and growth information generates similar results. By contrast, the provision of growth information alone weakens the relationship between district status and perceptions of school quality. For every 10-percentile-point increase in district status, the grades in the growth group decrease by an additional 0.05 points relative to the control group. In higher status districts (not all of which are also higher growth districts), the negative effect of receiving growth information is large: about half a letter grade on average. In lower status districts (some of which are relatively higher growth districts), there is no effect. This is consistent with the negativity bias identified by James and Moseley (2014): Satisfaction tends to decline with the receipt of bad performance information, but there is no analogous positive effect of good performance information. This pattern of results suggests that participants in the growth group incorporate the new information into their evaluations in ways that temper the conventional wisdom that higher status districts are therefore higher quality districts.

[Figure 2 about here]

The fourth, fifth, and sixth plots in Figure 2 compare the control group with each of the other experimental groups at every point in the district growth distribution. In the control group, there is a weak positive relationship between district growth and participants' grades, indicating that these evaluations only loosely reflect the variation in district growth. Given participants' unfamiliarity with growth, the presence of any relationship between district growth and perceptions of school quality is likely due to the fact that district growth is also correlated with district status (when regressing grades on both status and growth among participants in the control group, only the relationship between status and grades is significant). The provision of growth information—alone or in combination with status information—strengthens the relationship between district growth and participants' grades considerably. For every 10-percentile-point increase in district growth, the grades in the growth group and the both group increase by an additional 0.06 points relative to the control group. In line with the expectations of negativity bias, the provision of growth information produces negative effects for participants living in lower growth districts and no effects for participants living in higher growth districts. This pattern of results is also consistent with the finding that participants know less about their districts' performance in terms of growth than in terms of status. As a result, the effects of growth information vary based on the news—positive or negative—that it contains.

We also explore whether the provision of academic performance information affects participants' views about how much schools should focus on academic performance relative to other educational objectives (in this case: students' social and emotional well-being). Model 5 of Table 3 displays the average effects for the status group, the growth group, and the both group. On average, participants in the control group suggest that schools should place 64.98 percent of their focus on academic performance with a standard deviation of 18.68 percentage points. Receiving status information reduces the relative importance of academics by 2.13 percentage points. Participants in the growth group and the both group also say that schools should focus less on academics than their peers in the control group, but these differences are not statistically significant. When considering the sample as a whole, the provision of academic performance information—particularly about status—leads participants to say that schools should focus slightly less on academics relative to other educational goals.

Figure 3 displays the relationships between actual district performance and participants' attitudes about how much schools should focus on academics, disaggregated by experimental condition (equivalent to Models 7-8 in Table 3). The first three plots compare the control group with each of the other experimental groups at every point in the district status distribution. In the control group, there is no relationship between district status and participants' educational priorities. Participants in both lower status and higher status districts come to the same general conclusion: Schools ought to spend about two-thirds of their time and resources on academics. The provision of status information—alone or in combination with growth information—tends to reduce participants' emphasis on academic performance slightly, but the negative effect is constant across the entire district status distribution. However, the effect of growth information alone varies by district status. For every 10-percentile-point increase in district status, the importance of academics in the growth group increases by an additional 0.67 percentage points relative to the control group. In lower status districts, the provision of growth information (which may contain unexpected "good news" for some) prompts participants to indicate that schools could focus a little less on academics. Meanwhile, in higher status districts, the provision of growth information (which may contain unexpected "bad news" for some) shifts the importance of academic performance upwards.

[Figure 3 about here]

The fourth, fifth, and sixth plots in Figure 3 compare the control group with each of the other experimental groups at every point in the district growth distribution. In the control group, there is a clear negative relationship between district growth and participants' educational priorities. These attitudes are remarkably intuitive considering the absence of growth information: Participants in lower growth districts want schools to focus more on academics, while their peers in higher growth districts suggest that schools should focus a little more on social and emotional well-being. The provision of academic performance information of any kind appears to undermine this relationship. For every 10-percentile-point increase in district growth, the importance of academics increases by an additional 0.83 percentage points (the status group), 0.92 percentage points (the growth group), and 1.11 percentage points (the both group), relative to the control group. Among those in lower growth districts, the provision of academic performance information—either status, growth, or both—causes participants to assign less importance to academics. The reverse is true in higher growth districts. Our research design does not offer insight into the mechanism for these somewhat counter-intuitive results. It may be the case that participants in lower growth districts are more skeptical of the measures of academic performance provided by our experiment, and they respond by placing relatively more emphasis on students' social and emotional well-being.

Heterogeneous Effects by District Racial/Ethnic and Economic Composition

Next, we present the results of the analyses associated with our secondary research questions. Given the increasing number of statistical tests that accompany each additional research question, the reader should view the following results as exploratory.

The first of our two secondary research questions asks whether the effects described above vary by the racial/ethnic and economic composition of participants' districts. This question is based on the premise that district-level student racial/ethnic composition and district-level student economic composition have different underlying relationships with average status and average growth. Figure 4 displays these relationships for the participants in our sample. There is a strong, positive relationship between the percentage of white students and the district status percentile ($r = 0.62$). The analogous relationship is much weaker with respect to the district growth percentile ($r = 0.18$). Similarly, the relationship between the percentage of FRPL-eligible students and the district status percentile ($r = -0.87$) is much stronger than the analogous relationship with the district growth percentile ($r = -0.35$). Based on the differences in these underlying relationships, we speculated that the effects of the provision of academic performance information might vary for participants living in districts with different racial/ethnic and economic compositions.

[Figure 4 about here]

Models 1-2 of Table 4 display the effects of academic performance information on local school grades as they vary by the percentage of white students and the percentage of FRPL-eligible students in participants' districts. We do not observe evidence of treatment effect heterogeneity by the percentage of white students. However, the effects of growth information vary by the percentage of FRPL-eligible students. In the control group, the relationship between the percentage of FRPL-eligible students and perceptions of school quality is sharply negative: Participants in less affluent district tend to give lower grades to their local schools. In the growth group, this relationship is weakened. For every 10-percentage-point increase in FRPL-eligible students, the grades in the growth group increased by an additional 0.06 points relative to the control group. In short, upon receiving growth information, participants' perceptions of school quality are less likely to be a simple function of the affluence of a community.

[Table 4 about here]

Models 5-6 of Table 4 display the effects of academic performance information on the relative importance of academics as they vary by the percentage of white students and the percentage of FRPL-eligible students in participants' districts. In the control group, the relationship between the percentage of white students and the relative importance of academics is negative, and the analogous relationship with the percentage of FRPL-eligible students is positive. In other words, participants in whiter and more affluent districts tend to say that schools should focus a little less on academics and a little more on students' social and emotional well-being than their peers in districts that serve more low-income students and students of color. The provision of growth information reverses these relationships. For every 10-percentage-point increase in the percentage of white students, the importance of academics in the growth group increases by an additional 1.06 percentage points relative to the control group. For every 10-percentage-point increase in FRPL-eligible students, the importance of academics in the growth group decreases by an additional 1.03 percentage points relative to the control group. The provision of growth information tends to prompt participants in richer, whiter districts to place more emphasis on academics. At the same time, the provision of growth information prompts participants in less affluent, more diverse districts to place more emphasis on students' social and emotional well-being.

Updating Prior Beliefs About Academic Performance

The final research question asks whether these effects could be the result of participants updating their prior beliefs about academic performance in their districts. To answer this question, we test whether the effects vary by the extent to which participants incorrectly estimate academic performance in their districts. Model 3 of Table 4 displays the effects of academic performance information on local school grades as they vary by the amount that participants overestimate their districts' status percentiles. The only evidence for differential updating with respect to status appears among participants in the both group. For every 10-percentile-point overestimation of district status, the grades in the both group decrease by an additional 0.04 points relative to the control group. The evidence for differential updating with respect to growth—about which participants' prior beliefs are less well informed—is more robust. Model 4 displays the effects of academic performance information on local school grades as they vary by the amount that participants over-estimate their districts' growth percentiles. For every 10-percentile-point overestimation of district growth, the grades in the growth group and the both group decrease by an additional 0.05 points and 0.04 points relative to the control group, respectively. In short, as the overestimation of district growth increases, so does the negative effect of growth information on local school grades.

Model 7 of Table 4 displays the effects of academic performance information on the relative importance of academics as they vary by the amount that participants over-estimate their districts' status percentiles. We do not observe evidence of treatment effect heterogeneity along this dimension. Alternatively, Model 8 indicates that, for every 10 percentile point overestimation of district growth, the importance of academics in the both group decreases by an additional 0.75 percentage points relative to the control group. In other words, as the over-estimation of district growth increases, so does the negative effect of receiving both forms of academic performance information on the importance that they assign to academics.

Conclusion

States increasingly include measures of both achievement status and achievement growth in their school accountability systems. States and school districts use this information to guide their efforts to support struggling students, redirect resources where they are most needed, and even shut down chronically under-performing schools. Families also use this information—either via states' official school report cards or via secondary sources, such as GreatSchools.org or Niche.com, that draw on state data—as they make school and housing decisions.

Previous scholarship suggests that the American public already possesses a modest understanding of how their local schools perform in terms of achievement status. We observe the same pattern in our own analysis. However, we also find that Americans are largely unfamiliar with how their local schools perform in terms of growth. This should not be altogether surprising, given the fact that many states have only recently incorporated growth data into their school accountability systems. To understand how the public responds to these new measures of educational performance, we conducted an online survey experiment with a nationally representative sample that identifies the effects of disseminating status and/or growth information on participants' perceptions of school quality.

Because of Americans' existing familiarity with achievement status in their local schools, the provision of status information does not fundamentally alter the underlying relationship between district status and the public's perceptions of school quality. The provision of growth information, however, reshapes Americans' views about educational performance. The effects of growth information are quite different for participants living in lower growth districts (significantly reducing the grades that participants assign to their local schools) and higher growth districts (no effect). Consequently, the provision of growth information strengthens the underlying relationship between district growth and the public's perceptions of school quality. In short, when participants learn about student growth, their personal evaluations of their local schools become more in line with a measure that many researchers consider a better measure of schools' contributions to student learning. Moreover, because district growth bears a weaker relationship to the economic composition of the student body than district status, the provision of growth information reorients Americans' perceptions of school quality away from the conventional wisdom that more affluent school districts are almost always higher quality districts.

However, the increasing prevalence of student growth information may have some unanticipated consequences. We also asked participants to opine on how much schools should focus on academic performance relative to other educational objectives (in this case: students' social and emotional well-being). We find that the provision of growth information to participants living in lower growth districts not only lowers their perceptions of school quality, it also causes them to say that their schools should focus less on academics. It may be the case that distributing information about lackluster student growth will not, as one might expect, induce a call-to-arms regarding academics. Rather, it may end up reducing support for schools' academic objectives and/or this particular method of measuring success towards those objectives.

These results have important implications for our understanding of the social, economic, and political consequences of how we measure educational performance. As states assign relatively less weight to traditional indicators of achievement status when evaluating school quality, we might expect to see heightened demand for higher growth schools and nearby housing. Because average growth bears a weaker relationship to student demographics than average status, this shift could alternatively benefit many low-income communities and communities of color (by increasing housing values for existing homeowners) or further disadvantage them (by attracting relatively affluent newcomers who can afford higher housing costs).

We see two important avenues for future research stemming from this work. First, additional survey research is necessary to understand the extent to which individuals comprehend and trust new measures of academic performance such as growth. Second, recent revisions to school accountability systems offer an opportunity to study how such decisions about measurement may affect families' school enrollment decisions, housing prices, and political outcomes in school board elections and local school funding referenda. Our analysis suggests that these changes can alter the public's attitudes towards the public schools, but much work remains to be done to understand whether these revised attitudes translate into different behaviors.

References

Achieve, Inc. (2019). Accountability in state ESSA plans. Tracking tool. Retrieved from https://states.achieve.org/essa-tracker

Bali, V. (2016). Evolving trends in public opinion on the quality of local schools. *Educational Policy, 30*(5), 688-720.

Barone, C. (2017). What ESSA says: Continuities and departures. In F. M. Hess & M. Eden (Eds.), *The Every Student Succeeds Act: What it means for schools, systems, and states*. Cambridge, MA: Harvard Education Press.

Barrows, S., Henderson, M., Peterson, P. E., & West, M. R. (2016). Relative performance information and perceptions of public service quality: Evidence from American school districts. *Journal of Public Administration Research and Theory, 26*(3), 571-583.

Bayer, P., Ferreira, F., & McMillan, R. (2007). A unified framework for measuring preferences for schools and neighborhoods. *Journal of Political Economy, 115*(4), 588-638.

Black, S. E. (1999). Do better schools matter? Parental valuation of elementary education. *Quarterly Journal of Economics, 114*(2), 577-599.

Chingos, M. M., Henderson, M., & West, M. R. (2012). Citizen perceptions of government service quality: Evidence from public schools. *Quarterly Journal of Political Science, 7*(4), 411-445.

Chingos, M. M., & West, M. R. (2015) Why annual statewide testing is critical to judging school quality. Brookings Institution. Retrieved from https://www.brookings.edu/research/why-annual-statewide-testing-is-critical-to-judging-school-quality/

Clinton, J. D., & Grissom, J. A. (2015). Public information, public learning, and public opinion: Democratic accountability in education policy. *Journal of Public Policy, 35*(3), 355-385.

Data Quality Campaign. (2019). Growth data: It matters, and it's complicated. Retrieved from https://dataqualitycampaign.org/resource/growth-data-it-matters-and-its-complicated/

Fahle, E. M., Shear B. R., Kalogrides, D., Reardon, S. R., DiSalvo, R., & Ho, A. D. (2018). Stanford education data archive: Technical documentation, version 2.1. Stanford University Center for Education Policy Analysis.

Figlio, D. N., & Lucas, M. E. (2004). What's in a grade? School report cards and the housing market. *American Economic Review, 94*(3), 591-604.

Fiva, J. H., & Kirkebøen, L. J. (2011). Information shocks and the dynamics of the housing market. *Scandinavian Journal of Economics, 113*(3), 525-552.

Houston, D. M., & Henig, J. R. (2019). The effects of student growth data on school district choice: Evidence from a survey experiment (EdWorkingPaper: 19-87). Retrieved from Annenberg Institute at Brown University: https://www.edworkingpapers.com/ai19-87

Imberman, S. A., & Lovenheim, M. F. (2016). Does the market value value-added? Evidence from housing prices after the public release of school and teacher value-added. *Journal of Urban Economics, 91*(1), 104-121.

Jacobsen, R. (2009). The voice of the people in education. In G. Sykes, B. Schneider, & D. N. Plank (Eds.), *Handbook of education policy research*. New York, NY: Routledge.

Jacobsen, R. Saultz, A., & Snyder, J. W. (2013). When accountability strategies collide: Do policy changes that raise accountability standards also erode public satisfaction? *Educational Policy, 27*(2), 360-389.

Jacobsen, R., Snyder, J. W., & Saultz, A. (2014). Informing or shaping public opinion? The influence of school accountability data format on public perceptions of school quality. *American Journal of Education, 121*(1), 1-27.

Jacobsen, R., Snyder, J. W., & Saultz, A. (2015). Understanding satisfaction with schools: The role of expectations. *Journal of Public Administration Research and Theory, 25*(3), 831-848.

James, O. (2011). Performance measures and democracy: Information effects on citizens in field and laboratory experiments. *Journal of Public Administration Research and Theory, 21*(3), 399-418.

James, O., & Moseley, A. (2014). Does performance information about public services affect citizens' perceptions, satisfactions, and voice behavior? Field experiments with absolute and relative performance information. *Public Administration, 92*(2), 493-511.

James, O., & Van Ryzin, G. G. (2017). Incredibly good performance: An experimental study of source and level effects on the credibility of government. *American Review of Public Administration, 47*(1), 23-35.

Ladd, H., & Loeb, S. (2013). The challenges of measuring school quality: Implications for educational equity. In R. Reich & D. Allen (Eds.), *Education, Justice, and Democracy*. Chicago, IL: Chicago University Press.

Loveless, T. (1997). The structure of public confidence in education. *American Journal of Education, 105*(2), 127-159.

Marvel, J. D. (2015). Unconscious bias in citizens' evaluations of public sector performance. *Journal of Public Adminisration Research and Theory, 26*(1), 143-158.

Reardon, S. F. (2016). School district socioeconomic status, race, and academic achievement. Stanford University Center for Education Policy Analysis. Retrieved from https://cepa.stanford.edu/content/school-district-socioeconomic-status-race-and-academic-achievement

Rothstein, R., Jacobsen, R., & Wilder, T. (2008). *Grading education: Getting accountability right*. New York, NY: Teachers College Press.

Schneider, J., Jacobsen, R., White, R. S., Gehlbach, H. (2018). The (mis)measure of schools: How data affect stakeholder knowledge and perceptions of quality. *Teachers College Record, 120*(6), 1-40.

Schueler, B., & West M. R. (2016). Sticker shock: How information affects citizen support for public school funding. *Public Opinion Quarterly, 80*(1), 90-113.

Sherman, S. J., Mackie, D. M., & Driscoll, D. M. (1990). Priming and the differential use of dimensions in evaluation. *Personality and Social Pyschology Bulletin, 16*(3), 405-418.

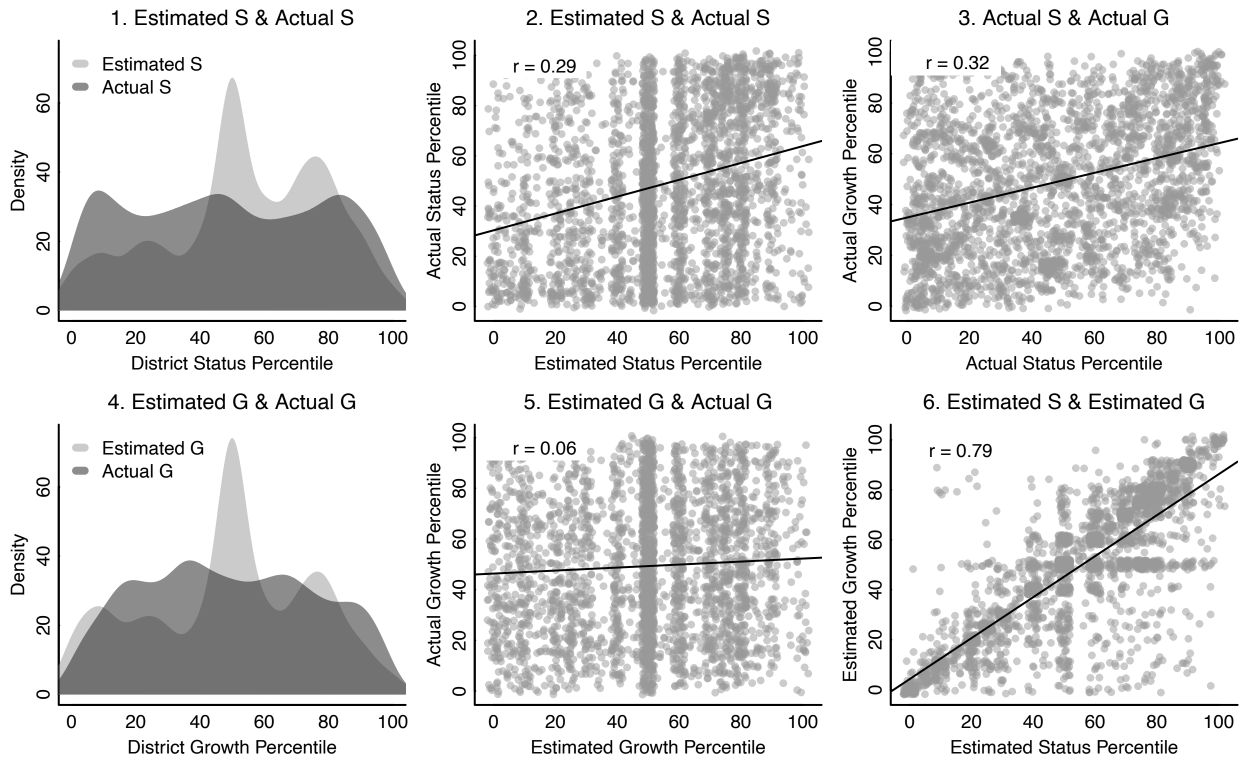
Stiefel, L., Schwartz, A. E., & Rotenberg, A. (2011). What do AEFA Members say? Summary of results of an education finance and policy survey. *Education Finance and Policy, 6*(2), 267-292.

Walker, S. E., & Archbold, C. A. (2014). *The new world of police accountability* (2nd ed.). Washington, DC: Sage Publications.

Wong, A. (2017). Delving into one of the questions Betsy DeVos couldn't answer. *The Atlantic*. Retrieved from https://www.theatlantic.com/education/archive/2017/01/delving-into-one-of-the-questions-betsy-devos-couldnt-answer/513941/

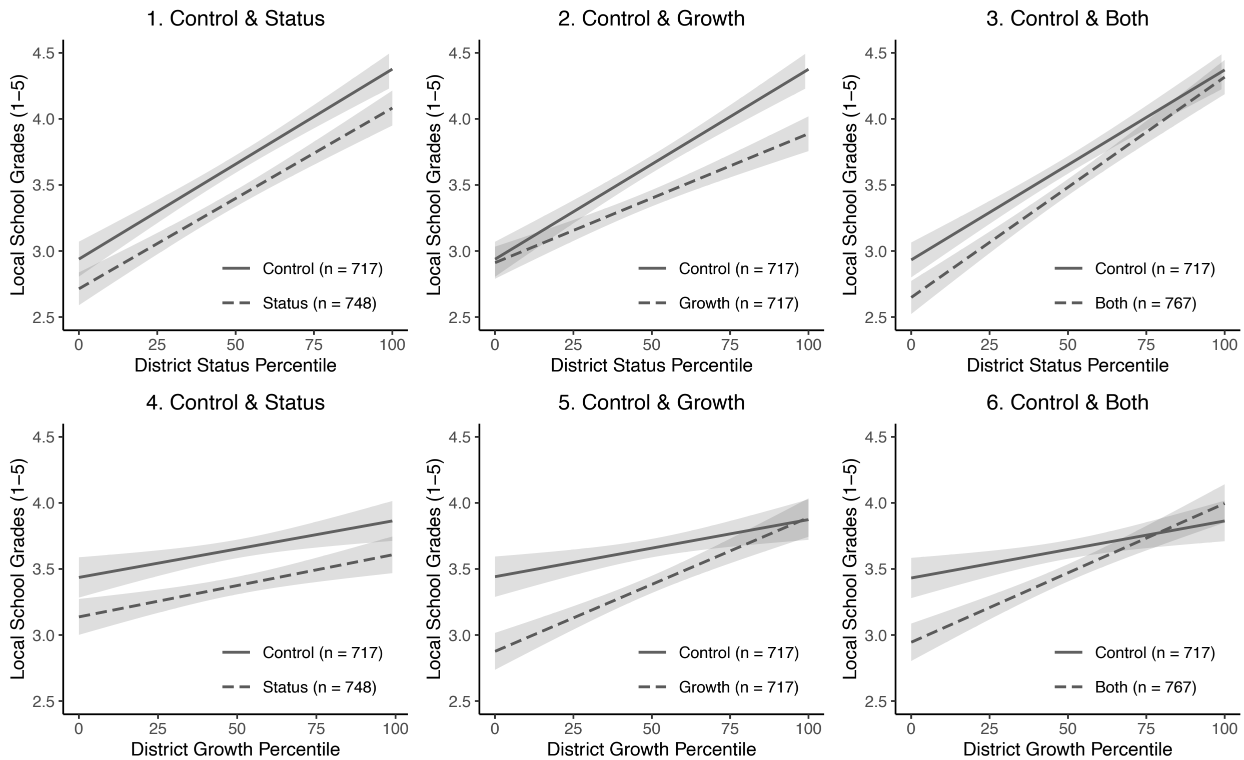
Figures

Figure 1. Estimating District Status and District Growth (*n* = 2,928)



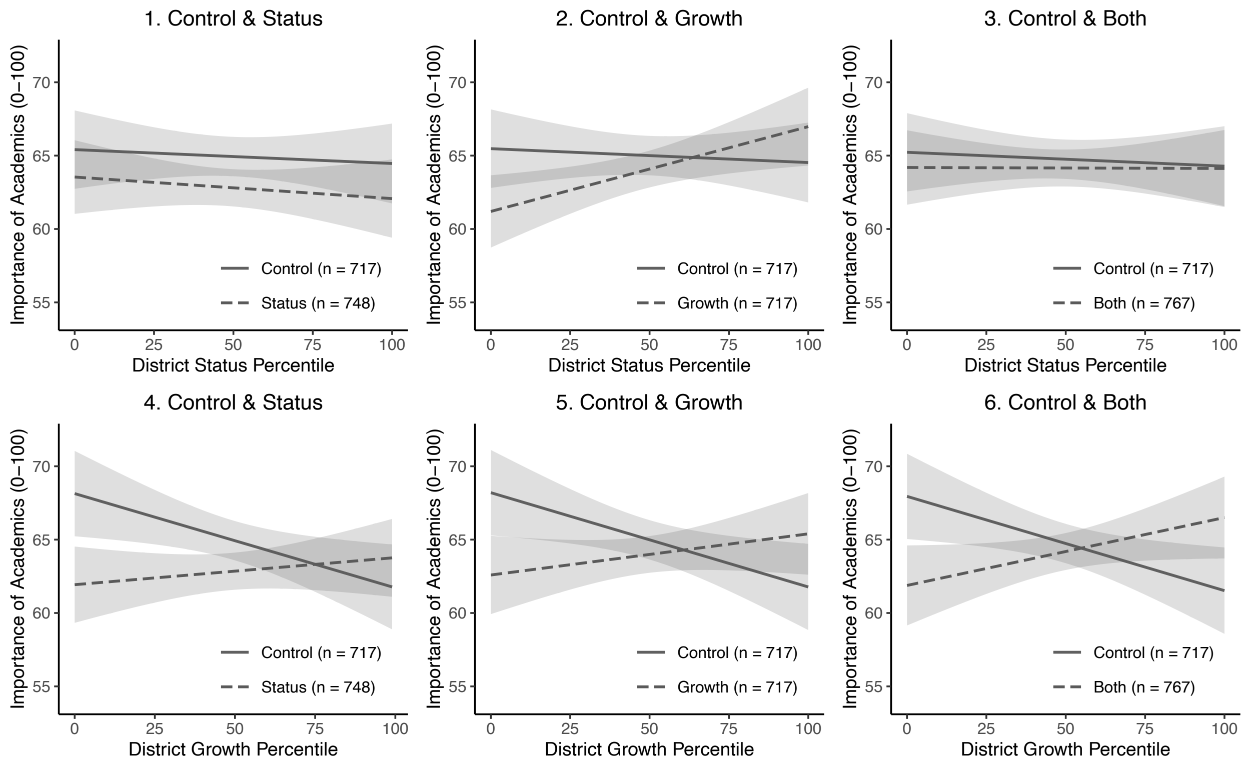
Note. Estimates in scatterplots include random noise to differentiate points; lines represent bivariate linear regressions; analyses incorporate survey weights.

Figure 2. Local School Grades by District Status and District Growth



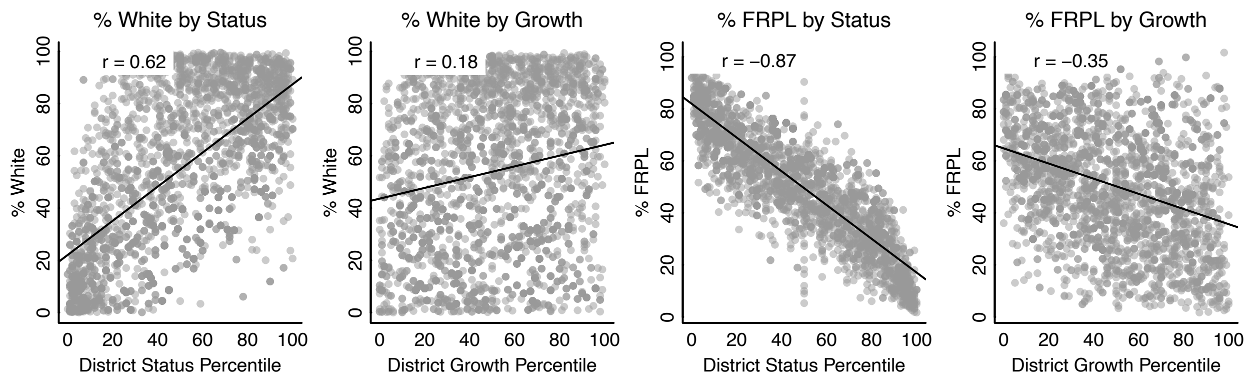
Note. Lines represent results from Models 3-4 in Table 3; analyses incorporate survey weights and include all individual-level covariates; shaded areas represent 95% confidence intervals.

Figure 3. The Relative Importance of Academics by District Status and District Growth



Note. Lines represent results from Models 3-4 in Table 3; analyses incorporate survey weights and include all individual-level covariates; shaded areas represent 95% confidence intervals.

Figure 4. District Status, Growth, and Demographics (*n* = 3,037)



Note. Points represent participants' local school districts; lines represent bivariate linear regressions; analyses incorporate survey weights.

Tables

Table 1. Balance and Missing Data

%	Control (n = 724)	Status (n = 763)	Growth (n = 788)	Both (n = 771)
Female	48.81	52.94	50.94	53.32
White	63.31	65.91	63.03	63.06
Black	12.86	11.22	11.31	12.60
Hispanic	16.82	17.04	14.96	16.73
Other Race	7.00	5.83	10.70*	7.60
Less Than High School	10.71	12.04	8.15	11.51
High School	29.60	28.23	28.49	28.47
Some College	25.30	28.06	30.02*	29.16
College	34.39	31.67	33.34	30.87
Household Income < $25k	13.25	13.99	14.74	15.71
Household Income $25k–$85k	46.83	41.57*	41.08*	43.96
Household Income > $85k	39.92	44.45	44.19	40.33
Took Survey in Spanish	5.16	6.69	5.21	5.98
Parent	28.90	28.72	34.40*	32.00
Teacher	3.10	2.78	2.93	2.51
Head of Household	80.79	77.56	80.10	79.40
Owns Home	70.02	71.77	71.54	69.09
Employed	66.89	61.98*	65.29	65.64
Married	56.52	54.66	58.89	61.09
Northeast	18.97	17.32	18.12	16.72
Midwest	18.93	20.05	24.39*	19.54
South	37.49	37.68	34.36	41.76
West	24.61	24.95	23.14	21.98
Age (Years)	47.74	47.89	47.58	47.34
Party ID (1–7)	3.63	3.70	3.71	3.74
Ideology (1–7)	4.03	3.99	4.13	4.06
Missing Outcomes	4.80	6.80	4.47	4.15
Missing Covariates	0.85	1.43	1.56	1.98

Note. Status, Growth, and Both compared to Control; analyses incorporate survey weights; * $p < 0.05$

Table 2. Estimating District Status and District Growth (n = 2,928)

	Mean	SD	Correlation
Estimated Status	54.05	24.97	
Actual Status	48.46	29.22	
Estimated S − Actual S	5.57	32.52	
Estimated Growth	48.66	25.77	
Actual Growth	49.10	26.59	
Estimated G − Actual G	-0.57	35.95	
Estimated S & Actual S			0.29
Estimated G & Actual G			0.06
Estimated S & Estimated G			0.79
Actual S & Actual G			0.32

Note. Analyses incorporate survey weights

Table 3. The Effects of Status and/or Growth Information

	Local School Grades (1–5)				Relative Importance of Academics (0–100)			
	1	2	3	4	5	6	7	8
Status	-0.28*		-0.22*	-0.30*	-2.13*		-1.87	-6.21*
	(0.05)		(0.09)	(0.10)	(0.94)		(1.83)	(1.97)
Growth	-0.29*	0.00	-0.03	-0.57*	-1.06	1.06	-4.28*	-5.61*
	(0.05)	(0.05)	(0.09)	(0.10)	(0.94)	(0.91)	(1.81)	(1.99)
Both	-0.18*	0.10*	-0.28*	-0.49*	-0.60	1.52	-1.03	-6.07*
	(0.05)	(0.05)	(0.09)	(0.11)	(0.94)	(0.91)	(1.84)	(2.01)
Control		0.28*				2.13*		
		(0.05)				(0.94)		
Z			0.14*	0.04*			-0.09	-0.64*
			(0.01)	(0.01)			(0.24)	(0.27)
Z × S			-0.01	0.00			-0.05	0.83*
			(0.02)	(0.02)			(0.32)	(0.35)
Z × G			-0.05*	0.06*			0.67*	0.92*
			(0.02)	(0.02)			(0.32)	(0.36)
Z × B			0.02	0.06*			0.09	1.11*
			(0.02)	(0.02)			(0.32)	(0.36)
Z =			S Percentile (10s)	G Percentile (10s)			S Percentile (10s)	G Percentile (10s)
Observations	3,012	3,012	3,012	3,012	3,045	3,045	3,045	3,045

Note. Values are WLS coefficients (standard errors in parentheses); analyses incorporate survey weights and include all individual-level covariates; * $p < 0.05$

Table 4. Heterogeneous Treatment Effects

	Local School Grades (1–5)				Relative Importance of Academics (0–100)			
	1	2	3	4	5	6	7	8
Status	-0.27*	-0.45*	-0.29*	-0.28*	-3.27	-1.72	-1.38	-1.14
	(0.10)	(0.12)	(0.05)	(0.05)	(1.92)	(2.39)	(0.93)	(0.92)
Growth	-0.12	-0.58*	-0.30*	-0.30*	-6.77*	4.23	-0.40	-0.66
	(0.10)	(0.12)	(0.05)	(0.05)	(1.89)	(2.38)	(0.93)	(0.91)
Both	-0.12	-0.13	-0.16*	-0.18*	-1.28	0.83	-0.46	-0.54
	(0.10)	(0.12)	(0.05)	(0.05)	(1.91)	(2.39)	(0.93)	(0.91)
Z	0.09*	-0.19*	0.02	0.07*	-0.52*	0.28	0.23	0.46*
	(0.01)	(0.02)	(0.01)	(0.01)	(0.24)	(0.33)	(0.21)	(0.19)
Z × S	0.00	0.03	0.01	0.00	0.24	-0.05	0.04	-0.41
	(0.02)	(0.02)	(0.02)	(0.01)	(0.32)	(0.44)	(0.28)	(0.25)
Z × G	-0.03	0.06*	0.01	-0.05*	1.06*	-1.03*	-0.53	-0.47
	(0.02)	(0.02)	(0.02)	(0.01)	(0.31)	(0.43)	(0.29)	(0.26)
Z × B	-0.01	-0.01	-0.04*	-0.04*	0.14	-0.28	-0.02	-0.75*
	(0.02)	(0.02)	(0.02)	(0.01)	(0.31)	(0.44)	(0.29)	(0.25)
Z =	% White (10s)	% FRPL (10s)	Est. S – Act. S (10s)	Est. G – Act. G (10s)	% White (10s)	% FRPL (10s)	Est. S – Act. S (10s)	Est. G – Act. G (10s)
Observations	3,003	3,003	2,934	2,931	3,036	3,036	2,943	2,939

Note. Values are WLS coefficients (standard errors in parentheses); analyses incorporate survey weights and include all individual-level covariates; * $p < 0.05$