EPIC Insights

Making the Grade: Examining the Effects of the Relative Weight of Proficiency Versus Growth in North Carolina's School Performance Grades

Introduction

In recent years, many North Carolina education officials have expressed concern that the state's school performance grades do not accurately measure school quality. In particular, there are concerns that the current accountability model almost exclusively focuses on student test scores—rather than including a more comprehensive set of student and school outcomes—and gives much greater weight to test proficiency rather than test score growth. These concerns are exacerbated by the COVID-19 pandemic, which has highlighted how factors beyond the control of schools can influence proficiency rates. In particular, the pandemic has resulted in sharp declines in proficiency rates on End-of-Grade (EOG) and End-of-Course (EOC) exams and commensurate increases in the number of schools receiving 'D' or 'F' performance grades and being designated as low-performing.

In response to these concerns, the North Carolina Department of Public Instruction (NCDPI) is convening an advisory group tasked with studying accountability systems in other states and issuing recommendations for a revised school accountability model in North Carolina. With this brief, we hope to aid this advisory group and contribute to the broader discourse regarding the state's accountability model. Specifically, in this brief we examine the distribution of school performance grades under the state's current accountability model and assess how the distribution of performance grades changes with different weights for test proficiency and growth. We acknowledge that this brief only considers one (albeit important) component of a comprehensive school accountability system. However, by critically assessing how different weighting formulas for proficiency and growth influence school performance grades, we hope to inform the design of a revised school accountability model.

North Carolina's Current Accountability Model

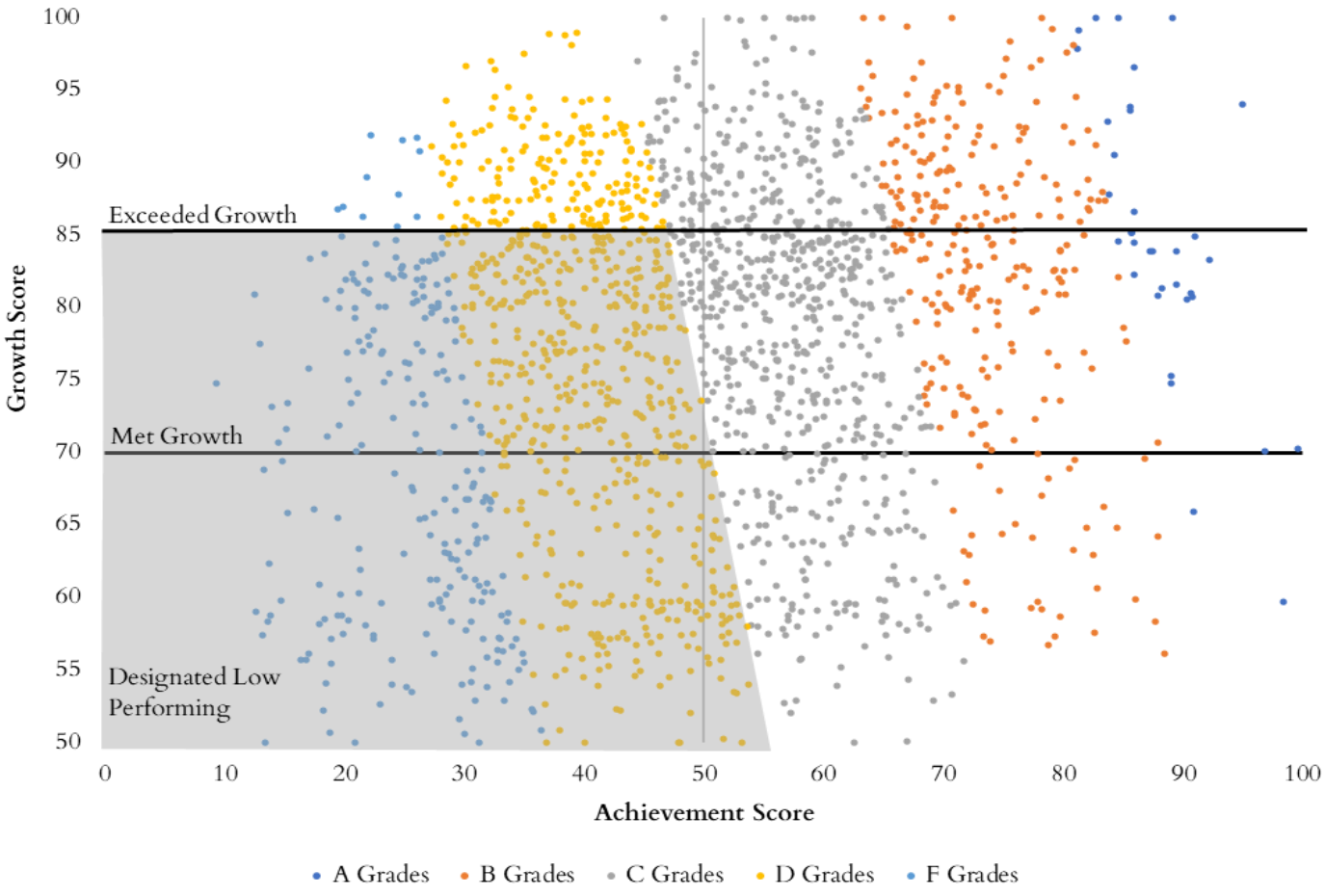
North Carolina's current accountability model assigns A-F letter grades to schools based on their performance score, which is a weighted average of the school achievement score and the school growth score. The achievement score accounts for 80 percent of the school performance score and is comprised of proficiency rates on statewide EOG and EOC assessments in reading/English language arts, math, and science.[1] At the high school level, the achievement score also includes proficiency on the ACT/WorkKeys assessments, the percentage of students passing their Math 3 course, and the four-year cohort graduation rate. The growth score accounts for 20 percent of the performance score and assesses the extent to which students at a given school make progress equal to or greater/less than the average progress made by students at their grade level.

Figure 1 presents data from the 2021-22 year on the distribution of performance grades (A-F) and the designation of low-performing schools under North Carolina's current accountability model. Given the differences in the measures that make up the achievement score across school levels, we limit our analyses in Figure 1 (and subsequent figures) to the school performance data of elementary and middle schools only.[2] Overall, Figure 1 shows the strong relationship between proficiency rates and school performance grades in North Carolina's current accountability model. This point is illustrated in Figure 1 by (1) the 180 elementary/middle schools with an 'A', 'B', or 'C' performance grade that failed to meet growth in 2021-22 and (2) the nearly 200 elementary/middle schools with a 'D' or 'F' performance grade that exceeded growth in 2021-22. The former set of schools did not do well in 2021-22—as measured by school growth—but may not be identified as needing improvement, in large part, based on the characteristics of students enrolled at the school. That is, profi-

[1] The achievement score considers proficiency rates for all students and proficiency rates for English language learners.
[2] For our analyses we exclude schools enrolling any student in a high school grade (i.e. grades 9, 10, 11, or 12).

ciency reflects many factors outside the school's control including student background, prior educational experiences, and outside influences like the COVID-19 pandemic. A school may have high proficiency but not support students in achieving growth in their learning. Conversely, the latter set of schools generated significant student growth in 2021-22—a real signal of learning taking place—but are still labeled as 'D' or 'F' schools. This is not a school accountability model that clearly identifies the schools that are in most need of improvement.

Figure 1: School Grades and Low Performing Status by Achievement and Growth Scores Under the Current Accountability Model



Note: This figure displays the achievement score and growth score of each elementary and middle school in North Carolina in the 2021-22 school year. Individual schools are color coded to represent school performance grades and the region occupied by low performing schools is shaded.

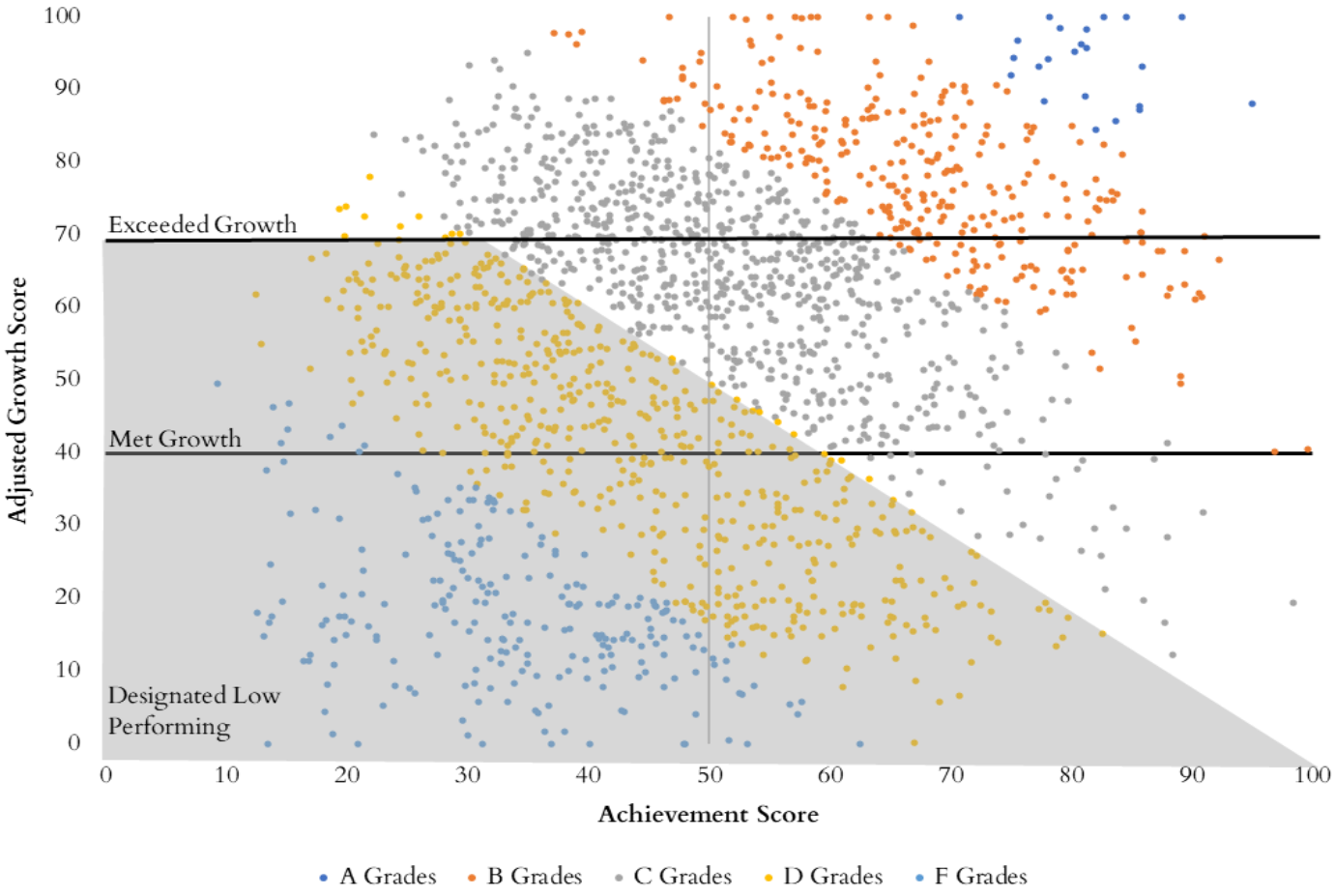
Before considering hypothetical accountability models with different weighting percentages, it is worth noting that North Carolina's current accountability model **does not actually** weight school growth at 20 percent. Right now, a school's achievement score (based primarily on proficiency) ranges from 0-100 but the growth score ranges from 50-100. This means that a school earning the very lowest school growth score still gets 10 points credited to their school performance grade. For our hypothetical accountability models—shown in Figures 2 and 3—we rescaled the growth score to run from 0-100 and adjusted the A-F grading scale to compensate for this change.[3] We contend that this is an important adjustment and that North Carolina needs to address this weighting issue in a revised accountability model.

[3] To create a rescaled school growth score we subtracted 50 from the current growth score and then multiplied by 2. Our revised grading scale is as follows: 83-100 is an 'A', 67-82 is a 'B', 50-66 is a 'C', 33-49 is a 'D', and less than 33 is an 'F'. We use this revised growth score and grading scale for our hypothetical accountability models.

Hypothetical Accountability Models with Different Weighting Formulas

Figure 2 presents data from the 2021-22 year on the distribution of school performance grades and low-performing school designations in a hypothetical model in which proficiency and growth (scaled from 0-100) are each worth 50 percent of the school performance grade. With this approach, almost all elementary/middle schools that exceeded growth have a performance grade of 'C' or higher and very few schools that did not meet growth have a performance grade higher than a 'D'. Furthermore, with this approach, the relationship between school poverty and school performance grades is modestly weakened. With North Carolina's current accountability model, 80 percent of the state's high-poverty elementary/middle schools received a 'D' or 'F' performance grade.[4] In a model weighting proficiency and growth evenly (Figure 2), 56 percent of North Carolina's high-poverty elementary/middle schools received a 'D' or 'F' performance grade.[5]

Figure 2: School Grades and Low Performing Status with Achievement Score Weighted 50% and Adjusted Growth Score Weighted 50%



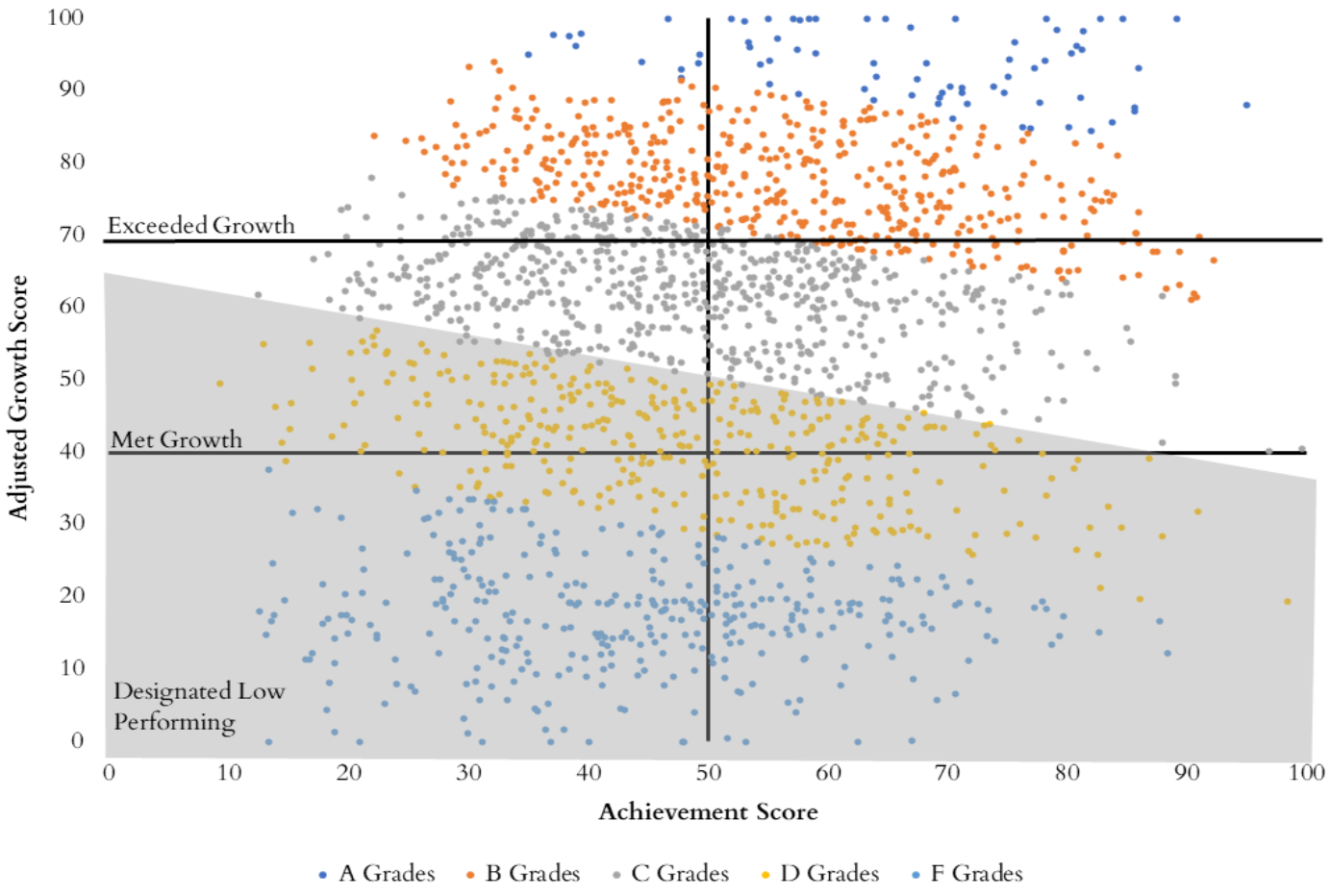
Note: This figure displays the achievement score and adjusted growth score of each elementary and middle school in North Carolina in the 2021-22 school year. Performance grades are calculated in this model by weighting the achievement score 50 percent and the adjusted growth score 50 percent. Individual schools are color coded to represent school performance grades and the region occupied by low performing schools is shaded.

[4] We define a school as high-poverty if its low-income percentage is 75 percent or higher. See https://www.dpi.nc.gov/districts-schools/federal-program-monitoring#title-i---eligible-schools-summary-report-essr for the low-income reporting.

[5] In the current accountability model (Figure 1), the school performance score is correlated with the school percent low-income at -0.70 (for elementary/middle schools); in the 50-50 model (Figure 2), the school performance score is correlated with the school percent low-income at -0.39.

Finally, Figure 3 presents data from the 2021-22 year on the distribution of school performance grades and low-performing school designations in a hypothetical model in which proficiency is worth 20 percent and growth (scaled from 0-100) is worth 80 percent of the performance grade. Visually, it is important to note how these graphs have changed as proficiency accounts for less and growth accounts for more of the performance grade. With a model that more heavily weights proficiency, the distribution of A-F grades is largely horizontal along the x-axis (proficiency). With a model that more heavily weights growth, the distribution of A-F grades is largely vertical along the y-axis (growth). In this model, almost all 'A' and 'B' elementary/middle schools exceeded growth in 2021-22 and a majority of 'D' and 'F' schools failed to meet growth. Furthermore, in a 20-80 model, the relationship between school poverty and performance grades is further weakened. With growth accounting for 80 percent of the performance grade, only 38 percent of North Carolina's high-poverty elementary/middle schools received a 'D' or 'F' performance grade—down from 80 percent in an 80-20 model (Figure 1).[6]

Figure 3: School Grades and Low Performing Status with Achievement Score Weighted 20% and Adjusted Growth Score Weighted 80%



Note: This figure displays the achievement score and adjusted growth score of each elementary and middle school in North Carolina in the 2021-22 school year. Performance grades are calculated in this model by weighting the achievement score 20 percent and the adjusted growth score 80 percent. Individual schools are color coded to represent school performance grades and the region occupied by low performing schools is shaded.

[6] In the 20-80 model (Figure 3), the school performance score is correlated with the school percent low-income at -0.12.

Summary

The fundamental purpose of a school accountability model should be identifying, to the extent possible, the effectiveness of schools at meeting the goals of public education. When the accountability system measures school effectiveness, states, districts, and schools have more accurate information to guide decisions around school supports and recognition. Furthermore, families have a clearer understanding of the quality of their child's school.

North Carolina's current school accountability model does not provide an accurate depiction of how schools perform. The heavy weighting of test proficiency means that schools are judged on factors beyond their control, such as the prior experiences of their students and challenging situations like the pandemic. Achievement growth, on the other hand, represents what students are gaining through their experiences at school, regardless of where they come from and other factors in their lives and the world around them. Mislabeling school effectiveness matters because stakeholders—e.g. state and district officials, school administrators, teachers, and families—react to these labels in ways that may impact future school performance. Furthermore, educators in high growth schools deserve recognition for their efforts to support their students and educators and students in low growth schools deserve supports to ensure that every student is learning and growing at school.

The purpose of this brief is not to advocate for a particular accountability model, but rather, to discuss challenges with the current model and to demonstrate how different models can produce different definitions of school effectiveness. It is up to North Carolina education officials to define school effectiveness in ways that best advance the learning and well-being of K-12 students. In doing so, our hope is that North Carolina creates an accountability model that prioritizes what schools more directly control and that North Carolina recognizes that school effectiveness is a multi-faceted measure. Quality schools benefit a range of outcomes for students, educators, and families and those measures can be included in a more comprehensive school accountability model.

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