

A photograph of a male teacher with a beard, wearing a blue button-down shirt, leaning over a desk to assist a young boy with curly hair who is wearing a red and white striped shirt. They are both looking at a laptop. In the background, several other students are seated at desks, also working on laptops. A large screen in the background displays a colorful image of planets and orbits. The scene is set in a modern classroom with white desks and blue accents.

Using a Strengths-Based Approach to Understanding Students' Aptitude

ABILITY DATA OFFERS UNTAPPED OPPORTUNITY TO ENHANCE UNDERSTANDING AND PERSONALIZE LEARNING FOR ACADEMIC SUCCESS

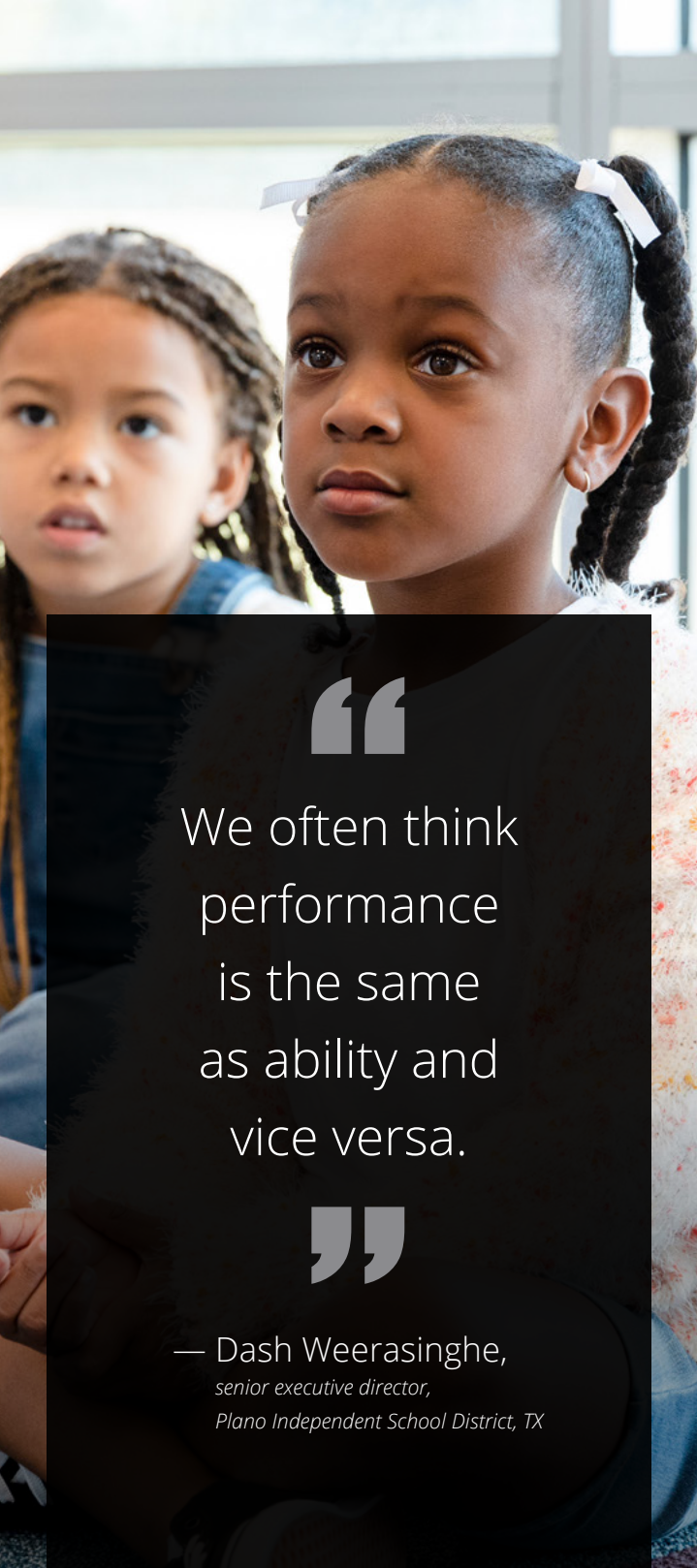
Standardized tests and the government-mandated achievement exams administered throughout K-12 public education to assess student proficiency, school quality and even teacher effectiveness have long been the sole measure of success for students. Yet, in recent years, prominent universities from Columbia in New York to Stanford in California have removed standardized test requirements from their college admissions processes.

The topic also has become a controversial one in the K-12 arena, with many states starting to rethink their testing models.

The reasons are multifaceted. While achievement tests can tell you how well a student memorizes facts and absorbs information, they do not show how the students solve problems and think creatively. Such “achievement tests” might demonstrate what students have learned in the classroom, but they are typically biased by curriculum, teacher effectiveness, classroom environment and even test prep. These biases can skew a full picture of what any given student is capable of and can lead to missing out on marginalized students who possess impressive aptitude despite a lack of resources.

“We often think performance is the same as ability and vice versa,” notes Dash Weerasinghe, senior executive director of assessment, research and program evaluation for the Plano Independent School District in Texas. “However, since much of performance is English-centric, a lot of our English language learners or economically disadvantaged students may not necessarily demonstrate high performance.”

This could lead to missed recognition of a student’s natural talents and capability to learn. K-12 schools need to reevaluate



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the metrics they use to assess students. Achievement data alone cannot offer a full sense of how students are doing and which students are missing opportunities to improve. Instead, achievement data should be used in conjunction with other data points to paint a holistic picture of each student.

The key to unlocking the potential of every student is to couple achievement tests with **ability data** and *compare student potential with student performance*.

WHAT ARE ABILITY AND APTITUDE TESTS?

Many schools use ability or aptitude tests, such as CogAT® (*Cognitive Abilities Test™*), to identify and place students in gifted and talented or advanced academic programs. But limiting their use for this one purpose is a missed opportunity. Ability data can offer critical input for educators to create a comprehensive view of students that can personalize education, inform teaching strategies and improve outcomes.

If they know what their students are capable of learning, they can better provide the differentiated support they need to succeed.

“Ability data provides educators a fresh and meaningful way to understand each student’s potential for learning and to easily differentiate instruction based on individual strengths,” says Joni Lakin, co-author of CogAT Form 8 and professor at the University of Alabama.

These benefits can extend to all students, especially English learners and students with special-education accommodations, resulting in enhanced equity throughout the school and district. Many educators might not realize how



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valuable the insights from these specialized assessment options can be for understanding innate student strengths and identifying gaps between potential and performance.

In this white paper, we will explore how educators can use ability data as an instructional tool to raise the playing field for all students.

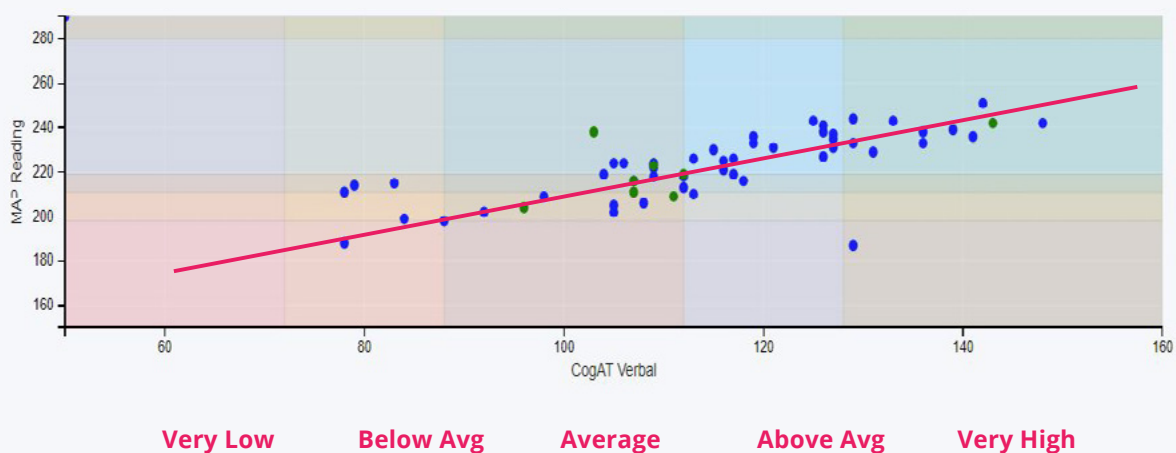
HOW ABILITY DATA COMPARES WITH ACHIEVEMENT DATA

The key difference between these two categories of tests is that achievement-

based assessments, such as MAP® or Star Assessments®, focus on what students have learned. States often use them to get a standardized picture of how education is being administered across regions and districts. In short, these tests are more a reflection of school quality and the classroom lessons than the students themselves.

Achievement data can leave behind students from families of lower socioeconomic status, students of color and historically excluded students who might not have the resources and preparation to excel on the test.

Ability Performance Charts - MAP Reading and CogAT Verbal



Relying solely on achievement data can incorrectly overlook students with high aptitude and potential for learning or students who may have an underlying learning challenge who could benefit from additional intervention or special-education resources.

In contrast, ability is a metric to measure how students explore learning opportunities, how they approach novel problem-solving and reasoning processes, and their overall aptitude and potential. It provides insight into a student's readiness to demonstrate creative

problem-solving skills and learn in different situations and learning environments.

For example, during the early part of the COVID-19 pandemic, many students received uneven exposure to learning and curricula. Some stayed home alone while their parents worked, while others received personalized learning in pods. As a result, it would be expected that the students with more structured learning opportunities would achieve higher scores on standardized achievement tests.

However, that would not necessarily be the case with an ability test, which would reflect the students' capacity for learning and reasoning. That capacity continued to grow even when students juggled real-life responsibilities, such as caring for siblings, instead of focusing on classwork during the early days of the pandemic, Joni Lakin from the University of Alabama explains.

There are correlations between the two sets of data, but the outliers — those

who test well on ability tests but poorly on achievement tests — are often the students who are most disadvantaged by the current systems or have unique learning needs. With extra help or personalized learning opportunities, they have a better chance at reaching their potential. Ability tests not only highlight these students but offer invaluable data to enhance the education and success of every student by supplying educators with the information on how students best learn.

CASE STUDY

CogAT Assessment Designed with Equity Focus

Leveraging *CogAT* as a universal screener across grades can offer a fuller picture of how students learn and progress over the course of their K-12 education.

CogAT measures problem-solving skills in three areas: verbal reasoning, quantitative reasoning and figural, or nonverbal, reasoning. Students receive a composite score that illustrates their reasoning ability, which [Riverside Insights](#) calls “a powerful predictor of academic success.” Verbal scores indicate readiness to learn language and reading comprehension, whereas quantitative scores align with math success and the nonverbal score with science outcomes.

The *CogAT* assessment was designed with equity in mind. At the K-2 level, the test uses picture-based item formats, so the focus is on reasoning and not language proficiency, for example. The test also reduced the

language load to measure students fairly, regardless of English proficiency, and has an alternative verbal version for English language learners. There are audio instructions in eight languages, which are read by native speakers, and students can take the test untimed at the primary level. Upper-level grade testing timing is generous and flexible. Furthermore, Riverside Insights has conducted bias and fairness reviews to ensure that the test is fair.

As a result, *CogAT* serves as a reliably equitable way for educators to get a pulse of their student population and identify opportunities to level the playing field. ■

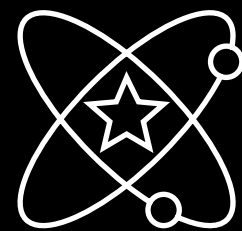


WHO CAN BENEFIT FROM ABILITY DATA?

In short, the benefits of ability data can be helpful to all students by illuminating their natural strengths, capacity for learning and opportunities for growth. By opting for a focus on ability over achievement, equity problems in K-12 education — often a reflection of circumstances outside the classroom that affect student learning — also can be improved.

A recent study published by [Purdue University](#) in Indiana found that in 2016 alone, nearly 772,000 Black students were underidentified for gifted programs and less than half as many were identified as gifted. Used in conjunction with achievement data, ability data can identify mismatches. Educators can then dive more deeply into those cases to investigate the causes of the disparity, which can include not receiving enough preparation for achievement tests, learning differences that have gone unnoticed, social and emotional issues that have impeded learning and challenges such as being an English language learner.

One district is aiming to solve these inherent flaws in the system. In the Plano Independent School District, one-third of enrolled students are from families that are economically disadvantaged, and one-fifth are English-language learners. The district is now using ability data to improve equity in its gifted programs and equip teachers with granular information about how each student learns, so they can better personalize learning, Weerasinghe says. In 2014, the district began administering the *CogAT* to all students in first, third, fifth and seventh grades — rather than just to those students whose parents or teachers requested the testing for placement in gifted programs.



In 2016 alone, nearly **772,000** Black students were **underidentified** for gifted programs and **less than half** as many were **identified** as gifted.

“The result was very eye-opening for our teachers and some of our administrators, too. Our pool of students who could reach higher standards was a lot higher than we thought,” Weerasinghe notes.

By administering *CogAT* to each student and then plotting ability data against achievement data, the district identifies mismatches in potential and performance — i.e. students who have high ability but whose language skills or differing learning styles make that less obvious to educators. The repeat testing in subsequent grades

allows the district to track how students progress and identify differences in subgroup performance over time. By using ability data to better understand their students, the Texas educators created an equitable assessment administration system that proactively addresses implicit bias and ensures that educators have the right data points to meet each child’s learning needs.

Not only does utilizing this data lead to richer, deeper, strengths-based learning through engagement but by default, using ability data leads to improved achievement.

ACTION LIST:

Ability Versus Achievement Analysis

By Dash Weerasinghe



1

Identify students who are performing higher than peers and lower than peers with the same ability levels. Carry out this grouping for the five ability levels (very low, below average, average, above average and very high).

2

Determine what is working, for those students in the very low or below-average ability range that is enabling them to achieve a higher probability of success.

3

Identify what we can learn from those students who are in the below-average range and are successful on state and local achievement measures that we can apply to students in the average, above average or very high range who are less successful.

4

Determine what is holding back those students who show high ability on *CogAT* but lower achievement scores. What can we do to support this group of students, and what guidance does *CogAT* profile provide on how to personalize instruction for these students?

5

If two students have similar abilities, identify whether we can expect similar achievement. If we see drastically different achievements, what can we learn from our successful students? ■

However, these are not the only benefits driven by focusing on students' natural strengths rather than deficits. According to a recent National Education Association [story](#), building on what students know or can do rather than focusing on filling gaps in their learning can build SEL skills for a child, developing life competencies (self-awareness, confidence, curiosity, etc.) through taking ownership of their own learning.

CONCLUSION

Educators know that the days of simply memorizing facts have passed and the importance of teaching students how to use tools to achieve what they need is key to success in academics and life. Fortunately, through ability tests and the data they reveal, teachers themselves are now given the tools to highlight the strengths of every student and identify discrepancies between cognitive ability and achievement performance, leading to the ultimate goal of helping every student reach their full potential.

To find out more about ability data and speak with a sales rep, visit [The Cognitive Abilities Test \(CogAT\)](#). ■



ABOUT

Riverside Insights

Riverside Insights, one of the nation's leading and most long-standing developers of research-based assessments, is led by a powerful mission: to provide insights that help elevate potential and enrich the lives of students, clinical patients, employees, and organizations globally.

For more information, visit [RIVERSIDEINSIGHTS.COM](https://www.riversideinsights.com)

By plotting ability data against achievement data, Plano ISD identifies mismatches in potential and performance