GUIDE

Get ahead of the curve: How data can improve teaching and learning

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SUMMARY

As US schools try to move the needle on educational outcomes, they are looking for new solutions to help them better meet students' learning needs. This guide will explain how research-backed assessments can deliver accurate and reliable data that will greatly facilitate the goal of improving instruction and setting a higher bar for student achievement.

Introduction

American schools in the 21st century find themselves in a challenging situation. Educators know that as the world's countries become more interconnected, US schoolchildren will face a lot of competition as they build their lives and careers. But educational outcomes in the United States are not keeping pace with this fast-growing world. Across the domains of reading, language arts, mathematics, and science, US students are no better off than they were a few decades ago, according to the <u>National Assessment of Educational Progress</u>.

This slow progress, however, is not for lack of trying. Educators and school leaders are continually engaged in efforts to assess how their students are learning and how they can best help them excel—not only supporting lower-performing students, but also giving higher-performing students the opportunities they need to reach their potential. Ideally, the results of these assessments help schools intervene with students who need it and help teachers improve the instruction they provide.

But not all assessments are created equal. When assessments produce data that's unreliable or hard to interpret, teachers are at a loss for how to act on it, and they face pressure to make classroom decisions based on their intuition. "Assessment fatigue" can set in. Many students, too, don't see a lot of benefit from the assessments they take. But the right kind of assessment—one that's validated by research, designed for ease of use, and accompanied by the training and support needed to make sense of the results—can make a big difference for schools and students. In fact, excellent assessments can enhance a school's overall culture and move the needle on educational outcomes.

This guide will help educators move beyond assessment fatigue and see how research-backed assessments can deliver accurate and reliable data that will greatly facilitate the goal of improving instruction and setting a higher bar for student achievement.

Three ways teachers and schools can use assessment data to improve instruction

As teachers and school leaders endeavor to give students the best instruction possible, they can get a major assist from assessment data in three key ways.

1. Illuminate learning gaps

We are all familiar with the traditional classroom model: Students sit together with their attention fixed on one teacher, who leads them through a set sequence of lessons and expects the class to move forward as a single group from one lesson to the next. This model accommodates many students' needs, but a significant minority are not well served by it. Many students have learning gaps that slow them down relative to their peers, cause them to fall behind, and hinder their performance on tests and college readiness.

For example, students in their first year of algebra learn how to work with variables and solve equations, and these skills lay the groundwork for many of their future lessons and classes in mathematics. If this initial learning fails to take hold, students will move forward with gaps in their ability to understand concepts in mathematics and solve problems. Similarly, challenges with reading comprehension make it more difficult for students to keep up with assignments across all parts of the curriculum.

These students may end up in lowerlevel classes. They may perform poorly on state tests and find themselves less ready for college than their peers. Ultimately, they could be at a disadvantage in their careers—all because their learning gaps in school were never identified and addressed.



But when schools illuminate learning gaps with assessments designed to accurately measure student knowledge and progress, the real challenges—and opportunities—come into focus. Instead of attributing students' academic struggles to demographic factors or behavioral issues, schools with insight into learning gaps can begin the important work of improving instruction and intervening with the students who need the extra support.

2. Personalize instruction to meet students where they are

When teachers have actionable information about their students' learning progress, they can start putting together a flexible curriculum that gives students the opportunity to move forward according to their own skill sets and learning styles. This benefits not only students with learning gaps and challenges, but also the students who may be ready for more advanced material. Personalized instruction can include a number of features, including the following:

• **Dynamic groupings.** Instead of using the traditional model of a single group comprising all students in a given class, teachers can form a number of small, collaborative peer study groups based on students' interests and learning progress. Students can move between groups as often as needed in order to be successful with a particular subject.

- Self-guided online learning. Some students do great on their own. Teachers can offer them technology-assisted personalized learning pathways that are tailored to their needs, whether the students are on, above, or below grade level.
- Interest-driven reading and writing assignments. In addition to the traditional approach of assigning one book to an entire class, teachers can also customize reading and writing assignments for individual students based on their interest areas and abilities, drawing from a wide range of topics and genres.

Teachers who are able to personalize learning for their students have a flexible definition of what it means to be "good" at math, science, or language arts. Students may need help with specific tasks in geometry or reading, for example, even if they understand the overall concepts. Good assessment data allows teachers to zero in on the areas where students need help. It also helps teachers tailor instruction for students who are performing on or above grade level and are ready for more complex material.

3. Foster a culture of continuous improvement

Consider the difference it makes when schools, teachers, and students think of assessments not as tests, but as valuable forms of feedback and validation. Well-designed assessments conducted at regular intervals can become ingrained in a school's culture in a way that gives everyone something to rally around:

Improving instruction in the age of Big Data

School districts have joined many other organizations and companies in looking to the power of data to help them answer one overarching question: How can we improve the service we provide? Adoption of data analytics in all industries rose from 17% in 2015 to 59% in 2018. according to one survey, and while education has been slower than other fields to embrace data as a quality improvement tool, most schools say it's just a matter of time before they incorporate data analytics into their own operations and resource allocation decisions.

However, while the trend toward higher utilization of and dependence on data is clear across all fields, data is only as good as the assessment tool that delivers it. A faulty assessment will produce faulty data, and quality improvement efforts will peter out. The data from a welldesigned assessment, on the other hand, can be an invaluable resource for school districts. It can inform decision making at the highest levels, support the professional development of teachers looking for ways to improve their instruction, and give a major boost to students' academic attainment.

Students receive personalized feedback on their assessments, helping them set new goals in their problem areas and celebrate their successes in the areas where they shine. This feedback loop creates a motivating effect that keeps students engaged in their learning.

Teachers use assessment data to gain insights into individual students' learning progress, allowing them to tailor their instruction and intelligently form skill-based student groups. This is not only good for students, but it's also good professional development for the teachers.

School leaders and administrators depend on aggregated assessment data to help them better understand needs and priorities at the school level, and to make resource allocation decisions that will create the conditions for continuous improvement.

In short, high-quality assessment data fosters an educational culture in which students feel seen and cared for, teachers have a better window into their students' needs, and schools can confidently set priorities based on real information rather than guesswork.



How to set the bar higher for student achievement

Assessing student learning isn't just about uncovering learning gaps. It's also about discovering the bright spots—areas in which students are exceeding expectations and may be open to taking on more advanced material. By tailoring instruction to these students as well as the ones needing extra support, teachers can create a level playing field in which all students are supported and motivated to reach their potential.

As described earlier, differentiated learning groups are a powerful instructional tool that teachers can use to tap into students' strengths and interests. This is very different from the traditional classroom model (one teacher, one curriculum, one student body). In small, adaptable learning groups, students have an excellent opportunity for growth in several areas that will serve them well throughout their school years and beyond:

- **Collaboration.** Students work closely with their peers, solving problems together and relying on each other to remain accountable.
- **Mutual learning.** In learning groups, students teach and learn from each other.

- Leadership. When students are responsible for contributing to their learning groups, they discover their capacity to lead activities and earn the respect of peers.
- Self-reliance. In small groups, students are in command of their own learning process—with support and guidance from their teacher as needed. For students comfortable with self-guided learning, this kind of ownership can be a rewarding motivator.

The key point here is that all students, not just the ones who struggle, stand to gain when teachers are able to identify learning gaps and move toward a more personalized curriculum. When teachers intervene with students who need the extra support, those students have an enhanced sense of belonging. They feel lifted up, they are able to contribute more productively to the class, and their future prospects brighten. At the same time, assessments help teachers nurture the talents and ambitions of those who may be edging ahead of their grade level in some areas. By being responsive to the entire spectrum of student learning, teachers can gradually raise the bar for the whole classroom and set a new standard for success.

What does the right assessment solution look like?

With teachers and students alike already feeling stressed by the burden of state tests and other summative assessments, school districts need to tread carefully when it comes to purchasing and implementing new assessment solutions. Teachers are under pressure to bring their students up to grade level and help them meet standards, and they know that new assessments and other initiatives don't always deliver actionable—or even accurate—results. Assessment fatigue is real.

But not all assessment solutions are created equal. The most robust ones produce important insights into student learning and reliable data that teachers can put to immediate use in their classrooms. As districts compare the features of different assessment products, a few key criteria will help them narrow their search and ultimately get the best return on their investment:

- **1. Backed by strong research.** The best assessment solutions are designed by teams of credentialed experts with extensive experience in education, specific content areas, and statistical methodologies.
- **2. Designed for ease of use.** The look, feel, and accessibility of an assessment go a long way toward helping students stick with it and take the time to give meaningful answers.
- **3. Validated in the field.** Assessments should be field-tested, continually refined over time, and proven to yield results.
- **4. Accompanied by training and ongoing support.** The more granular the data, the more support teachers and administrators will need as they go about analyzing and interpreting that data. An ongoing relationship with the assessment provider will maximize the value of the product.



As US schools try to move the needle on educational outcomes, they are looking to assessments—and the data they produce—for guidance. Data can be a powerful and even transformative asset, but with so many assessment products available, educators and school leaders can sometimes find themselves experiencing paralysis by analysis. The cure for this common ailment is to focus on the quality and breadth of an assessment solution, with the criteria discussed above as a starting point. Teachers will know when the right solution is in place: Learning gaps are identified and closed, students are more engaged with what they're learning, and teachers are able to offer their students a stimulating variety of pathways to success.



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