

Data Management and Analytics: Keys to Maximizing Student Literacy



Experts project that, if current trends continue, it will take nearly three decades before even half of American fourth-graders are reading at proficient level.

Source: "Why Reading Matters and What to Do About It: A CEO Action Plan To Support Improved U.S. Literacy Rates." Business Roundtable. December 2016.

The Need for Third-Grade Reading Proficiency

Did you know that nationally, only 26 percent of high school students meet all four college readiness benchmarks in English, reading, math and science? And one-third of students meet none of them?¹ These are truly alarming statistics - but the question is, what's driving them? And what can schools do to improve them?

It's often said that from kindergarten through third grade, children learn to read. But from fourth grade on, children read to learn. So students who are not reading proficiently by the end of third grade start to fall behind. Although children continue to hone their reading skills after third grade, research confirms that reading proficiently by the end of third grade is a critical milestone for future success in school and beyond.²

In fact, the majority of children who struggle to read in third grade continue to struggle through high school. They are also four times more less likely to graduate high school than those third-graders who are proficient at reading.³ Experts project that, if current trends continue, it will take nearly three decades before even half of American fourth-graders are reading at a proficient level.⁴

¹"Why Reading Matters and What to Do About It: A CEO Action Plan To Support Improved U.S. Literacy Rates." Business Roundtable. December 2016.

² Ibid

³ Ibid

⁴ Ibid

State Actions to Increase Reading Proficiency

To reverse these trends and increase third-grade reading proficiency, 36 states have passed legislation focused on literacy. This legislation is aimed at improving third-grade reading levels and providing targeted interventions for students struggling to reach proficiency. This effort takes into consideration a number of recommendations made in a recent report on reading proficiency from the US Business Roundtable, an organization of chief executive officers of leading US companies working to promote sound public policy and a thriving economy. In their 2017 report on literacy, they include in their recommendations:

- Comprehensive governance structures to align agencies and departments that oversee early learning programs and K-3.
- Options for how best to identify, collect, manage and analyze data from pre-K through third grade or from birth through age 8 programs.
- Systems that can include a range of assessments to track and analyze student progress.
- Collection and analysis of data from appropriate screening, diagnostic, monitoring and formative assessment activities as students progress through the education system.

The good news is that many states have already invested in the development of integrated data and analytics systems to help answer early childhood policy questions and support continuous improvement in

services. Often called Early Childhood Integrated Data Systems (or ECIDS), these systems can be created, integrated into, or expanded to include indicators of reading proficiency. In addition, these systems can be improved to allow for real-time data information and predictive analytics.

Literacy-specific data can also be incorporated into state longitudinal data systems along with other important information about early learning and educational experiences. Longitudinal data systems that securely link early childhood data with K-12 data can help policymakers and educators:

- Understand whether investments in policies and programs are getting the results intended.
- Identify best practices for replication.
- Provide information to K-3 teachers to tailor curriculum and instruction.
- Provide feedback to pre-K programs on how well they are doing preparing children for success in elementary school and beyond.

Users can then visually interact with data to answer questions quickly and make more accurate, data-informed decisions. In addition, they can further analyze the data to uncover hidden insights that can improve student literacy. The overall goal would be for stakeholders to be able to access reports that provide longitudinal trends showing children are progressing through different early childhood programs going into kindergarten and through third grade.

Similarly, systems focused on literacy could be incorporated into, or correlated with, new accountability and equity systems being created under the new Every Student Succeeds Act (ESSA), which overhauled No Child Left Behind. ESSA allows allocated funds to support local education agencies carrying out initiatives that will improve student achievement in reading and writing from birth through 12th grade. This shift recognizes the continuing need for students to attain the necessary literacy skills to graduate from high school as college- and career-ready members of society.

Using SAS® Software to Support State Literacy Objectives

As the prior discussion suggests, integrated data management and analytics solutions are critical to helping states identify at-risk students, monitor the effectiveness of interventions, track individual student and school progress, provide valuable feedback to educators so they can refine and innovate strategies and programs, and more.

For example, educators and policymakers are using SAS software's superior data integration, quality and analytics to make proactive data-informed decisions to increase third-grade reading proficiency. SAS helps them:

- **Monitor effectiveness.** Use multiple measurements and analyses to create a holistic picture of where improvements are needed and provide targeted interventions for students struggling to achieve proficiency.
- **Determine participation and impact.** Decide which children are eligible to participate in early childhood programs and services and measure outcomes from different levels of participation.
- **Inform policymakers and stakeholders.** SAS turns complex data into visualizations to better understand student progress over time.

Literacy-specific data can be incorporated into state longitudinal data systems along with other important information about early learning and educational experiences.

- **Build data repositories.** This requires ascertaining what data is needed, how it will be collected, where it will be housed and who has access to it.
- **Integrate data horizontally from various systems and agencies.** This improves coordination, eligibility and service delivery.
- **Correlate reporting systems.** By correlating data across systems, SAS helps users illustrate relationships between student academic performance, educator effectiveness and per-pupil expenditures.
- **Ensure data quality while protecting privacy.** With SAS, users can integrate, manage and ensure the quality of data from multiple sources while protecting student and educator privacy.
- **Track programs and student success longitudinally.** Analyze longitudinal data to spot trends and patterns to improve student reading proficiency.

The SAS® Difference: A Comprehensive, Experience-Based, Data-Driven Approach

SAS takes a comprehensive analytical approach in order to address a broad range of education issues - and brings a wealth of related experience to help ensure customer success. For example, SAS provides:

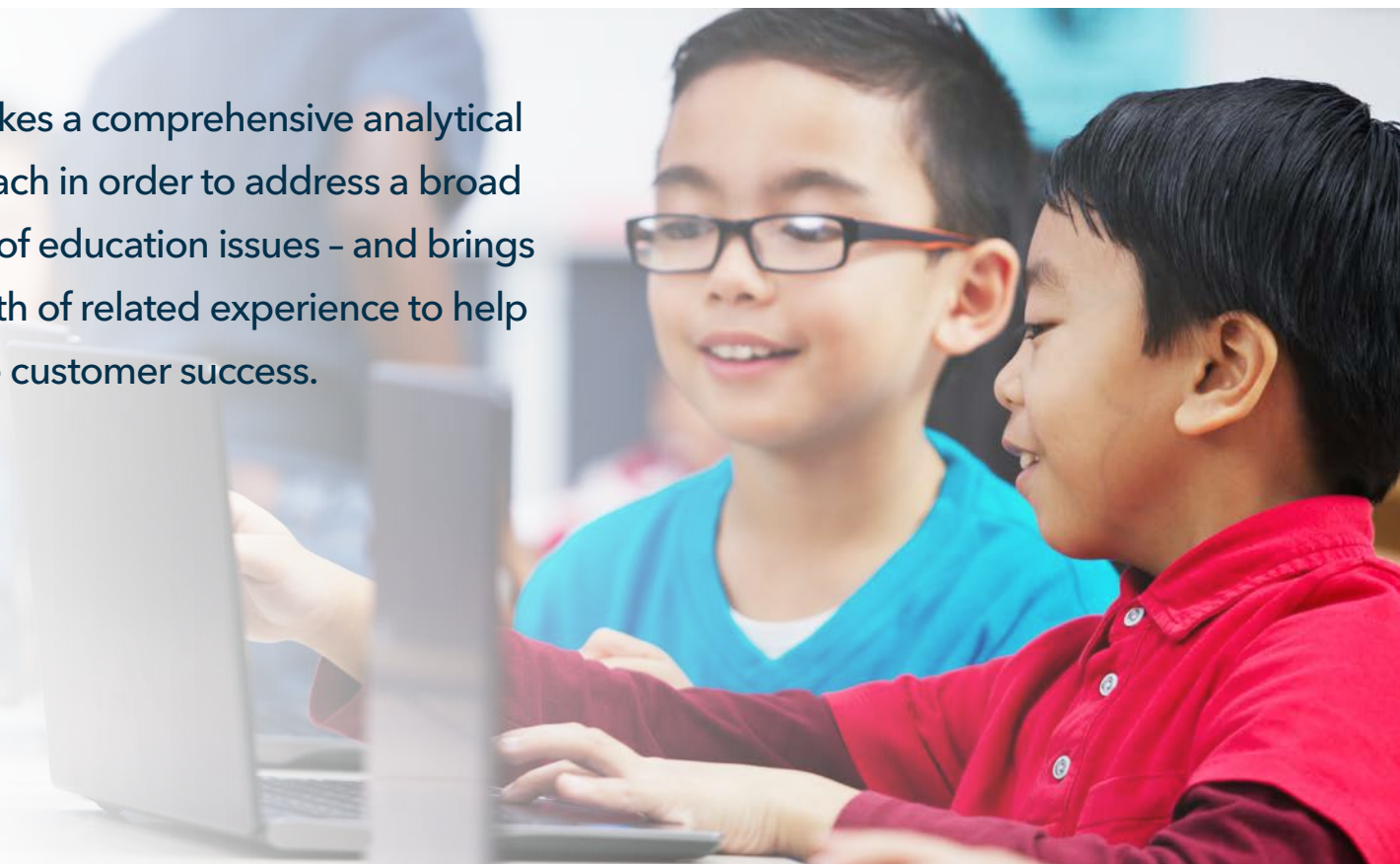
- **Experience with accountability systems, school report cards and state longitudinal data systems.** SAS has experience in establishing these systems, which are used to inform policymakers and stakeholders about student outcomes and effective programs and policies.
- **Data management.** SAS combines, cleanses and manages data from disparate sources across agencies and systems.
- **Domain expertise.** SAS has worked across agencies and departments to streamline the data gathering process, while compiling and sharing information with stakeholders to develop the most effective education policies and programs.

- **Advanced analytics.** SAS advanced analytics enables organizations to assess the effectiveness of programs and policies across the early learning and K-12 systems. Policymakers can see improvements in student outcomes, spot patterns, correct course and reallocate budgets to programs delivering results.
- **Data visualization capabilities.** SAS pulls together all relevant data into a well-rounded picture using dashboards and visualizations. Users can visually interact with data; answer questions quickly; make more accurate, data-informed decisions; and easily share their findings with others.

Learn More

To learn more, please visit sas.com/P12.

SAS takes a comprehensive analytical approach in order to address a broad range of education issues - and brings a wealth of related experience to help ensure customer success.



About SAS in Education

With a [special focus on education](#), SAS strives to give everyone THE POWER TO KNOW®. SAS software is widely used to run the business of education. In fact, it's the same world-class analytics software used by more than 83,000 business, government and university sites around the world, including 94 of the top 100 companies on the 2016 Fortune Global 500® and more than 3,000 educational institutions. And because of our commitment to education, SAS provides K-12 and degree-granting educational institutions access to SAS software at a

significantly discounted rate. SAS also provides [free curriculum](#) and mobile apps for K-12, as well as [free and low-cost student access to world-class software](#). Additionally, SAS collaborates with colleges and universities around the world to launch [degree](#) and [certification](#) programs to foster the current and next generation of analytics talent. With more than four decades of working in [education](#), SAS brings together individuals, institutions, communities and data to derive insights in order to prepare students for college, careers and a brighter future.

To contact your local SAS office, please visit: sas.com/offices

