![Alliance for Excellent Education logo — Every Child A Graduate]

"Using Data Safely and Effectively to Strengthen Student Performance"

Written Testimony of

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Introduction

Chairman Meehan, Chairman Rokita, Ranking Member Clarke, Ranking Member Loebsack, and Members of the U.S. House of Representatives Subcommittee on Cybersecurity, Infrastructure Protection and Security Technologies and the Subcommittee on Early Childhood, Elementary and Secondary Education:

It is an honor to testify before you today to discuss the critical role that the effective and safe use of data can play in supporting success among America's students.

My goal today is to illustrate how student data can be used effectively to strengthen student achievement and personalize the learning for each individual student while simultaneously maintaining high levels of student privacy.

Today, I come to you first and foremost as an educator. I've spent my life serving children, first as an elementary and middle school classroom teacher, then as a middle school assistant principal, an elementary principal, and most recently as the director of technology and cyber education in the rural Quakertown Community School District located in upper Bucks County, Pennsylvania. In each of these roles, I balanced the use of data and its tie to student achievement, while ensuring privacy on a daily basis.

I am now pleased to serve as the state and district digital learning director at the Alliance for Excellent Education. The Alliance is a Washington, DC–based national policy and advocacy organization dedicated to ensuring that all students, particularly those traditionally underserved, graduate from high school ready for success in college, work, and citizenship. The Alliance focuses on America's 6 million most-at-risk secondary school students—those in the lowest achievement quartile—who are most likely to leave school without a diploma or to graduate unprepared for a productive future. The Alliance's mission is to promote high school transformation to make it possible for every child to graduate prepared for success in life.

A chief part of the Alliance's mission is using technology and digital learning to provide innovative and effective ways to ensure that all students—especially those most at risk and disadvantaged—graduate from high school prepared for success.

The Alliance held the first national Digital Learning Day in 2012, an annual celebration with participation from more than 26,000 teachers and millions of students from every state in the nation. In 2013, the Alliance announced Project 24, a new effort to assist school districts in developing a plan to use technology and high-quality digital learning, including the collection of proper and secure student learning data, to help drive new twenty-first-century student-centered instruction models leading to improved college and career readiness for all students. Currently, 1,300 school districts are participating in some way.

Although I could stand before you and share countless stories of how data-driven decision making—both in the classroom by teachers and at the district level by school administrators— has forever changed the lives of students, I'll take a moment to give just one example.

I knew Susan (name has been changed for protection) as a fourth grader. When I met her she was nine. Susan had struggled tremendously in her previous school and never had much support at home. Having bounced from school to school, she had little consistency and rarely had the home support needed to be successful. Life was dealing her a tough hand.

During her first few weeks in my classroom, we were able to collect a tremendous amount of data on her levels of performance. For example, we looked at the various aspects of her reading, from fluency to comprehension, etc. Based on Susan's exact needs, and due to the large amounts of data we were able to collect, we were able to develop a personalized plan to meet her needs. Over time, I watched as these interventions, implemented based on data-driven decisions, helped to build her confidence, and ultimately her academic skill level. As Susan moved through other data-based, personalized instructional environments, she was able close the achievement gap, and ultimately cross the stage at graduation, receiving her high school diploma. As an educator who has witnessed myriad stories like Susan, it is without a shadow of a doubt that I know that her success is attributed to her teachers and schools being able to utilize a vast amount of real-time data to develop personalized instruction to meet her needs. There are countless students just like Susan, sitting in virtually every one of our nation's classrooms.

Need for Education Reform

In order for the United States to sustain its position as the world's leading economic power, its system of education must be rapidly and dramatically improved. By 2018, two-thirds of the nation's jobs will require at least some postsecondary education, and estimates indicate that the nation will be 3 million college degrees short.[i] Approximately 30 percent of African American and Hispanic students do not graduate on time, if at all,[ii] and 20 percent of students who do make it to college need at least one remedial course,[iii] meaning that they are paying college prices for the high school education they should have already received.

This poor preparation is taking place at a time when the economic demand for a highly educated workforce has never been greater. Over the past forty years, the percentage of jobs requiring postsecondary education has doubled (from 28 percent to 59 percent).[iv] The demands of the knowledge-driven economy are far outpacing the production of students who are prepared for the workforce. To respond to this rapidly rising demand for a higher-skilled workforce, every state has raised its academic standards to require that every student graduate from high school ready for college and a career.

While states are working to strengthen education in order to meet the demand for a highly-educated workforce, the nation's demographics are rapidly changing. Students of color make up more than half of the K–12 population in twelve states and comprise between 40 and 50 percent of the student population in an additional ten states.[v] The nation's fastest-growing student populations are those that the traditional education system is least equipped to serve.

This seismic tremor in education means that the nation must provide a higher-quality educational experience to more students than it ever has before. Only the effective use of data and technology supporting teachers will accomplish this major objective.

Effective Use of Data Is Critical to Education Reform

Data can be a powerful tool for personalizing learning for each student and increasing achievement in the highest-need schools. Just like doctors evaluate your medical history, current condition, and records from other physicians to diagnose, care, and treat patients, teachers and administrators need access to data in order to best personalize learning for each student, for they too are assessing, diagnosing, and treating the various needs of our nation's students.

Today, the Alliance released a paper—*Capacity Enablers and Barriers for Learning Analytics: Implications for Policy and Practice*—that describes how learning analytics initiatives are helping states and districts move from being data collectors to data analyzers.[vi] The full paper is included in my complete testimony submitted for the record. Learning analytics applies techniques from science, sociology, psychology, and statistics to analyze student information. It enables the effective use of data to improve instruction in meaningful ways, such as those that adapt instructional content, intervene with at-risk students, and provide feedback.

When student data is collected properly and used effectively, it can be an integral part of personalizing instruction to improve learning. Data can guide digital learning to target instruction. It can provide real-time feedback on student progress that allows teachers to tailor instruction, resources, and time.

Throughout my time in Quakertown, I was able to witness this first hand. As the district implemented a personalized approach to instruction, with decisions predicated on data-driven decision making, we were able to create an environment where student learning and growth was at the forefront. Through this technology-infused, data-driven environment, we saw high school graduation rates increase 10 percentage points over a two year period. Upon my recent departure from the district, we had more students taking rigorous courses than ever before, the state standardized test scores were the highest they've ever been, and results on tests such as the SAT showed significant growth over time.

Our nation, schools, and leaders must be careful not to let fear of data thwart progress toward the best learning strategies for all students. At the same time, teachers, principals, and district and state leaders must be mindful and purposeful about the appropriate collection and use of data. Overly restricting data because of the fears of some will be devastating to modern, innovative teaching practices. There must be support for policies that effectively address privacy, safety, and security concerns related to digital learning and other ways that data is stored including antiquated paper file storage. In doing so, it is important to differentiate between real and perceived threats so that we can take advantage of the real potential to improve learning outcomes for students through the proper use of data.

Pulling from my 14 years of school district service, I'd like to share a few examples of how the use of data transforms and personalizes instruction for students and how school districts use data to systemically plan and problem solve to meet the needs of their student population.

Having been a classroom teacher for six years, and supervising classrooms for five years as a principal thereafter, data played and continues to play a vital role in the daily instructional process. Teachers collect and analyze data on a regular basis to inform their instruction. Whether it's specific data regarding reading levels, comprehension, fluency, math facts, or information surrounding a specific academic standard, teachers collect, organize, and analyze data in order to personalize instruction for each student. Without such collection, teachers would lose the ability to pinpoint the exact needs of each child and would lose the ability to treat each need with precision. Best practices indicate that meeting each student where they are will push them to their highest levels of achievement. But this is only feasible through personalized learning and instruction, which can only occur when up-to-date data is readily available so that teachers can make real-time instructional decisions, allowing them to put their students' needs at the heart of teaching and learning.

At the building level—and as both a middle school and elementary principal—this data was used to analyze grade levels, trends in curriculum, strengths and weaknesses in our academic program, and grade level and teacher effectiveness. Tracking this data on a large scale at the building level allowed me to properly allocate resources, from reading specialists and special education support, to a systemic response to intervention model. On a weekly basis, Quakertown's teacher and specialists would meet in data teams to discuss every child and what we could do better or differently to meet their individual needs—both for those needing additional support and those who needed high levels of enrichment. We would then use this information to design schedules for support and intervention for all students, both at the classroom and building levels.

As I moved to Quakertown's district office, the ability to collect, analyze, and dissect student data on a large scale was even more important. At the highest levels, our leadership team would analyze districtwide trends, which allowed us to identify and plan for needs moving forward. These areas of need would help us formulate district goals, and over the long term, strategic plans. Without objective academic data on the large scale, the ability to make districtwide decisions about curriculum renewal, standardized assessments, professional learning, budget, etc. would be jeopardized.

As it relates to special education, very specific achievement data would be used to build an Individualized Education Program (IEP) for each child, as required under the Individuals with Disabilities Education Act. These goals would then be measured throughout the course of each year and revised on a year-over-year basis to chart growth and achievement and ensure that our nation's students with disabilities receive both what they need and deserve.

As both a principal and cabinet-level member at the district office, part of my role was to ensure high-quality teaching in the classroom, which was monitored through the teacher supervision process. As such, supervisors had access to student data and were able to longitudinally track performance of teacher effectiveness over time. In order to prepare students for their tomorrow,

there must be high-quality teachers in the classroom today; and being able to objectively assess effectiveness, over time, is imperative.

As the director of technology at Quakertown, it was my team's job to oversee the security of such data, including data stored in our data warehouse and student information system. Like other districts, we utilized the necessary firewalls, security certificates, and limitations on access to ensure that only those people with a need to know had the needed information. For instance, only two people in the district would have access to all student information; me and the data specialist who would work on the district's Pennsylvania State Reporting System. Teachers were only able to see information that was legally permissible for students who they taught, and principals and specialists would be granted access to their building-level data. This information was treated with the highest levels of security and accountability, even going as far as having every staff member sign a confidentiality agreement, every year, which clearly delineates the expectations of how they were to handle the student data to which they had access.

On the educational technology front, the Quakertown district would partner with various companies on tools and resources from online registration, ranging from our student information system and gradebook to various assessment and testing tools. For each company, we'd work to ensure compliance with the Family Educational Rights and Privacy Act (FERPA), and with instances of data transfer—such as that of online registration—there was a 128-bit encryption in place, the same level of security used in online banking. When it came to various web tools, we'd work to ensure compliance with the Children's Internet Protection Act, paying special attention and giving extra precautions to those students under 13 years of age. It was the district's legal obligation to ensure that the highest levels of security for this data were in place, and something that was always at the top of our priority list.

Other Examples of Success

In my role at the Alliance, I have seen states and districts across the country using data effectively. In Kentucky, for example, K–12 and postsecondary data is linked in order to provide feedback reports to high schools on matters such as college readiness and ACT scores. This data can be used to reduce the large number of students who need remediation when they leave high school. In Oregon, professional development on instructional strategies is paired with technical training so that educators can use data regularly to improve instruction.

A particularly powerful example of the effective use of data comes from Chicago Public Schools (CPS), the nation's third-largest school district. In 2007, CPS initiated a reform to utilize data in order to prevent students from dropping out. Evidence shows that students who end their ninth-grade year on track to graduation are almost four times more likely to graduate from high school than those who are off track. Therefore, CPS promoted the use of data to monitor students' performance, help teachers intervene before students fell too far behind, and implement a variety of interventions to address the specific needs facing students as identified by the data. At the center of this effort were monthly data reports given to each high school that allowed educators to respond when students were heading in the wrong direction.

As a result of this effort to effectively use data to keep students in school, the percentage of ninth-grade students who are on-track to graduation has risen 25 points, from **57 to 82 percent**, and graduation rates have increased 13 percentage points.[vii]

Recommendations

Whether in rural Quakertown, or urban Chicago, the power of data to improve student achievement is real. Data can and must be used responsibly, and educators across the country demonstrate every day that they are able to effectively use student data while maintaining student privacy. On behalf of the Alliance for Excellent Education, I offer recommendations for your consideration in order to improve the ability of our nation's teachers and schools to use data to strengthen student achievement.

1) **Professional development:** Educators need support in how to effectively use data to improve instruction while protecting sensitive student data. Funds from Title II of the Elementary and Secondary Education Act should be utilized for this purpose.

2) **Early warning indicator and intervention systems:** Schools and districts across the country are implementing early warning indicator and intervention systems in order to identify struggling students and provide support that is tailored to their individual needs. There are many ways in which federal policy can support the implementation of early warning indicator and intervention systems, including requiring them as a component of federal School Improvement Grant program.

3) **Data transparency:** Parents and the public must know what data is being used to support students, and they must be given access to this information.

   - It is imperative that the public, and parents in particular, know what student data is being collected and why. States and school districts should each provide readily and publicly accessible information on the types of individual student data they maintain and how it is collected and used, who has access to protected data, and what safeguards are in place to protect it. School districts must insure that their individual schools are meeting the district requirements.

   - The Family Educational Rights and Privacy Act, or FERPA, currently gives parents and eligible students aged 18 or older access to their education records. Following the example set in health care through the Health Insurance Portability and Accountability Act, or HIPAA, access should be expanded so that data is also available for parents and eligible students in an electronic and cost-efficient format. School districts should explore creating encrypted and password-protected websites to make this information readily accessible to parents and eligible students in a safe and protected manner while protecting it from exposure to unauthorized individuals.

4) **Data protection:** Strong policies and plans are vital in data collection to safeguard privacy. States, districts, and schools must have a data protection infrastructure to ensure that

personally identifiable student data is protected. States should designate a chief privacy officer who is responsible and held accountable for the implementation of sound privacy policy. Duties would include monitoring data collection practices, insuring compliance with federal and state laws, overseeing a data security compliance plan and emergency data breach response plan, and tracking the latest technological improvements and best practices in data collection and privacy. Districts should designate a single point of contact who focuses on privacy issues. Some districts may consider exploring whether they should designate a district chief privacy officer depending on their size, individual needs, and cost feasibility of implementation.

5) **Policy for learning in the twenty-first century:** Privacy protection policies must be updated and modernized to insure student privacy is protected. Simultaneously, legislative bodies must be cautious to avoid creating policies that hinder learning. Education in the twenty-first century must take advantage of all that technology has to offer, recognizing that learning takes place in and outside of the classroom. To this end, the bipartisan Aspen Institute Task Force on Learning and the Internet recently issued the report *Learning at the Center of a Networked World*, which offers recommendations for policymakers at all levels for consideration and action.[viii]

Conclusion

There is a difference between rhetoric and reality. Privacy concerns are real, and school leaders and policy makers must continue to deal with these very real concerns systemically and transparently. At the same time, it is imperative that this policy debate serves as a mechanism for spurring innovation, rather than stifling it. The U.S. Congress and state legislative bodies should explore modernizing privacy protection through proactive laws that encourage data use while protecting it to better reflect today's world, thus avoiding sudden reactionary policies that create unnecessary and undue constraints on learning. The nation's students, their parents, and its economy deserve nothing less.

Endnotes

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[i] A. Carnevale, N. Smith, J. Strohl, *Help Wanted: Projections of Jobs and Education Requirements Through 2018* (Washington, DC: Georgetown University Center on Education and the Workforce, 2010).

[ii] R. Stillwell and J. Sabel*: Public High School Four-Year On-Time Graduation Rates and Event Dropout Rates: School Years 2010-11 and 2011-12 (First Look)* (NCES 2014-391) (Washington, DC: US Department of Education, National Center for Education Statistics, 2014),

[iii] D. Sparks and N. Malkus, *Statistics in Brief: First-Year Undergraduate Remedial Coursetaking: 1999–2000, 2003–04, 2007–08* (NCES 2013-013) (Washington, DC: US Department of Education, National Center for Education Statistics, 2013), http://nces.ed.gov/pubs2013/2013013.pdf (accessed February 11, 2014).

[iv] A. Carnevale et al., *Help Wanted*.

[v] W. DeBaun, *Inseparable Imperatives: Equity in Education and the Future of the American Economy* (Washington, DC: Alliance for Excellent Education, 2012).

[vi] M. A. Wolf, R. Jones, R. Wise, *Capacity Enablers and Barriers for Learning Analytics: Implications for Policy and Practice* (Washington, DC: Alliance for Excellent Education, 2014).

[vii] M. Roderick, T. Kelley-Kemple, D. Johnson, and N. Beechum, *Preventable Failure: Improvements in Long-Term Outcomes When High Schools Focused on Ninth Grade Year: Research Summary* (Chicago: University of Chicago Consortium on Chicago School Research, 2014), https://ccsr.uchicago.edu/sites/default/files/publications/On-Track%20Validation%20RS.pdf (accessed June 23, 2014).

[viii] Aspen Institute Task Force on Learning and the Internet, *Learning at the Center of a Networked World* (Washington, DC: Author, 2014), http://aspeninstitute.fsmdev.com/documents/AspenReportFinalPagesRev.pdf (accessed June 23, 2014)