Protecting student data in a digital world

Social Sector April 2015

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Protecting student data in a digital world

Proponents of data-enabled education can learn from other industries that have faced concerns about the risks of using personal information.

Across industries, data and advanced analytics are being used to personalize products and services, generate more impact at lower cost, and improve the user experience. Education is another field that stands to benefit from this trend: there is much evidence that data-fueled learning tools can dramatically improve student outcomes. The effective use of student data in K–12 schools—in fact, in most of the education system—is nascent, however. Schools, and in particular public schools, have limited budgets and may find it difficult to prioritize investment in data-driven tools and technologies. School systems are enormously complex, which can make it challenging to implement new programs. And the use of student data raises questions about issues such as privacy, the possibility that personal information could be accessed by or sold to unauthorized third parties, and, more broadly, the ways in which data will be collected and used both inside and outside the school system.

In fact, the risks involved with data-driven instructional methods—and the perceptions surrounding those risks—are among the biggest challenges to helping students gain the benefits of large-scale adoption of data and analytics in schools. But we believe these challenges can be overcome. Organizations in many industries are grappling with similar concerns, and in turn they have begun to design processes and safeguards that enable the productive use of personal information while also addressing concerns about its collection and use. In important ways, schools differ from private-sector companies like retailers and banks, and even from more public-minded organizations like hospitals. Nevertheless, we believe that stakeholders across the education system—policy makers, school administrators, teachers, parents, and organizations that are responsible for collecting and protecting data—can learn from other industries that use data to improve and personalize the user experience, and that they can embrace the transparent use of data as a path to improved educational achievement for students.

How student data can improve education

Increasing the use of student data in education could unlock between $900 billion and $1.2 trillion in global economic value; upward of $300 billion of that would come from improved instruction.[1] Personalization is one important way to realize those gains. Customized lessons have helped students make measurable gains, as has designing math word problems that incorporate students' interests.[2] In fact, when more than 6,000 students in 15 public schools across the United States used personalized learning tools as a complement to teacher-led instruction, they gained an average of 1.5 years of progress in math in just 1 academic year—47 percent higher than the national average. Students who began the year below grade level made gains of 81 percent higher than the national average.[3]

Personalization is just one way student data can be used to improve instruction. The School District of Palm Beach County in Florida—which boasts among the highest graduation rate of any urban school district in the state[4]—gives its 12,000 teachers access to their students' achievement and attendance data; teachers can use the data as a tool to inform their decisions about instruction. Data-driven tools

and technologies can also suggest ways to improve teacher performance. And offering parents access to data about their children's grades and progress has been shown to encourage higher levels of parental investment and involvement in student outcomes.[5]

Why parents and educators are concerned

In order to reap the benefits of data-enabled tools, schools would need to collect and analyze student data more often and more rigorously—an idea that might initially make some parents and educators uncomfortable. Once proponents of data-enabled education understand the concerns about increased data collection, they will be better positioned to address them. Specifically, they must be ready to do the following:

Protect students from direct harm. Some parents, teachers, and school administrators worry that data-enabled learning could damage the quality of the school experience. They fear that analytics could diminish the role of teachers in the classroom, ultimately reducing students to a set of data points and overlooking the ways that individual personalities or learning styles might influence performance. Further, parents and teachers worry that some children will be prematurely and permanently labeled as underperformers. Of course, parents have even deeper fears about what might happen if data fall into the wrong hands. Identity theft is just one example.

Ensure companies don't profiteer from student data. In a 2012 survey, 93 percent of parents with children in the US school system (grades 1 through 12) said they were either "somewhat uncomfortable" or "very uncomfortable" with advertisers tracking their children's Internet use in school.[6] No responsible school system or educational-software company would intentionally misuse the digital student data it collects. In fact more than 100 companies, including digital giants Google and Apple, have signed a voluntary pledge to protect student data.[7] Still, the survey makes it clear that parents are uneasy with even the idea of organizations profiting from information about their children, so it is an important factor to consider when launching or expanding data-enabled instructional programs.

Protect students' privacy. To get the full benefits of student data, at least some information must be shared outside the classroom; software programs that are tailored to individual students' needs, for example, won't work without student data. But even parents who are comfortable allowing their child's teacher or school to collect and use digital information might be apprehensive about allowing it to go beyond school walls. Still others are opposed to the collection of any type of digital information about their children, regardless of how it's used. Concerns about data collection and analysis aren't unique to parents—it's not uncommon for teachers and school administrators to be equally apprehensive about sharing students' digital data.

What proponents of data-enabled education could do

Although concerns about data collection are heightened in the context of children, the concepts themselves are not exclusive to the education system. Other industries have learned how to manage similar risks and have made consumers more comfortable with the collection and analysis of personal information for specific purposes, so that ultimately the risks of using data don't stand in the way of realizing the tremendous benefits it can bring. These industries point the way forward in the educational data debate. Again, this is not to suggest that the risks associated with student data are identical to those associated with private-sector-company data. Rather, we believe that as schools begin creating data-driven programs, stakeholders in the

education system can borrow from other industries that have made progress toward addressing concerns about data collection and use. Broadly speaking, there are three lessons to be learned from these industries.

Make clear the tangible benefits of sharing data

People are much more likely to be comfortable sharing personal information if they understand—and value—the benefits they receive as a result. Credit cards, for example, deliver significant benefits but in exchange require that users surrender some personal information. While there have been several serious and high-profile data breaches, credit-card use continues. (And, of course, credit-card companies can continue to improve their cybersecurity by addressing the security issues these breaches have revealed.) The video-streaming site Netflix also makes clear the benefits of sharing personal data: when customers log in to their account, they see personalized suggestions for what to watch next, based on specific movies and TV shows they've already watched and rated highly. Although Netflix and credit-card companies face different risks associated with their data collection, what they have in common is that consumers willingly share their data because they value the tangible benefits they receive in exchange.

Schools too should make clear the benefits of data-enabled instruction, taking care to emphasize that it does not damage the quality of the classroom experience when done well. One way educators can help parents, specifically, understand and value the benefits of data-driven tools is to give them the opportunity to see the benefits firsthand. A school district in the western United States offers a case in point. When the district started using data-enabled educational tools (for instance, learning modules that adapt to student needs in real time and dashboards that track student progress toward learning objectives), some parents had their children opt out of the program. But within six months of seeing how the tools were helping other students progress, nearly all of these parents changed their minds. Such an illustration of the benefits of using data to improve student learning—and in particular how it can actually enhance the effectiveness of the teacher—can be a powerful tool in overcoming concerns that data-enabled tools might lower the quality of education that students receive.

Be transparent about what data will be collected and how data will be used

People want the companies that have access to their personal information to take their concerns seriously. Specifically, they want to know what information they're sharing and how it's being used so that they can avoid risks they're not comfortable taking. Parents and educators are no exception. Here, supporters of data use in education can take a lesson from smartphone-app builders, who have made great strides in clarifying to end users what data are collected by which app, and how that information is used. For instance, many apps now confirm that it's OK to access location information before offering tailored recommendations based on where the user is. Unlike the seemingly interminable privacy policies associated with some web services—which most people accept without reading—app-specific location permissions are often extremely simple. Given that a good number of users do in fact decline to allow access to their location data, it's reasonable to conclude that many people find app privacy policies more user-friendly and easy to understand.

For schools, transparency means giving families access to the data being collected about their children. It also means making sure parents and students know exactly who has permission to view and edit the data, and how the data will be used. President Obama recently proposed the Student Digital Privacy Act, which has the potential to assuage some concerns. The purpose of the legislation would be to "prevent companies

from selling student data to third parties for purposes unrelated to the educational mission and from engaging in targeted advertising to students based on data collected in school."[8] Although only in its initial stages, such regulation could start to address concerns about companies misusing data that are intended to be used exclusively to improve student learning.

Earn the trust of parents, teachers, and students

Consumers need to trust the institutions that have access to their data; this is doubly important in the context of student data. This means those institutions, including the vendors that use student data to develop and update their tools and apps, must take concrete steps to earn that trust. Banks, for example, have access to a great deal of sensitive personal data. In an effort to gain public trust, US banks invest more than many industries in cybersecurity, including contracting with specialized cybersecurity and insurance providers. They also submit themselves to rigorous regulatory rules and oversight, both by formal regulators and from peer industry groups. Like more sophisticated companies in some industries like banking, educational institutions should make sure they understand the sensitive data they have and redesign not only technical systems, but also business processes to put appropriate protections in place.

Schools and education companies may be able to follow suit by also developing data protection standards and policies, and by appropriately engaging qualified cybersecurity firms. In doing so, they can begin to address concerns about identity theft as well as more general fears that data might fall into the wrong hands. Some schools are experimenting with different ways to build trust on the front line, too, in order to reassure families that data will not be used to label their children or be carelessly given over to faceless corporations. As part of a three-day learning summit, one district in California invited its technology learning partner to speak with teachers, parents, and community members directly about what the company does—and how it does it. Building trust is neither quick nor easy, but sharing the company's mission—and increasing the community's understanding of its motives—was a critical first step in gaining public trust in this district.

As the type and volume of student data increase, so do concerns about who exactly will have access to the information and how it will be used. To get the benefits of data-enabled instruction, schools would need to collect and analyze more student data than they have in the past. They would also need to collect this information more often and more rigorously, and then make relevant portions of it available to more people and organizations. The risks are real, but they can be managed, leading to real rewards in the form of better student learning and achievement.

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[1] For more, see the full McKinsey Global Institute report *Open data: Unlocking innovation and performance with liquid information*, October 2013, on mckinsey.com.

[2] "Teachers college study shows students in high-tech math program outpace national average," New Classrooms, November 18, 2013, newclassrooms.org; and Candace A. Walkington, "Using adaptive learning technologies to personalize instruction to student interests," *Journal of Educational Psychology*, 2013, Volume 105, Number 4, pp. 932–45.

[3] *New Classrooms*, "Independent analysis of first two years of Teach to One: Math," blog entry by Joel Rose and Chris Rush, December 4, 2014, newclassrooms.org.

[4] "High school graduation rate," Florida Department of Health, 2015, floridacharts.com.

[5] *Performance-Driven Education in the Classroom*, Charlotte-Mecklenburg School District and Michael & Susan Dell Foundation, 2011, msdf.org.

[6] *SafeGov Global School Internet Privacy Survey,* SafeGov and Brunswick Group, 2014, safegov.org.

[7] For a full list of signatories, see studentprivacypledge.org.

[8] "Fact sheet: Safeguarding American consumers and families," White House, January 12, 2015, whitehouse.gov.

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April 2015
Designed by Global Editorial Services