Technology as a Tool for Improved Data Use: Schoolzilla

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Introduction

Participating in the Strategic Data Project (SDP) fellowship for the past two years has helped me fill in many of the gaps I had about the history and complexity of the issues facing America's educational system and has led me to embrace SDP's belief in the important role that Data Strategists must play as drivers of school and system change.

I work for a charter management organization, Aspire Public Schools, where I lead our technology and process improvement team. Unlike most other fellows, I use computer programming languages and Tableau software, not statistical software. I am focused on empowering *others* to discover answers to their own questions instead of doing the analysis myself (though I love to do that too). I have been a software developer, product manager, technology consultant, nonprofit program manager, and computer security researcher but I had only been in education for three years when I became Aspire's Agency Fellow.

During every SDP gathering, I kept thinking about technology. How could we leverage technology to "transform the use of data in education to improve student achievement" and to magnify the impact of the fellows? How could we make the SDP analytic process sustainable and less dependent on having a data fellow? I grew more and more determined to figure out a way to demonstrate that technology could remove barriers to easy-to-use data and increase the reach of the great work of the fellows and SDP to improve outcomes for students.

My 20 years of experience before joining SDP included a variety of roles at the intersection of technology and people. I founded and ran a consultancy creating technology solutions for nonprofits in the Mid-Atlantic region and the San Francisco Bay Area, did computer security research at the Department of Defense, was a technology consultant with Booz

& Company (formerly Booz*Allen & Hamilton), wrote about technology for parents and policy makers at The Children's Partnership, and led the introduction of a mobile software product at a technology start-up (now part of Xora). I have a B.S. in Symbolic Systems from Stanford University and an M.S. in Computer Science from the Naval Postgraduate School, where I received the Outstanding Academic Achievement Award for Department of Defense Studies.

When I joined SDP, I had only been working in education for three years, all entirely at Aspire Public Schools. I led a team focused on eliminating barriers to data use for teachers, principals, and system leaders. We created systems that integrated data from dozens of different sources and dramatically reduced the time necessary for stakeholders to create and distribute personalized reports.

What I learned from my other SDP fellows was that these struggles were widespread and Aspire was atypical in its ability to overcome the many barriers to making data available, easy to use, and quickly turned into useful information. Though the fellows had a huge appetite to put data to use to improve outcomes for children, the barriers within their organizations were bigger and seemingly intractable: antiquated home-grown data systems, siloed data, department heads that hoarded access to data, time-consuming compliance reporting requirements, under-resourced and under-skilled technology departments, and clunky hard-to-use tools, to name some of the most common frustrations.

Schoolzilla

In early 2011, my team at Aspire started responding to requests from other charter school systems to help them radically increase the usefulness of their data infrastructure and reporting. We quickly realized that we would not be able to fulfill all requests in a reasonable time if we

structured ourselves as a consulting organization, and we started working on creating a web-based platform on which we could build self-serve products that could scale to serve millions of students. The result was Schoolzilla (www.schoolzilla.org), and our first product offering was the California State Test (CST) Explorer. The free CST Explorer enabled any data analyst or data hungry principal or teacher in California to quickly analyze their state test results using reports and "attack questions" based on those used by Aspire's teachers and principals to prepare for action planning.

Despite little marketing and an untimely launch, more than 100 schools in California used the CST Explorer in 2011. We updated the CST Explorer and re-launched it in time for the August release of CST results, and by the end of August will have a beta version that works with any formative and summative assessment results. In 2013, we plan to expand the breadth and depth of our data infrastructure and reporting platform to combine data from different sources and make critical information one-click away from the people that make decisions in the classroom, school, and district.

<p align="center">**Schoolzilla + People = Impact**</p>

Though technology itself is an important lever, it is not enough to drive report adoption and use and ultimately, better decision making. People are at the heart of decision-making, and there are two roles that we created at Aspire that have helped drive high adoption and use of tools. We intend to build these into Schoolzilla design and services. The first is the role of the Data Hero – the person who eagerly uses data to solve problems and shares her enthusiasm with others in the organization, pushing for more impactful data collection, data quality, data analysis, and data use. For example, the Director of Human Resources or someone on her team may be the Data Hero for staff-related data and analysis. I focused on how to empower others across our

central office, since my team was small and couldn't possibly create reports for everyone who had an important question they needed answered. We focused on creating a data infrastructure that would enable people to answer their own questions.

Schoolzilla's data infrastructure is designed to be Data Hero-friendly, coupled with an easy-to-use reporting tool (Tableau Software), and includes "Quality Check" reports to help empower Data Heroes. Moving forward we intend to take a page from the SDP book, and provide functionality within Schoolzilla that encourages analysts at different districts to collaborate on data analysis and reporting, so we are improving the wheel instead of re-inventing it.

The second important role is the Data Driver – a teacher or principal who takes on the additional role of learning Schoolzilla's data tools, figuring out how to best incorporate them into the regular processes at their school to save time and drive better results, and serving as the go-to-person for any teacher or staff member who has a question about the data tools. One way we may accomplish this through Schoolzilla is to partner with organizations like the Achievement Network who provides data coaching services to more than 300 schools.

Schoolzilla and SDP

We found a great opportunity to demonstrate the vision of Schoolzilla by working with SDP to share the Strategic Performance Indicators (SPIs). The SPIs and the process described in the SDP Toolkit were very complementary to how we designed the Schoolzilla platform, and I started talking with the SDP team about a demonstration project to show what technology could do to eliminate barriers to making data useful.

Over the course of a few weeks in April of 2012, we prototyped how several SPIs could be semi-automated on the Schoolzilla platform by an analyst who has to only upload their raw data and then would be able to share interactive, customizable SDP reports with their own system and school leaders. We demonstrated the result at the SDP's annual Convening and received a lot of encouragement and feedback. In the coming months, we will make the prototype fully functional and expand its features to include the ability for any data analyst to improve upon the existing reports using Tableau Software and then share their version back with the broader community.

SDP Participation and Impact on Key Responsibilities

The biggest impact that participating in the SDP Fellowship had on me was to broaden my focus. When I joined SDP, all of my passion for improving educational outcomes for kids was focused completely on Aspire. By developing relationships with other Fellows and with the SDP staff, I began to take a much more personal and passionate interest in my like-minded colleagues in other school systems and the students they served. It really bothered me that some of the problems that we have been able to resolve at Aspire were still very much barriers in many other school systems.

What I learned through other fellows and the sessions also broadened my perspective on educational issues, and helped me become a more valued thought partner within Aspire. For example, through SDP I developed a rich understanding for the different ways to measure student growth and teacher effectiveness. Both the Chief Academic Officer and the VP of Education at Aspire often asked me to weigh in on the use and analysis of this data, and I helped craft the documents and co-led the discussion with the management team, the principals, and the teacher advisory board about our Teacher Effectiveness system. During my two years in the

Fellowship, I also was promoted to be the Vice President of Technology, managing the technology infrastructure functions in addition to my other responsibilities.

Lessons Learned

For new SDP fellows, I would recommend investing time in getting to know the other people in your cohort and the SDP staff early on. In my case, I found it really helpful to talk to fellows with similar skills, backgrounds or roles that were in a very different type of school system. Hearing how they dealt with legacy organizational structures, data challenges, and politics helped me understand how I might work effectively if I ever find myself in a similar environment. I learned more than I could have from just working within my own organization.

I have decided that the best way for me personally, given my particular skills and experiences (including my SDP experience), to have a positive impact on the challenges that face our schools and our students is to focus on making Schoolzilla an effective tool that empowers people who care about education can use to make better decisions for students and their future.