The Challenge Facing Our Public Schools

We stand on the cusp of a new era in American education. States are implementing the ambitious new Common Core State Standards, and technology is beginning to make good on the promise of new tools for teachers and more diverse and individualized content for students. But in the midst of these changes, schools, districts and states face immense challenges. Budgets are tight, and education technology systems are often duplicative or don't work well together. A patchwork approach to technology has kept important data and information from being accessible to students and teachers, while states and districts have struggled over what investments to prioritize to provide teachers with the tools they need and to give students the personalized educations they deserve.

Despite all the resources that have been invested and technological innovation that has occurred over the past 30 years, very little of it has made it into the classroom to help students and teachers. Teachers deserve to have the best-available user-friendly technology at their fingertips. They deserve tools that connect the dots between student information, such as test results, grades and learning history, and standards and curricular materials. With the right technology to deliver such tools and information, teachers can focus their efforts on the human art and science of teaching — the core of education that makes the biggest difference, not just in student learning, but also in students' lives.

Technologies do exist today that make personalized learning easier, but they either don't work well together or don't work with existing systems that teachers and students use every day. The broad adoption of the Common Core State Standards creates a unique opportunity to do things differently. States are working to raise the bar on education and, in turn, improve and align technology systems and teaching resources to these new learning standards.

With technology developed by the Shared Learning Collaborative (SLC), personalized learning informed by easily understood data could be the norm in every classroom. There is no reason why each state should have to tackle this challenge alone. This is why they created the standards, and why we formed the SLC.

Fulfilling the Promise of Technology in Education

Led by the vision of the Council of Chief State School Officers and nine participating states, and funded by the Bill & Melinda Gates Foundation and Carnegie Corp. of New York, the SLC is an alliance that aims to accelerate the progress of our public schools toward personalized learning for all students. The collaborative is designing a shared technology infrastructure that will support the implementation of the Common Core State Standards and help states and districts provide teachers with the instructional data and tools they need.

Instructional data will be linked to high-quality and diverse sets of curricular resources, so that each student gets what he or she needs most at that moment in time. And, because the Common Core State Standards create more consistency across states than ever achieved in the past, we have an opportunity to create an infrastructure that works better and costs less per state than what can be accomplished by each state working individually.

In addition to making instructional data more manageable and useful, this open-license technology, provisionally called the Shared Learning Infrastructure (SLI), will also support a large market for vendors of learning materials and application developers to deliver content and tools that meet the Common Core State Standards and are interoperable with each other and the most popular student information systems.

Frequently Asked Questions

What exactly is the Shared Learning Infrastructure (SLI)?

The SLI is a set of shared services that will connect disparate student data and learning content that currently exist in different formats and locations and don't integrate with one another. The SLI will include the following:

- **Middleware:** Software that integrates and orchestrates activities across different state systems, components and applications, enabling them to interact.
- **Dashboards:** Out-of-the-box dashboards to make student data more manageable and useful for educators in a customizable format.
- **Data store:** A secure, cloud-based repository for structured and unstructured learning data.
- **API:** an open application programming interface (API) to enable vendors and developers to create applications and content that can interface with the SLI.

What are the benefits?

By supporting a vibrant, multistate market for content and tools, backed by a set of powerful, nonproprietary, shared services to drive integration and interoperability, we hope to save teachers, schools, districts and states time and money, giving them greater

insight into what learning resources are most helping students — the ultimate beneficiaries.

In the earliest phase of the technology rollout, states and districts will be able to use the data integration and analytics to better understand what is helping students achieve success and where there is room for improvement. By joining a shared services model, states and districts will be able to save money and apply their resources to other local priorities. A common framework for a large market will also reduce procurement and provisioning costs.

As the project evolves, shared resources across multiple states will drive the market to build more and better academic tools and content to be deployed in the classroom. The rise of content and tools compatible with Common Core State Standards and findable via the SLI will enable teachers and schools to more easily find, evaluate and use teaching materials to support personalized learning.

When will it be ready?

The technology will be available for testing by developers, states and districts in early summer 2012 and will be in classrooms in the first five pilot districts by late 2012. The SLC is committed to incorporating feedback from teachers, developers, state leaders and other education partners every step of the way.

Nine states have joined in this effort and will pilot the implementation of the system in selected districts: Colorado, Illinois, North Carolina, New York and Massachusetts will implement in Phase 1; Louisiana, Georgia, Kentucky and Delaware will implement in Phase 2. These states all share a deep commitment to improving student learning by supporting teachers as they incorporate the Common Core State Standards into their classroom instruction. The goal is to complete implementation of the SLI for the initial nine states in 2013, when it will also be available to other states, districts and school networks.

How is this different from what's on the market today?

Although many states are already aware of and working toward technology systems that will meet educators' and students' needs, tight budgets and a patchwork approach has kept important data from being accessible to students and teachers. Meanwhile, states and districts have struggled over which investments will provide teachers with the tools they need and give students the personalized educations they deserve.

Components of the SLI are being designed based on feedback from teachers, state education teams and other education partners to work with existing state systems, content and applications. By working together, states have an opportunity to participate in an ecosystem that works better and costs less per state than what can be accomplished by each state working individually. The SLI will be nonproprietary and available on an open license. It will offer states, districts and teachers the choice of a wide array of tools

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and content for the classroom, including free and premium offerings from multiple vendors and content providers. With the ability to determine what content and learning applications work best across multiple states, teachers and administrators will have new insight into which curricular resources are most helpful to students so they can make smarter buying decisions.

Who will own the technology?

All software developed by the SLC will be nonproprietary, and a nonprofit will own and serve as steward for the intellectual property. During the development, Carnegie Corp. is leading a design process for long-term governance and management. To create a level playing field for large and small education technology and content companies, data management and analytics providers and application developers, the software will be available on an open license to any school district, state, vendor or content developer.

Who is paying for the project?

The Gates Foundation and Carnegie Corp. are funding the creation of the initial version of the technology, technical assistance to participating states, and the design of a nonprofit entity that can manage and sustain the SLI as a public good. States will bear some costs to integrate their existing data systems with the SLI and will choose their own contractors to perform this work. While the long-term governance model is still in development, the goal remains to enable states to save money by collectively adopting shared services, freeing up funding for states to invest elsewhere to meet the needs of their students and teachers.

Who will build the technology?

There are several components of the system, and they will be created by multiple contractors working in close collaboration with states, districts and teachers to build a system that is sustainable and not dependent on any one vendor. The vendor selected to develop the nonproprietary software to enable data integration and application interoperability is Wireless Generation. Other vendors will be selected for data and application hosting, development of a few core applications, and other key areas. All vendors developing parts of the core technology will operate under work-for-hire contracts, with no ownership of intellectual property created — all core components will be nonproprietary and available on an open license.

Who will provide the applications, and what will they cost?

The project is designed to enable an open market, where teachers will be able to easily access the content and tools their districts have purchased, as well as identify and select from other premium and free content and tools aligned to Common Core State Standards and other rigorous learning objectives. Application developers and content publishers of all sizes will have the opportunity to make aligned resources available through the SLI, giving them ready access to more customers. Because the SLI will allow data from many source systems and learning applications to interoperate with each other, it will also

connect classroom data to content and applications. Suppliers that make tools and content available through the SLI will retain their existing intellectual property rights, whether they have free or premium offerings.

What student data will be available through the SLI?

The SLC is committed to the Common Education Data Standards (CEDS) and will implement CEDS 2.0 in the SLI. We will also adopt the classroom-level data elements from Ed-Fi — a vendor-neutral application of CEDS with an XML exchange that permits interoperability among student data systems for grades K–12. The SLI will also be compatible with the Schools Interoperability Framework and a number of the most popular student information systems. Because of this, the SLI will enable data about each student's learning to be consistently formatted and made available to learning applications so that education agencies don't incur new integration costs every time they adopt new technology. States, districts and schools using the SLI will retain ownership and control of their data.

How will privacy and security be managed?

Because states, districts and schools using the SLI retain ownership and control of their data, they will also retain control of privacy and security policies around how that data is protected. Designing protections for student privacy will be addressed throughout the development of the system, and data access and usage models will be designed to support compliance with the Family Educational Rights and Privacy Act and other privacy laws.

For More Information

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