Data Needs Assessment Project

EXECUTIVE SUMMARY

**Prepared for
Virginia Department of Education
By Center for Innovative Technology**

Period of work 12/3/13 through 11/11/14

Overview

Historically, many educators have viewed data and data use in education settings in terms of accountability, as a means of drawing attention to inadequacies, or used as justification for punitive measures. This negative perception has some basis in fact, as evidenced by heightened calls for accountability in education and given recent revised definitions and measures across the nation. This paradigm, however, is slowly changing as educators have begun to realize that using data in everyday decisions can be a key tool in ensuring positive outcomes in a multitude of administrative, instructional and intervention strategies. Data have been used to help educators tailor curricula, identify at-risk students, customize classroom learning and improve students' college readiness.

In 2004, Virginia was at the forefront of innovative data practices when it implemented a decision support system for schools, school divisions and the Virginia Department of Education (VDOE). For 10 years, Virginia provided school divisions with state data via a data warehouse known as the Educational Information Management System (EIMS). That contract has since expired and Virginia desires a new product that combines state and local data.

The Search for a Solution

VDOE tasked the Center for Innovative Technology (CIT), a non-profit organization with a mandate to accelerate technology adoption, to conduct a multi-phased project to identify an effective solution for the data needs of Virginia educators and school divisions and to recommend a strategy to enhance their understanding of how data can be used to transform K-12 education in Virginia. The resulting plan would shift VDOE's interaction with the divisions as a static one-way collector of data with a focus on accountability to a support and service model.

The CIT team based its research and methodologies on the problem statement, "What do Virginia's K-12 stakeholders need and want in terms of data and data services, and what would be the best strategy to fulfill their needs for the next decade?" A secondary consideration was, "Are there already existing solutions that would address these requirements and how have other state departments of education approached this issue?"

Action Plan

The team realized that the single most important factor in the success of any new solution would be to understand the needs, wants, resources, and capabilities of the people who would be using it. The development of an action plan to transform the data culture in Virginia, therefore, would be reliant on the engagement of stakeholders, those "on the ground" users who could use data to produce the most impact on improved educational outcomes. All types and levels of stakeholders were consulted, from parents and teachers to administrators, and school board officials. By the end of the first phase of the project, more than 400 individuals participated in focus group activities and 97% of all school divisions participated in the effort.
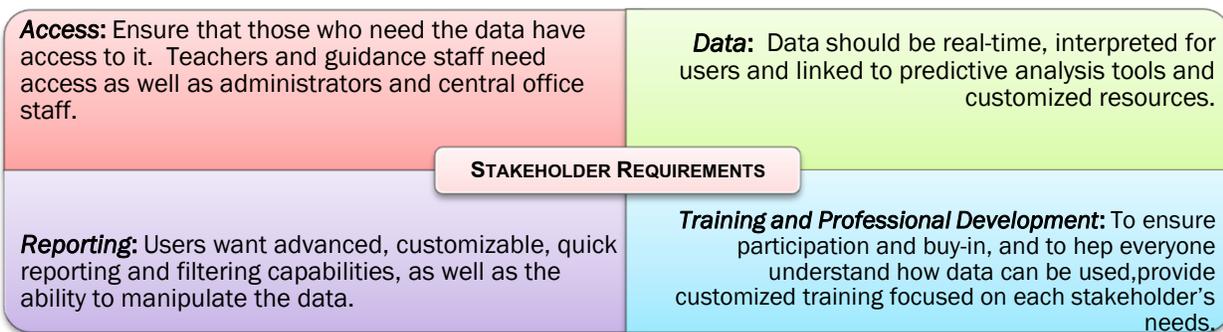
Throughout all the outreach events and activities, stakeholders were very candid in their assessments of user needs and in their recommendations for how to build a solution that would meet these needs.

Stakeholder Feedback

Stakeholders requested a unified data system that integrates state-level, division-level, and classroom data. Users need access to a full range of timely, relevant and reliable data that includes historical, growth, and predictive analysis features in order to make decisions and meaningful modifications in instruction in a user-friendly format.   Representative examples of stakeholder feedback include:

- The system should be intuitive and user-friendly, and the data display should be role-based.
- Users need access to a full range of timely, relevant and reliable data, including historical and growth information, in order to make better decisions and meaningful modifications in instruction.
- In order to guide instructional improvement, data should be interpreted for users and linked to predictive analysis tools and customized resources.
- Users want advanced, customizable, quick reporting and filtering capabilities.
- The system should support a linkage between the statewide instructional improvement architecture and the state and division IEP systems.

User requirements generally fell into four main categories:

Access: Ensure that those who need the data have access to it. Teachers and guidance staff need access as well as administrators and central office staff.	**Data:** Data should be real-time, interpreted for users and linked to predictive analysis tools and customized resources.
STAKEHOLDER REQUIREMENTS	
Reporting: Users want advanced, customizable, quick reporting and filtering capabilities, as well as the ability to manipulate the data.	**Training and Professional Development:** To ensure participation and buy-in, and to hep everyone understand how data can be used,provide customized training focused on each stakeholder's needs.

Stakeholders also repeatedly emphasized the need for professional development and training for the many levels of user experience and acumen. In addition to understanding what is available in the new system and how to navigate it, however, stakeholders felt that more of Virginia's K-12 staff would use data if

- they understood why data is important;
- they saw real examples of successful data use using actual student data;
- they could understand what analysis results mean; and
- they knew what next steps could be taken once analyses were complete.

Marketplace Trends

Another important step to determining a plan for Virginia was to examine the national landscape. After analyzing the feedback from stakeholders, the project team asked:

- What are other departments of education doing to provide data to their educators and how are they using their data?
- Are there any trends?
- How are others approaching training and professional development on data use and data systems?
- Is there something that already exists that would meet Virginia's needs?

To answer their questions, the team set out to speak with national leaders in data use in other state departments of education (DOE) and these leaders shared an overview of their data systems and the

role each state DOE played with respect to data exchange with their districts. Representatives from 13 states generously contributed their perspectives and feedback from the lessons they had learned during the evolution of their own systems.

In addition to learning how other states approached data exchange, the team decided it also was important to know what is available in the current technology marketplace and whether current commercial offerings and/or impending technology breakthroughs might match the requirements identified by Virginia stakeholders. Throughout the project, by synthesizing all the information gathered throughout these activities, the team stood up several models for how the state data solution might work. There were several feedback loops and proposed solutions underwent many revisions before a final solution was approved by the project's steering group (a 32-person group made up of representatives of the many roles and regions in Virginia).

Virginia's New Strategy

Virginia's new strategy will have two primary components: (1) Technology and Integration and (2) Professional Development and Division Support. From what the team learned, to build a data culture in Virginia and to eliminate the "if you build it, they will come" mentality, the new solution will combine a unified data system that will integrate the use of state, division, and classroom data with the development of a center for the promotion of ongoing training and professional development on the value of data use in decision making and how data can be used to strengthen Virginia's K-12 community.

Technology & Integration

The technology must meet the multiple demands of many different stakeholder types, a variety of division policies and processes, and must be compatible with an array of SIS vendors. This will be accomplished via an online interface that will allow divisions to access the state-level data and combine it with local data within their local student data systems. The revised solution not only will provide access to the state's student-level longitudinal data, it will generate unique student identifiers that will allow educators to track students over time and identify trends and gaps, it will produce electronic student transcripts, and, most importantly, it will allow users to perform analyses that will provide a more comprehensive view of students and their performance. Since the new system will be optional for school divisions, those who prefer to continue to use their own systems still will have access to state level student data via a direct web feed.
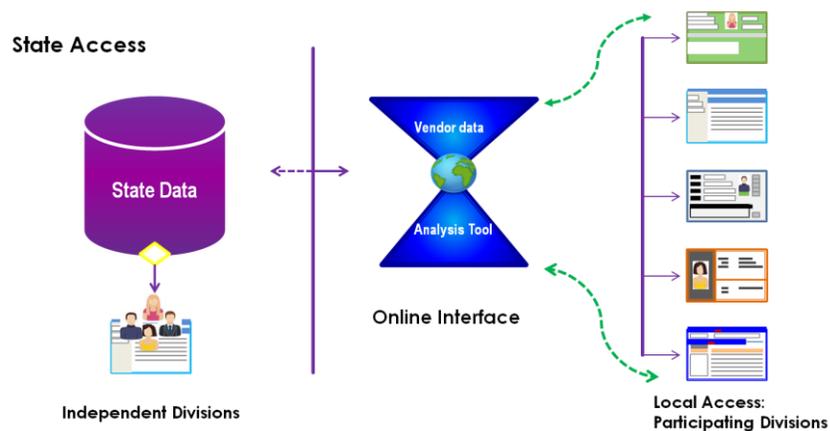

Figure 1. Model for Virginia's New Technology and Integration Component

Professional Development and Division Support

Given all stakeholders' needs for strong, comprehensive professional development in data use, analysis and interpretation and their desires for strong division support, VDOE will embark upon establishing a central data center that provides a single site for resources and all training and professional development needs on data and data use. Some of the themes cited by stakeholders as critical to building a culture of data-driven decision making included professional development opportunity vetting, and real-time immediate assistance in understanding data. Once teachers and other education professionals understand how to use and interpret data, they will recognize the value of data use in decision making and this new mindset will effect needed changes in the classroom, in schools and across divisions. Stakeholders in all roles can take part in professional development in order to

- recognize the value of data use in decision making;
- interpret data results to modify instruction, state or division level decisions or to apply necessary intervention techniques; and
- navigate all relevant features and resources within the technology component.

The Data Needs Assessment project is an important step in continuing the conversation with all stakeholders.

Looking Ahead

The first phase of the DNA project included thorough best practices research, stakeholder outreach and technology analysis that resulted in the delivery of a needs assessment to serve as an action plan for making the aforementioned shift. The goal of Phase II of the DNA project includes the implementation of a solution to support Virginia's educators in becoming more proficient with the use of education data. The framework for this plan includes two components:

(1) **Technology and Integration**: Identify, pilot and implement the online interface and web feed capability

(2) **Professional Development and Division Support**: Develop a model for an Education Data Professional Development Center and a master plan for its evolution. Create an outreach and communication plan to publicize the availability of these new tools.

The implementation of this framework will rely upon the development of a stakeholder-driven Request for Proposal (RFP) and the building of a blueprint for the architecture of a new Education Data Professional Development Center to address educating the state's K-12 community on data and how it can be used to transform education in Virginia. Generating a solution will take time and hard work, but will bring numerous dividends in the form of customized learning, stronger curricula, identifying and aiding at-risk students, and much more.