

# Case Study – Texas Student Data System

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While Texas has been a leader in education information management, its systems and processes did not evolve as fast as the demand for timely, transparent, accessible and actionable data. This case study outlines how Double Line Partners (DLP) on behalf of the Michael & Susan Dell Foundation developed, prototyped, and piloted a data solution to meet the growing demand for data in Texas. Double Line Partners played a leading role in updating the data collection standard and bringing educator facing dashboards and related training and support to Texas school districts. The educator facing dashboard developed by DLP will be available statewide to over 1,200 independent school districts and charter schools representing over 4.6 million K-12 students.

### Challenge

Local Education Agencies (LEAs) in Texas have faced challenges with the state’s legacy system for collecting and reporting education data<sup>1</sup> as the demand for data outgrew an aging data collection system. These issues include:

- LEAs spend significant time providing accountability data to meet state and federal requirements which costs LEAs an estimated \$323M annually
- Data that is shared back with LEAs is not timely nor in a very usable format
- Data rarely makes its way to the educators best positioned to improve student achievement

In 2009, the Michael & Susan Dell Foundation funded a multi-year contract for Double Line Partners to design, develop, and document a set of educator dashboards and the supporting data store that would bring timely data to educators and also supports the state’s efforts to modernize the accountability data collection requirements.

The goal of this groundbreaking project was to implement intuitive, user friendly dashboards that would put real-time student performance data in the hands of educators to improve student achievement. This also provided an opportunity to centralize the collection of student level data and make this information more transparent to educators thus reducing the collection burden on LEAs and charter schools.

### Approach

This multi-year project consisted of several stages of design and implementation.

- The first phase of the project was to design, develop and document a prototype for a set of dashboards using an early version of the Ed-Fi solution.
- Upon successful completion of the prototype, DLP began building out a full set of features and functionality to deploy to seven school districts in a live limited production release (LPR) environment. This LPR was designed to test the dashboards, training, and support model to build an understanding of what is required to scale the system and to gather “on the ground” user feedback to guide development leading up to the final production release.
- In the final year of the LPR, DLP continues to support the LPR districts while working closely with the Michael & Susan Dell Foundation who will transfer the dashboards and supporting artifacts to the Texas Education Agency (TEA) and the agency’s vendors for statewide deployment.

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<sup>1</sup> For more information about the findings and recommendations from the study, please refer to the [Texas Data Collection and Reporting Systems Investigation](#) (TDCARSI) report published January 27, 2009.

## Prototype

The prototype phase of the project consisted of several key activities: stakeholder engagement and dashboard design, development of the prototype system, and testing of the system with two volunteer school districts.

### *Stakeholder Engagement and Dashboard Design*

The initial work of the project focused on defining a set of dashboards informed by national research and best practices from over 20 urban school districts across the country. The intent of the best practice research was to identify metrics that would be predictive of student performance and provide actionable information to educators.

Using these best practices as a foundation, DLP facilitated a series of stakeholder engagement sessions with over 3,000 educators across the state to identify user needs and begin to build buy-in to the dashboards<sup>2</sup>.

DLP then translated findings from the stakeholder engagement process into development requirements for the dashboards which were used as a guide to create mockups and metric definitions for the initial set of student, campus, and district level dashboards<sup>3</sup>. This documentation was then used by the development team as a template to create the first working prototype of the system.

### *Development and Testing of the Prototype System*

The Texas prototype system was the first use case that leveraged the Ed-Fi solution to integrate data from multiple source systems (e.g., SIS, assessments, HR) via XML, into an Operational Data Store (ODS) which powered the prototype dashboards.

In four months, DLP was able to map district source system data to the XML schema, develop the ETL packages that calculate the dashboard metrics, and enable the connection and use of stored data in the ODS to stand up the dashboards for Lubbock ISD. This was the first proof of concept of the Ed-Fi solution and conceptual approach to moving data into an operational data store<sup>4</sup>.

With this learning, DLP spent the remainder of the year refining the system architecture, expanding and refining the metrics, enhancing functionality, and incorporating data from a second district. Prototyping the dashboards with two districts began to build the knowledge base of lessons that could inform efforts to implement the dashboards at a large-scale, statewide.

## Dashboard Implementation – Limited Production Release

After delivery of the prototype in 2010, the Michael & Susan Dell Foundation extended Double Line Partners' scope of work to implement the dashboards across seven districts in a limited production release. While the statewide system will not be live until the 2013-2014 school year, this LPR environment has provided an opportunity to run the system in a live setting to test many aspects of operations and support.

Key activities that DLP has been supporting during the Limited Production Release include:

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<sup>2</sup> For more on how stakeholder engagement results in successful system design, please see the [DLP authored white paper](#). For more details on the findings and recommendations from the stakeholder forums held in 2010, [please see this report](#).

<sup>3</sup> For more on the metric definitions and best practices, please see: <http://www.ed-fi.org/tech-docs/1.1/metrics.html>

<sup>4</sup> For more on lessons learned from the prototype phase of the project, please see white papers from [Prototype Release 1](#) and [Prototype Release 2](#).

Running a live production system for a set of seven diverse districts across the state and providing system level support in partnership with one of the state regional service centers (ESC 10).

Assisting student information system (SIS) vendors with building tools to extract dashboard data using the Ed-Fi solution for the limited production release districts including:

- Creating vendor documentation and holding a series of in-person meetings and webinars to train vendors
- Reviewing and testing of vendor work product
- Supporting vendors following the launch of their extractor in an LPR district

Continuing development of dashboard content and functionality largely based on LPR user feedback.

Acting as the primary point of contact with districts to manage the on-boarding, technical implementation, educator training, feedback and support functions.

Developing and refining a comprehensive set of technical and user training materials for districts.

These activities have generated invaluable insights into vendor and district data and instructional practices prior to the large scale deployment.

### **Supporting Transition to Statewide System**

In addition to supporting LPR districts, DLP is currently working with the Foundation to leverage the LPR application code base and provide the necessary enhancements to scale the dashboard application for statewide deployment. This includes transferring the knowledge based developed during the limited production release to TEA and the agency's vendors responsible for statewide deployment.

### **Impact**

This was the first state in which an early concept of the Ed-Fi solution was tested and successfully demonstrated that data from multiple systems could be integrated to power a set of timely, easy to use, dashboards that track student performance. Within Texas, the Ed-Fi-powered StudentGPS dashboards are available to over 9,000 K-12 educators representing nearly 200,000 students across seven school districts in the state

Through multiple forms of stakeholder feedback throughout the development cycle, DLP has been able to continually enhance the dashboards and ensure the [Texas Student Data System](#) is meeting the needs of educators and students. The feedback from the district educators and administrators has been overwhelmingly positive with numerous success stories relating to identification and monitoring of student performance in ways never before possible.

The limited production release environment has provided the Foundation a unique and valuable "testbed" to inform the technical specifications and assumptions, customer support models and tools, and dashboard training approaches for the statewide deployment.