Community-Sourced Technology Allows Michigan Data Hub to Streamline Data Sharing While Preserving Local Control

Executive Summary

Organization
Wexford-Missaukee Intermediate School District

Project
Michigan Data Hub

Challenge
- Time and cost associated with integrating a wide variety of student-related information systems
- Any solution must enable system interoperability across a variety of vendors and data sources
- Schools, districts, and intermediate school districts have strong culture of local control

Solution
- The Michigan Data Hub advisory team selected the Ed-Fi Data Standard and the accompanying suite of technology components developed by the Ed-Fi Alliance

Results
- The Michigan Data Hub cost-effectively enables the integration of disparate systems with improved data quality and reduced effort
- Schools and districts own and control their data without having to invest in a new SIS
- Educators have access to real-time information about student attendance, behavior, and achievement

"It's the best solution I've seen in that it standardizes data in an open fashion across districts, states and vendors. It is a great hybrid approach between the districts, ISDs, state, and national needs to make data consistent, shareable, and usable in each environment."

- Kurt Rheaume
Manager, Student Information Systems
Wayne Regional Education Service Agency

Overview

Michigan sees enormous value in creating a more efficient, streamlined, single source of student information that supports and preserves local control. When fully implemented, the envisioned system will solve data integration issues identified in the original focus of the project and provide educators, parents, schools, and districts throughout the state with data that will help improve student achievement. Such a system would also supply policymakers with up-to-date and reliable data that will better inform their decision making.

Currently, Michigan's school districts don't have a timely way to access data consolidated from all of their systems. Additionally, at the state level, policymakers don't have the access—or the resources—to align or efficiently share aggregated state and local data with districts which would provide them with more valuable and timely data analysis and insight.

Faced with this crippling information gap, a group of local school districts and Intermediate School Districts (ISDs) came together to search for a cost-effective solution that would improve the usefulness and efficiency of their existing data systems while also preserving local control of their data. With the help of a state-funded grant, coordinated through the Michigan Department of Education

(MDE), the Michigan Data Hub project was established as a local and regional initiative. Its goal is to create a systematic way for all districts to use Ed-Fi technology and related tools to collect, organize, standardize, and house data in a consistent manner. The data can then be used to generate a uniform set of reports throughout the school year for administrators, educators, and policymakers.

By design, the Michigan Data Hub meets the needs of both the state and school districts. Representatives from the Center for Educational Performance and Information (CEPI) and MDE have been included in the project to facilitate discussions on how the data hub would align with data collected at the state level and local level. That collaboration has led to a broader vision of the project that supports local control of data systems, data access, and data usage while also providing alignment with state level data initiatives through CEPI, MDE, other state agencies and for legislative needs.

Background

During the 2012-13 school year, State of Michigan funds were allocated for a variety of projects under the Technology Readiness Infrastructure Grant (TRIG) to prepare schools for online learning and online assessment. One of the projects, Data Integration, was created for the purpose of addressing the proliferation of school data systems and the challenges of using data in a siloed information environment. While the initial intent was to reduce the number of data systems, the real need was to improve the use of educational information and reduce the associated costs and data-quality issues. Michigan districts needed a way to integrate all of their school data systems in a standardized and cost-effective manner regardless of which data systems they used such as student management (SIS), assessment, data warehouse, library, special education, or transportation.

There was also a need to standardize data from across the state into a format that could be used to meet state and federal reporting requirements in a way that was easier and more efficient than the data submission processes already in place.

By aligning these different systems to a common data standard, districts would be able to access and analyze data from multiple sources and produce reports that provide a much more robust picture of the status of education at the local, regional, and state levels. Moreover, these connections would give educators even greater insight into student achievement and enable schools to implement helpful programs and interventions for students.

"It is a long-term solution that will benefit the students in the state for a long time into the future. The cost savings from eliminating redundant systems and processes should garner long-term support from districts and allow them to use resources more efficiently and effectively."

- Tim Hall
  TRIG Project Director

Challenges for the Michigan Data Hub Project

Using TRIG grant funds awarded by the state, the Wexford-Missaukee Intermediate School District initiated the Michigan Data Hub project. The project is led by a project

manager from Kalamazoo Regional Educational Service Agency, and is guided by an advisory committee of ISD and local district staff representing every TRIG region of the state.

Because the Michigan Data Hub project will span several years and involve a large number of stakeholders and deliverables, it has and will continue to face many challenges on its implementation journey. This made it was crucial that project leaders select the right technology solution.

Some of those challenges include:

System Interoperability – There are many SIS vendors operating in Michigan, with six vendors sharing 93% of the market. The solution must provide an efficient way to standardize student data from multiple vendors across the state and enable system interoperability across a variety of data sources (e.g., health, transportation, food services) to give administrators and educators and more complete view of the connection between programs, services, and student outcomes.

Data Integration & Sharing – Michigan needed a way to facilitate the exchange and integration of data from districts to ISDs and distribute standardized data, dashboards, and reports back to districts and schools.

Transition Time & Cost – Creating a statewide information interchange system from the ground up involves a tremendous time and financial investment. The solution needed to be both efficient and cost-effective.

Broad Stakeholder Access – The solution must provide manageable access to data dashboards and reports for all stakeholders. Administrators, educators, and policymakers require up-to-date information about performance, behavior, and programs so that they can assist with identifying necessary interventions to improve student achievement.

The Importance Local Control – Because schools, districts, and ISDs throughout Michigan have a strong culture of local control, the solution had to be vendor-neutral, enabling local ownership of data and local control over vendor, hardware, and software selection.

Ed-Fi Technology Solves a Wide Range of Issues

After reviewing many data standardization, exchange, and use models, the Michigan Data Hub advisory team selected the Ed-Fi Data Standard and the accompanying suite of technology components developed by the Ed-Fi Alliance to serve as the backbone for bridging data between systems.

"It is helpful to be able to work not only within our own state to save money, but also with a collaborative of states across the country through the Ed-Fi Alliance that have created new solutions that become part of the Ed-Fi core and are available for other states to use."

- Dirk Bradley
  Data Warehouse
  Programmer/Analyst
  MiCase

Because Ed-Fi technology is community sourced and field tested through proven use cases in K-12 education across the country, Michigan is relying on the technology to save money by using the tools that have been developed and refined in other states and districts. The Ed-Fi technology will also allow Michigan to spend more time and resources developing tools and technology that focus on their unique goals of distributing data back to districts and connecting SIS data with other data systems.

The Ed-Fi Data Standard supports broad data integration and interoperability across a variety of data sources and vendor solutions. That means districts do not need to spend money to replace their existing data systems. Using the Ed-Fi Data Standard, the Ed-Fi Operational Data Store, and accompanying API, data from each SIS and supplemental data source can be mapped to the Ed-Fi Data Standard and then stored, aggregated, and shared back with schools, districts, and ISDs in a consistent manner.

In future implementation phases, the Michigan Data Hub plans to use the Ed-Fi Dashboards to provide teachers and administrators across the state with consistent and timely data that guide student instruction and interventions. The dashboards will be supplemented with data from CEPI, MDE, and other state agencies to provide for more robust, valuable and actionable data for educators.

The Michigan Data Hub, powered by the Ed-Fi Data technology, is designed to yield a wide array of benefits for education stakeholders in Michigan, including:

- Teachers and students will benefit from higher quality data and real-time detailed information about student attendance, behavior, course, program and performance information that will guide instruction and interventions.

- District and school administrators and teachers will benefit from higher quality data and near real-time information about their students through the Ed-Fi Dashboards. The Dashboards will reduce the amount of time administrators spend creating their own reports and assist with decision making about resource allocation and program implementation. The Michigan Data Hub will also support with the timely sharing of student records between schools for mobile students.

- District and ISD information technology staff (e.g., data base administrators, SIS managers, data warehouse programmers, and analysts) will benefit from statewide state-of-the-art processes and technology that are more cost effective. Districts will not have to build and maintain their own data dashboards, and ISDs will not have to expend resources to standardize data across districts.

- SIS vendors will benefit from the development of connections between their products and the Ed-Fi Data Standard that can be used statewide and with clients in other states. Increased system interoperability across data

sources (e.g., SIS, assessment, transportation, and food services) improves the use and functionality of their products.

- The state will benefit from more timely and higher quality data from districts. By sharing business rules and error checking processes with the Michigan Data Hub, data quality checks are completed prior to submitting data to the state. Since the data it receives will already by standardized and validated by the Michigan Data Hub, the state will be able to spend more of its resources making statewide data usable and actionable and less on managing compliance and integration.

- The public will benefit from improved and cost-effective data systems with usable information about the performance and progress of students, schools, and districts over time.

Ongoing Implementation Efforts

During the spring of 2015, a total of 26 districts volunteered to participate in a pilot transition to the Michigan Data Hub. At that time, 91% of Michigan's school districts (representing 96% of public school students) were using a SIS vendor that is aligned with the Ed-Fi Data Standard, amounting to an increase from 83% of the districts (representing 87% of the students) in 2014.

During the next implementation phase, which extends through 2016, the goal is to increase participation to 20% of Michigan's districts. Through continued alignment with SIS vendors and the Ed-Fi Data Standard, the Michigan Data Hub will benefit almost all students and schools statewide when fully implemented.

According to TRIG Project Director Tim Hall, many superintendents and administrators expressed great interest in the Michigan Data Hub as well as an eagerness to engage after learning more about the Ed-Fi Data Standard and Ed-Fi Dashboards.

"It is a long-term solution that will benefit the students in the state for a long time into the future," says Hall. "The cost savings from eliminating redundant systems and processes should garner long-term support from districts and allow them to use resources more efficiently and effectively."

Ultimately, by choosing community-sourced Ed-Fi technology, Michigan's policy makers get better-quality data at an affordable cost, school districts maintain control over their data and have the freedom to choose how their system operates, and SIS vendors can more easily develop solutions that can be used by all school districts.

Every stakeholder will have their cake and be able to eat it too!

About the Ed-Fi Alliance

The Ed-Fi Alliance is an organization leading the movement to improve K-12 education by unlocking the potential of untapped, valuable data that is collected by states and school districts every day.

The Ed-Fi Data Standard is the leading educational data standard and serves as the foundation for enabling interoperability among secure education data systems designed to improve student achievement and teacher satisfaction. Ed-Fi technology builds secure bridges between disparate data systems, empowering teachers with real-time, actionable insights so they can better understand the individual needs of every student in their classroom.

To learn more about the Ed-Fi Alliance, the Ed-Fi Data Standard, and the Ed-Fi Operational Data Store please visit Ed-Fi.org.