

Legislative Report
for
2018-2019
Section 22m

Michigan Data Hub
Grant Progress

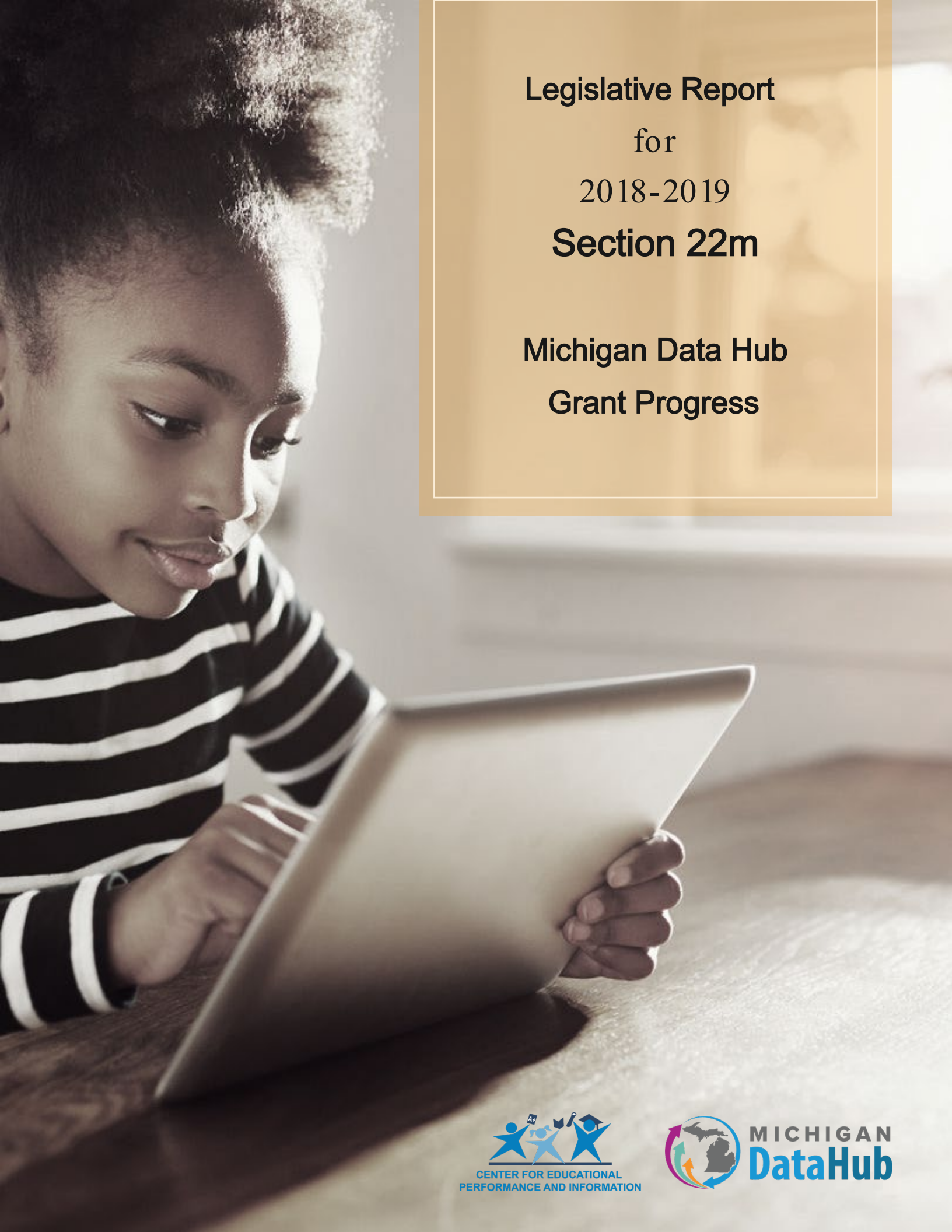


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Foreword

It has been an incredible year of progress for the Michigan Data Hub. The addition of a new focus on “Actionable Data Use” brought new collaborative team members who continue to drive the work around student-focused needs and priorities. This focus sharpened the MDH vision toward supporting educators and students, and with that, brought a renewed sense of purpose and urgency in accomplishing key project goals outlined by the legislature in section 22m of the State School Aid Act. The state, regional and local partners contributing to this work remain dedicated, energized and committed to the long-term gains that are beginning to take shape.

The project continues to evolve and mature in the very capable hands of Don Dailey from the Kalamazoo Regional Service Agency continuing to serve as the project director, and with Tom Johnson now serving as the Actionable Data Manager. These professionals from within the education community are leading the work with a laser focus on finding the most efficient and effective approaches to transforming data into useful information that can be readily leveraged throughout the entire education ecosystem. From teachers, students and parents to education leaders, administrators and policy-makers, there are tremendous information gains being discovered and leveraged at the local, regional and state levels. From the hard work of building the standards-based architecture to the discovery and development of big ideas that demand the availability of high-quality information to support teaching and learning, the MDH team remains on target with these collaborative efforts.

To say that only two skilled professionals are making everything work would understate the importance of this collaboration and the team of skilled professionals involved statewide. Please see appendices E and G to get a sense for how many people from many organizations statewide believe in the power of this collaboration and have made the commitment to supporting the MDH toward enhancing the delivery of services to their regions, districts and colleagues across the state. We hope the report provides you with a view into the work of these dedicated civil servants while giving you a sense for the power the MDH offers.



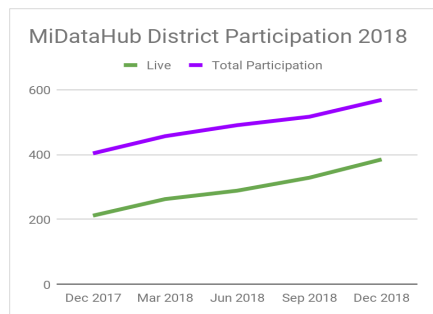
Thomas Howell
Executive Director
Center for Educational Performance and Information (CEPI)

Executive Summary

MiDataHub solves the problem of time-consuming, redundant, and inaccurate data entry. School district personnel can now enter all of the student information “within just a few minutes” rather than taking “days, weeks, or sometimes months.” Michael and Susan Dell Foundation

SEE www.midatahub.org FOR A SHORT ANIMATED VISION OF MIDATAHUB

PROMOTING 100% DISTRICT ADOPTION



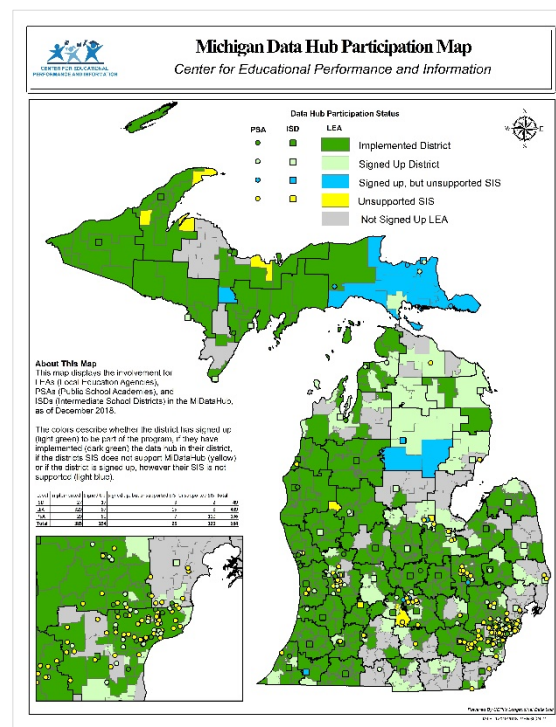
Active district connections to MiDataHub infrastructure have increased from 212 at this time last year to 385 today. Total participation increased by 173 for a total of 585 districts. As of December 2018, 569 or 64% (map right) of all public local and charter districts, representing 1,125,032 or 74% of Michigan’s K12 students are participating. Of these, 385 districts are connected and sending data daily.

EMPOWERING SCHOOLS AND VENDORS TO WORK TOGETHER

MiDataHub has enabled vendors Eidex, NWEA and SAS to scale connectivity to their products rapidly. Eidex leads the way with 120 districts providing connectivity. SAS has 119 districts providing data for their EVAAS tool, and 116 districts are configured to load their NWEA assessment data into MiDataHub. Other vendors are also beginning to leverage this valuable resource.

INTEGRATING SCHOOL DATA SYSTEMS

The Michigan Data Hub (MiDataHub) is currently providing 1,837 active connections (integrations) between school data systems today, a 300% increase from one year ago. The total value of these integrations is **\$12,700,233**. This is money that districts would otherwise spend to make similar connections or manually enter data, thus allowing schools to invest these resources more directly in the classroom.



Actionable Data

Over the past year, opportunities have arisen to leverage MiDataHub to enhance statewide legislative initiatives, to support teaching and learning directly through the use of actionable data, and to provide for additional productivity. Examples in three areas; Legislative Initiatives, Active Integrations, and Classroom Supports are highlighted below. These value-added features are opportunities that exist solely because of the standardized flow of data through MiDataHub and referred to as **‘Powered by MiDataHub’**.

SUPPORTING OTHER LEGISLATIVE INITIATIVES

1. **3rd Grade Reading Law**, section 1280f: Revised School Code: Pilot schools are now testing the MiRead Web Application. Collaboratively developed by Michigan’s ISDs and educational associations, MiRead is built to support creating and sharing Individualized Reading Improvement Plans (IRIPs). The MiRead System is currently being piloted in six districts with expected statewide availability for the fall of 2019 (71%) (See pages 23-24 for more details)
2. **Student Growth Percentiles (SGPs), value added measures (VAMs), and educator growth and evaluation**. In support of two specific legislative initiatives, SGP ([section 380.1248](#)) and VAM ([section 388.1695b](#)), Eidex and SAS EVAAS now rely on data provided exclusively through MiDataHub to support use by educators across Michigan. Without MiDataHub integration these vendors would be unable to provide the critical classroom and student specific data needed for schools to use their tools. Over the past four months nearly 240 districts have integrated and begun using these tools to support their improvement and evaluation efforts.
3. **Eidex** — Funded in part by Section 102d of the school aid act, nearly 350 local districts and 200 charter schools are using the Eidex Insights tool. Powered by MiDataHub, Eidex has dramatically expanded its feature set for schools. Over 110 districts are now using these features, with new districts coming online every week.

TOP DOZEN ACTIVE INTEGRATIONS

1. Ed-Fi Dashboards (317 districts)
2. PowerSchool (263 districts)
3. MiLearn (176 integrations, 72 districts)
4. Eidex (120 Districts)
5. SAS EVAAS (119 districts)
6. NWEA (116 districts)
7. M-Step (111 districts)
8. Skyward (81 districts)
9. Career Cruising (67 districts)
10. MiStar (50 districts)
11. Synergy SIS (48 districts)
12. Infinite Campus (25 districts)

ACTIONABLE DATA EFFORTS

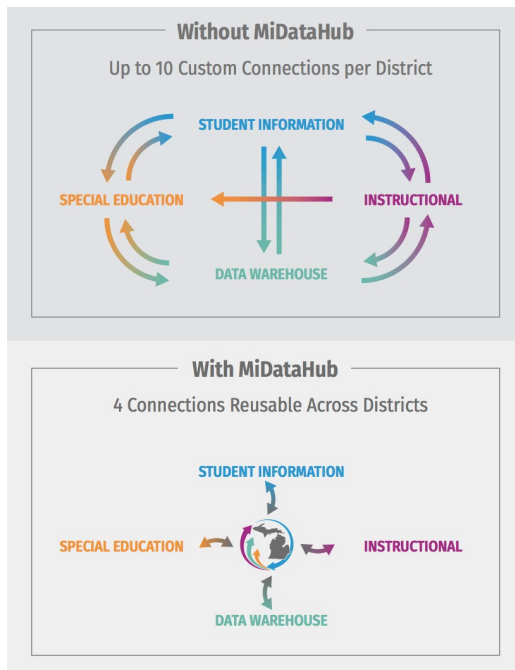
1. The MiRead Literacy Portal, supporting K-3 literacy in the classroom and the implementation of the 3rd grade reading law, is being pilot tested in six districts.
2. The MiStrategyBank application is integrated and providing research-based strategies to MiRead.
3. 72 districts are using MDEs MiLearn portal to provide students, parents and teachers with direct online access M-Step, WIDA, and MiAccess assessment results.
4. Over 200 districts have M-STEP and/or NWEA data loading into their dashboards.

Introduction

Section 22m legislative language requested the following...

“Not later than January 1 of each fiscal year, the center shall prepare a summary report of information provided by each entity that received funds under this section that includes measurable outcomes based on the objectives described under this section. The report shall include a summary of compiled data from each entity to provide a means to evaluate the effectiveness of the project. The center shall submit the report to the house and senate appropriations subcommittees on state school aid and to the house and senate fiscal agencies.”

The Executive Summary and Actionable Data section above are designed to provide a standalone two-page overview and highlight a few of the key areas of progress and impact. The ‘Findings’ to follow and reference appendices offer a more detailed accounting of the progress to date as related to the eight goals outlined in the 22m legislation. This progress report, in the context of 22m funding, is based on a full year of grant funding.



What should become clear in a review of this document is that:

- district adoption is increasing rapidly,
- schools are saving considerable time and money,
- MiDataHub has created an ecosystem to support equity in school data,
- and a diverse array of educational efforts are being supported and enhanced.

Already supporting students, parents, teachers, administrators, schools, districts, MDE efforts, and CEPI requirements, the importance of maintaining this effort grows daily. By interconnecting and streamlining access to, use of, and improving the quality of educational data for all stakeholders, MiDataHub is demonstrating a multi-fold return on investment (ROI). Last year, we reported that the value of the integrations facilitated by MiDataHub was \$1,408,057. This year that number has increased to well over \$12,500,000; a tremendous return

on the annual legislative investment in public education.

At its core, MiDataHub simply and dramatically reduces the number of integrations (connections to move data between data systems) that are created and managed by Michigan schools. This reduction statewide is from tens of thousands of redundantly created and managed integrations to less than one hundred, all centrally managed on behalf of all of Michigan’s local and charter public schools. The

images, above, demonstrate this reduction for one district and with only four of the typical nine systems a district uses. Replicating this process for 900 districts dramatically amplifies the savings.

Findings

LEGISLATIVE GOAL 8A

CREATING AN INFRASTRUCTURE THAT EFFECTIVELY MANAGES THE MOVEMENT OF DATA BETWEEN DATA SYSTEMS USED BY INTERMEDIATE DISTRICTS, DISTRICTS, AND OTHER EDUCATIONAL ORGANIZATIONS IN MICHIGAN BASED ON COMMON DATA STANDARDS TO IMPROVE STUDENT ACHIEVEMENT.

The Michigan Data Hub team has established an infrastructure of five fully functional data hubs that have the capacity to effectively manage the movement of educational information statewide. The five hosting locations are Copper Country ISD, Kalamazoo RESA, Kent ISD, Oakland Schools and Wexford-Missaukee ISD. All five data hubs are connected via a virtual private network to keep MiDataHub separate and protected from other systems. Work is underway to consolidate the database portion of the five hosting locations into a single data server that will be replicated for improved reliability. Further, MiDataHub hosting locations are all linked by 100Gb high-speed connections via the Statewide Education Network (SEN), allowing for the traffic to be securely handled within Michigan rather than the commercial Internet.

In partnership with the Michigan Collaboration Hub (MiCH), the SEN, and the Michigan Educational Technology Leaders (METL), the MiDataHub team is exploring additional hosting options including cloud hosting. This work, initially called MiCloud, is a broad-based exploration of available options and cost effectiveness for MiDataHub as well as other collaborative initiatives that are being explored. Recommendations for future hosting options are expected in 2019.

The movement of data is managed through use of the Ed-Fi Alliance data standard. This standard is based on the Common Education Data Standards (CEDS), which is the same data standard that state agencies use to report their data to the federal government. Currently 30 of the 50 states have adopted this standard. Although not the first to adopt this standard, Michigan has been a leader and a pioneer in the use of the Ed-Fi standard for interoperability purposes. While the standards-based interchange of data is the “how”, the improvement of student achievement is the “what” that really matters. In 2019 MiDataHub will update its use of the Ed-Fi standard first to version 2.4 and then to version 3.1. These updated versions will allow Michigan to continue moving forward in connecting to the various products used throughout the state.

One aspect of effectively managing the movement of data is to ensure that the system is always available and functional as needed. The data hub team tracks the number of minutes that the system is down and compares that to the number of minutes the system could possibly be available to determine an uptime percentage. The metrics established to receive the grant funds indicated a target of 99.x% uptime. Through 12 months of the 22m funding from January to December, the uptime has averaged 99.9%, meeting this goal. This will continue to be tracked during the funding year to ensure that uptime remains at or above this level.

In addition to Ed-Fi, another standard that is being used for interoperability is OneRoster. OneRoster was created by IMS Global, which has created interoperability standards for other types of information, including educational resources. OneRoster is much narrower in usage than the Ed-Fi standard, in that it

focuses solely on student roster information. However, roster information is what many educational data systems need. As such, implementation of the OneRoster API on top of the Ed-Fi data store allows MiDataHub to be multilingual. When a system needs just roster data, the OneRoster API becomes an option for that. When more robust information is needed, or data needs to flow bi-directionally, the Ed-Fi API is preferred. Work on a read-only version of the OneRoster 1.1 API was completed in 2018 and several vendors were able to successfully access the API for districts. These vendors include Discovery Learning, Follett, Houghton Mifflin Harcourt and Microsoft. Going forward, any application that can use the OneRoster API can automatically be integrated with MiDataHub. This functionality will accelerate the integration of data systems and drive district adoption. With the success of the OneRoster read-only API, development work will be completed in 2019 to allow for assessment data to be written via the API, adding more flexibility and options for district users.

New to the MiDataHub infrastructure in 2018 was the creation of the Michigan Data Exchange (MiDataExchange), which was created to provide data for applications such as MiRead and MiStrategyBank applications. Typically, district data is stored in an operational data store (ODS) specific to that district. When districts opt into MiDataExchange, the portion of their data that is needed to power statewide applications is put into the data exchange. That allows for districts to have the data that they need for the applications, and to create student plans and other content that can move to other districts as the student moves.

MiDataHub's use of data standards has also had a tremendous impact on state agencies such as CEPI and MDE. These agencies use state-specific data elements and data structures; however, data standards were not implemented between their collection systems, longitudinal data system (MSLDS), and public-facing web portal (MI School Data). Because of this, multiple transformations of the data are necessary to move data between systems, and modifications to any data element can have a significant effect at all levels.

CEPI and MDE have begun planning for a revision of their data elements and structures to be based on the nationally recognized Common Education Data Standards (CEDS). These elements and structures would be standardized across the collection systems and MSLDS. Further, the MI School Data portal is being redesigned to be more flexible and streamlined, reading data from MSLDS instead of having its own set of data elements/structures.

LEGISLATIVE GOAL 8B

UTILIZING THE INFRASTRUCTURE TO PUT IN PLACE COMMONLY NEEDED INTEGRATIONS, REDUCING COST AND EFFORT TO DO THAT WORK WHILE INCREASING DATA ACCURACY AND USABILITY.

In the first several years of the project, the major focus was on the integration of student information systems, as they represent most of the data that districts track. Now that the SIS integrations are largely functional, efforts are ramping up to achieve additional vendor adoption. As of the last legislative report, there were 15 integrated systems with 569 instances of those integrations in use. As of this report, 28 systems are integrated, with 1,837 instances of those integrations in use.

To improve the process for onboarding and supporting vendor partners desiring to integrate with the Michigan Data Hub, a vendor relations manager position was created. This position involves gathering integration needs from the field, engaging identified/prioritized vendors, coordinating vendor status meetings, conducting monthly webinars, overseeing vendor certification, creating and managing a

vendor advisory board, monitoring data quality of integrated systems, facilitating vendor support through the development process, developing models for sustainability, and ongoing vendor relations.

Details of several of the integrations already in place or underway are detailed below:

EIDEX AND SAS EVAAS

Starting in 2018, the Michigan Department of Education recommended school districts use either the Student Growth Percentile (SGP) and/or Value Add Measurement (VAM) in determining the impact of instruction using state assessments for teachers of record in grades 4-8, and that districts would use only one of the two models for this purpose. For VAM, MDE allocated legislative funds to provide access for this tool. For districts pursuing SGP, Eidex is available (at cost) for calculating this measurement. Both products developed integrations with MiDataHub to extract required data elements for each measurement calculation. In addition to streamlining current imports from MiDataHub, both vendors are exploring future integration development efforts with importing State Assessment data (M-STEP), and other critical assessment data required for the growth models. As of December 2018, current integration totals for both SAS EVAAS and Eidex are below. Please note, this does not account for each system integrating to pull multiple years of data (most districts have integrated three years of historic data for us in these systems) from each district’s ODS:

| Vendor | # of active integrations |
|-----------|--------------------------|
| SAS EVAAS | 119 |
| Eidex | 120 |

“Uploading district data efficiently and accurately to Eidex is a key component to client satisfaction and usage. Doing so ensures that district administrators have access to key information to drive academic and financial decision-making across multiple levels. Recognizing that connecting attendance, behavior, and assessment data to the Hubs would dramatically reduce the amount of time required for districts to gather and upload data to Eidex, we have readily encouraged integration. Integration means automation, thus reducing potential for error as files are transferred from one location to another. As of December 10, 100 districts have connected with the DataHub and integrated with Eidex, with several hundred following suit helping to ensure a wonderfully rich flow of data across the state. Perhaps one of the greatest benefits of the collaborative efforts between Eidex and the DataHub has been the ability for our teams to reach a much wider audience. With our efforts in tight alignment, Eidex and DataHub teams can offer insight, provide technical support, and engage in meaningful data-driven discussions that would be far more difficult to come by were we each working on our own. Most importantly, it becomes abundantly clear to the districts we each work with, that all the efforts put forth by our collaboration are done in name of deeply impacting teaching and

learning through best practices in data across the State of Michigan.” — Doug LaFleur, President / Eidex

“SAS EVAAS uses the data elements captured from the MiDataHub to provide teacher-level growth measures. These data elements identify which teachers were responsible for an individual student’s instruction as well as the teacher’s percentage of instructional responsibility for that student in the tested subjects and grades. By partnering with the MiDataHub we have been able to receive this data in a timely and efficient manner which is integral into us keeping up with our deliverable timelines. Also, being able to leverage the MiDataHub’s technical support and communications support teams to help get the word out about SAS EVAAS in the State of Michigan and solve end users’ problems quickly has been very helpful.” — Scott Peoples, Project Manager SAS EVAAS

SWIS

The Schoolwide Information System (SWIS) provides for tracking of student discipline referral information. Used by many MiBLSI school districts, integration of SWIS is a highly requested feature for MiDataHub. A comma separated value (CSV) extract process for MiDataHub was developed to provide student and staff information to SWIS. This was successfully completed for two districts, with many others interested in implementing the work. Further, development was started on the process of importing referral data from SWIS for use in early warning systems and state reporting. This work is expected to be complete in the first quarter of 2019.

MI SCHOOL DATA

The MiDataHub team is partnering with CEPI, Macomb ISD and Shiawassee RESD to oversee the implementation of the MI School Data Redesign Grant, which will facilitate the redesign and modernization of the MI School Data portal. The goal is to provide information in a more intuitive, comprehensive, and actionable manner. The work will also involve aligning the MI School Data portal as well as the Michigan Statewide Longitudinal Data System (SLDS) to the same standards used for MiDataHub, allowing those systems to more easily exchange information where beneficial. A final piece of that work would allow for the MiDataHub Single Sign-On (SSO) to be used to authenticate users to MI School Data and vice versa.

M-STEP — (MICHIGAN STUDENT TEST OF EDUCATIONAL PROGRESS)

The M-STEP assessment is an online test assessed for the first time during the Spring of 2015. This statewide adopted assessment will assess how well students are mastering the state standards. These standards highlight what students should know and be able to perform in preparation to enter the workplace, career education training, and college. These results, when combined with classroom work, report cards, local district assessments and other tools, offer a

comprehensive view of student progress and achievement. In October new functionality was released that brought one of the more anticipated features school districts have been waiting for. This functionality provides the delivery of M-STEP results directly from the State of Michigan data systems to the data hub database (ODS) for each district that configures the integration. As of December 2018, 111 districts have now opted into having M-STEP results load into their data hub database on a nightly basis. In addition to the M-STEP results in each district's ODS, results are also available in the Ed-Fi/MiDataHub dashboards. As of December, Spring 2016 and Spring 2017 results are integrated. We are anticipating Spring 2018 results to be available sometime shortly after January 2019.

The configuration steps for this integration are minimal and documented on our documentation site located at www.midatahub.org. By completing less than a minute of configuration, this critical assessment data will be populated for a school district within 20 minutes. Interest from school districts is growing for Student Information System vendors to begin importing this data to allow easy access directly from the Student Information System.

Most importantly, the integration of M-STEP results through MiDataHub provides districts and educators with historical results for new students enrolling from other districts in Michigan. When a new student enrolls in a district, within 24 hours, historical MSTEP assessment results are loaded into the new district's ODS and dashboards, allowing educators to quickly and easily review past performance and better prepare to educate their new student. In the past, access to this data took at best weeks but typically never happened, requiring educators' months to understand and adjust to the specific needs of the student.

MEAL MAGIC

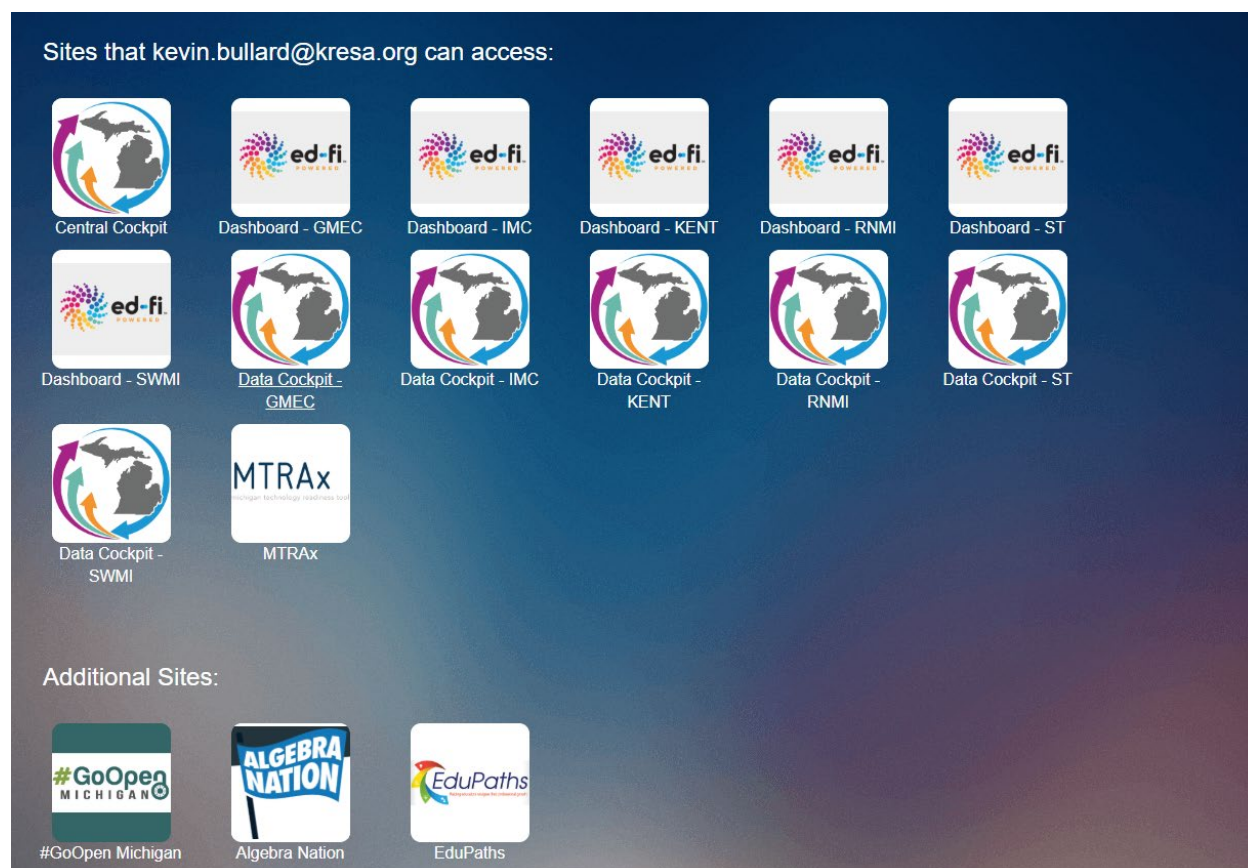
Meal Magic Corporation has provided food service management software to K-12 schools in Michigan for over 30 years. Meal Magic is a K-12 food service management leader throughout the state of Michigan, with their product being used in over 50% of the districts throughout the state. With this presence throughout the state, having an API integration available in the Data Hubs for schools will simplify the integration process between a student information system and their product. Conversation with Meal Magic on an integration started in early 2016 with a commitment from their team to adopt the ED-FI standard to develop and API integration. During the summer of 2017 we received confirmation they were not pursuing an integrated partnership with the Data Hubs due to the lack of interest from their participating districts. Since that message went out, they received numerous requests from their districts on the value add of an integrated partnership and how this type of integration would provide a more timely, accurate consumption of data from the Student Information System. As of December 2018, they have an operational API integration with the data hubs and offer this integration free of charge to districts that use their Cloud based hosted module. They are pursuing further integration efforts and have mentioned of wanting to be the "Gold standard for integration".

ALGEBRA NATION

This integration is currently in progress and has the potential to reach 100% of the districts in Michigan. Algebra Nation is a legislatively funded product to assist students with improving their Algebra skills. MDE added requirements to the Algebra Nation contract so that they would partner with MiDataHub to

provide districts with this data hub integration as an option to import data to roster their system. That integration includes sending roster data to the product, and system usage information flowing back to MiDataHub. That will allow the district, MDE and eventually the legislature to have information to determine if that product is effective at improving student achievement and if future funding would be appropriate. Additionally, MiDataHub will provide authentication of students for Algebra Nation. By having Algebra Nation as a service provider tied to MiDataHub single sign-on, students will be able to navigate seamlessly to Algebra Nation without having to log in a second time. This work will serve as the basis for providing similar authentication, using the **MiLaunchPad**, for additional educational applications going forward.

An example of the Algebra Nation single sign on application in our launchpad is displayed below. Upon logging into MiDataHub (with a federated district account, ADFS or Google) a staff or student will bypass the second login and be directly logged into the Algebra Nation site:



NORTHWEST EVALUATION ASSOCIATES (NWEA)

As of December 11, 2018, there are 114 districts using the Michigan Data Hubs to import NWEA assessment scores. The NWEA assessments for those districts are currently being loaded into each district's Data Hub ODS. Upon the assessment data being loaded in each districts data hub it will be available in the MiDataHub dashboards as well as for exchange with other systems that use the data. Based on information from NWEA, this integration will impact up to 62% of districts statewide.

MICHIGAN STUDENT DATA SYSTEM (MSDS) REPORTING

One of the most important integrations with CEPI is to make the state reporting process, known as the Michigan Student Data System (MSDS), easier and more accurate for districts. The goal of MSDS reporting through MiDataHub is to provide a common tool and/or process so that all schools can use as an identical process for state reporting. This integration involves several steps. The first step is to ensure that every piece of information in MSDS, EEM, REP and FID has a way to be exchanged and can be stored in the district database. So far, all 169 elements are mapped and available to be exchanged. Over half of those elements have been validated within each Student Information System as being provided sufficiently for state reporting. Testing of the state reporting processes has started as of Fall 2018 with a pilot of five LEAs and one ISD. This work is anticipated to continue throughout the 2018-19 school year, with initial availability expected during the Fall of 2019. Work during this testing phase will include ensuring all security agreements are completed and secured with participating districts, EEM integration is functional, and testing the multiple data points being sent from the SIS vendors to MiDataHub. The execution of this work includes bi-weekly meetings with the SIS vendors, monthly stakeholder meetings, posting updates on Basecamp (internal communication tool), and maintaining communication and testing efforts throughout the testing districts to ensure all elements are mapped, flowing, and configured.

CAREER CRUISING

Career Cruising is a program that encourages students to conduct personality inventories and provides them with skills matches to assist in career exploration throughout middle and high school. This tool also provides students an opportunity to search college information and craft their résumé. Recent conversations with the MiDataHub team have allowed the team at Career Cruising to learn about the statewide single sign-on process available through the Data Hub ADFS system. Career Cruising has had numerous districts request this and feel it would reduce the burden on district IT greatly, as they would have a simple means to setup Career Cruising as a LaunchPad application. This also greatly simplifies their onboarding process, as they no longer have to configure single sign-on on a district-by-district basis. They are hoping to have districts piloting this feature early in 2019.

Quotes, below, from Ben Pierce at Career Cruising (Xello, Inc.), and a Tweet (Twitter) from Bryan Smith, Ingham ISD, underscore the true value of this initiative to both educational system vendors and to Michigan school districts.

Benefits to Career Cruising (quoted from Ben Pierce, Director Data Services Career Cruising (Xello, Inc.))

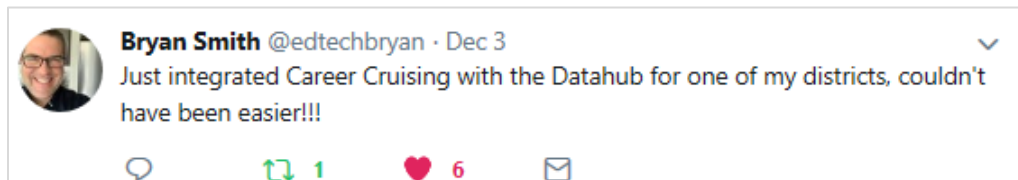
- “We saved roughly 1.5 months of man-hours a year not having to do manual imports for many of our largest Michigan districts.
- Student roster accuracy has increased substantially due to the rostering information coming from Ed-Fi rather than Excel spreadsheets.
- Our support call volume from Michigan districts has gone down due to the fact that roster information is synced nightly and student records are always up to date.
- Our onboarding time for new districts in Michigan has dropped dramatically thanks to the ease of clients creating an access key and secret for Career Cruising via their cockpit application. A previous

district setup that could sometimes take weeks can now be completed immediately after we receive our Ed-Fi keys.

- We've been able to work with districts who previously could not use Career Cruising because they did not have the technical means / time to extract their student roster on a semi-annually basis for us.
- Ed-Fi has significantly streamlined our engineering process in Michigan thanks to the fact that we only need to worry about integrating with Ed-Fi, as opposed to having to work with a large number of different SIS vendors (some of which are not easy to connect with)."

Benefits to Customers (quoted from Ben Pierce, Director Data Services Career Cruising (Xello, Inc.))

- "Districts no longer have to worry about the accuracy of their student roster in Career Cruising because they're now integrated nightly, as opposed to semi-annually.
- District IT are spending less time configuring integration / pulling files and are instead managing the entire process from their Data Hub Cockpit.
- Districts that couldn't previously use single sign-on with Career Cruising now can, as data is synced nightly and accurately.
- Teachers are now able to spend more time working with students and getting value from Career Cruising rather than having to worry about key-punching students into our administration portal or updating records."



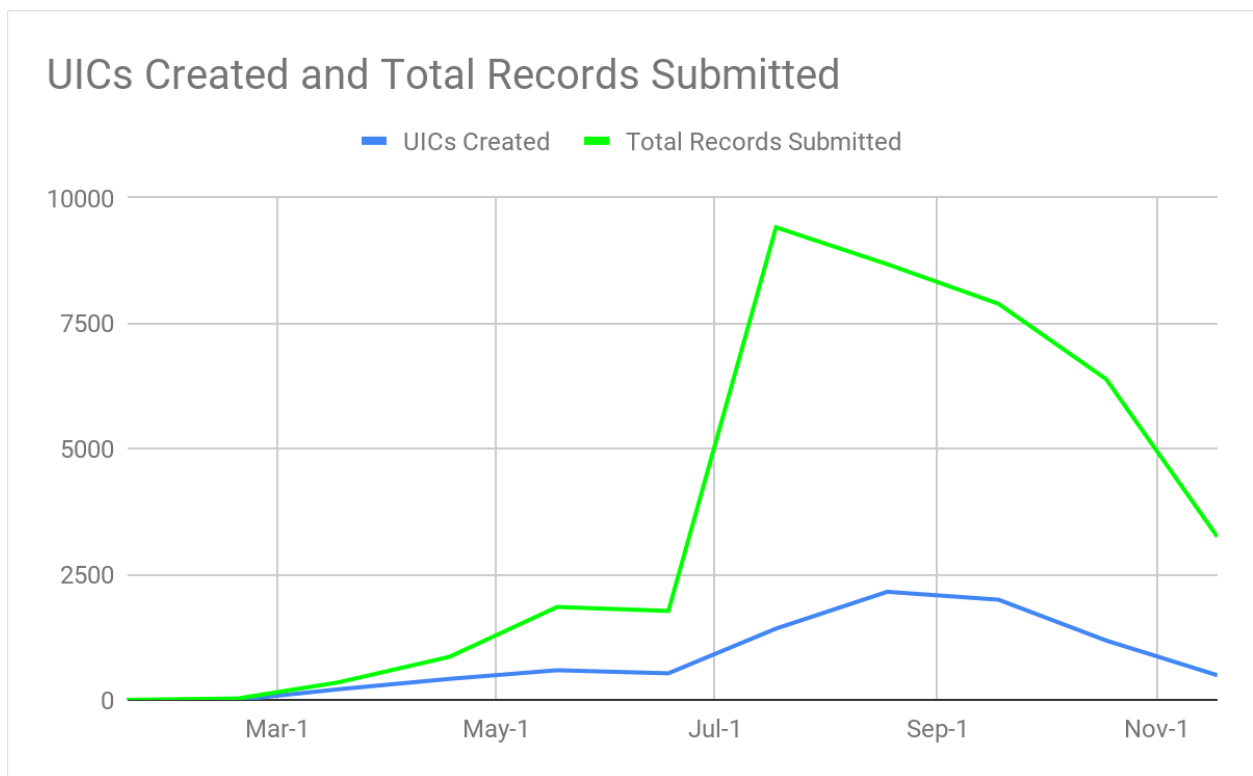
UIC INTEGRATIONS

The Unique Identification Code (UIC) is an extremely important state assigned identifier for students. The current practice of obtaining a UIC for a student includes front office building staff logging into the State's MSDS system online, entering some basic information for the student, and waiting for a match or new UIC to be provided, regardless of obtaining an existing or new UIC. That value is usually then pasted back into the SIS. It is also possible to create a file with several students that need UICs, upload to the CEPI site, waiting for CEPI to resolve any records that are problematic, then downloading the result file, and importing the records back into the SIS. This process could take from 5-10 minutes per student, and hours to days for bulk requests of multiple students at once. Both options also provide the opportunity to get an incorrect UIC. The longer the process takes, the longer the district uses the student's data without a valid UIC and increases the likelihood that the student will not publish or roster to critical educational technology systems instructional staff use daily.

The Michigan Data Hub expedites this process by providing a web service for the SIS to call. Once the call is received (student needs a UIC #), MiDataHub connects to the CEPI web services, acquires the UIC and sends it back to the SIS where it is saved immediately with the student record. This improves data accuracy by reducing the time without a valid UIC down to almost nothing, while saving significant time for school employees, and allowing student data to begin to flow into the many other data systems used

to support their learning. As of December 2018, the UIC services functionality is operational in 3 Student Information Systems (Powerschool, MiStar, and Skyward). Infinite Campus and Edupoint Synergy are in the development phases with a planned deployment for this service sometime during the second half of the 2018-19 school year.

Since the UIC Services functionality was available in late February 2018, there have been over 40,000 UIC requests from student information systems using this functionality (see graph below). We are anticipating exponential growth (estimated at 400,000+, based on historic new kindergarten entries and student mobility) in the number of UIC requests throughout this school year and beyond, especially in the next phase of enrollment for districts (spring 2019).



EEM INTEGRATIONS

The Educational Entity Master, maintained by CEPI, contains the official district and building information for educational entities across the state. Many of the rules for state reporting rely on EEM information. As of November 2018, CEPI and the Michigan Data Hub team have completed this integration. Data will initially flow from EEM to a district's data hub database (ODS) upon initial configuration, and any subsequent changes to EEM data will automatically flow to the ODS. This integration of official school leadership and infrastructure data into the MiDataHub infrastructure will facilitate error checking, state reporting, and a variety of other tasks. Ensuring the consistency of this data will dramatically increase usability for school personnel and the State.

These are but a few examples of the growing list of commonly needed integrations that are in place. last year's report, the number of integrations has increased by over 300%, growing from 569 to 1,837. A more exhaustive list of integrations is included in Appendix B.

LEGISLATIVE GOAL 8C

PROMOTING THE USE OF A MORE COMMON SET OF APPLICATIONS BY PROMOTING SYSTEMS THAT INTEGRATE WITH THE MICHIGAN DATA HUB NETWORK.

From the time that this project has started, Michigan has experienced a significant decrease in the number of student information systems (SIS) in use by schools. Based on an initial survey of 709 districts in 2013, the six student information systems targeted for integration by the project were eSchoolPlus, Infinite Campus, MISTAR, PowerSchool, Skyward, and Synergy. The survey found that 82.8% of districts and 87.1% of students were on the top six identified SIS at that time. Current records, for the 710 districts that we have data on, show that 99.1% of the students and 95.9% of the districts represented are using the top six SIS systems. With over 70% survey response rate, it is estimated that these percentages hold true for all of Michigan's local and charter public schools.

Much of this SIS migration has been attributed to districts pursuing student systems that have been identified by and connecting to MiDataHub. In fact, we are only aware of one other SIS outside of the identified six that has been implemented during the duration of this project, which is the Illuminate SIS (*currently in the process of creating a connection to MiDataHub*).

Speaking about their integration with MiDataHub, "This is easily one of the highest value projects we have in the pipeline right now." — Ben Pierce, Director of Data Systems, Xello Inc.

Similar shifts with other school data systems have been observed, with many districts including MiDataHub integrations as a preference or requirement in bid requirements. In addition to individual districts requesting that systems be MiDataHub compliant, statewide bids and contracts are also beginning to require integration. The Michigan Department of Education (MDE) now considers the use of and potential MiDataHub can bring to any new initiative. The SAS EVAAS student growth percentile tool, funded by the legislature and contracted for schools statewide through MDE, relies solely on MiDataHub to provide local district data needed to offer its service. Conversations are ongoing on leveraging MiDataHub to support state reporting on several initiatives such as the newly created MiSTEM, the Section 35a Additional Instructional Time grants, pupil accounting, and testing is underway for school fall, winter, and spring State reporting using MiDataHub. In each of these cases, schools and MDE currently use a variety of tools to complete these tasks, resulting in duplicate development and support efforts, delays, and at times data accuracy issues. Leveraging MiDataHub, will, in time, result in one, common, reliable, and efficient process statewide and is already lowering the cost and improving the quality and accuracy of data compiled in these and other activities.

In addition to solving existing data challenges, MiDataHub has created an ecosystem, of sorts, with data transformed into a common language and arriving from an increasing array of systems, the opportunity

to build common solutions in this space has emerged as a significant opportunity. As is discussed in other sections of this report, the MiRead literacy application is in initial pilot in seven Michigan school districts. By the fall of 2019 it is expected that over 200 districts will use MiRead as their common tool for managing the 3rd grade reading law. The following year use could rise to 75% to 90% of schools. Without MiDataHub, schools would do as they have in the first two years of the law, they would create paper forms, duplicate processes and focus nearly all their efforts on compliance. With MiRead the process is faster, more effective, more integrated into daily learning and includes students and parents actively in the reading improvement process. MiRead is but one of many examples of new solutions that are being created collaboratively by the educational community for statewide use in a way that will save thousands of hours of work and potentially millions of dollars spent by schools for lesser solutions.

Just as the MiDataHub ecosystem is offering opportunities for Michigan schools to more easily, effectively, and efficiently create solutions, it has created opportunities for the private sector to do the same. A Grand Rapids based company, Eidex, is using the MiDataHub ecosystem to dramatically expand its offerings. Having successfully built tools that provide schools with engaging and effective tools for mining statewide data to examine and improve school process and budgeting, Eidex is now using MiDataHub to help schools look closely at local student and teacher data. Their new tool, Prism, is based completely on the use of data provided through MiDataHub. With nearly 550 Michigan local and charter schools as current customers, Eidex is using MiDataHub to impact and empower educators in 60% of Michigan schools with tools they could not have otherwise created.

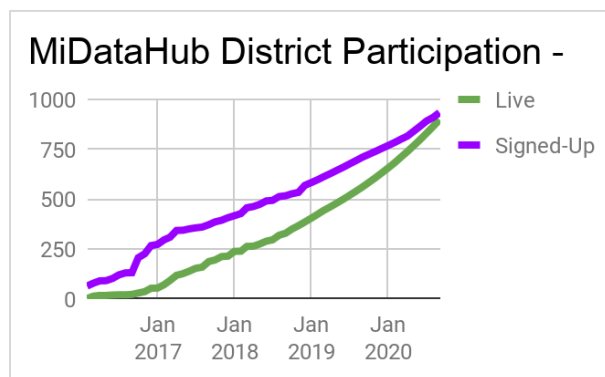
Based, in large part, on the success of MiDataHub in establishing data standards, CEPI is currently engaged in evaluation of its internal data systems and structures. This evaluation includes efforts to redesign the technical architecture of State data systems. This redesign is focused on adopting and implementing data standards in alignment with those adopted by MiDataHub and implemented in a rapidly growing number of local districts. Aligning State data systems will both simplify integrating State-reporting for local districts and provide opportunities for the State to leverage collaborative work from across the country to improve its ability to process, synthesize, analyze and access educational data.

Expanding beyond instructional systems has always been on the roadmap for MiDataHub. Efforts in this area have taken hold over the past year as well. MiSuite, a school finance, payroll, and human resources system, developed by a consortium of ISDs, has connected to MiDataHub. MiSuite is now being offered statewide and a growing network of districts and ISDs is lining up to make this a truly collaboratively owned and developed tool. The most recent expansion of the system is underway in the Flint area with the entire Genesee ISD region adopting the tool. Its MiDataHub connections will pave the way for streamlined implementation of the software and enhance our ability as a state to collaborate based on common data standards.

In short, MiDataHub is already narrowing the field of educational data systems in use in Michigan. While at the same time driving up the level of collaboration by schools and state agencies and streamlining business and instructional practices for Michigan schools.

LEGISLATIVE GOAL 8D

PROMOTING 100% DISTRICT ADOPTION OF THE MICHIGAN DATA HUB NETWORK BY SEPTEMBER 30, 2020.



To date, more than 560 of the roughly 900 districts in Michigan have begun the process of adopting MiDataHub by either signing up for the project or fully connecting (live) at least their SIS to MiDataHub. The chart (left) shows the growth in the numbers of live districts and districts signed-up to date and projected through September 2020. As of the time this was written, the number of live districts was 385, which is 173 districts more than the 212 reported last year. As MiDataHub is a voluntary use system, continued awareness efforts are significant and critical.

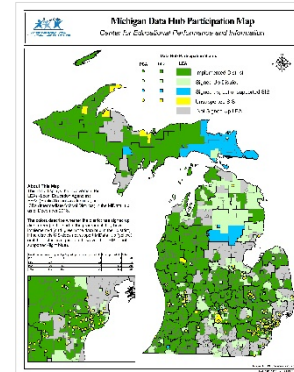
Future growth rates in the chart above are based on the average growth since the first district connected. At the current rate, 100% of local and charter schools will be connected by the goal date of September 2020. While full adoption is on target, there are still 4% of districts using an SIS that is not connected and numerous small independent charter schools who have proven challenging to engage. Thus, a full 100% adoption by all 900 districts may not be possible, though it always remains a goal.

The table below shows a breakdown of the progress by district type - intermediate school district (ISD), local education agency (LEA) or public school academy (PSA). The greatest interest has been at the ISD level, as 85% are interested, with 49% of the ISDs and over 60% of the ISD students already live. The 553 LEAs have had the greatest rate of live adoption, with over 60% of districts and students live on the data hubs and nearly 80% that have expressed interest. We are continuing to expand our outreach to PSAs, as just over 30% of them have expressed interest, and only about 10% of the PSAs and students are live currently. We have reached out to the Michigan Council of Charter School Authorizers (MCCSA) and Center for Charter Schools at CMU to discuss the benefits for PSAs and to enlist their assistance on communicating with the charter school community. The emergence of vendor partners such as Eidex is enhancing our ability to engage with the charter school community as well. Eidex expects and is encouraging it's 200 charter school clients to go live in the coming year.

| Number of Entities | Type | Interested | | Live Districts | | Live Students | | Total Students |
|--------------------|--------------|------------|---------------|----------------|---------------|----------------|---------------|------------------|
| | | # | % | # | % | # | % | |
| 53 | ISD | 45 | 84.91% | 26 | 49.06% | 29,114 | 60.47% | 48,145 |
| 553 | LEA | 439 | 79.39% | 331 | 59.86% | 816,184 | 60.91% | 1,339,894 |
| 276 | PSA | 85 | 30.80% | 28 | 10.14% | 14,642 | 10.80% | 135,524 |
| 882 | Total | 569 | 64.51% | 385 | 43.65% | 859,940 | 56.44% | 1,523,563 |

To date, 100% of 458 districts that have signed agreements have maintained those agreements. Many of the connected districts are partnering on pilot connections including early literacy assessments AimsWeb Plus, Acadience Reading, and NWEA, as well as resources such as MiLearn, UIC automation, and state reporting. This level of engagement is encouraging for the long-range adoption and use of the system.

The map to the right indicates current registrations and implementations. As is clear in the map, partnerships with Intermediate School Districts are often the critical lynchpin in the connecting process. Targeted efforts are underway to increase adoption in areas of the state that are clearly underrepresented. Recent and scheduled events in the lower-thumb area and the northeast/central lower peninsula are expected to fill in substantial sections of the map throughout early 2019. These professional development (PD) events are typically the first step in the onboarding process.

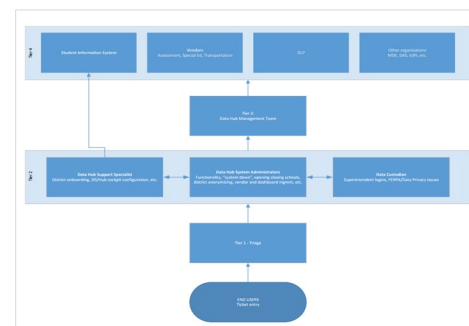


EduPaths

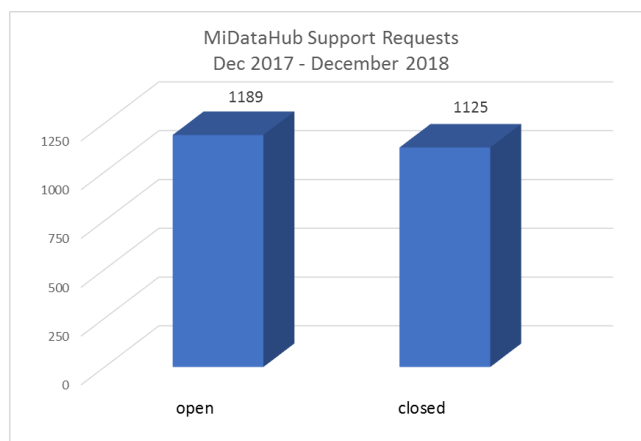
Over the course of the last six months the data hub team has been working closely with the development team at EduPaths to develop modular trainings with a goal to build capacity of staff throughout Michigan on functionality within the Michigan Data Hubs such as navigation, managing users, interpreting reports, creating integrations with vendors, dashboards, and other functionality the data hubs provide a district. We are focused to provide high level on demand training utilizing EduPaths which is a tool that educational staff are currently using as a FREE professional development portal available to ALL Michigan Educators and staff. EduPaths courses are designed to expand understanding on a wide variety of topics and help educators share best practices. These Data Hub courses will be available online, free, and are completely self-paced and intended to help educators personalize their own learning plan anytime and anywhere. There is strong potential to build an SSO integration with EduPaths which would allow districts a single sign on process to the tool.

MiDataHub Helpdesk

The Michigan Data Hub leadership team fully implemented Solarwinds helpdesk and a tiered model of support to accommodate the growing implementation effort across the state. Since its full deployment during the fall of 2017 Support requests can be submitted by sending an email to support@midatahub.org. Upon submission of the email a ticket is generated and assigned as appropriate to the Data Hub Support staff or others. The graph on the right depicts our tiered model of support which includes a 4-tiered model. Tier 1 support staff triages the ticket and assigns it to the appropriate staff to resolve or will resolve the ticket at tier 1. Tier 2 consists of Data Hub Support Specialists, Data Hub System Administrators, and Data Custodians, all of which are staff designated throughout the state, mainly at a county level (ISD, RESA, ESA, etc.) Tier 3 includes the Data Hub Management Team



(Infrastructure Manager, Director, Support Manager, and Actionable Data Manager). Tier 4 includes others such as SIS developers, Vendors, Double Line Partners, MDE, CEPI, and others. Ticket statistics are captured below, depicting total ticket counts from December 2017 – December 2018.



Professional Development

In the 12 months since the last report, the MiDataHub team has completed 157 PD events to a total of nearly 3,363 educators. This far exceeds the goal of 12 events for the year. The number of sessions, most scheduled at the request of districts and ISDs, and level of participation are indicative of the growing interest in MiDataHub and its value to schools and the State.

Onboarding events are generally regional sessions for an ISD or group of ISDs to assist districts from the region in the process of connecting their data systems to MiDataHub. During the initial three months of the current grant period, the MiDataHub team has completed four regional onboarding events. Onboarding events are technical assistance PD sessions where MiDataHub staff work directly with ISD and district staff to establish automated connections from their data systems to MiDataHub. With a goal of ten for the year, and many already scheduled in the new year, this effort is well ahead of schedule.

"... Through our use of the data hubs, we are seeing an improvement in data quality. Instead of finding and addressing data quality during state reporting timelines, we are seeing them earlier – during the enrollment and registration process. This gives us cleaner data. We are excited to take advantage of the UIC integration and MiLearn, both exclusively available through the data hubs. We no longer upload files for UIC matching... Not only does this integration reduce my work as the Pupil Accountant and State Reporting MISTAR System Administrator but our building secretaries have the UIC immediately and there's no waiting or follow up to complete a student registration. The integration with MiLearn gives staff, parents and students in our district instant access to student state testing results, even if the students were not in our district during testing ..." — Donna Reuter, Student Data Supervisor, Farmington Public Schools

MiDataHub Support

In addition to the MiDataHub statewide staff, the MiDataHub project also works with ISDs to establish regional support personnel. These ISD level-staff, Data Hub Support Specialists (DHSS), offer local knowledge about; the systems local schools use, their data policies and practices, and ever important relationships as they provide support on the use of MiDataHub. Grant funds are budgeted and support these efforts at an hourly reimbursement rate. This expands the capacity of the MiDataHub staff, from six to 53 experts across the state providing regional and statewide support for local schools. Monthly meetings managed by the Data Hub leadership team with the Data Hub Support Specialist network encourage collaboration and sharing among this large group. During these meetings we discuss new functionality within MiDataHub, upcoming and current integration efforts, solving common onboarding challenges, and ensuring continued district adoption of the tools available for school districts upon being integrated. The attendees of the monthly Operations Workgroup are DHSSs, the MDE staff, CEPI, DLP, and others.

In addition to the monthly Operations Workgroup meetings there are monthly meetings or workgroup calls that are Student Information focused and open for not just Data Hub Support leadership but also local districts experts. The last group of meetings with this team are 30-minute-long virtual sessions, meeting every other week with the connected SIS vendors. The focus of these meetings is to provide an opportunity for SIS vendors to address any questions from the field and provide updates on upcoming functionality and bug fixes. In addition, A current listing of these specialists is maintained on the www.midatahub.org website and Appendix E at the end of this document.

LEGISLATIVE GOAL 8E

ENSURING LOCAL CONTROL OF DATA, DATA SECURITY, AND STUDENT DATA PRIVACY.

Local control, data security, and data privacy start at the cockpit level. The cockpit application is a web-based utility that puts districts firmly in control of their own data and provides an audit log tracking all manual changes. Initially, a district's data integration capability is disabled until their superintendent or his/her proxy electronically signs a data hosting agreement (DHA), which spells out the terms and conditions of using the system. The superintendent/proxy can revoke that signature at any point, effectively disabling any further integration with their district.

The DHA is important in that it provides guidelines and restrictions for those who access MiDataHub on behalf of the districts. The guidelines include maintaining FERPA protection of data, ensuring encryption at rest and in transit, identifying that the district remains the owner of the data, and that the data cannot be disclosed to anyone without the consent of the district. To date, there have been no instances of inappropriate disclosure of data nor any FERPA violations. A revised agreement with improved language along with increased liability coverage was implemented in the Spring of 2018.

Once the agreement has been signed, the district then can create and manage a variety of inbound, outbound, and API integrations. Those integrations provide the capability for the exchange of information. For a vendor to utilize that capability, the district must provide the vendor with the appropriate secure connection information.

All integrations are protected by industry standard encryption. All web-traffic is encrypted with secure socket layer (SSL) encryption, which includes all API integrations. Inbound and outbound integrations will utilize SSL as well as secure file transfer protocol (SFTP). Finally, the entire data hub network is enclosed in a virtual private network (VPN) which is very tightly controlled to allow only appropriate traffic through.

At an infrastructure layer, all storage area network (SAN) drives are encrypted, so that physical theft of a drive will not allow for retrieval of data. Within the SQL database used by the system, all databases are encrypted so that a database backup cannot be restored without the proper keys.

The Department of Technology, Management, and Budget (DTMB) utilizes tools to scan State of Michigan infrastructure to ensure that no vulnerabilities exist. A scan of the data hub infrastructure led to a few minor recommendations that have since been addressed but found no vulnerabilities in the network infrastructure. Additionally, MiDataHub contracted with VDA Labs to do penetration testing. That testing found that “MiDataHub had made solid strides in certain areas” and also that “there are other areas where MiDataHub needs to tighten up and continue to invest”. MiDataHub staff and its developers have been working to implement recommendations provided by VDA Labs to further ensure security and privacy. Continued scanning and audits in the future will continue to give districts confidence that their data is well protected.

The recent addition of the ability to track changes to settings in the MiDataHub Cockpit provides an additional layer of security in the system. With this feature districts will be able to review when connections were initiated, when settings are changed and who took those actions.

We also take steps to educate all staff as well as contracted Data Hub Support Specialists (DHSSs) about FERPA regulations on handling of data. Most of the project staff are employed by Kalamazoo RESA, which requires annual completion of SafeSchools training modules, including FERPA. All DHSSs and other contracted staff are required to complete training through the Privacy Technical Assistance Center (PTAC). PTAC provides a federally approved training course, which provides certificates of completion. These certificates are held on file for reference as needed.

In addition to these overt efforts at security, the workings of many of the technical solutions provided by MiDataHub eliminate the potential for human error in many of the tasks. The ability to get UICs directly through MiDataHub eliminates the need to create and store data files with UIC information, preventing unauthorized access to that information. Similarly, the exchange of data files via API and secure file transfer protocol (SFTP) eliminates employees putting those files on laptops and other storage devices where the files may be accessed by others. This secure functionality protects highly sensitive data sources such as free and reduced lunch, assessment and special education data.

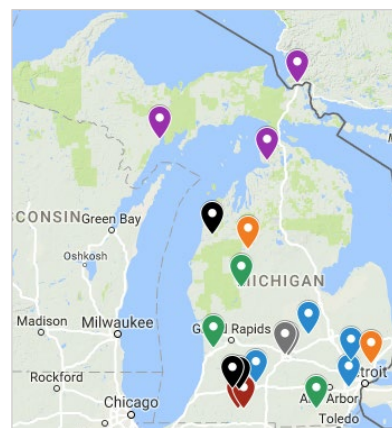
Although we have taken great lengths to protect student data from inappropriate access, we also have made great strides in providing the right data to the right people. A new initiative being developed with CEPI, the “snack pack”, will deliver valuable student information to district staff for new enrollees. Armed with this information, which is provided in a secure manner, districts will be better able to address the educational needs of each student.

LEGISLATIVE GOAL 8F

UTILIZING THE INFRASTRUCTURE TO PROMOTE THE ACTIONABLE USE OF DATA THROUGH COMMON REPORTS AND DASHBOARDS THAT ARE CONSISTENT STATEWIDE.

As the data quality and availability improve through the streamlined integration of systems, the capability to use that data in an actionable manner to support teaching and learning dramatically expands. While there have been many initiatives to improve the use of data, and MiDataHub will not be the magic bullet solution to all actionable data needs, it does serve to expedite equitable solutions to many of our actionable data challenges. As such, the work of actionable data focuses on supporting and promoting the use and development of instructional applications that are “Powered by MiDataHub”.

An Actionable Data Advisory (Appendix G - Membership) assembled in 2017 (map right) with curriculum and instruction, data, and educational technology leaders from across the State. The advisory along with the DataHub Actionable Data Manager, Tom Johnson, are leading work across a wide range of statewide efforts to leverage MiDataHub to support improvement efforts in buildings, classrooms, and for individual students. This group has set and begun focused work on four primary statewide priorities:



1. The development of an online tool for the creation, management and administration of Individualized Reading Intervention Plans (**MiRead**).
2. The development of a system to maintain and distribute research-based strategies for the improvement of teaching and learning. **MiStrategyBank** acts much like MiDataHub, designed to house and distribute educational strategies.
3. The integration of **early childhood data** systems into MiDataHub.
4. Promote the development and integration of MiDataHub with MDE’s new Comprehensive Improvement Process (MiCIP).

Based on the common standards and transmission processes promoted by MiDataHub, the applications, systems, and processes that are *Powered by MiDataHub* rely on the Hubs to populate the vast majority of data used by these systems. Examples of the actionable data initiatives that are *Powered by MiDataHub* include:



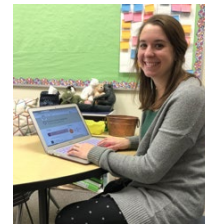
MiRead is now being piloted by seven districts, with positive early feedback from teachers, literacy coaches, and administrators. On Wednesday November 21, 2018 the first pilot teachers logged into the MiRead application. This first real user experience in the new literacy application, which relies on MiDataHub for data, far exceeded expectations.

Within fifteen minutes the first teacher into the system, Samantha, had explored most of the applications features, reviewed data on her students, and re-created an IRIP she developed for one of her students this fall. In doing so, she was able to assign specific instructional strategies that her team from KND (Kaleva Norman Dickson), with the support of their local literacy coach and a coach from the Manistee ISD had identified for use in MiStrategyBank. Developers from MiStrategyBank were able to configure these strategies and ensure that they were aligned and ready for use in MiRead.

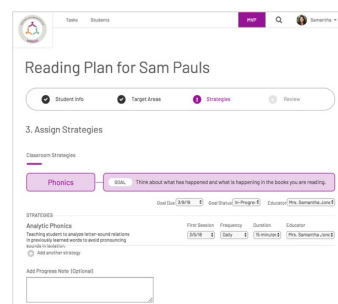
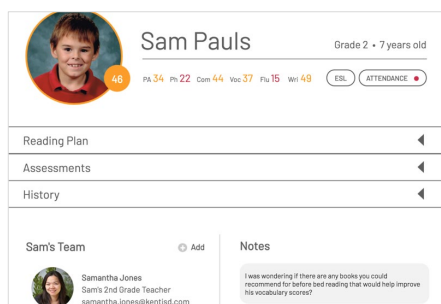
MiRead pilot district, - Kaleva Norman Dickson (KND)

“It was exciting to see how easy it was to get the teachers into the system and to have all of their students with data located in one spot. It appears to be much easier than our old system to update as we move forward. Teachers can go in and easily add information and progress monitoring as needed.” — Jennifer Cordes, KND Literacy Coach

“There are a variety of ways to record thoughts and information on students. The print out system looks like it will be parent friendly. The “grouping students” feature will be very helpful for grouping students for instruction and monitoring their progress.” — Samantha Valinski, KND 3rd Grade Teacher



Maybe the most exciting part of this initial experience was when Samantha said that the student with the plan that she created had already successfully completed the initial intervention. With that in mind, she logged back into MiRead and augmented her student’s plan, closing out the initial strategy and adding a new one that she is now using to help that student take their next steps toward literacy. In doing so, Samantha quickly demonstrated a key concept that had been envisioned for MiRead: with a living literacy plan, both teacher and student are being supported in their ongoing efforts to strategically strive for success in reading. Jen, the local Literacy Coach at KND reported that their old process would never have supported the ability to quickly and easily modify or enhance the reading plan based for the student or teacher in this way.



MiStrategyBank is powering MiRead Pilots and currently contains nearly 2,000 research-based strategies gathered from national research clearinghouses including, the What Works Clearinghouse and the Pew Research Center. A Statewide Literacy advisory is being assembled at this time with membership from Michigan’s Early Literacy Taskforce, the ISD ELA Consultant Network, Michigan’s Literacy Coach Network, the Michigan Department of Education and key research partners from universities and research centers. This advisory will curate strategies from research studies and nationally recognized resources, converting them into actionable

strategies that can be embedded into individualized reading improvement plans in MiRead so that students, parents and educators can work together to ensure literacy for all Michigan students. The next workgroup is expected to emerge in the spring and populate the system with strategies and interventions for student at risk of dropping out of high school and for use in the MiDataHub Early Warning Signs Dashboard. Eventually it is hoped that MiStrategyBank will integrate with district school improvement planning efforts and help to align district work at all levels.

Work is underway with MDE to identify and endorse research-based, evidence-based, and promising practice interventions and to link those official lists to the enhanced Student Supports and Enhancement System. Discussions are also underway to develop 'fast-track' or pre-approval processes to streamline district application process for programs including Title and At-Risk. MiStrategyBank sits at the center of aligning this work and eliminating costly delays in funding to schools while at the same time helping to ensure the most effective strategies are used by schools.

Early childhood integrations include work with John's Hopkins on developing initial integrations with Michigan's Kindergarten Readiness Assessment (KRA), which will be used by 66% of Michigan school districts in the fall of 2019 and 100% in the fall of 2020. MiDataHub is also partnering with CEPI's redesign effort and assisting in the development of an early childhood reporting system, which will integrate Pre-K data systems such as ChildPlus, the student information system used by over 75% of HeadStart programs. This reporting system is creating the ability to gather, standardize, and ultimately transfer pre-K participation and assessment data to K12 schools. This data, largely inaccessible to K12 educators in the past will empower schools and teachers to most effectively place students and to pre-plan for instruction that will meet individual student needs, thus dramatically increasing the likelihood of success for some of our most at-risk students.

MiMTSS - Working in partnership with the Michigan Department of Education and Michigan's Integrated Behavior and Learning Support Initiative (MiBLISI), MiDataHub will play a key role in the development of MDE's new MiMTSS (Michigan's Multi-Tiered System of Support) online portal. The MiMTSS portal is being built as a redesign and major update of MiBLISI's MiData tool. Over the past ten years, MiBLISI has been providing support to hundreds of Michigan schools in its role as a third-party technical assistance arm of MDE. Built with a deep foundation of research, MiData assists schools with efforts to use data and plan for system and student supports based on data. The tool also helps schools manage implementation of research-based initiatives with fidelity. Working with MiDataHub as its primary source of data, the MiMTSS tool will provide schools with quick, easy, and reliable access to data critical to the MTSS process. In doing so, the MiDataHub integration will save schools and districts dozens if not hundreds of hours each. This time can be better applied to the analysis of the data and the development and implementation of efforts to improve school processes and student outcomes.

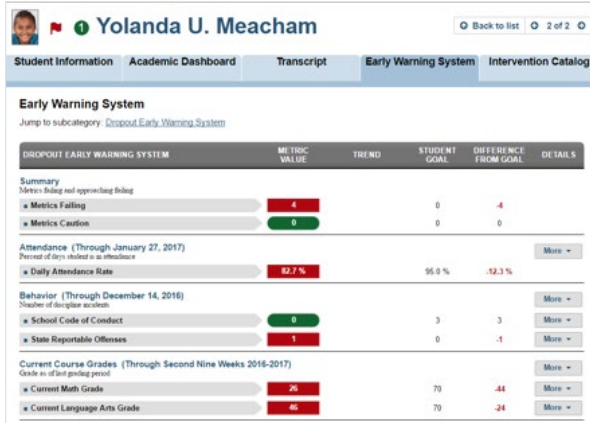
MI School Data Redesign - This year the Michigan Data Hub joined in the work of MI School Data. With funding provided by CEPI, and in partnership with the Macomb and Shiawassee ISDs, MiDataHub hired a MI School Data Redesign Coordinator. The Coordinator, Tim Davis, has over 25 years' experience in educational data and technology systems and in his prior role at Charlevoix Emmet ISD, was a MI School Data regional trainer. Initial work on this project revolves around managing the RFP process and vendor selection. In the coming month, Tim will coordinate focus groups, design efforts, and project management in the redesign of MI School Data. This work will include a focus on integrating this effort

with MiDataHub so that local data can augment the state level data currently used and accessed through the system. The potential access to data and streamlining of processes by combining the efforts of these two statewide initiatives will enhance the experience of educators and the public.

Competency Based Education (CBE) – MiDataHub is working in this emerging space as well. Two years ago, CBE structures were built into the MiDataHub design. This allows MiDataHub to record and move data for things like electronic badges and certifications linked to both students and educators. Current efforts include collaborations with the districts awarded with Competency Based Education grants. These districts are on Michigan’s cutting edge of this national effort and are looking to MiDataHub to help them manage this data and ultimately be able to provide students, colleges, universities, business and industry with what is commonly referred to as a talent transcript. This is emerging work, with solutions being developed by many schools, associations, and companies, and which sits central in the work of efforts such as the Marshall Plan and the MiSTEM Network. MiDataHub is ready to support the data and is working with partners in each of these areas as well as with startup companies and post-secondary partners. How this work evolves is yet to be determined, however, MiDataHub has integrated the standards for holding and transporting this data and has Michigan ready to embrace whatever solutions emerge as the most effective for students, schools and employers in the next few years.

Common Reports – The cockpit application is designed to house common reports that can be created and plugged into the framework to make them available to districts. This allows for a process of rapid prototyping and deployment of reports, so that important reporting capabilities can be put in the hands of districts quickly. In addition, a custom export tool allows districts to query their data in any way they would like, allowing for near instant access to their information. One use of the tool would be to distribute a query to districts to answer a legislative data need. Some specific reports that are already in the system include data quality reports, data hub usage statistics, CEPI MSDS reports, and data validation reports. CEPI has expressed an interest in creating reports, such as a chronic absenteeism report, and distributing it via MiDataHub for districts to utilize.

M-STEP assessment results are now flowing from MDE into MiDataHub and into the MiDataHub Dashboards. These integrations bring timely, automated access to these data sets for exchange with other systems. One particular benefit of the flow of this data rests in the MiDataHub integration which not only provides schools with results for students that were tested but also for those new students that enroll from other districts. By providing schools with student assessment data upon enrollment, MiDataHub is arming educators with critical information about student academic performance within a day of enrollment, removing the costly delays to this data that existed prior to the existence of MiDataHub.



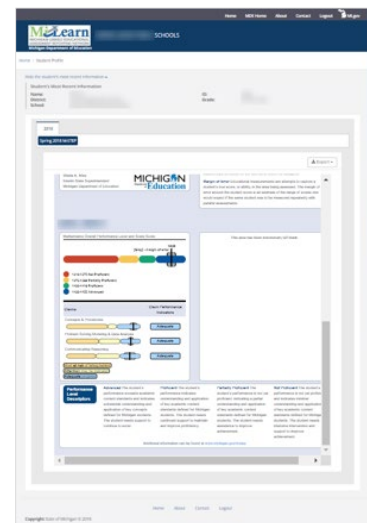
EWIMS -MiDataHub has implemented the Ed-Fi dashboards, including an early warning system (EWS) dashboard (left) and intervention catalog that are freely available to districts. Building on the EWS and intervention catalog (soon to be powered by MiStrategyBank), MDE and the Great Lakes Comprehensive Center have teamed up with MiDataHub to create an Early Warning Intervention Monitoring System (EWIMS) process. EWIMS is a process to use EWS data to identify students at risk of dropping out, assign appropriate interventions, and monitor student progress over time. A manual, eight training videos, along with five of eight online courses

in EduPaths (another statewide system that is in the process of integrating with MiDataHub) have been developed to assist with implementing this process. The goal for this past grant year was to have over 200 districts with dashboards. As of this report, 317 districts have dashboards in place. A second goal with regards to the dashboards is to pre-populate the intervention catalog with research-based and evidence-based practices, from MiStrategyBank, so that districts can select from them to address student needs.

NWEA, an assessment system in use by 62% of Michigan school Districts, has integrated with MiDataHub and is currently sending assessment results into the system. These results are populating new dashboards, which were developed in Nebraska as part of their Ed-Fi initiative, and available for others to use at no cost. Released in March of 2018, 116 districts are now integrating NWEA results into MiDataHub for use in their MiDataHub Dashboards and any integrated system which requires the data.

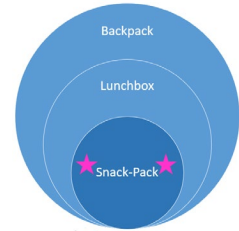


MiLearn is an MDE initiative that grew in use over the past year from 15 districts to 72 districts today. The MiLearn website is hosted by MDE and contains an array of educator and parent-friendly reports on M-STEP and WIDA testing. The connection to MiDataHub allows for parents to access the system and results for their children using the local school district parent portal without the need for additional accounts for parents. Teachers and administrators can access the system similarly and are given access to students in their classroom or building(s) respectively. This new, direct online delivery to parents will soon replace the hundreds of thousands of dollars spent printing and shipping color copies to schools and parents. In addition to the cost savings, the system will also serve to deliver results immediately upon MDE release of assessment results, without the historical delay of weeks or months.



Snack Pack Project — In November of 2018, CEPI convened a workgroup to begin designing a concept we call the “Snack Pack”. The Snack pack will be part of a broader three-phase collaboration with CEPI

around making historical student records available to districts when they enroll new students. Similar to the way that the UIC lookup process works through MiDataHub, SIS systems will be able to make a call for a student's records and receive them back in a package called a snack pack initially, and then evolving by the third phase into what we will call a backpack. Details of what is expected in the three phases is below.



Phase 1: Snack Pack

- Contains critical information necessary at the time of student enrollment
- Services that must legally start within a specific timeframe (e.g., 30 days for Special Education IEPs)

Phase 2: Lunchbox

- Information not necessary at the time of enrollment, but still desired
- Historical student records from CEPI's longitudinal data system

Phase 3: Backpack

- Electronic CA-60 (official educational record)
- Contains some data not collected by CEPI/MDE

These are but a few of the actionable data efforts that are underway. A more comprehensive list of initiatives is included in Appendix G.

LEGISLATIVE GOAL 8G

CREATING A GOVERNANCE MODEL TO FACILITATE SUSTAINABLE OPERATIONS OF THE INFRASTRUCTURE IN THE FUTURE, INCLUDING ADMINISTRATION, LEGAL AGREEMENTS, DOCUMENTATION, STAFFING, HOSTING, AND FUNDING.

An extensive governance model is in place for the Michigan Data Hub. The current governance model is based on the type of funding that has been provided, which so far has been state grant funding. The current Section 22m funding is provided through CEPI, which has sub-granted to Kalamazoo RESA as fiscal agent. Kalamazoo RESA employs the MiDataHub staff including a Director, Actionable Data Manager, Operations Manager, and Support Manager who are responsible for carrying out the various aspects of MiDataHub work.

A leadership team comprised of the Director of CEPI, the Assistant Director of CEPI, the Director of the MDE Office of P-20 Data and Information Management, the MDE Director of 21st Century Learning, MiDataHub Director and MiDataHub Actionable Data Manager is in place to ensure that MiDataHub is meeting the legislative and grant requirements.

Primary coordination and direction for the Michigan Data Hub is provided by two advisory committees that are comprised of ISD representatives from MiDataHub regions. While these committees are

advisory, they represent the voice of the districts. It is the advisory committees that identify priorities as facilitated and recommended by the Director and Actionable Data Manager.

Much of the work of MiDataHub is distributed to ISDs throughout the state. Five ISDs are serving as data hub hosts and receive funding to offset both the use of their infrastructure as well as their staff time to serve as data hub system administrators. A wider variety of ISD staff serve as data hub support specialists (DHSS), with 47 DHSS's serving from more than 30 ISDs statewide.

Legal agreements have been developed to handle various aspects of MiDataHub operations. A contract for hosting services is in place between Kalamazoo RESA as fiscal agent and the other four data hub hosts. A new revised data hosting agreement (DHA) between Kalamazoo RESA and all districts joining MiDataHub is in place. The DHA ensures protection of district data and identifies the terms and conditions that govern district usage.

As MiDataHub looks to the future, strategic partnerships are playing a critical role. Agreements with the Michigan Collaboration Hub (MiCH) at MAISA provide for extended services and logistical support. Like many other statewide initiatives, MiDataHub looks to MiCH for support, guidance, and access to educational groups and associations. These relationships are paying significant dividends and will, in time, provide pathways to funding to support the long-term operation of MiDataHub. One example is MiRead. Developed in partnership with MiDataHub, MiCH, and the Ottawa ISD, MiRead will go into full production during the 19-20 school year and expected to be adopted by many if not all districts in Michigan.

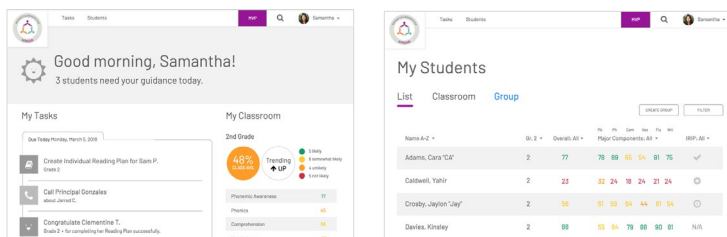
In addition to the revenue sharing and co-development of applications powered by MiDataHub, MiCH may offer the future governance model for MiDataHub. Currently MiCH, using its statewide advisory and steering structure, is overseeing many ongoing initiatives, including, among others, the State Education Network, the EduPaths professional learning system, and MiOpenBooks K12 social studies online textbooks. The current MiDataHub governance model mirrors that of MiCH, joining the MiCH structure directly in the future is an option that is under consideration and which could offer MiDataHub scaled support systems, pooled purchasing, staffing options, and potentially decreased liability coverage.

Most recently, MiDataHub has implemented a decision-making process based on the research-based Hexagon tool. This is the same process in use by schools across Michigan who are engaged in MiBLISI and/or MiMTSS processes. This tool provides a framework for assessing the six components of implementation demonstrated to be critical to support change in systems. With new initiatives seeking to leverage and integrate with MiDataHub nearly daily over the past year, using the Hexagon tool is providing MiDataHub, its staff, and its advisories with clear processes to prioritize efforts and maximize the use of the MiDataHub ecosystem to support teaching and learning in Michigan.



The work to identify and implement ideal governance and sustainability options is ongoing during monthly advisory and collaboration meetings with MiDataHub Advisories, in partnership with CEPI and MDE.

One example of MiDataHub governance and decision making in action is the decision and efforts to help schools effectively address legislative priorities like the “3rd grade reading law”. The MiRead system, described in detail in the section above has emerged with the support of MiDataHub and several partners from across Michigan. The need to provide students who are not reading at grade level with individualized reading intervention plans (IRIPs) affects all districts statewide. Currently, districts and ISDs are all working to put something into place, cobbling together solutions that meet the basic needs, but are not well integrated. The duplication of effort in addressing this legislation is tremendous. The Actionable Data Advisory along with an Early Literacy Data taskforce have identified the need to address this on a statewide basis. By creating an application that connects to MiDataHub to get student demographics and assessment data, a common system can be developed that can be used by districts statewide. Further, given that the system would house data statewide, IRIP information can move with a student between districts. Work over the past year is now culminating with initial pilot testing in seven districts. A request for expansion of pilots was recently released with a target of 20 pilot districts this winter and 50 in the spring, in preparation for a statewide release in the summer of 2019.



As MiDataHub matures and becomes integrated across dozens of educational applications and educational initiatives and integrated by nearly 1,000 school districts over the next few years, sustainability will become a necessity for all stakeholders. Long-term financial models are in development and are evolving based on adoption of systems and on the broader technology and data industries. It is anticipated that funding streams will be established that can augment and potentially fund the entire operation.

One example of planned funding is the MiRead Application. Current projections put the cost of this tool for schools at fifty cents per student. Assuming eventual 100% adoption, with 1,500,000 students in Michigan annual revenue for MiRead is projected at \$750,000 per year. Of that, 20%, or \$150,000 is scheduled to support the cost of the MiDataHub Integration and the Michigan Data Exchange (a version of the DataHub for allowing the statewide transfer of data when students change districts). Collaborative development and funding such as MiRead offer the opportunity to meet the specific needs of Michigan schools, at low cost, while helping to support the ongoing infrastructure costs of MiDataHub.

LEGISLATIVE GOAL 8H

EVALUATING FUTURE DATA INITIATIVES AT ALL LEVELS TO DETERMINE WHETHER THE INITIATIVES CAN BE ENHANCED BY USING THE STANDARDIZED ENVIRONMENT IN THE MICHIGAN DATA HUB NETWORK.

One of the most impactful results of implementing the Michigan Data Hub infrastructure is that it has changed the way we approach new data initiatives. Not only does MiDataHub provide a standards-based framework that can be leveraged for new initiatives, but it also opens up the ability for collaboration from districts to ISDs to State of Michigan entities like CEPI, DTMB and MDE.

The governance structure serves as a mechanism for identification and evaluation of new initiatives. Having representation on both the Data Integration Advisory and Actionable Data Advisory from districts, ISDs, CEPI, and MDE allows for early identification of new data needs. With all parties at the table, the data needs can be discussed, and the hexagon tool described in the previous section can be used to identify if the initiative should move forward as a MiDataHub powered solution.

In addition to evaluating future data initiatives described above, CEPI has also been changing internal processes to evaluate requests received from internal and external stakeholders. Some of these requests are to streamline compliance reporting or data quality processes, and instead of simply adding more reports to existing systems, they are now evaluating whether the requested information would better serve students in a timelier manner if collaboration with the hubs can solve the issues. While data issues can be “fixed” at the time of compliance reporting, the reality is that the compliance report may be correct, but a student may not have received needed services for several months. These requests for improving data quality can now be considered opportunities to instead provide improved student supports or district efficiencies via the data hubs.

MiCIP — The Michigan Department of Education is currently evaluating the replacement and consolidation of numerous data systems that support school improvement processes. These include comprehensive needs assessment, online surveys, school improvement plan creation, and consolidated (Federal Title I, II, IV, V) grant application and management systems. The replacement of all these tools, each of which schools are currently required to use separately, with one system, MiCIP (Michigan’s Continuous Improvement Process system) is an effort to dramatically streamline these required data gathering, reporting, planning, and grant application process. The time savings for schools and the department will be tremendous once this newly envisioned system is in place. However, the greatest value will be the integration of these currently disconnected processes. By combining these into one seamless system/process, schools will be able to easily evaluate their data, better identify effective goals, integrate those goals across their systems, budgets, and processes all the way to the classroom and student, creating truly aligned and relevant efforts for improved student achievement.

MDE is working with MiDataHub staff and advisories as it designs this new consolidated solution. Leveraging MiDataHub in the MiCIP process and solution will ensure that Michigan schools can more easily implement the solution and that their local data is embedded in the process. Longer term, the extension of MiDataHub, through tools such as MiStrategyBank, into this work will support efforts of schools to identify and move to the most effective research-based practices, based on their local data, and ultimately improve student achievement. In short, MiDataHub will allow schools to bring together ‘big data’ from state and national systems, with their ‘small’ local data to better understand student needs and the most effective solutions for each district, school, teacher, and student because of the integration of MiDataHub.

Many other examples of initiatives that are being enhanced by using the standardized environment of the Michigan Data Hub have been described above. Rather than describe each again here, the following list should serve as a strong indicator of the empowering value of MiDataHub across a growing array of initiatives enhanced by MiDataHub.

| MiDataHub Enhanced Initiatives | | |
|---|--------------------------------|---------------------------|
| CEPI's Snack Pack | CEPI's UIC Services | CEPI's EEM Services |
| MSDS General Collection | MSDS Early Childhood Reporting | MSDS TSDL Reporting |
| Federal Civil Rights Data Collection (CRDC) Reporting | MDE's MiLearn | Eidex's Prism Application |
| MiStrategyBank | MiLaunchPad SSO | Talent Transcript |
| SAS EVAAS SGP Tool | Green Pupil Accounting | Section 31a Reporting |
| Student Growth Percentiles | Early Childhood Reporting | EduPaths Online PD System |
| Michigan Virtual | MDE's MiMTSS Tool | #GoOpen |
| MDE's EWIMS Process | Section 35a Reporting | Kindergarten Readiness |
| Competency Based Education | | |

Section 22M MiDataHub

Legislative Report Conclusions

January 2019

Legislative Goal 8a: Creating an infrastructure that effectively manages the movement of data between data systems used by intermediate districts, districts, and other educational organizations in Michigan based on common data standards to improve student achievement

Goal 8a is being met with district and vendor adoption on schedule. State departments, educational organizations, and the field in general are embracing the infrastructure and benefiting from the common data standards.

As Todd Wideman, Systems Engineer, with Imagine Learning wrote in an email on December 12, 2018, *“Several of our districts have dogmatically insisted that we join the hub because they love it so much and MiDataHub support is exceptional!”*

Legislative Goal 8b: Utilizing the infrastructure to put in place commonly needed integrations, reducing cost and effort to do that work while increasing data accuracy and usability.

Vendor adoption is increasing, and numerous valuable integrations were delivered during the year. With LEA adoption nearing 60% and overall adoption over 43% (see chart page 18), ROI is exceeding \$12,000,000 per year. Expectations for Goal 8b are being exceeded and ROI will continue to grow with increased district adoption.

Legislative Goal 8c: Promoting the use of a more common set of applications by promoting systems that integrate with the Michigan data hub network.

Goal 8c is already met. The SIS installed base has reduced. New collaborations have formed and are developing common applications.

Legislative Goal 8d: Promoting 100% district adoption of the Michigan data hub network by September 30, 2020.

Goal is on target to be met with current rates predicting 100% adoption by September 2020. Significant efforts are underway and proving successful in reaching this goal, including partnerships with key vendor partners such as Eidex and SAS EVAAS.

Legislative Goal 8e: Ensuring local control of data, data security, and student data privacy.

Goal is being met. The infrastructure has been scanned by DTMB in 2017 and was penetration tested by VDA Labs in 2018 to identify and eliminate potential weaknesses. The system, agreements and processes have been designed for security and local control based on best practices statewide.

Legislative Goal 8f: Utilizing the infrastructure to promote the actionable use of data through common reports and dashboards that are consistent statewide.

Goal expectations are being exceeded. Advisory is serving to prioritize efforts. Priorities, training, and ongoing development efforts include: EWIMS, MiRead, MiCIP, MiStrategyBank, Open Educational Resources, and Competency Based Education.

Legislative Goal 8g: Creating a governance model to facilitate sustainable operations of the infrastructure in the future, including administration, legal agreements, documentation, staffing, hosting, and funding.

Goal is on schedule to be met. Legal agreements, structure, staffing, and governance models continue to evolve in planning. Emerging development of MiCloud, a statewide collaboration to develop and manage shared educational cloud server, storage, and application hosting is underway. MiDataHub servers are scheduled to be migrated into this low-cost / high reliability environment in the next 18 months. Streamlining and securing infrastructure supports the long-range sustainability of MiDataHub.

Legislative Goal 8h: Evaluating future data initiatives at all levels to determine whether the initiatives can be enhanced by using the standardized environment in the Michigan data hub network.

Goal met. Systemic efforts underway at MDE, CEPI, METL, MASSP, MEMSPA, MAISA, and others to leverage MiDataHub network across an increasingly wide range of current and future initiatives. Some examples include Section 35a, At-Risk, count day, and civil rights data collections, green pupil accounting, school improvement, comprehensive needs assessment, student growth percentiles, and federal title funding grant application and management systems, etc.

Conclusion

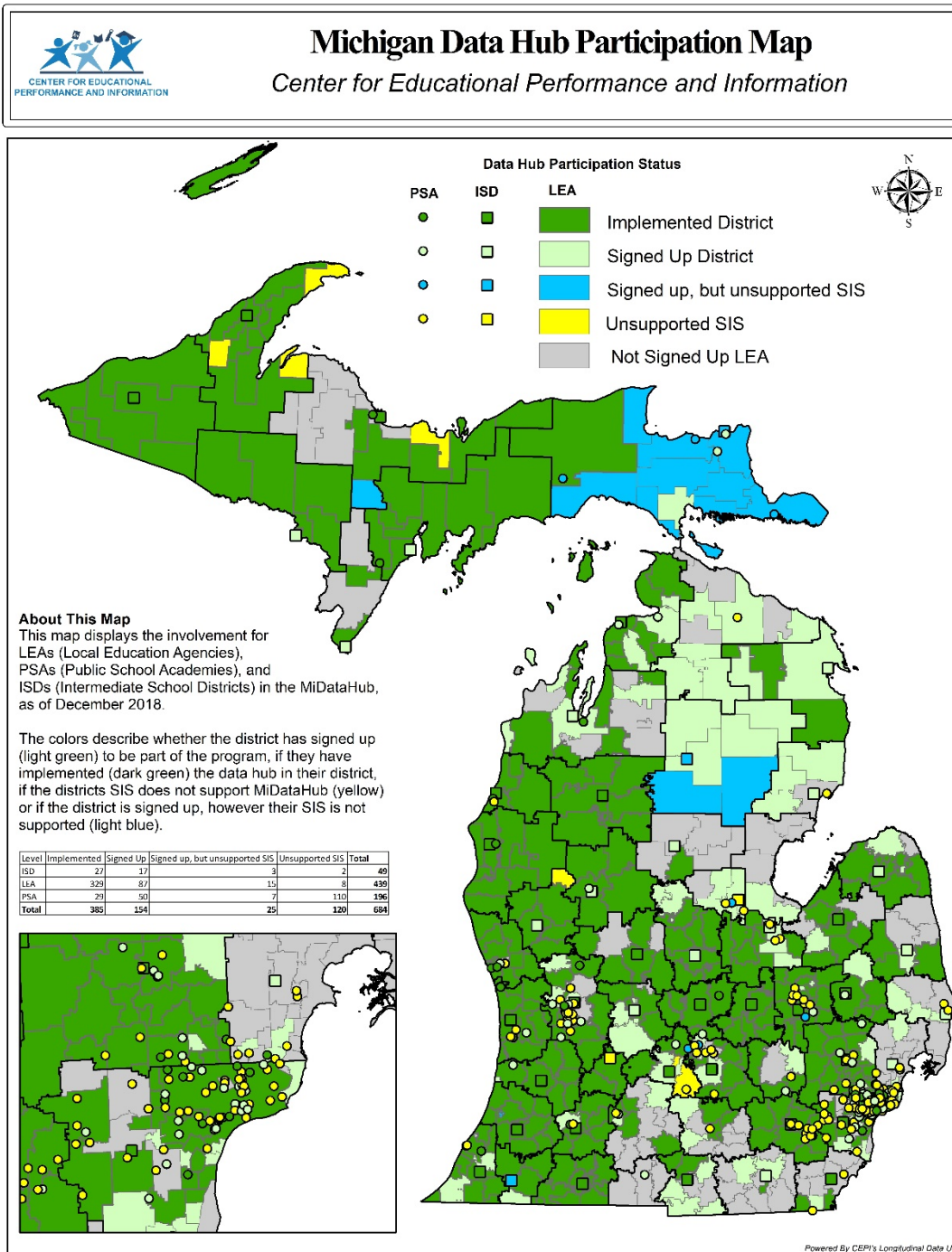
The MiDataHub project is exceeding expectations. With the return on legislative investment, based only on the value of integrations alone nearing 600%, the net savings to the educational community for this year is estimated at over \$12,000,000 for school districts. Currently this equates to \$5.45 for every dollar invested by the legislature this year. Productivity and actionable data enhancements are accelerating access to high quality data for educators at levels that far exceed the direct ROI value.

APPENDICES

Appendix A

MIDATAHUB ADOPTION MAP

January 1, 2019



Appendix B

MIDATAHUB INTEGRATION INVENTORY

Numerous vendors are in development of integration via the Ed-Fi API and/or OneRoster API. While they are not listed here, additional systems in process can be found at <https://www.midatahub.org/getting-started/connected-partners/>.

MiDataHub Integration Inventory

| System | Type | 2017-18 Integration Status | 2018-19 Integration Status | Potential Impact |
|--|-------------------------|---|--|--|
| Acadience Reading (formerly DIBELS Next) | Assessment | Testing - API Roster integration. Planned - sending back of assessment data via API. | Testing - API Roster integration. Planned - sending back assessment data via API. CSV loading of assessments in testing. | 13% of districts per vendor provided numbers |
| aimsWebPlus (Pearson) | Assessment | Testing - Roster integration. Planned - sending back assessment data. | Roster integration certified. Testing process to load test results from CSV file. | 7% of districts per vendor provided information |
| Algebra Nation | Educational Application | Testing - Roster integration, authentication. Planned - sending back usage information. | Rostering and SSO integration in production. Sending back usage information still in process. | Legislative funding for 100% of districts |
| BrightArrow Alert | Notification System | Certified Roster Integration | Certified Roster Integration | 2% of districts, but increasing due to integration |
| Career Cruising/ Xello | Career Planning | Certified Roster and Transcript Integration. Planned - student portfolio and schedule requests transfer to MiDataHub. | Certified Roster and Transcript Integration. Planned - student portfolio and schedule requests transfer to MiDataHub. | 44% of districts, but growing due to MiBrightFuture work |
| CEPI EEM Integration | School Data | Testing - Ability to sync EEM data to district ODS | Certified and in production | 100% of districts |

MiDataHub Integration Inventory

| System | Type | 2017-18 Integration Status | 2018-19 Integration Status | Potential Impact |
|----------------------|----------------------------|---|--|--|
| CEPI UIC Integration | Identity | Testing - Ability to acquire UICs from CEPI via API | Certified in Powerschool, MiStar, and Skyward tools. In Development with Edupoint Synergy and Infinite Campus. | 100% of districts |
| Discovery Education | Educational Application | | Certified integration via OneRoster API and uses SSO federated logins. | Usage percentage unknown. 2 live districts. |
| Edupoint Synergy | SIS | Testing - Full SIS API integration. Planned - state reporting certification. | Certified API Integration. Testing - State Reporting certification | 6% of districts |
| Eidex | Dashboard Application | Testing - Full API receipt of student data, attendance, discipline, grades, transcript | Certified- Pulling multiple years of data via the API. | 60% of districts per vendor provided numbers |
| Follett Destiny | Library Management System | | Testing OneRoster API Integration. | 35% of districts. |
| Infinite Campus | SIS | Production - Full SIS API integration. Planned - state reporting certification. | Certified API Integration. Testing - State Reporting certification | 3% of districts |
| Kickstand Edify | Learning Management System | Testing - API Roster Integration. Planned - ability to send back assessment data via API. | Still in testing. | 1% of districts |
| MealMagic | Food Service System | | Certified and in production. | At least 40% of districts |

MiDataHub Integration Inventory

| System | Type | 2017-18 Integration Status | 2018-19 Integration Status | Potential Impact |
|----------------------|--------------------------|---|--|--|
| MDE MiLearn | Dashboard | Production - Sync of authentication, roster, and student-parent relationship data | Production of sync authentication, roster, and student-parent relationship data certified. MiLearn functionality available in 2 of 5 SIS tools (Powerschool and MiStar). Remaining 3 are in development. | 100% of districts |
| MDE M-STEP | Assessment | Testing - API integration of assessment results to data hub ODS for districts | Certified | 100% of districts |
| MDE WIDA | Assessment | Testing - API integration of assessment results to data hub ODS for districts | In development. | 100% of districts |
| MiRead File Exchange | Reading Plan Development | Planning | Certified - provides data via API to the data exchange. | 100% of districts (81% based on currently connected assessments) |
| MISTAR | SIS | Production - Full SIS API integration. Planned - state reporting certification. | Certified API Integration. Testing - State Reporting certification | 100% of districts |
| MISUITE | Finance/HR/Payroll | Testing - API integration of personnel and finance data | Testing | 100% of districts |
| NWEA MAP | Assessment | Testing - Receiving assessment results via Ed-Fi XML. Planned - Roster integration via API. | Certified - Daily ingestion of assessment results for districts that have signed agreement and configured integration. | 62% of districts |

MiDataHub Integration Inventory

| System | Type | 2017-18 Integration Status | 2018-19 Integration Status | Potential Impact |
|----------------------------------|--|---|---|-------------------|
| OneRoster (IMS Global) | Roster | Testing - This API is an alternative to Ed-Fi and opens the door to integration of a wide variety of systems. | Roster read functionality in production. Write capability in development. | 100% of districts |
| PowerSchool | SIS | Production- Full SIS API integration. Planned - state reporting certification. | Certified API Integration. Testing - State Reporting certification | 53% of districts |
| SAS EVAAS | Reporting System - Value Added Metrics | | Certified roster integration | 100% of districts |
| SchoolZilla | Dashboard Application | Testing - Full API receipt of student data, attendance, discipline, grades, transcript | Testing - Full API receipt of student data, attendance, discipline, grades, transcript | Unknown |
| Skyward | SIS | Production - Full SIS API integration. Planned - state reporting certification. | Certified API Integration. Testing - State Reporting certification | 16% of districts |
| SunGard/ PowerSchool eSchoolPlus | SIS | Testing - Ed-Fi XML integration. Planned - state reporting certification. | Ed-Fi XML integrated. Testing - State Reporting certification | 3% of districts |
| USA Scheduler | Student Master Schedule Application | Certified - Full API roster integration. Planned - sending back schedules for the next school year. | Certified - Full API roster integration. Planned - sending back schedules for the next school year. | Unknown |

Appendix C

MIDATAHUB PRODUCTIVITY FEATURES AND INITIATIVES

MiDataHub Productivity Features and Initiatives

| Feature/Initiative | Benefit | Audience |
|--------------------------------|---|--|
| Cockpit application | Provides a secure place for districts to manage all aspects of their integrated data. Districts manage this from their district “landing page”. | 100% of districts, primarily superintendent and district technology/data staff |
| API Integrations | Provide bidirectional transfer of data and full interoperability between systems. Highly secure and scalable. This is the desired integration type for all systems. API integrations also allow vendors to access multiple years of data where that exists. | System vendors, State of Michigan Systems, Michigan School Districts |
| Inbound Integrations | Allows for bulk-loading of data in Ed-Fi XML format into the Michigan Data Hub from other data sources. Files are transferred on a scheduled basis in secure protocols such as SFTP. | Useful for vendors such as NWEA to mass send assessment data, where API integrations are not provided |
| Outbound Integrations | Allows for sending data on a scheduled basis to other systems either in Ed-Fi XML format or other standard formats such as comma and tab delimited. Files are transferred on a scheduled basis in secure protocols such as SFTP, SSL, and Azure storage. | Useful by districts and system vendors for the purpose of mass populating other systems and for reproduction of legacy integrations where an API connection isn't yet provided by a vendor |
| Multiple Outbound Destinations | Allows for outbound integrations to flow to more than one destination. This feature was paid for by MDE for the MiLearn project, but applies to all outbound integration uses. | Any district, vendor or initiative using outbound integrations |
| Build Process | Applies metrics criteria to school data to prepare for the use of the Ed-Fi dashboards. | Scheduled by district technology staff, at a frequency needed by district staff using the dashboards |

MiDataHub Productivity Features and Initiatives

| Feature/Initiative | Benefit | Audience |
|-----------------------------------|---|--|
| Electronic Agreement Capabilities | Allows for superintendents to sign agreements online to permit the use of MiDataHub or other optional features such as MDE applications like MiExcel and MiLearn. The capability also exists for districts to revoke their approval of any agreement. | Superintendents and any vendors that have a functionality that a district would need to opt into using |
| Proxy Designation | Due to the fact that many superintendents delegate the responsibility of signing agreements, the ability to designate a proxy has been provided. | Superintendents have this option when using the cockpit |
| Single Sign-On (SSO) | The SSO capability scales across all data hub applications, allowing one user login and password to access the cockpit, dashboards, and any other applications that use the SSO. | All users of data hub applications, including school staff, students, parents and any other educational stakeholders who have accounts |
| Auto-Generation of Accounts | School staff accounts can be generated when sufficient information is provided from the district SIS, HR or other integrated product. An email is sent to staff with temporary login information when their account is created. This permits access to dashboards and other functionality. | All school district staff |
| Account Federation | School districts have the option of federating their Microsoft or Google logins used in district to MiDataHub. When that is completed, district users (staff, students), can log into data hub applications with their district login rather than a data hub login, further eliminating redundant logins. | Any district with Google or Microsoft Logins that wishes to complete the approximately 1-hour configuration |
| Launchpad | The launchpad leverages the SSO and federated accounts to provide easy identification of all applications that a user has access to and one-click navigation to them without the need to log in again in most cases. | All district staff, students and potentially parents |
| Mtrax SSO | One of the applications that has leveraged MiDataHub SSO and launchpad is Mtrax. Any user who uses the same email address for Mtrax as they do in MiDataHub can access Mtrax from the launchpad without logging in a separate time. | District technology staff who use Mtrax |
| Manage Users | Users who are not provisioned in any other fashion can be manually added by a district. Data Hub System Administrators and Data Hub Staff can manage users across districts on any given data hub. | District tech contacts, data hub system administrators and data hub staff |

MiDataHub Productivity Features and Initiatives

| Feature/Initiative | Benefit | Audience |
|-----------------------------------|---|--|
| Data Hub Reports/District Reports | MiDataHub have an integrated report framework that allows for new reports to be easily added and deployed. Current reports available include data quality, status reports, error check reports and MSDS verification reports. Reports are available at both the hub level and the district level depending on the need. | District tech contacts, data hub administrators, school staff who need reports |
| Agreement Reminder Email | Email reminders to superintendents to electronically sign agreements can be easily sent as needed. | Data hub staff and system administrators |
| Open/Close District | When new districts need to be added or existing districts closed, this functionality provides a simple easy way to do that work. | Data hub staff and system administrators |
| ODS Anonymization | In order to demonstrate functionality of MiDataHub without jeopardizing student privacy, it is helpful to be able to work with anonymized data. This feature allows for a new and realistic data set to be created from an existing district's data. | Data hub staff and system administrators |
| Manage MSDS Submission Dates | On a year to year basis it is important to be able to update the due dates for CEPI MSDS submissions, as well as to make changes mid-year as needed. A simple interface exists to allow that functionality. | Data hub staff and system administrators |
| MSDS Error Check/Rules Engine | A flexible rules engine has been programmed into the Michigan Data Hub so that district data can be checked against the rules, allowing records to be corrected. The initial implementation was to add all of the CEPI MSDS rules for the error check process. | District state reporting staff and data stewards |
| MSDS Collection Extractor | The ability to generate the various MSDS data collection files has been created. Testing of these files is underway with a goal of certifying them for various SIS vendors by the end of the school year (June 2018). | District state reporting staff and data stewards |
| MSDS Collection Comparison | This feature allows for a districts MSDS file generated from their SIS to be compared with a file generated from MiDataHub. Records that are missing or do not matched are identified, allowing for the data processes to be corrected. This functionality will be valuable for testing and certifying SIS vendors. | District state reporting staff and data stewards. SIS vendor feedback |

MiDataHub Productivity Features and Initiatives

| Feature/Initiative | Benefit | Audience |
|------------------------------|--|---|
| Custom Export Tool | A tool was created to allow districts to design queries for data validation and to facilitate export of data to other systems without the need for programming. This tool gives districts great functionality to answer questions, including legislative data needs. | District tech staff, data hub staff. ISD staff who may design re-usable queries for all districts |
| Exports Proposed for Sharing | When a custom export is designed that has value to other districts, it may be proposed for sharing. Functionality is in place to allow for that export to be reviewed and approved for use in other districts. | Data hub system administrators and data hub staff can approve. Any district technical contact may submit a request |
| Frequently Asked Questions | This feature serves as brief documentation for users of MiDataHub, providing critical information on a variety of process. | Accessible by any data hub cockpit user |
| System Inventory | Allows districts to record the data systems in use in their district. This information is used for identifying integration needs and was valuable for the ROI study. Eventually there is a desire to leverage this for an online, navigable statewide inventory. | District tech directors and eventually interested parties in the information to inform purchasing and support decisions |
| Integration Inventory | Allows districts to record the status of integrations between their systems in the systems inventory. The information recorded assists with planning data integration needs. | District tech directors and eventually interested parties in the information to inform integration decisions |
| ODS Reset | Allows districts to clear their data stored in the ODS so they can start over with a fresh database or if they choose to remove their data from MiDataHub. | District tech directors |
| Activity Log | Provides a consolidated view of the various integrations' activities for district review. This review includes the log of the status of each integration and operation. | District tech directors, data hub system administrators and data hub staff review this information often |
| Audit Log | Provides an audit trail of all operations that occur with district data. Every time an integration is created, modified, activated, or inactivated is recorded. This provides districts with confidence that they will know if something is done with their data. | District tech directors, data hub system administrators and data hub staff review this information often |

MiDataHub Productivity Features and Initiatives

| Feature/Initiative | Benefit | Audience |
|------------------------------|---|--|
| Maintenance Scripts | Occasionally there is a need to run a program (script) to make changes to the district database. This functionality allows for well tested and documented scripts to be executed by the districts. | District tech directors, data hub system administrators, data hub support specialists and data hub staff utilize this functionality |
| MiLearn Authorizations | Districts that utilize the MiLearn system are able to specify permissions for the various roles of users in their district. | District administrators and technology contacts will have this capability |
| MiLearn Compatibility Checks | Districts that utilize the MiLearn system are able to run a data check to make sure that all necessary data is available. | District technology contacts and data hub staff will run these data checks |
| UIC Automation | The Ed-Fi API has capability for system vendors to look up identification codes for students. This functionality has been linked to CEPI UIC routines, allowing systems to effectively look up and create UICs. | System vendors will leverage this functionality, allowing their systems to look up UICs and auto-populate them in their systems, saving districts time and ensuring more accurate data |

Appendix D

MIDATAHUB ACTIONABLE DATA FEATURES AND INITIATIVES

MiDataHub Actionable Data Features and Initiatives

| Feature/Initiative | Benefit | Audience |
|--|---|---|
| Early Childhood Data Exchange | Integration of Child-Plus (SIS used by Head Start) and GSRP approved assessments TS-Gold, and Highscope COR. Key to providing critical student developmental and academic data to schools to support the transition from pre-K to K-12. Greatly enhances ability to track students from pre-K programs into and through elementary school to assess program effectiveness. | 100% of districts |
| EWIMS (Early Warning Intervention and Monitoring System) | Universal dropout prevention toolset. Research identifies clear impact on attendance and grades, both significant early indicators of student dropout. | 100% of districts |
| Kindergarten Readiness Assessment | The rollout of KRA as a new statewide assessment from 2018-2020 provides an opportunity to implement a common solution for rostering, administering and accessing information at the onset of this new initiative. Ensuring processes are consistent and streamlined will ease the burden of implementing a new assessment and will facilitate the sharing of this data as students transition between districts. | 33% of districts in 2018 66% (2019) 100% (2020) |
| MiRead | Online tool to support 3rd grade reading law requirements, process, and supports. Includes consistent identification of students in need of IRIP, then to create, manage, and share (student owned IRIP) across districts. | 100% of districts |

MiDataHub Actionable Data Features and Initiatives

| Feature/Initiative | Benefit | Audience |
|---|---|-------------------|
| MiStudentData-Exchange | Developing an intermediate level database that is fed from district DataHub databases to facilitate the creation of common applications and sharing of student data across districts. In the example of the new MiRead tool, schools will opt-in to the system. Once connected, only data needed for the IRIP will be transferred to the MiStudentData-Exchange. This data can be accessed to operate MiRead and other similar tools. Data will then 'belong to the student' and follow them when they change districts immediately upon enrollment. Other examples include the Electronic Student Record Exchange and the Talent Transcript. | 100% of districts |
| Student Record Exchange - Electronic CA60 | Today, when a student moves between districts, a paper copy of their official student record follows them. However, the delay in requesting these records generally ranges from a week to six months. The electronic CA60, or Student Record Exchange (CEPI's Student Backpack) will ensure that new schools have student records within minutes. This instant access to data will ensure that students are placed in the appropriate grades and courses and receive much needed supports immediately. | 100% of districts |
| MiStrategyBank (MSB) | Standardized tool to inform and manage the assignment of interventions based on individual student needs. Includes pre-populated interventions to encourage and support best practices. Will support programs such as EWIMS, MiRead, At-Risk, Title, and school improvement. MSB is designed to evolve into the educational strategy hub, powering a vast array of educational applications in the future. | 100% of districts |

MiDataHub Actionable Data Features and Initiatives

| Feature/Initiative | Benefit | Audience |
|----------------------------------|--|-------------------|
| Talent Transcript | An electronic, visual, transportable transcript that provides a more complete picture of a student skills, experiences, and competencies. This tool will provide for academic, badging, credentialing, and competency-based display of student experiences and extend the use of the 'transcript' beyond our 30% of college-bound students to all students regardless. | 100% of districts |
| Teacher Certification/MOECs | Planning has begun to integrate MDE's teacher certification system along with a variety of teacher professional development platforms, including Michigan Virtual, REMC, and EduPaths, to automate the recording of professional development hours. Additional uses include eventual linkage of credentials to SIS and scheduling applications. | 100% of districts |
| Teacher Evaluation - SGP and SLO | Private sector solutions (Vendor partners Eidex and SAS EVAAS) emerged in 2019 to fill the gap identified in 2018. Support for these and other tools enhance MiDataHub's ability to support the field in this space. | 100% of districts |

Appendix E

DISTRICT SUPPORT SPECIALISTS AND MIDATAHUB STAFF

MiDataHub Support Specialist Network

| Name | Student Information System | District/Area | Region |
|--------------------|---------------------------------------|--|-----------|
| Anne Schimelpfenig | MISTAR | Wayne/Livingston | GMEC/KENT |
| Anthony Delling | Synergy | Genesee ISD | GMEC |
| Brian Kobliska | Powerschool | Ingham ISD | GMEC |
| Brian McDonald | Powerschool | Eastern UP | RNM |
| Bryan Smith | Powerschool, Skyward | Ingham ISD | GMEC |
| Chris Barnwood | Powerschool, Infinite Campus, Synergy | Kent ISD | Kent |
| Christian Anderson | Powerschool | Wayne/Clinton/Oakland/ Ingham | GMEC |
| Dona Johnson | Powerschool | Wexford- Missaukee/West Shore/Manistee | IMC |
| Doug Jarvi | Powerschool | Gogebic Ontonagon ISD | RNM |
| Doug Metcalf | MISTAR | Oakland Schools | GMEC |
| Garrett Burgett | Powerschool | Kent ISD | Kent |
| Greg Shepard | Powerschool, Infinite Campus | Ottawa/Muskegon | Kent |
| Heidi Aldrich | Powerschool | Gratiot-Isabella | GMEC |
| Ian Haight | Powerschool | Berrien/Lewis Cass | SWMI |
| Jamie Jarvi | Powerschool | REMC 1/Copper Country ISD | RNM |
| Janell Craig | MISTAR | Oakland Schools | GMEC |
| Jason Rasmussen | Skyward | Saginaw/Midland/Iosco | GMEC |
| Jeff Fielstra | Powerschool | Muskegon | Kent |
| Jeff Kamaloski | Powerschool | Wexford- Missaukee/West Shore/Manistee | IMC |
| Joe Owczarski | Infinite Campus | Genesee ISD | GMEC |
| John Londono | Powerschool | St. Joe County ISD | SWMI |
| John Milewski | Skyward | Ionia ISD | Kent |
| Joseph Miller | Powerschool | Washtenaw ISD | Kent |
| Josh Hiner | Powerschool | Copper Country ISD | RNM |

| | | | |
|-----------------------------|---------------------|--|-----------|
| Kevin Hoornstra | Powerschool | Ingham ISD | GMEC |
| Laura Caballero | Infinite Campus | Genesee ISD | GMEC |
| LeAnn Szymanski | Infinite Campus | Muskegon/Ottawa | Kent |
| Lisa Sutphen | Powerschool | Shiawassee/Clinton/ Wayne | GMEC |
| Lisa Thorne | Powerschool | Allegan/Barry/Van Buren/Hillsdale | GMEC/SWMI |
| Lukas Enciso | Powerschool | Allegan/Barry/Lewis Cass/Van Buren | SWMI |
| Mark Nordin | Powerschool | Copper Country ISD | RNM |
| Mark Wiegerink | Infinite Campus | Ottawa | Kent |
| Matt Molloseau | Infinite Campus | Genesee ISD | GMEC |
| Melisa Swoish | Skyward | Tuscola/Sanilac | GMEC |
| Melissa Tront | Powerschool | St. Joe County ISD | SWMI |
| Michelle Dowdall | Synergy | Genesee ISD | GMEC |
| Mike Richardson | Powerschool/Skyward | REMC 1 | RNM |
| Nick Morse | Powerschool | Kent ISD | Kent |
| Oakland Schools Helpdesk | MISTAR | Oakland Schools | GMEC |
| Patrick Loshaw | Skyward | Midland/Saginaw | GMEC |
| Paul Cameron | Powerschool | Wayne/Clinton/Oakland /Ingham | GMEC |
| Peter Nethercott | Powerschool | Kent ISD | Kent |
| Robert Kaminski | MISTAR | Wayne RESA | GMEC |
| Sally Riffle | Powerschool | Wexford- Missaukee/West Shore/Manistee | IMC |
| Sally Whitcomb | eSchoolPlus | Lenawee/Monroe | Kent |
| Stephanie Abata | Powerschool | Marquette-Alger | RNM |
| Stephanie Gabriel | Powerschool | Washtenaw ISD | Kent |
| Steve Schmunk | Powerschool | Marquette-Alger | RNM |
| Sue Gilliam | Synergy | Genesee ISD | GMEC |
| Ted Belej | Powerschool | Copper Country ISD/Gogebic-Ontonagon | RNM |
| Tim Howard | Skyward | Calhoun ISD | GMEC |
| Tony Howard | Synergy | Genesee ISD | GMEC |
| Will Nankervis | Powerschool | Copper Country ISD | RNM |

MiDataHub Staff

| Name | Title | Role |
|---------------|------------------------------|---|
| Windee Wagner | Help Desk Support Specialist | Tier I & II helpdesk, website, documentation, training |
| Kevin Bullard | Support Manager | Oversee helpdesk, DHSS network, SIS relations and semi-weekly webinars, Tier I, II, III support, training, onboarding support, strategic planning |
| Dirk Bradley | Operations Manager | Tier III, IV support, Infrastructure design, development, support and maintenance, system development, code support and enhancements, security, testing, and deployment |
| Anne Crylen | Vendor Relations Manager | Vendor relations, evaluation, engagement, recruitment, support, and strategic planning |
| Tom Johnson | Actionable Data Manager | Instructional priorities development, actionable data advisory, grants, strategic partnership development, data leadership team, outreach, training, public relations, strategic and sustainability planning, |
| Don Dailey | Project Director | Project and staff oversight, data integration advisory, systems development, data leadership team, systems design and testing, Tier II, IV support, development partnerships, strategic partnerships, CEPI / MDE relations, infrastructure design and development, budget development and oversight, contracts, strategic and sustainability planning |

Appendix F

LINKAGES TO OTHER INITIATIVES AND FUNDING

Linkages to Other Legislation and Initiatives

| Title | MiDataHub Impact | Relative Impact |
|---|---|--|
| 3rd Grade Reading | Transport roster and assessment results for approved assessments. | 100% of students |
| Algebra Nation, section 99c | Providing authentication and rostering data to Algebra Nation and capturing use data for districts and ISDs | 100% of students |
| Career Planning | Actively integrating student data, contact information, rostering for Career Cruising. Single Sign-On anticipated February 2019. | 44% of students |
| Directory Information, HB 5140, section 1139a | Exploring development of directory reporting tool with local options and standard exports and reports | 100% of students |
| Educator Evaluation, Value Added Growth 95b | Vendor partners Eidex and SAS EVAAS | 100% of students |
| GSRP, Head Start, and other Pre-K Programs | Coordinating with statewide committees and vendors to connect CORE and TS-Gold Assessments and ChildPlus SIS | 75% of students |
| First Robotics | Badging and Talent Transcript efforts will support students | 10% of students |
| Food Service / Direct Certification | Working with MDE departments on enhancing direct certification (identification of eligible students) and automating billing and reimbursement processes to save schools time and improve cash flow for food service programs. | 100% of students |
| Imagine Learning, section 99u | Initial planning for rostering and use data (see 99c above) | 100% of students |
| Kindergarten Readiness Assessment (KRA) | Scheduled to connect KRA for student rostering and assessment results prior to required pilots, summer 2018 | 33% of students for 2018, 100% by 2021 |

Linkages to Other Legislation and Initiatives

| Title | MiDataHub Impact | Relative Impact |
|------------------------|---|------------------|
| MiSTEM Section 99s | Included in the MiSTEM Committee recommendation as a required component for participation. Providing data consistency and the ability to track MiSTEM efforts. | 100% of students |
| MiLearn | Online portal, leveraging single-sign-on from local district parent and teacher portals to provide access down to student level M-STEP and WIDA reports. Note, MiDataHub is only pathway for MDE to connect students and parents, in partnership with local districts. Should replace the color printing of over 500,000 copies and result in significant cost savings. | 100% of students |
| Minecraft, section 64d | Developing single-sign-on and license deployment for 175,000 Microsoft licenses for Minecraft. | 15% of students |

Appendix G

MIDATAHUB ADVISORIES

MiDataHub Actionable Data Advisory

| Name | District | Title |
|------------------------|----------------------------|--|
| Tim Davis | Kalamazoo RESA | Mi School Data Redesign Coordinator |
| Frank Holes | Allegan AESA | Data & Improvement Specialist |
| Mitch Fowler | Battle Creek Public School | Administrative Director, Data / Innovation |
| Mike McGroarty | CEPI | Longitudinal Data Manager |
| Trina Anderson | CEPI | Assistant Director |
| Tammy Hereau | Delta Schoolcraft ISD | Gen Ed/School Improvement/Data |
| Marianna Ripple | EUPISD | Data / Instructional Technologist |
| Susan Brummel | Kent ISD | School Improvement Consultant |
| Stan Masters | Lenawee ISD | Coordinator, Instructional Data |
| Kristi Martin | Macomb ISD | Director |
| Kaitlin Ferrick | MDE - HeadStart | Director |
| Michelle Ribant | MDE, P20 Data Office | Assistant Director |
| Dave Cairy | Michigan Collaboration Hub | Director |
| Tonya Harrison | MOISD | Director of General Education |
| Heidi Kattula | East Grand Rapids Public | Superintendent |
| Joyce Sackleh | Oakland Schools | Director of Applications |
| Andrew Henry | Red Cedar Solutions | President |
| Kathy Miller | Shiawassee RESD | Executive Director, instructional Services |
| Melissa Tront | St Joseph County ISD | Database Administrator |
| Diane Talo | St. Joseph ISD | Director of Instructional Leadership |
| Cindy Taraskiewicz | Wayne RESA | MTSS Coordinator |
| Dr. Lisa Lockman | Wexford-Missaukee ISD | Director of General Education |
| Dr. Brandi-Lyn Mendham | Zeeland Public Schools | Director of Curriculum & Technology |

MiDataHub Data Integration Advisory

| Name | District/Agency | Title |
|------------------|-----------------------|------------------------------------|
| Tom Howell | CEPI | Director |
| Trina Anderson | CEPI | Assistant Director |
| Doug Jarvi | Copper Country ISD | System Engineer |
| Jason Kronemeyer | EUPISD | Director of Technology |
| Glen Finkle | Kent ISD | Director of Technology |
| Brian Schupbach | KRESA | Assistant Superintendent |
| Phil Carolan | Lenawee / Monroe ISDs | Director of Technology |
| Kristi Martin | Macomb ISD | Director, Management Technology |
| Dave Judd | MDE - P20 Data | Director |
| Michelle Ribant | MDE - P20 Data | Assistant Director |
| Joyce Sackleh | Oakland Schools | Director of Applications |
| Melissa Tront | St. Joseph ISD | Database Administrator |
| Doug Olson | TBAISD | Technology Systems Manager |
| Kurt Rheume | Wayne RESA | Director of Information Technology |

Appendix H

HISTORICAL DATA INTEGRATION EFFORTS

For as long as schools have been collecting data, there have been challenges in entering, managing, and using that information. In recent years, the number of data systems that school districts use has increased dramatically as they adopt a wider variety of educational tools and student knowledge is assessed more often as part of the learning process. [An Education Week article](#) references the “fragmented nature of data systems in school districts” as well as the fact that “a lot of school data are siloed”.

There have been a number of attempts to solve this issue over the years. The fact that the issue still remains for schools is a testament to the difficulty of the situation. In 1999, a platform called Schools Interoperability Framework (SIF) was introduced as the first standards-based approach to solve this issue on a broad scale. SIF involved exchange of data in a standardized format, referred to as XML format (the same format currently used for Michigan State reporting to the Center for Educational Performance and Information - CEPI). SIF could route the information to each software application that a school used. While the technical solution was ahead of its time, the complexity of it made it difficult and costly for districts and software companies to implement, thus it was never widely adopted.

In 2006, the Michigan School Business Officials (MSBO) led an initiative to establish standard data definitions for student, financial and hr/payroll applications statewide. The Statewide Software Initiative (SSI) as it was called, was a collaborative initiative involving ISDs and districts statewide. Ultimately, SSI struggled due to a lack of funding to support the work and the reliance upon school staff who had lacked the free time to work on the project successfully.

The next initiative was the Regional Data Initiatives (RDI) grant. This grant spun up a number of data warehouse implementations that were designed to bring together data from disparate systems for district use. The RDI projects faced a number of challenges from difficulty in data integration, reliance on existing staff that were spread too thin, minimal collaboration between projects, vendors not fulfilling their promises on products and services, and, ultimately, to difficulty sustaining the work.

In 2012, planning was started on the Technology Readiness Infrastructure Grant (TRIG), which included a data integration project. Armed with a more collaborative process that leveraged data experts statewide, a dedicated project manager, and a toolkit and newly formed national data standards from the Ed-Fi Alliance, MiDataHub concept was born and quickly began to gain support. The resulting Michigan Data Hub (MiDataHub) has exceeded the progress of all the preceding efforts, establishing a functional, reliable, secure, and scalable infrastructure that is beginning to deliver on the promise of interoperability.

Appendix I

Glossary and Web References

GLOSSARY

- API - Application Programming Interface. An API is the basis of interoperability, allowing other programs to GET (receive data), POST (write data), PUT (update data) and DELETE (remove data) from/to the Michigan Data Hub in a secure manner. It is the most flexible of all integration types and can be put into place very quickly with just a few pieces of information.
- Data Hub — A hosting location where district information is managed for the districts in a region.
- Data Hubs — All of MiDataHub hosting locations collectively, and often substituted for the Michigan Data Hub.
- Ed-Fi — The Ed-Fi Alliance (www.ed-fi.org) is a non-profit funded by the Michael and Susan Dell Foundation out of Austin, TX. The Ed-Fi Alliance produces a free, open, standards-based toolset which is leveraged by the Michigan Data Hub.
- Funding Year — The funding year for section 22m used for this report is October 1, 2017 to September 30, 2018
- Integrated System — A vendor system that has established connectivity with MiDataHub for testing and/or production.
- Integration — The exchange of key information between data systems to keep the systems in sync.
- Integration Instance — An integration of data between MiDataHub and a data system for a specific district.
- Interoperability — The seamless, secure and controlled exchange of data between different applications and technologies. (As defined in Edsurge article)
- Michigan Data Hub — Represents the overall interoperability initiative as well as a collective representation for MiDataHub.
- MiDataHub — Pronounced “My Data Hub” is an abbreviation commonly used for The Michigan Data Hub.
- MSDF — Acronym for the Michael and Susan Dell Foundation, funder and parent organization of the Ed-Fi Alliance.

- ODS — Operational Data Store. The database where district data is housed. Each district has an ODS with their own data for each school year. All integrations and interoperability are provided for a district from their ODS.
- OneRoster — One of many standards specified by IMS Global. OneRoster is used for the exchange of roster information.
- SFTP — Secure file transport protocol. This is a secure, encrypted method of sending data files.
- Uptime — The percent of time in minutes that the hubs were up and running.
- XML — eXtensible Markup Language. This is a very flexible and generic data format. It can describe data in a very comprehensive manner.

WEB REFERENCES AND BACKGROUND RESOURCES

- Legislative Language https://docs.google.com/document/d/1lIrma00ZWoZgtdj3BGHUOLgsD2vVrpA9D7GzfuECg_s/edit?usp=sharing
- MiDataHub Website www.midatahub.org
- EdFi Alliance <https://www.ed-fi.org/>
- Ed Surge Article 1 <https://www.edsurge.com/research/guides/what-does-it-take-to-make-interoperability-work-in-k-12-education>
- Ed Surge Article 2 <https://www.edsurge.com/news/2017-10-28-tool-project-unicorn-making-the-mythical-idea-of-data-interoperability-real>
- IMS Global Website <https://www.imsglobal.org/>
- Project Unicorn <https://www.projunicorn.org/>
- Education Week Article ¹<https://www.edweek.org/ew/articles/2013/03/14/25datadelivery.h32.html>

Appendix J

Cost Savings Calculations

There are no great sources for determining the amount of cost savings due to integrations. Probably the best source is the ROI Study that was completed in the Summer of 2016. That study found that the Michigan Data Hub could potentially save districts more than \$56M per year through eliminating duplicate efforts in data integration, providing shared tools to support ongoing data management tasks, and streamlining and partially automating compliance reporting submissions.

For purposes of this report, a figure of \$7,371 per integration was used in determining cost savings. This savings was based on figures from the ROI study that indicate that the median district spends \$71,500 on integrations and that the average district has 9.7 existing connections. Dividing the median cost by the number of connections yields the \$7,371 figure used. It is important to note that in some cases, such as MiLearn, several integrations are required to provide the data properly for that solution. In other cases, one integration serves multiple purposes. Such is the case with an SIS integration, which also allows for UIC information to also integrate, even though no specific integration is configured for that service. No attempt was made to adjust the numbers for either scenario.

Finally, the cost savings do not include the tremendous benefit achieved through the actionable use of data provided by MiDataHub and related applications. MiLearn, MiRead, MiStrategyBank, the MiDataHub dashboards, EWIMS and other applications in use dramatically add to the amount of value and return on investment from this work.

For more information, please review the ROI Study document: [“The Michigan Data Hub: A Strategic Alignment and ROI Study”](#).