



RACE TO THE TOP II

ACCELERATE MICHIGAN

Section C

Michigan's
Students

Michigan's
Future

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(C) Data Systems to Support Instruction

In 2006, Michigan worked with Center for Education Leadership and Technology (www.celt.org) to create a well-defined roadmap for creating a longitudinal data system which we now know also incorporates both the 10 essential elements called for by the Quality Data Campaign and the 12 required elements of the America Competes Act. Building on that work, the State began building a robust system for the ongoing collection of data, and as a result, a rich and deep data archive. Significant resources have been invested in the collection of student, staff, facility, and financial data that accurately describe Michigan's K-12 education system and participants. Michigan was one of the first states to implement a unique student identifier, which enables longitudinal analyses of student and system progress. Michigan has aligned data definitions, implemented student and staff identifier, pursued linkages among data systems statewide, and has invested in processes that ensure the quality, reliability and integrity of the data it maintains.

Race to the Top provides an exciting opportunity for Michigan to accelerate the use of this system, creating a culture of data use in service of raising student achievement while closing achievement gaps. The wealth of data collected and maintained will be more fully harnessed and put into service to drive instructional practice, identify student achievement and growth, contextualize student and school achievement within the larger educational context, and conduct annual evaluations of educators. Our focus is on improving instruction and student learning, but the engine necessary to achieve those goals entails the targeted extension of and utilization of our data systems, as well as launching a capacity building campaign through extensive professional development aligned with the data and their use.

(C)(1) Fully implementing a statewide longitudinal data system

Michigan has completed 10 of the 12 elements of the longitudinal data system as outlined by the America Competes Act, and is well on the way to completing the other two (see Table C1 on pp.C-5-C-7). Thus, we have the capacity and system in place to collect, connect, and use data related to these elements for making state education policy decisions and to measure progress toward establishing and sustaining education reform, including linking *all* student level data (including assessment data and data on students not tested) via the unique student identifier. The unique student identifier is now the key identifier in PK-12 and higher education that will enable

communication among all levels of the education pipeline. By virtue of this key connection, Michigan can begin following students into college and gauge the success of Michigan's education system in ensuring strong student learning that allows transition to higher education without the need for academic remediation in order to succeed.

Of particular note is the recent implementation of the state's e-Transcript system, which provides high school course taking data on all students, and also will facilitate linkages with postsecondary education. All Michigan high schools have signed agreements, and are in the process of installing the e-Transcript software; many have begun making the e-Transcript service available to students for submitting transcripts to institutions of higher education. All of Michigan's public colleges and universities are now registered to begin exchanging transcripts as well. The first "push" of data to the transcript data repository will occur in early 2011. These data will be analyzed and reported out by September 2011, and will also be used extensively by the Michigan Consortium for Educational Research (described below), which will provide important validation information and guidelines to the utilization of these data for research purposes.

Michigan has mature systems in place that uniquely identify students, teachers, and courses. The Registry of Educational Personnel collects data about teacher, administrator, and other personnel school assignments and duties, and it assigns a unique identifier to 360,000 staff members, which includes 120,000 teachers and administrators working in Michigan's K-12 system. The registry also stores historical data on each staff member, including links to the credentialing system. The Michigan Student Data System uniquely identifies each of the 1.6 million students enrolled in a Michigan preschool, elementary, or secondary school and collects and stores basic personal and demographic data for the student. Therefore, Michigan's lack of a student/teacher link has not related primarily to technical issues, but rather to statewide debate over the importance of implementing this link at the state level. Race to the Top has provided a critical opportunity for Michigan to focus attention on the need for this link. Recent legislation, passed in January 2010, requires annual evaluations of educators based in part on the use of student achievement and growth data; this imperative to link students and teachers provides Michigan with a clear opportunity to make and use these linkages. Unique teacher, student, and course identifiers will become part of the permanent individual-level student performance

records maintained in the enhanced state longitudinal data system. Teachers will be linked to courses taught and students served.

Michigan has also made significant strides toward collecting data that provide “other information determined necessary to address alignment and adequate preparation for success in postsecondary education” (Element 12) as well. Recent efforts, for example, have focused on PK-20 linkages, an area of statewide focus. Here, too, Race to the Top funds will help to accelerate our progress by strengthening the linkages but – more importantly – by focusing on the *information* provided by those linkages, such as information on student entrance, preparation, and persistence in postsecondary education.

One method that Michigan has begun to pursue in order to provide greater information regarding postsecondary outcomes is coordinating the education databases with other state databases. Michigan’s Department of Energy, Labor, and Economic Growth has already begun to implement several key strategies aimed at accelerating the transition of thousands of workers into good-paying jobs through relevant postsecondary training or education. Coordinating services among Michigan’s adult education, postsecondary education, and workforce development systems is of central importance. In order to achieve this commitment, Michigan is aligning data systems that store and exchange information about the achievement of individual students and their progress through life after school. The incorporation of adult education, training, and workforce data into Michigan’s Statewide Longitudinal Data System will better position state and local leaders to meet the needs of our communities and citizens.

One promising initiative is a new state partnership with the education research community, the Michigan Consortium for Educational Research (see Appendix C.1). Funded by the US Department of Education through the Evaluation of State and Local Programs grant program, this consortium is a collaborative research effort between researchers at the University of Michigan, Michigan State University and the Michigan Department of Education and the Center for Educational Performance and Information. The purpose of this consortium is twofold: (1) to study the impacts of the Michigan Merit Curriculum and Michigan Promise Scholarship on student achievement and postsecondary outcomes and (2) serve as a pilot collaboration between research institutions and the state of Michigan. An important outgrowth of this collaboration is the support it will give to postsecondary data linkages. The consortium’s grant allows for the provision of National Student Clearinghouse data to the state, in order to understand and track

postsecondary education enrollment for all students in the state over a multi-year time period. This will help Michigan begin the process of tracking students into postsecondary education, and will provide critical information on this process. The consortium will also work to facilitate increased data linkages in order to study the transition into postsecondary education, as an outgrowth of their work but with the added benefit of forming these linkages for permanent state use outside the bounds of the consortium's work.

To accelerate these efforts, Michigan proposes to use a portion of Race to the Top funding to align data and information from multiple units in the state in order to develop a complete and accurate picture of postsecondary outcomes. These planned linkages include, in addition to those already mentioned, the Michigan Department of Treasury, the One-Stop Michigan Information System (workforce development), Michigan Adult Education Reporting System, Unemployment Insurance Database, Postsecondary Career Tech (Perkins IV), and others. A benefit from this alignment work will be a reduction in duplicative information collection, reliance on outmoded systems, problems caused by inflexible protocols, and information assets silos. Significant improvement should be evident in the ability of Michigan policymakers to access critical information at critical moments to support sound decisions about policy options.

Table C1: Michigan’s Status on 12 Elements of the America Competes Act

Data Elements	Current Status	Proposed Status With New Race to the Top Funding	Comments and Clarifications
(1) Statewide Student Identifier	In place since 2003 in the Single Record Student Database (SRSD)	Completed for PK-12; underway for postsecondary	e-Transcript contract was initiated in July 2009 to capture postsecondary students.
(2) Student-level enrollment, demographic, and participation data	In place since 2003 in the SRSD	Complete for PK-12; underway for postsecondary	e-Transcript contract was initiated in July 2009 to capture postsecondary students.
(3) Student-level graduation, transfer, and dropout data	In place since 2003 for K–12 via the SRSD, and launched in 2009 for postsecondary via the e-transcript system	Complete for PK-12; underway for postsecondary	e-Transcript contract was initiated in July 2009 to capture postsecondary students.
(4) Ability of K–12 and higher education data systems to communicate	In place for PK–12 since 2003 and includes capacity for postsecondary with the e-transcript system launched in 2009	Complete for K-12; in progress for postsecondary; expand system connections; NSC data for out-of-state	Prototype matching completed August 2009. Full data exchange for state analysis will be available in December 2010. NSC data available fall 2010

(5) Audit systems to address data quality, validity, and reliability	In place since 2003 and continues to expand to ensure data quality	Continuous improvement via data checks and data quality monitoring processes.	Continued practice at CEPI. All systems have audit trail and data quality feedback processes.
(6) Yearly assessment records of students	In place at the Michigan Department of Education's Office of Education Assessment and Accountability (OEAA)—linked to all student data in SLDS via unique student identifier	Complete	N/A
(7) Information on students not tested	Complete at OEAA since 2009; linked to all student data in SLDS via unique student identifier	Complete	In place as of December 2009; data available after each test cycle.
(8) Teacher identifier system linked to students	Capacity developed, but not fully implemented in the Michigan Student Data System (MSDS)	Will develop according to timeline in Section B of Race to the Top.	State-issued student and staff IDs are in place. The linking process is being planned for school year 2010–11. Funding through Race to the Top.

(9) Student-level transcript data	In place since December 2009 via the launch of the e-transcript system	System in place for all students in Grades 9 through 12 and postsecondary; first repository submission in 2010	e-transcript contract is in place; all public colleges and universities are registered to exchange with high schools. Data will support status in December 2010.
(10) Student-level college readiness scores	Complete via the Michigan Merit Exam for all students; linked to all student data via unique student identifier	Complete; Improve by adding limited populations	Acquire ACT test results for out-of-state student and a limited number of home school and private school students
(11) Successful student transition to higher education with remediation information	In place via the e-transcript system launched in December 2009	Improve measures over time by going beyond transcript data. Acquiring National Student Clearinghouse data	e-Transcript contract is in place; all public colleges and universities are registered. Data can be pulled to support this status in December 2010.
(12) Other information necessary for success in higher education	Planned, but not in place	Develop new processes and systems to accomplish this	Intending to fund this through Race to the Top.

(C)(2) Accessing and Using State Data

Michigan has invested considerable resources over the past several years on the development and strengthening of longitudinal data systems for students and teachers, and is now poised to accelerate those efforts. To create a culture of quality data collection and use, the data must be made broadly available, easily accessible, and appropriate professional development needs to be provided to increase the effective data usage capacity of an expansive set of educational stakeholders. To do this, Michigan has focused on providing and extending access to and support for the use of data by four key stakeholder groups: (1) educators, (2) the state department of education and other state agencies, (3) the research community, and (4) students, parents, and the interested public. Michigan will give particular attention to strengthening collaboration with major research universities to establish systems whereby relevant information on research-based instructional practices can be disseminated to K-12 teachers, and provide a venue for researchers to access rich data on student performance and other information. The related professional development necessary for this work is outlined in section C(3) but is included in detail in section D(5).

Michigan has been making data available to educators primarily through the Data for Student Success initiative, which is funded by a Title IID competitive grant. In 2006, the Michigan Department of Education and the Center for Educational Performance and Information asked the Michigan Legislature to appropriate \$1.5 million in Title II, Part D funds to support a consortium of intermediate school districts and local education agencies, working with the State, in building a reporting system that would translate state-collected data into actionable reports to inform instruction at the district, building, and classroom levels. This collaboration resulted in the development of the Data for Student Success portal, which simplifies the process of accessing and querying the data, and provides powerful analytic reports using state data to complement local data initiatives. The Data for Student Success project now serves as the prototype for building Michigan's Web-based education data portal to become a "one-stop shop" for the dissemination of Michigan education data. This education data portal is a critical tool to be used in Michigan's RESPONSE system (see Section A), and will provide the data necessary at each point in the system, as well as at each level, to allow Michigan to increase student achievement by improving instructional practice via targeted professional development.

The education data portal will be critical for coordinating the data available via the Statewide Longitudinal Data System and will streamline the data flow supporting multiple uses. Data will be automatically fed into instructional improvement programs such as Data for Student Success, the Comprehensive Needs Assessment, School Improvement Planning process, and the Improving Instruction through Regional Data Initiatives – see Section C(3) – and it will make these data broadly available for use via the Web. The portal will also make student-teacher links available for use in evaluating teacher and leader effectiveness. Through these programs and evaluative processes, schools and districts will link locally determined summative, formative, and interim benchmark assessment data to state-maintained summative assessment data, and will put results into context using additional local student demographics, student and teacher attendance data, transcript data, grades, teacher effectiveness measures, and other school context data to begin moving the conversation from data for compliance to data for decision making and local improvement efforts.

The state will provide summative assessment information to the Regional Data Initiatives in currently assessed subjects and in mathematics and English language arts under the CC assessments, while the intermediate and local school districts will provide summative, formative, and interim benchmark assessments on non-common core subjects, and grades and roles not currently assessed by the state system (see Section B(2) and B(3) for more information). To ensure timely packaging and export of the data sets in a usable format, the State will work with regional data partners so that both common and custom queries allow for the exchange of data elements to support local decision making.

The entire system is protected by robust, role-based security that provides individual and aggregate data on teachers and students. Under this proposal, we plan to open the system to greater access through the public portal; this requires full reviews of technical security, as well as the supporting infrastructure and a more refined role-based access control process. Once the data are available and secure, they can be used for multiple purposes and by multiple audiences.

One key use of state-level data, for instance, will be the use of state-level data as “quality assurance” and to monitor progress on core system-wide goals. The state will also pursue linking education data with other state-level agencies to produce a broader, richer core of data available to answer questions of interest to the state (as described above). Finally, the state will

identify and implement a process that identifies research questions across departments so that resources can be allocated to address issues using the wealth of data available.

The Michigan Department of Education is also pursuing a broad research agenda that addresses state education policy questions in a more coherent fashion by engaging a diverse group of PK–12, postsecondary, workforce, and research partners to explore key education questions using data from the Statewide Longitudinal Data System and the data provided via the Regional Data Initiatives, where appropriate. Part of achieving that goal for Michigan is establishing a state-level research collaborative to assemble researchers from across the State and the Midwest region to contribute to the development of a research agenda targeting needs recommended by an appointed P–20 Advisory Council to the State superintendent.

The state-level research collaborative will require funding to oversee several key data tasks: (1) work with the P–20 Advisory Council to set and prioritize a state research agenda; (2) ensure that student, school, and system performance are measured meaningfully; (3) build technical and human capacity to use data effectively in state and local education agencies, and by research audiences; (4) review research proposals requiring State data regardless of funding source; (5) establish guidelines and standards for proposal submission with data requests and (6) make appropriate research results available to the public.

A recent research study conducted by the Regional Education Laboratory – Midwest provides a model for the research collaborative. Over the past four years, the Regional Educational Laboratory-Midwest, under the direction of Barbara Schneider at Michigan State University, has been providing technical assistance to the Michigan Department of Education, leveraging longitudinal data from the Registry of Educational Personnel, student assessment data, and student demographic data to answer key questions generated by the state regarding Michigan’s instructional workforce. This collaborative effort has produced three completed technical reports, with additional reports and projects continuing. Throughout the effort, the research team worked closely with Michigan Department of Education/Center for Educational Performance and Information to learn how to link and manage teacher data files, merged school-level data with teacher data, and worked in an iterative and collaborative manner to identify questions of interest to the state, provide timely feedback, and to refine analyses to produce more rigorous results. The state will use Race to the Top funds to create research-ready files that can be accessed through the education data portal, which will allow researchers to evaluate the

effectiveness of instruction for student subgroups well above or below grade level and perform other research that advances Michigan’s educational performance. We will also use funds to support the initial increased staffing levels necessary to work with researchers in creating and automating data requests, providing training on using the data in a secure manner, and documenting protocols and procedures. Additionally, Michigan plans to collaborate with the Institute for Social Research at the University of Michigan to identify mechanisms for making state data more broadly available for research.

In addition to making data available to school teachers, administrators and researchers, Michigan also plans to make state data available to students, parents and the interested public. As Michigan moves forward with the more iterative use of data to drive instruction and practice, more data will be made available to students, parents and the public to conduct their own dynamic queries through the education portal. The full build-out of this portal is planned under this Accelerate Michigan proposal. This critical infrastructure and technical development investment will indeed accelerate the use of data to drive instructional practice in Michigan and will quickly move our schools beyond using data for compliance and into a full culture of using quality data in support of student learning.

Timeline:

Establish the research collaborative.	June 2010
Convene initial stakeholder meeting.	July 2010
Establish rules and process for cross-institutional collaboration.	September 2010
Disseminate initial research agenda.	January 2011
Initiate first set of research projects.	February 2011
Begin gathering portal requirements.	July 2010
Begin portal development.	October 2010
Develop analysis tools and reports.	June 2011

Responsible Parties: CEPI, MDE, MDIT

(C)(3): Using data to improve instruction

A core feature of this application is strengthening the use of data in all aspects of the education system so as to increase student achievement. Michigan has two current data systems

in place to facilitate the use of data to improve instruction: the Data for Student Success system, described in Section B(2), and the Regional Data Initiatives. Regional Data Initiatives are local data warehouse systems that provide the data aggregation and analysis tools by which education data is utilized. Race to the Top provides an opportunity to further focus on utilizing the D4SS and Regional Data Initiative tool sets to improve instruction by targeting their use through the Responsive Instructional Support System, described in B(3), the Framework for Educator Evaluation, described in Section D(2), and professional development related to the use of data to inform instruction, described below in Section C(3) as well as in D(5) as part of Michigan's unified professional development plan.

Regional Data Initiatives

In August 2009, MDE released an \$11.6 million Title II, Part D, competitive grant funded by the American Recovery and Reinvestment Act of 2009, titled "Improving Instruction through Regional Data Initiatives." The program sought to extend the success of the D4SS initiative by building collective capacity at the intermediate school district or regional level to provide teachers and administrators with real-time access to a combination of state and local data to better inform their work. In response to the American Recovery and Reinvestment Act grant opportunity, all 57 of Michigan's intermediate school districts self-organized into eight consortia for rolling out professional development programs on five already installed and operational data analysis and reporting platforms.

These Regional Data Initiatives are collaborating to share resources across consortia to support common needs, including:

- 1) Facilitating the creation of an interoperability framework among the Regional Data Initiatives, the state longitudinal data system, and local student information systems;
- 2) Developing common professional development programs to support data use; and
- 3) Recommending and adopting a common set of reports for tracking student progress toward graduation and college readiness and early warning sign reports for dropout prevention and intervention (See Appendix C.2 for a further description of the Regional Data Initiatives collaboration).

Under the 8 regional consortia, 98 percent of districts and 45 percent of charter schools have signed up to gain access to classroom-level, instructional improvement systems. Since October 2009, 340 local education agencies (55%) have loaded their data into their regional data warehouse with 33,314 user accounts created. Of those, 18,213 individuals have logged on and accessed their data warehouse a total of 606,211 times (average of 33 times per individual user). All districts who participate in Race to the Top are required to participate in a Regional Data Initiative and to share their data with that initiative as outlined throughout this application. Using Race to the Top funding, Michigan will support the Michigan Association of Public School Academies in organizing remaining public school academies in a Regional Data Initiatives consortium to support the adoption of a common classroom-level, instructional improvement system.

The first priority for this initiative is interfacing the State Longitudinal Data System and the local student information systems through the Data for Student Success education data portal to create statewide interoperability. A second priority is to provide a critical data platform for the sharing of common assessments across districts using a common data warehousing tool. (Recall that an important component of the Michigan Department of Education assessment strategy in non-core curriculum areas, grades and/or specialty areas is the use of consortia to develop summative, formative and interim benchmark assessments, described and funded in Section B(2). A third priority of the Regional Data Initiatives is to serve as a component in the successful implementation of the Framework for Educator Evaluations, described and funded in Section D(2). The Regional Data Initiatives will serve as a conduit for the provision of information maintained at the state level, such as statewide assessment and growth data, as well as the linked student/teacher information and as a repository for locally collected information, such as the formative assessments. A final priority is the formation of local research collaboratives through coordination with the institution of higher education that partnered with each consortium. Each Regional Data Initiative has developed a series of action research questions related to instructional practice that are being answered collaboratively by each consortium (see Appendix C.3 for a list of Regional Data Initiative research questions).

(C)(3)(ii) Professional Development to support the use of instructional improvement

As part of Michigan's unified plan for professional development, we cannot overemphasize the importance of offering opportunities for all teachers and administrators to learn how to use data to drive decision making and improve instruction. Professional development around the use of data to improve instruction will be delivered largely via the Regional Data Initiatives. Each of the eight consortia is required to offer teachers and administrators 4 days of professional development, and each Regional Data Initiative has developed (and has begun to offer) professional development programs concerning data, data use, and available data tools. These programs begin in earnest in Summer 2010 to complement the statewide rollout of Data for Student Success.

Michigan Department of Education seeks to measure the impact of the new round of professional development in terms of change to instructional practice at the classroom level. The Regional Data Initiative is employing a comprehensive program evaluation, including an educator survey collected four times over the course of the 2009-2010 and 2010-2011 school years. The educator and building administrator survey will be sent to 50,000 building level administrators and classroom teachers. The first survey was sent May 2010 to establish the program's baseline. Part of measuring the impact of professional development includes training teachers and principals on how to determine the quality of professional development based on the outcomes of that professional development (i.e., looking at surveys and feedback; looking at changes in data in areas where professional development should have an impact, etc.). Training through the regional data initiatives will add this focus of importance in its curriculum and training delivery, as it is a complementary precursor to understanding how to use high quality data for decision making.

Using data to inform decisions and to critically review programs requires, as we have noted, a difficult cultural shift. While the Regional Data Initiatives are a good start, Race to the Top funding will enhance that work and allow for continued professional development, which will be altered and expanded based on the evaluation data described above. Race to the Top will require an addition of at least two days of professional development statewide specifically focused on the use of Regional Data Initiatives tools in support of the non-core common assessments, the Framework for Educator Evaluation, and data to inform instruction which is discussed in detail in Section D.

(C)(3)(iii) Sharing data for research purposes

MDE has modeled the sharing of data for research purposes as described above in the collaboration with Regional Education Laboratory-Midwest and Dr. Barbara Schneider in Section C(2) Accessing and Using State Data. Also described above in Section C(1) is the Michigan Consortium for Educational Research, a new federally funded initiative that will model the sharing of data among the Michigan Department of Education, the Center for Educational Performance and Information, Michigan State University and the University of Michigan. In addition to these efforts that are already underway, Michigan will share data for research purposes through the statewide Research Collaborative, described in Section C(2), and regional action research collaboratives that are part of the Regional Data Initiatives.

The statewide Research Collaborative is described in some detail above. The regional action research collaboratives are part of the work of the Regional Data Initiatives. The eight Regional Data Initiative consortia each identified a Michigan teacher preparation institution as a research partner to give the consortia the ability to conduct action research using the formative and summative data shared across the initiative. This regional action research will be integrated into the State's larger Research Collaborative that was described previously in this application in Section C(2).

Work on the regional action research has begun with the selection of a research area by each consortium and its research partner. The topics selected for research for 2009-10 include: impact of early childhood interventions on school readiness; teacher perception of the value of data for instruction practice; data elements needed to provide complete picture of post-secondary readiness; math response to intervention as a predictor of student success on assessments; development of and impact of interim assessments across a region; using assessment to modify instruction; impact on student achievement of the use of assessment data and professional development on the use of assessment data.

The formation of a state-level research collaborative alongside the development of Regional Data Initiatives provides opportunity for broader research collaboration for this network of consortia. Although the primary purpose of the state-level research collaborative will be to address a state research agenda, it also will convene meetings between and among the intermediate school district consortia, with the goal of standardizing data collection on core data elements across consortia and building organizational capacity in the analysis of longitudinal

data. For a more detailed description of the P-20 Advisory Council and research collaborative, see Appendix C.4.