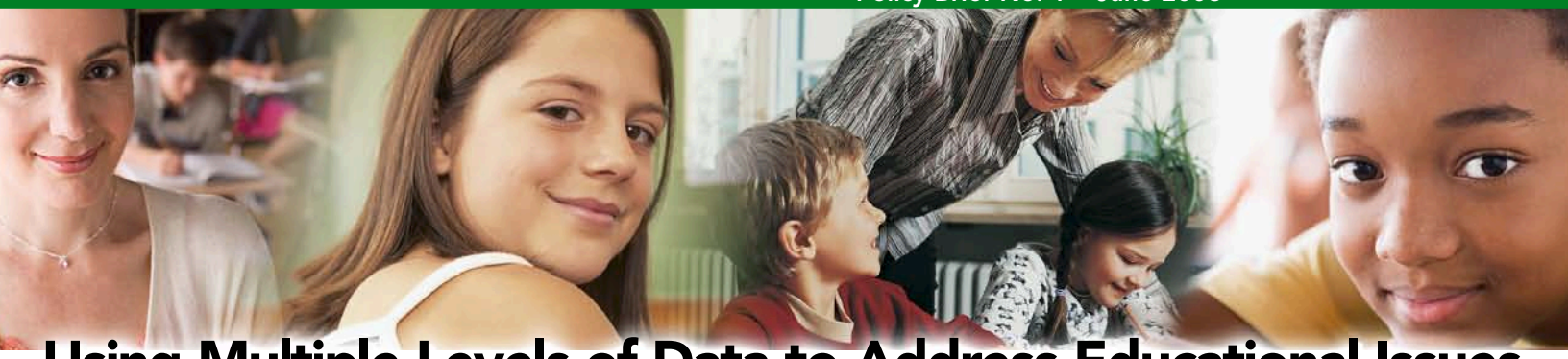
REL MIDWEST
Regional Educational Laboratory

Policy Brief No. 1 • June 2008



Using Multiple Levels of Data to Address Educational Issues

This Policy Brief is based on Getting the Evidence for Evidence-Based Initiatives: How the Midwest States Use Data Systems to Improve Educational Processes and Outcomes, *a 2007* Issues & Answers *report by Sarah-Kathryn McDonald, Jolynne Andal, and Kevin Brown of NORC at the University of Chicago and Barbara Schneider of Michigan State University. The* Issues & Answers *report was the result of a short-term REL Midwest study designed to (1) document current and expected priority information needs of each state in the Midwest region, including information that would enable states to move beyond compliance with reporting requirements toward more proactive strategic planning; and (2) document the structure of each state's educational data system and identify issues related to data quality, collection, and reporting. The complete* Issues & Answers *report is available online (http://ies.ed.gov/ncee/edlabs/regions/midwest/pdf/REL_2007016.pdf). All* Issues & Answers *reports meet Institute of Education Sciences standards for scientifically valid research.*

Note: *Conditions reported in this brief and in the* Issues & Answers *report on which it is based were current as of 2006. Authors of the original report indicate that conditions are changing, with many states in the Midwest region making significant progress on assembling their data, linking data from students to schools and teachers, and becoming involved in activities with institutions of higher education to analyze their data.*

The Importance of Data Use

Why is data use so important? Simply put, quality data combined with sound judgment about data use can improve policy and practice in education. Also, ensuring the quality of the evidence available to inform education decision making is a key part of the No Child Left Behind (NCLB) Act.

States in the Midwest region (Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin) are developing innovative approaches to collecting and providing access to high-quality data. But despite a wealth of data at the school, district, state, and federal levels, the objectives of data-based decision making in education have not been fully realized.

Exemplary Practices for Addressing Data Priorities

Several Midwest states have developed innovative practices for addressing their information priorities and for meeting federal requirements. These exemplary practices typically involve the following:

- Establishing individual-level longitudinal data systems.
- Linking data across the education information system.
- Developing diagnostics.
- Using accountability data.

Establishing Individual-Level Longitudinal Data Systems

All seven states in the region have established—or are establishing—individual-level student or teacher longitudinal data systems, with priority given to

student-level systems. To support these efforts, some states have obtained outside funding; others have reallocated resources. Iowa, Minnesota, Michigan, and Ohio have taken steps to begin establishing data warehousing systems. Indiana and Illinois have built this goal into their strategic plans and are making requests to their legislative bodies for funding. Table 1 provides a regional snapshot.

Linking Data Across the Education Information System

An often unattainable goal for many states is to link student and teacher data in order to identify and intervene in situations that if unchecked may lead to undesirable student outcomes. One obstacle to this goal is the lack of a system that will easily link the data. Another obstacle is addressing the concerns of teachers unions regarding the confidentiality of individual teacher data.

Table 1. State Development of Longitudinal Data Systems

State	Actions Taken
Illinois	Is implementing the Student Information System, which assigns unique student identification numbers to each public school student in the state; collects and stores demographic, graduation, dropout, and other information.
Indiana	Collects a variety of student-level longitudinal data, including demographic, enrollment, special program participation, dropout, and graduation information.
Iowa	Allows the electronic transfer of individual student data from school districts to the Iowa Department of Education to compile state and federal reports; allows the exchange of student records between school districts when students transfer between schools in the state.
Michigan	Collects individual-level student data through the Single Record Student Database, one of five elements of the state's data warehouse system. Also participates in a federal Statewide Longitudinal Data Systems (SLDS) grant (along with the states of Minnesota and Wisconsin and the Wisconsin Center for Education Research) to support developing a comprehensive multistate longitudinal data system.
Minnesota	Assigns unique student identifiers. Received a federal SLDS grant (along with the states of Michigan and Wisconsin and the Wisconsin Center for Education Research) to support developing a comprehensive multistate longitudinal data system.
Ohio	Uses a third-party vendor that assigns unique statewide student identifiers to public school students that can be linked to individual students only at designated data acquisition points. (In 2006, Ohio became the fourth state in the Midwest to receive SLDS funding.)
Wisconsin	Assigns unique statewide student identifiers, providing the capacity to link student-level records across all the state's student-level databases. Also participates in a federal SLDS grant (along with the states of Minnesota and Michigan and the Wisconsin Center for Education Research) to support developing a comprehensive multistate longitudinal data system.

Several states have plans in place or are developing strategies to address the goal of extending the utility of PK–12 data by developing links with postsecondary data systems. Constraints include the absence of a common identifier across student-level PK–12 and postsecondary record-keeping systems and the absence of a suitable data-warehousing infrastructure. Several states are conducting reviews to identify opportunities to develop systems to gather such data.

Developing Diagnostics

One goal of developing mechanisms to link data across information systems is to identify and remediate situations that if unchecked may lead to undesirable student outcomes. Some states have identified key data elements that will help with early identification of problems (for example, course-taking and course-completion, family involvement, and school climate data). Other goals include the following:

- Helping practitioners to see what best practices are characteristic of their schools, the factors promoting their use, and the ultimate outcomes.
- Highlighting high school experiences and clarifying which high schools are better at preparing their students for college—and why.
- Identifying teacher professional development practices that do (and do not) lead to outstanding instructional practices and improved student achievement.
- Understanding why teachers who attended some of the best teacher preparation programs leave the profession.
- Assisting district officials and teachers in understanding the relationship among classes, courses, and performance.

Using Accountability Data

Several states seek to go beyond NCLB accountability requirements and other mandates, using accountability data to monitor progress and target resources more efficiently and effectively. Examples include initiatives that do the following:

- Identify schools that are making significant progress.
- Identify how funds are being allocated.
- Use achievement data in a more timely fashion

Common Data Challenges

A combination of factors frequently hampers state efforts to address information priorities. Such factors include analytic capacity, staffing, and other resource constraints; data burden; and concerns with the implications of the Family Educational Rights and Privacy Act (FERPA) and related state and federal regulations.

- **Constraints on Resources and Capacity**
  - Recruiting and retaining skilled analysts, given salary differentials in public education and other sectors.
  - Conducting noncompulsory analyses of existing data, given current staff resources.
  - Moving to individual-level data collection with resources originally designed for aggregate data collection.
- **Data Burden**
  - Inability to provide resources for schools or districts to move from aggregate to individual reporting of data elements.
  - Absence of a legal authority to collect additional data.
  - Requests to report the same data in multiple forms.
- **Implications of State and Federal Regulations**
  - Although providing important protections, FERPA and other federal and state regulations also hamper the ability of states to extract the full value of the data they already collect for other purposes.
  - Despite a culture that is developing within states and across the region in support of allocating resources to share data to inform decision making, states are concerned that FERPA and other regulations will be barriers to achieving their goals.

State Data Priorities and Challenges Across the Region

ILLINOIS

Priorities

- Compiling all the available information into a data warehouse and streamlining the process of warehousing data.
- Establishing benchmarks by comparing Illinois with the rest of the nation and compiling data on the performance of limited-English-proficient students and students with individualized education programs.
- Measuring progress in student learning.
- Collecting more information about teacher training.
- Obtaining better data on graduation rates.

Challenges

- Redundancy in data collection efforts and inconsistencies in the treatment of missing data.
- Increased demands in terms of data collection and reporting.
- Meeting all of the new federal reporting requirements on time.

INDIANA

Priorities

- Using existing data in innovative ways to provide returns to schools.
- Collecting new information with regard to students' course choices and performance in order to identify and help at-risk students and schools.
- Collecting new information about teachers' professional development activities.
- Connecting K–12 and postsecondary data.

Challenges

(Included are the tactics that Indiana is using to address these challenges. Indiana is the only state for which this tactical information was available in the report.)

- Issues associated with the burden that data collection can place on local school districts. Tactic: Indiana has phased in the rollout of new collections over time, providing schools with up to one year's notice of changes to allow adequate time to modify collection.
- Limited resources. Tactic: Although additional funding is not available to help modify collection systems, local districts can work with an advisory committee to design reports and streamline data collection.
- Inconsistencies in the treatment of missing data. Tactic: Indiana districts complete special reports that list students with missing, inconsistent, or incomplete data.
- Staff capacity to provide speedy responses to requests for information. Tactic: The Indiana Department of Education is applying for relevant grants and attempting to anticipate additional information needs.

IOWA

Priorities

- Collecting more data on PK experiences as well as postsecondary patterns.
- Obtaining better information regarding teacher professional development.
- Gathering additional information on whether students are completing a core curriculum and further defining what the core curriculum encompasses.
- Developing a better longitudinal data system.

Challenges

- Application and reporting of data that the state already collects.
- Increasing demand for education data to be accessible, coupled with concerns about student privacy.
- Resource constraints related to data analysis.

MICHIGAN

Priorities

- Building a longitudinal system to house data and make information available in accessible and useful formats.
- Determining how subgroups of students are performing in school.
- Gathering more data on teacher training and professional development.
- Collecting more information on curriculum development and transitions to postsecondary education.

Challenges

- Inconsistencies in data coding procedures and in data definitions both within the state and across states.
- Working within the constraints of FERPA to allow K–12 and higher education institutions to share data while still protecting individual rights.

MINNESOTA

Priorities

- Centralizing the data, ensuring the data are catalogued, and making the data more accessible to a variety of users.
- Comparing data across states.
- Obtaining more information about the effectiveness of specific programs, teaching practices, and curricular reforms.
- Comparing subgroups or subpopulations within the state.

Challenges

- Funding issues involving the longitudinal data warehouse and coordination of federal reporting requirements at the state level.
- Inconsistencies in data collection time intervals and the treatment of missing data.
- State and federal differences in data definitions.

OHIO

Priorities

- Supporting collaboration among the various education offices.
- Collecting data to address longitudinal questions.
- Linking student and teacher data more easily.
- Making data accessible to educators in user-friendly, actionable ways.
- Benchmarking the state's progress internationally.

Challenges

- Inconsistent data definitions.
- Inability to take advantage of information already collected at the state level—particularly legal difficulties associated with sharing individual-level data collected in the K–12 system.
- Burden of data collection on school districts.

WISCONSIN

Priorities

- Comparing Wisconsin's progress with other states and with the nation overall.
- Determining how various subgroups or subpopulations within the state are performing.
- Obtaining information about transitions to postsecondary education.

Challenges

- Personnel constraints.
- Inconsistencies in data definitions and procedures; data entry errors.
- Coordinating the collection of related information for state and federal deadlines that often conflict.
- Responding to informal data requests in a timely fashion.

State Data Inventories

For this study, researchers designed data inventories to provide information on the data collection activities in each of the states, including what types of data are collected. Table 2 illustrates the type of information recorded in the state data inventories with respect to student and teacher data elements collected by the seven states in the region. Each cell containing a checkmark indicates a data element about which information was obtained and is recorded in each state's inventory.

Realizing the Objectives of Data-Driven Decision Making

Setting state education goals related to quality data can help policymakers and educators understand what is effective—and what is not—with regard to increasing student achievement. Using education data permits decision makers to prioritize how they spend limited capital and resources. Education data also can identify key areas for improvement and provide information about what strategies may be most effective in making those improvements.

State education agency officials in the Midwest region have much in common in their objectives for their education data systems. The analysis of how Midwest states use data systems suggests that opportunities exist to capitalize on the states' commitments to data-driven decision making. Opportunities also exist to improve the chances of realizing the potential of data-driven decision making if states think about these issues more comprehensively and systematically. Additional capacity-building and increased technical assistance at the state and local levels would enhance the work.

Reference

McDonald, S-K., Andal, J., Brown, K., & Schneider, B. (2007). *Getting the evidence for evidence-based initiatives: How the Midwest states use data systems to improve educational processes and outcomes* (Issues & Answers Report, REL 2007—No. 16). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. Retrieved May 8, 2008, from http://ies.ed.gov/ncee/edlabs/regions/midwest/pdf/REL_2007016.pdf

This brief was prepared for the Institute of Education Sciences (IES) under contract number ED-06-CO-0019 by Regional Educational Laboratory Midwest, administered by Learning Point Associates. The content of this brief does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government. This brief is in the public domain. Authorization to reproduce in whole or in part for educational purposes is granted.

Table 2. Student and Teacher Data Elements About Which Information Is Recorded in State Data Inventories

Student Data Elements	IL	IN	IA	MI	MN	OH	WI
Demographic data							
Gender	√	√	√	√	√	√	√
Date of birth	√	√	√	√	√	√	√
Ethnicity	√	√	√	√	√	√	√
Race	√	√	√	√	√	√	√
Low-income status	√	√	√	√	√	√	√
Special population data							
English proficiency status	√	√	√	√	√	√	√
Disability status	√	√	√	√	–	√	√
Economic disadvantage	√	√	√	√	√	√	√
Migrant status	√	√	√	√	–	√	√
Enrollment data							
School	√	√	√	√	√	√	√
Mobility	√	√	√	√	√	√	√
Attendance	–	√	√	√	√	√	√
Curriculum data							
Courses completed	–	–	√	–	–	√	√
Course numbering system	–	√	√	–	–	√	√
Middle school courses for High school credit	–	–	–	–	–	√	–
Dual enrollment courses	–	–	√	–	–	√	–
Achievement data							
State test scores	√	√	√	√	√	√	√
Data permanently stored	√	√	√	√	√	√	√
Untested student records	√	√	√	√	√	√	√
Special program data							
Early childhood program	√	√	√	√	–	√	√
Individualized education program	√	√	√	√	–	√	√
Special assistance	√	√	√	√	–	√	√
Honors courses	–	√	–	√	–	√	√
College test score data							
SAT scores	–	–	–	√	–	–	–
ACT scores	–	–	√	√	–	–	√
Advanced Placement exam scores	–	–	–	–	–	–	√
Attainment data							
High school graduate	√	√	√	√	√	√	√
Type of diploma	–	√	√	√	√	√	√
School dropout	√	√	√	√	√	√	√
Dropout follow-up	–	√	√	√	–	–	–
Dropout versus transfer	√	√	–	√	–	√	–
Follow-up standards	–	–	√	–	√	–	√
Teacher Data Elements	**IL**	**IN**	**IA**	**MI**	**MN**	**OH**	**WI**
Demographic data	√	√	√	√	√	√	√
Qualifications data	√	√	√	√	√	√	√
Professional development	–	–	–	√	–	–	–
Mobility data	–	–	–	√	–	√	–
Attrition data	–	–	–	√	–	√	–

Key

√ = Information about this data element was obtained and is recorded in each state's inventory.

Source: McDonald, Andal, Brown, and Schneider (2007, pp. 10–11)

REL MIDWEST
Regional Educational Laboratory

REL Midwest at Learning Point Associates
1120 East Diehl Road, Suite 200 • Naperville, IL 60563-1486 • 866-730-6735

REL Midwest is one of the 10 regional educational laboratories funded by the U.S. Department of Education, and its work is administered by Learning Point Associates.

2861_06/08