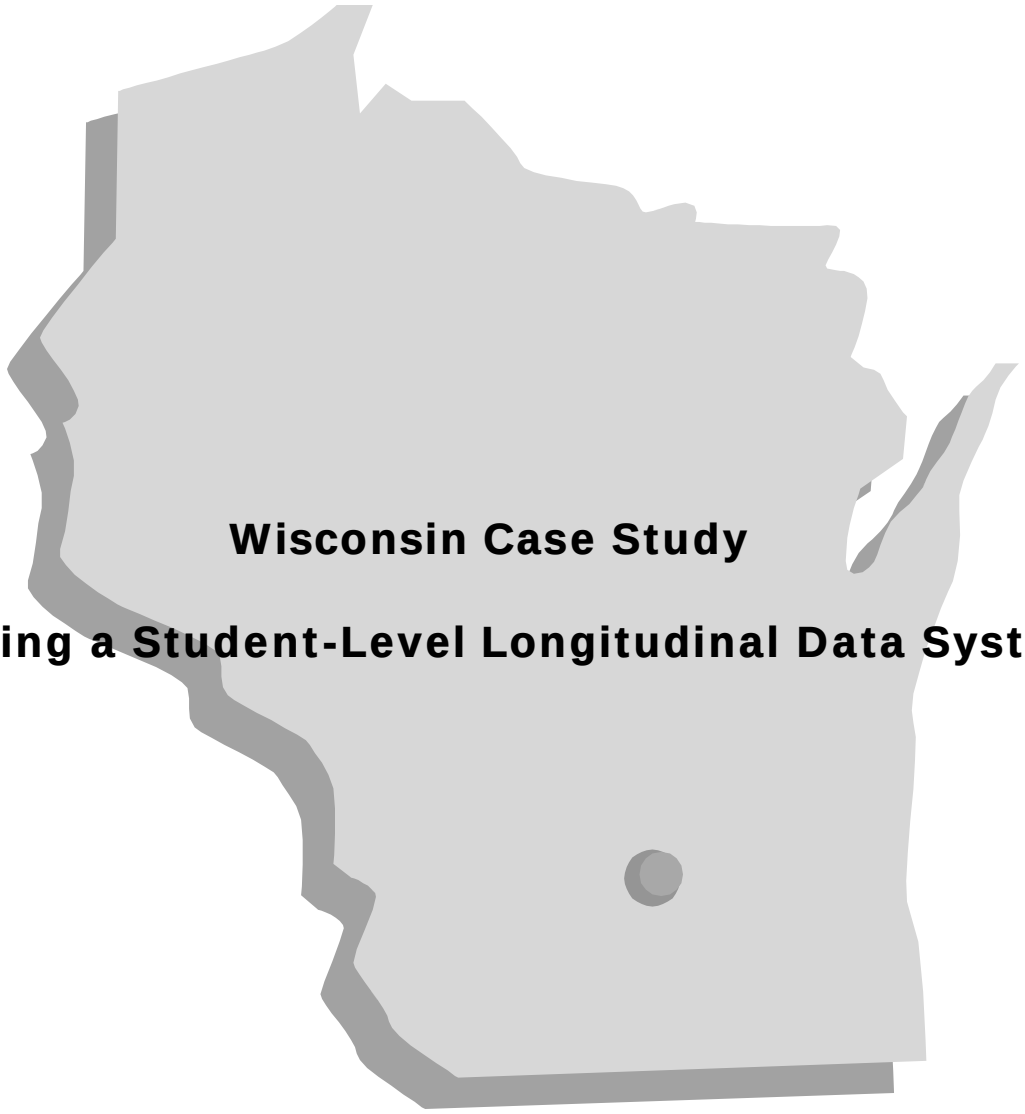
DATA QUALITY CAMPAIGN

Using Data To Improve Student Achievement



Wisconsin Case Study

Building a Student-Level Longitudinal Data System

Data Quality Campaign

August 2006

The Data Quality Campaign is a national, collaborative effort to encourage and support state policymakers to improve the collection, availability and use of high-quality education data and to implement state longitudinal data systems to improve student achievement. The campaign aims to provide tools and resources that will assist state development of quality longitudinal data systems, while also providing a national forum for reducing duplication of effort and promoting greater coordination and consensus among the organizations focusing on improving data quality, access and use.

To these ends, four site visits were conducted in the spring of 2006 to state education agencies (SEAs) to gather information on their experiences in developing statewide longitudinal data systems: Florida, Utah, Virginia, and Wisconsin.

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WISCONSIN: Toughing it out

The Wisconsin Department of Public Instruction (DPI) oversees 425 public school districts and 15 non-district sponsored charter schools in which 874,098 students were enrolled in the 2005-06 school year. Milwaukee Public Schools is the largest district in the state, enrolling 10% of the total students, while the majority of districts in the state are small and rural.

History of Development

Legislation

When Wisconsin started on the path to collecting student level data, the staff involved were not sure they would be successful politically (a key issue was student privacy) but the climate changed in favor of this effort, due partly to the enactment of the 2001 No Child Left Behind act. The State Superintendent was a proponent who felt it was important to have the information collected. A key former assistant state superintendent helped contact and meet with state legislators and other interest groups expected to be opposed to building the system. These efforts and the commitment to protecting privacy as the number one priority helped convince those who had been vocally opposed in the past to see that a statewide student-level longitudinal system was needed and useful. By the time development began in Wisconsin, "support" was primarily in the form of "lack of opposition." There were no funds available at the state level for development and there was no infrastructure in place – the system in Wisconsin is being built from scratch, primarily by DPI staff, with substantial assistance from a vendor.

Unique Identifiers

Wisconsin began to assign unique student identifiers (Wisconsin Student Numbers, WSNs) in spring 2004 using the Wisconsin Student Number Locator System (WSLS). In addition to assigning WSNs to students entering Wisconsin Public Schools, the WSLS is used to help ensure that the WSNs stay with students as they move from school to school and district to district and for updating and correcting WSLS data as needed. WSNs are available to other entities, such as those serving students with disabilities, the Department of Health and Family Services, and the Department of Corrections as of 2006-2007. Under the Individual Student Enrollment System (ISES), districts began submitting student enrollment data for the 2004-05 school year, along with graduates and dropouts from the 2003-04 school year. The student identifier was integrated with assessment records beginning with the 2005-06 school year. The ISES includes student demographic and outcome data needed to meet the school, district, and state report card requirements of the Elementary and Secondary Education Act (ESEA).

Partnerships

An external advisory committee (SSDEAC- State Superintendent's Education Data Advisory Committee) met quarterly; staff would bring issues for discussion to these meetings. The committee was composed of school district representatives from large and small districts (superintendents, school board members, and staff from research and technology, information technology, and program areas), staff from regional educational agencies (CESAs), and vendors.

It was important to take into consideration the needs of the largest school district, Milwaukee Public Schools, as well as the small districts that had no experience with this type

of data collection and submission. Staff felt it was imperative to provide a variety of options, but have found it difficult to provide the necessary flexibility in handling the complexity of multiple district processes due to the cost and maintenance required of a variety of systems.

An internal advisory committee met regularly to give guidance to the development process. Staff from assessment, special education, school finance, educational statistics, and information technology were included, along with a veteran agency staff member who is a former assessment consultant now assigned to special projects. A smaller group comprised of staff from information technology, educational statistics, and the special projects veteran had decision-making authority over much of the work. Some decisions, such as the final exit codes to be used for the dropout collection, and the business rules for calculating various rates, went to the Superintendent's Cabinet for discussion and approval.

Other efforts that aided the process were:

- Review by the Decision Support Architecture Consortium (DSAC) under the auspices of the Council of Chief State School Officers (CCSSO) to develop a roadmap for development.
- A site visit from a consulting firm with expertise in designing and building systems.
- Review of a variety of sources of data definitions such as state or federal statutes, NCES handbooks, and SIF standards.
- Consultation with colleagues from other states to determine if they had grappled with a particular issue and how it was resolved.

Implementation Issues

Costs

Estimated costs to the state:

- Approximately $1.3 million in contract costs to a vendor to aid in developing the statewide student identifier system ($650,000) and student level enrollment data collection ($650,000), beginning in November 2003.
- Approximately $1.3 million in DPI IT development and application staff contributions in developing the two systems over the same time period,
- Additional undetermined costs of non-IT staff time (program area staff and upper management).spent in design and analysis efforts as members of design and oversight committees.
- Additional undetermined costs of training for districts.
- Maintenance costs are undetermined, but will be absorbed by the DPI; however, the source of those funds are currently not identified or secured.

  Costs by Year, for most recent years:
  - In FY 2004-05, $336,000:
    - $226,000 in IT staff time (including development of a delegated authority application to interface with the state security system, testing, analysis, design, data quality checking, help desk support, and development of a data aggregation process);
    - $110,000 for contract staff to help with design, analysis and testing;
    - time and effort of 2+ FTEs of non-IT staff; and
    - training costs for districts.
  - In FY 2005-06 (through February), $444,200:
    - $127,000 in IT staff time;
    - contract costs of $72,000 in technical support for WSLS,

- $25,200 in help desk support for WSLS,
- $110,000 for help desk email support,
- $110,000 for design, analysis, and quality assurance testing;
- time and effort of 2 FTEs of non-IT staff; and
- training costs for districts.

- For FY2006-07 estimated IT staff cost to continue is $360,000 including maintenance and limited enhancements to meet mandates. This does not include non-IT staff costs that will equal or exceed the IT costs.

Estimated costs to districts:

Although costs to the districts are not available, a survey was conducted by the DPI to ask about the time commitment involved and whether additional staff were required for the initial data submission. Of the respondents, 9 districts indicated they had hired additional staff and 30 did not. Of those hiring staff, the range was from one half-time to one full-time employee, or the use of contracted services for a specified duration. Of those not hiring additional staff, the respondents indicated that the work was accomplished by extending due dates on other projects, putting in extra hours, paying overtime, and shifting duties among existing personnel. Almost all of the respondents indicated that a large time commitment was required and that tracking students takes a lot of effort at the local level. A district representative interviewed during the site visit stated that the data submission effort requires ¾ of the time of one staff person over a 3 to 4 month period – time taken away from working on other responsibilities.

Benefits and Uses of System

Benefits

- Savings have not been calculated, but DPI and district staff feel strongly that sufficient increases in efficiencies have occurred to at least partially offset the cost to collect and report more data.
- A number of data collections previously compiled have been eliminated. These include: the dropout report; counts of graduates; retention and attendance; fall enrollment; and the pre-id roster collection used for coding assessment documents.
- The next cycle of data submission will be more efficient, as Summary Reports under development during the current cycle are now in place. In addition, the number of duplicate records needing resolution is expected to be reduced in the next cycle.
- District staff reported an increase in professional development activities on how to ask meaningful questions of the data.
- Generating labels for assessment from the student enrollment data has reduced data entry and programming time and costs. Districts were positive about this change due to the decrease in work load at the district level and the improvement in data quality.
- More efficient submission of federal reports is anticipated.

Uses

- Assessment and other data are reported at a school level via a public website; cell sizes of less than or equal to five students are masked. Because confidential data about students must be aggregated and re-aggregated in many ways, actual rules are more complicated.
- Data are used to support the state focus on accountability, as well as for school improvement planning.

- School district staff with permission (granted by a district gatekeeper) can access individual level assessment data, obtain item-analyses by standard, or generate a variety of summary reports.
- Information on individual student performance by objective and standard is used by some teachers and administrators to inform instructional strategies at the classroom level.
- In addition to school-level growth, the new system will allow the calculation of student-level growth.
- In addition to the required state and federal evaluations and reports, the data will be used to evaluate the effectiveness of
    - staff development and instructional strategies by Educational Technology, and
    - class size reduction under the Student Achievement Guarantee Education program.
- In response to requests for data for research, DPI staff either provides the data or creates reports, depending on the nature of the request.
- Wisconsin statute prohibits using achievement data to evaluate teachers.
- Legal counsel at DPI has determined that staff cannot go into student level data for research purposes unless the research is DPI-initiated.

Lessons Learned

Design

- Scheduling, resources and capacity all have to come together.
- Develop and put in place validation rules as soon as possible. Over 100 validation rules were created to look for inconsistencies and illogical data. The process includes comparisons to prior year data to look for aberrations and outliers. Progress and Summary Reports that allow districts to see their own data are also a part of the validation process.
- Develop a process for adding, deleting, and modifying data elements on a scheduled basis.
- Have open-source applications so districts won't have to pay licensing fees.
- Be aware that it can take from one to three years to implement a change from design to report, depending on whether the element is being added or modified.

Partnerships

- Contracts with vendors need to be carefully written to address issues such as:
    - turnover in vendor staff, requiring re-education of new staff regarding the state's needs and requirements;
    - lack of human resources for efforts such as the help desk;
    - the need for more onsite visits by vendor staff or the requirement that developers work onsite;
    - firm dates for deliverables; and
    - clear communication of report requirements and complexity of reports.
- Cross-program meetings within the department were very helpful. Having everyone at the table to communicate the issues and understand the payoffs led to stronger commitment to consolidating data.
- Keep an active internal data steering committee, including program area staff, and an external advisory group.
- More training of school district personnel was needed, an effort hampered by a lack of human resources to provide one-on-one training or workshops. However, districts have access to a user guide provided within the application, online instruction and tutorials, and a help desk.

Other Considerations

- An aggressive time frame has pros and cons. A shorter timeline is painful but gets the system in place more quickly. A longer calendar for piloting the data collection would have allowed better feedback from districts.
- Be aware of the need to provide for ongoing maintenance, changes, and enhancements. This includes not only software, but costs for annual district training, refresher training, and helpdesk training.

Recommendations for Future Development

- Continue to provide training throughout the state to create a culture of using data to make instructional decisions and increase usefulness of system to all districts.
- Develop strategies to provide support for maintaining and enhancing the system, including hardware, software, district training, and the help desk.
- Develop methodologies to connect teachers to students within the system.
- Develop methodologies to connect students in the P-12 public education system to higher education data.