Florida Case Study

Building a Student-Level Longitudinal Data System

Data Quality Campaign
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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.

Florida: Evolving and Improving

The Florida Department of Education (FDOE) oversees 67 county-wide public school districts, encompassing almost 4,000 schools, in which over 2.6 million students were enrolled in the fall of the 2005-06 school year. Florida has a long history of collecting a multitude of data on its public education system and was one of the country's pioneers in collecting student-level data.

History of Development

Legislation

Early efforts to evaluate and hold educational programs accountable in Florida began with legislation passed in 1968 instructing the Department of Education to improve educational effectiveness. The Florida Statewide Assessment Program was created as a result of the 1971 Educational Accountability Act. An important element in the state's accountability effort, the program was designed to assess students' academic strengths and weaknesses, particularly in the basic skills. Since 1984, accountability for career and technical education, especially at the postsecondary level, has also been a focus in Florida. Accountability systems for community colleges and the state university system have been required by state statute since 1991. The state legislature in Florida has historically been supportive of implementing and enhancing statewide student longitudinal data systems for informing and improving public education. Currently, in every legislative budget a portion of the funding allocated to school districts must be used for data and information services.

Data Collection Processes

In 1986-87, Florida piloted collecting individual student-level data through the Florida Information Resource Network (FIRN). FIRN was a mechanism provided for districts to transmit data from the systems they were using locally. The data collected via FIRN were compared to the aggregate data collected in summary reports. Confidence and improvements in the new data collection system were built over several years before the summary data collection was eliminated. In 1990, the FDOE began to use the data collected through FIRN for reporting on the P-12 education system.

In 1988 the Florida Education and Training Placement Information Program (FETPIP) was implemented. The FETPIP is a data collection system that obtains follow-up information on students after they exit the P-12 system and includes employment, postsecondary education, military, public assistance participation, and incarceration data.

An electronic transcript system, the Florida Automated System for Transferring Educational Records (FASTER) has been in place since 1988-89. By 1994, Florida had one of the most progressive, comprehensive and efficient systems for transferring student records in the nation. In 2001, over 900,000 electronic transcripts were exchanged. At about the same time that Florida's FASTER system was going into production, Florida began to work with other states to develop a nationwide student record transfer system, now known as SPEEDE/ExPRESS (Standardization of Postsecondary Education Electronic Data Exchange/Exchange of Permanent Records Electronically for Students and Schools).

The Florida Comprehensive Assessment Test (FCAT) is part of Florida's overall plan to increase student achievement by implementing higher standards. The FCAT, administered to students in Grades 3-11, contains two basic components: criterion-referenced tests (CRT), measuring selected benchmarks in Mathematics, Reading, Science, and Writing from the Sunshine State Standards (SSS); and norm-referenced tests (NRT) in Reading and Mathematics, measuring individual student performance against national norms.

Since 2002, the Florida Education Data Warehouse (EDW) has provided a single repository of data extracted from multiple sources available at the state level on students, education facilities, curriculum, and instructional staff in the P-20 public education system. The EDW allows longitudinal data analysis at the student and staff levels from 1995-96 forward. Student level data include demographics, enrollment, course completion, assessment results, financial aid, and employment. Future plans include collecting SAT, ACT, and AP data, and obtaining information on private school students.

Future Enhancements

A new learning and teaching environment tool called Sunshine Connections is under development to provide relevant information to educators, administrators, parents and students. Teachers will be provided with interactive access to classroom management tools, student performance data, and interactive capabilities with other teachers, curricular materials, and professional development opportunities.

Implementation Issues

- o Annual data conferences are held to inform district staff of changes and updates. An association of MIS staff meets twice a year to share knowledge and lessons learned, and learn of enhancements and useful reports for informing instruction at the local level.
- o When new mandates or reporting requirements arise, staff in the FDOE work to define, process, and implement the changes in the least painful way for the district, so it will be the least burdensome to districts programming.
- o Currently a grant from the Institute of Education Sciences (IES) is being used to integrate facilities and finance data in the EDW and to develop a business intelligence tool for use with the data warehouse.

Costs

Estimated costs to the state:
- o Most data collection systems in Florida have been in existence for decades, thus the costs of building them are not relevant to this report.
- o To enhance the data warehouse, the FDOE started with a Request for Information (RFI) which resulted in presentations from 15 companies. From this exercise, enough information was obtained to create an Invitation to Negotiate (ITN). Since the FDOE had no money to build the system, they created a *no cost Request for Proposal (RFP)* – in exchange for providing information about Florida's system, the company participating would have "a laboratory to sell to other states."
- o Staff at the FDOE maintain all the systems; six FTEs provide programming support to local school districts.
- o In considering costs, it is helpful to view the public education system as a large corporation and specifically budget a percentage of the corporation's expenditures for information systems rather than look at the specific dollar value associated with each component.

Estimated costs to districts:
- o When FIRN was implemented, districts were not provided software or hardware by the state; districts submitted data from their local systems to FIRN in whatever way they found to be most expedient. The total costs to districts for that effort are not known. However, initial startup funding for this effort was one million dollars statewide allocated to districts based on staff FTEs. The development of consortia to aid in the new reporting process was part of this effort.

o Currently, in every legislative budget a portion of the funding allocated to school districts must be used for data and information systems.
o District representatives from three districts were interviewed to provide anecdotal perspective and estimated the staff impact of managing the SSID system in their respective districts as:
  o two teams (for student and staff data) of four each (District Size: 30,000 students, highly mobile)
  o two developers for the staff data and nine developers for the student data, ten FTEs to maintain the system (District Size: 128,000 students)

Benefits and Uses of System

Benefits
o Increases in accuracy and efficiencies in data collection have been realized over time.
o There are efficiencies inherent in state department efforts to define elements such as course numbers so that districts do not have to develop these. Standardization allows information to transfer from district to district and to higher education with shared understanding of how elements are defined.
o The state has the capability to cross reference data files submitted by the districts and identify errors and anomalies, a process not all districts can do locally. Reports provided to districts allow errors to be identified and corrected before final submission.
o The FDOE provides data to federal offices (such as the Office for Civil Rights) instead of having the districts submit the data directly as is done in most states.

Uses
o Data have been used for accountability and reporting in Florida for many years.
o Data are used for reporting almost immediately after the 2- to 3-week submission period.
o Districts are provided files containing data on their own students who are included in calculations for accountability purposes by the state.
o There is a very high use of data by teachers and administrators.
o FDOE staff work with legislative staff to ensure or strengthen understanding of the data used by legislators.
o The Florida Office of Program Policy Analysis and Government Accountability uses student level data to examine performance in various areas in the context of costs of education.
o The FDOE uses a *quid pro quo* system for negotiating with researchers requesting education data. In exchange for access to the data, the research question either has to be one of interest to the state, or fees are assessed for acquiring the data. The FDOE requires that agency staff be allowed to review research reports before they are released.

Lessons Learned

Design
o Start with an effort sufficiently focused and useful to have "an early win," then build on it rather than having a scope that is too broad to be manageable.
o Do not wait until things are perfect to start. Plan on mid-course corrections and phased implementation.
o Know that all the issues associated with these efforts (matching records across systems, confidentiality, demonstrating viability, selling the products, maintaining

the quality of operations, watching for pitfalls and opportunities) will need to be addressed continually.
o   Identify all the information you want to obtain at the beginning and plan on mid-course corrections as dynamics change. Put it in a format you can change because it will never remain static.
o   Expect to spend a year in discovery for an effort like a data warehouse and know that "no shrink-wrapped answer" is available. Be aware that it will take staff time for development and contract monitoring activities.
o   Keep ultimate goals in sight to maintain expectations of where you need to be.

Staffing
o   Maintain flexibility in the face of changing leadership, technology, expectations, and the political environment.
o   As much as possible, maintain continuity of staff.
o   Communicate to staff at the district level that the job entails data quality, not just getting the data reported.
o   Hold regular meetings with MIS and program area staff, both within the state department and within school systems. Funds for programs are allocated based on data, and programs are evaluated under accountability systems. However, it is often the MIS staff who are collecting and reporting the data, so communication and understanding between these groups is important.

Maintenance/Change Control
o   Matching students across collections (for example, enrollment to assessment) and within the EDW is done based on a rubric for assigning points of matching multiple student-specific variables, such as school of enrollment, first and last names, date of birth, and gender. Seventeen rules have been developed to identify a student, with varying levels of confidence assigned depending on the combination of matching data elements.
o   The FDOE periodically conducts a sunset process to review every data element and determine whether it should continue to be in the data collection. Processes are in place to track how often elements are used for reporting and analysis.
o   A student locator system using information from the data collections allows districts to find all possible matches on a student using a system to match records based on similar sounding surnames.
o   The FDOE tries to balance the need to collect all data elements with the goal of reducing the reporting burden on districts.
o   When possible, the FDOE reconfigures data at the state level to meet new reporting requirements, as that is a less expensive process than asking all districts to re-tool their systems.
o   Staff members who are responsible for collecting the data and putting it into the warehouse also focus on ensuring the data are clean before it is used by others.
o   Business rules for determining how to handle (for example) changes in a student's ethnicity, gender, or program need to be explicated and disseminated.
o   Consult an expert (for example, an economist or statistician) to help decide what to do with data anomalies, suspect data that cannot be changed, or data errors that affect state totals.

Partnerships
o   Establish and maintain good relationships with SEA and legislative leadership to achieve long-term goals.

o   Oversight committees need to be reformed as systems change and the scope and focus of the project changes. A committee to help design data collection for a P-12 system will not have the same audience as one focused on data usage.

o   Solicit districts (or universities or community colleges, depending on your effort) eager to participate so they can lead the way in telling their colleagues what the advantages and payoffs will be.

o   Solicit advocates among your districts. Those willing to go to the legislature can be effective. The size of the district is not necessarily a factor in selection. Improving data accuracy, resulting in more appropriate funding, can really help a small district.

o   Consider the needs of both small and large districts; neither is immune from the pitfalls of data collection and reporting processes.

o   Cooperation and collaboration is enhanced if districts get answers, even unpopular ones.

o   Since each system (for example, finance or facilities) has its own business rules, it is essential to include all relevant people in the effort to understand how the data are being used so as to align processes, definitions and edits.

Communication

o   Transparency of procedures and processes is helpful, so that all parties involved can see the benefits of better quality data.

o   Document all systems and how and why they were designed.

o   In order to improve the quality of data and eliminate confusion, determine one source of data for all reports and evaluations.

o   Be aware that once data are linked to other areas, perhaps in ways that were not originally intended, this will change the scope of how the data are collected and reported and can have unintended consequences.

Recommendations for Future Development

o   Continue to provide training throughout the state to create a culture of using data to make instructional decisions and individualize instruction for all students.

o   Work toward collecting data on why students are not tested.

o   Continue to expand data warehouse capabilities to include facilities and address issues of class size.

o   Continue to move toward development of data marts for providing most commonly-requested reports from the data warehouse.

o   Work to determine a basic level of information services to districts that can be maintained over time regardless of changes in leadership and funding.