

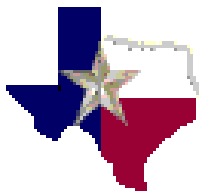


Texas Education Agency Educational Data Systems Past, Present and Future

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The TEA Mission



TEA

The Texas Education Agency Mission

The mission of TEA is to provide leadership, guidance, and resources to help schools meet the educational needs of all students and prepare them for success in the global economy.

The Agency supports the following core efforts:

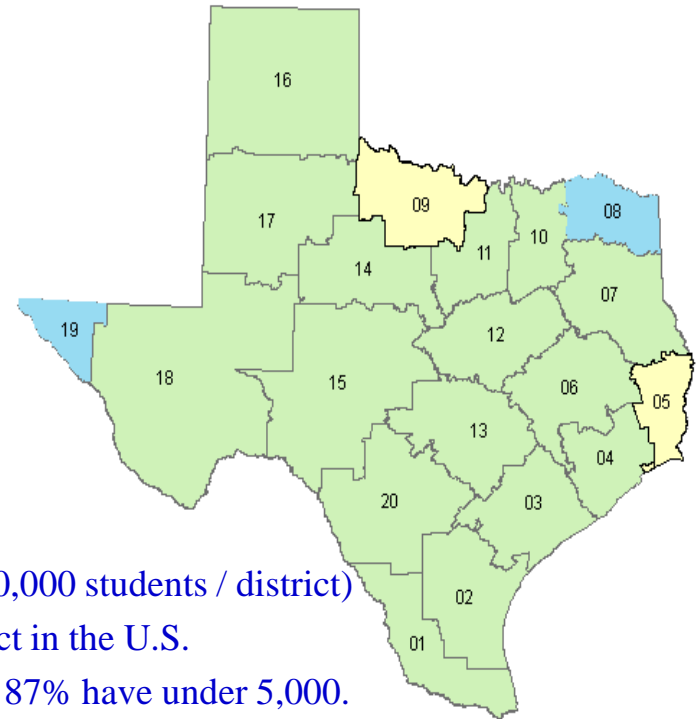
- Data collection, analysis and reporting
- School funding. The TEA is the funding source for all the Texas K-12 public schools.
- Grants and Entitlements management
- Textbook purchasing and management
- Teacher credentialing management



Texas Public Schools Demographics

Texas Public schools are diverse and independent

- **More than 4.6 M K12 students**
 - 47 % of students are Hispanic
 - 35% are White
 - 14% of students are African – American
 - 55% of students are economically disadvantaged
 - **Texas is #6 in the nation in student growth.**
- **20 regional Education Service Centers, with diverse demographics**
- **1200 school districts**
 - 27% of students are in the largest districts (over 50,000 students / district)
 - Houston is the seventh largest school district in the U.S.
 - 59% of the districts have under 1000 students and 87% have under 5,000.
- **8195 campuses**
- **More than 321,730 active teachers**





TEA Software Applications



TEA Software Applications

There are over 80 software applications supporting business automation at the TEA, including:

- **School funding** applications that manage more than \$16B
- **Grant and entitlement management** applications (applying, reviewing, awarding and managing) that manage more than \$4B
- **Student enrollment tracking**(transfers, attendance)
- **Data collection and reporting** applications



TEA Data Collection Analysis and Reporting



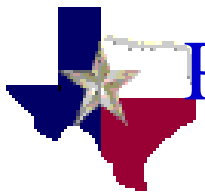
TEA Data Collection, Analysis and Reporting

- The largest TEA data collection system is **PEIMS** – the Public Education Information Management System
- The largest data warehouse for the TEA is **TPEIR** – the Texas Public Education Information Resource
- TEA jointly supports the Texas **Educational Research Centers** which provide K12 and public colleges data
- TEA also currently performs at least 260 other smaller data collections for areas such as special education, fitness, and other data.
- TEA supports many business intelligence efforts as well



PEIMS – The Texas Public Education Information Management System

- PEIMS original mandate was legislated in 1984 and PEIMS is typically considered the first statewide large scale student data collection system in the U.S.
- Primary goal – Accountability and Compliance
- The State Board of Education approved the Operational Plan for the Adoption of the Public Education Information Management System, or PEIMS, in June of 1986.
- The TEA PEIMS Division was created in 1986
- The first staff and budget data collections occurred during the 1987-88 school year.
- The first student data during the 1989-90 school year.



TEA

PEIMS Consists of Four Collections Per Year

Fall/Collection 1 (District status as of late October)

- Includes Budget, staff, organization, and student data , leaver data
- For compensatory entitlement, special programs, Federal reporting, Academic Excellence Indicator System (AEIS) profiles

Midyear/Collection 2:

- Includes Actual prior year financial data
- For legislative reporting, monitoring special program expenditures, district audits

Summer/Collection 3

- Includes student attendance, course completion, discipline, restraint and Title I, Part A data
- For school funding final allotments, attendance, course completion, part of AEIS, some special programs

Extended/Collection 4

- Includes optional extended year program (OEYP), Extended school year services (ESY), Bilingual/ESL summer school,
- Summer school funding and special programs



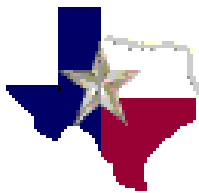
PEIMS Collection Process

The PEIMS collection process includes:

- PEIMS Data Standards – Definitions, codes, formats, procedures and dates for the collection of data
- Data Documentation describing the numeric and alphanumeric values stored in the database.
- Standard validation procedures
- An established database design
- A production system to format and load data into the TEA database

One collection (e.g Fall) typically takes 5 months from start (ready for data) to finish (data available to stakeholders)

The actual start of submission to final submission accepted typically takes more than a month. Schools put incomplete data in the system early on and run data validation reports as they refine and complete the data for final submission



Two Committees Support PEIMS Oversight

TEA

Policy Committee on Public Education Information (PCPEI)

- 24 representatives from districts, ESCs, government and educational associations
- Meets 3 to 4 times per year.
- Advisory group to oversee PEIMS policy issues
- Reviews and approves data, the elimination of data
- Provides policies that promote data quality .

Information Task Force (ITF)

- Similar composition of that PCPEI.
- holds monthly meetings
- provides technical advice to the PCPEI
- forwards its recommendations to PCPEI



An Assessment of Legacy TEA Data Collection Processes

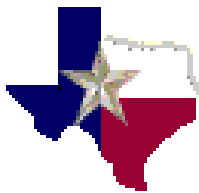


Assessing PEIMS and Other Collections at the TEA

In 2009, the Michael and Susan Dell Foundation (MSDF) funded a \$750,000 effort to determine the current state and recommendations for Texas K12 data collection.

The TEA contracted with IBM consulting services to perform the analysis.

The following is a summary of the issues and recommendations from that report.



TEA TDCARSI Project Goal and Activities

TEA

The Goal:

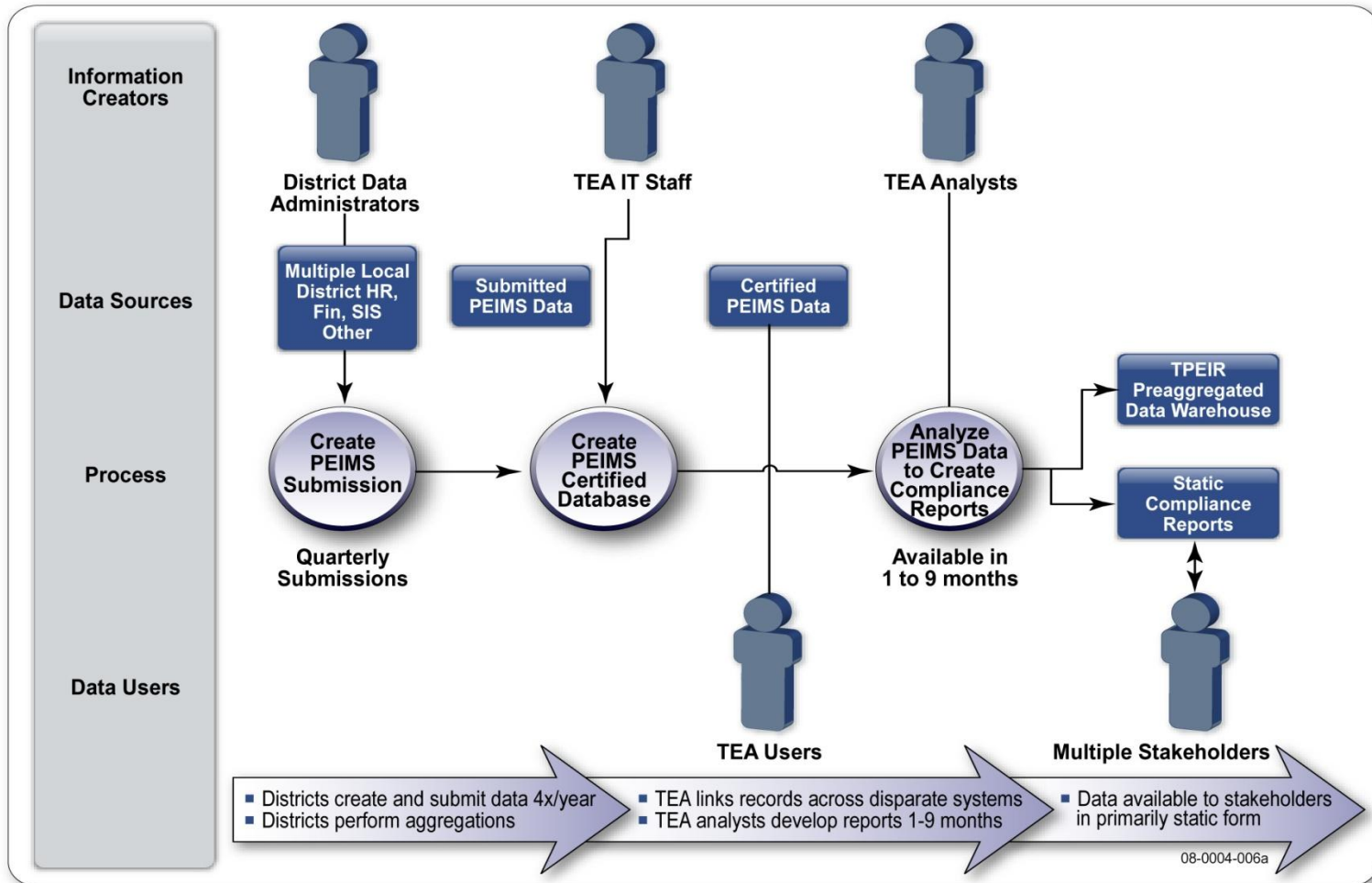
Recommend an information management approach that will allow the TEA and all types of key stakeholders to deploy and use an improved, flexible data collection, analysis and reporting system that will better support the TEA mission.

Key Activities included:

- Focus groups and interviews with over 250 districts, 18 (of 20) Educational Service Centers (ESCs), legislators, and government, research, and TEA staff
- Surveys of five other state education systems and processes (CA, FL, IL, NC, and OH)
- Analysis of the existing and proposed requirements data collection and reporting systems
- Forum for student information system vendors
- Sample survey of PEIMS costs to 20 districts



Existing TEA Environment





Stakeholder Needs for Education Data

Timely, accurate, relevant data is the basis for strategic and tactical decisions and analysis

Strategic Planning and Assessment

- State and local initiatives
- Student mobility and diversity trends
- Grant participation tied to student outcomes
- At-risk factors and student performance
- Research on targeted populations
- Longitudinal analysis
- “What if” scenarios

Tactical Planning and Intervention

- On-time graduation and college readiness
- Student-teacher links
- Integrated data that tells the “whole story”
- District-to-district comparability analysis
- Course performance vs. test results
- Student performance related to instructional practices



Issues as Identified by Key Stakeholders

- 1. Inability of current system to deliver data that is timely, relevant, and actionable**
- 2. Current data collection model imposes significant burden on local districts**
- 3. Lack of statewide standards for local data management systems**
- 4. Limited use of unique Texas Student Identifier makes it difficult to integrate student data across sources**
- 5. Cumbersome and inefficient analysis and reporting capabilities**
- 6. Inability to easily access comprehensive longitudinal data**
- 7. Lack of agency-wide standards for data collection and storage**
- 8. Lack of a single TEA point of contact for all data collections**



Recommendations for TEA data collection and reporting



TDCARSI Report Recommendations

- 1. Streamed, Granular Data Collection Model of Disaggregated student data**
- 2. Multiple Repositories for stakeholder needs**
 - Operational data store for local needs**
 - Aggregated Data Warehouse for global needs**
- 3. Business Intelligence and Reporting for each repository**
- 4. Unique statewide Texas Student Identifier**
- 5. Unique Teacher Identifier (and Classroom Link)**
- 6. State Voluntary Student Information System**
- 7. Enterprise Data Governance and Board**
- 8. TEA Enterprise Data Management Office**
- 9. Statewide Enterprise Data Standards**



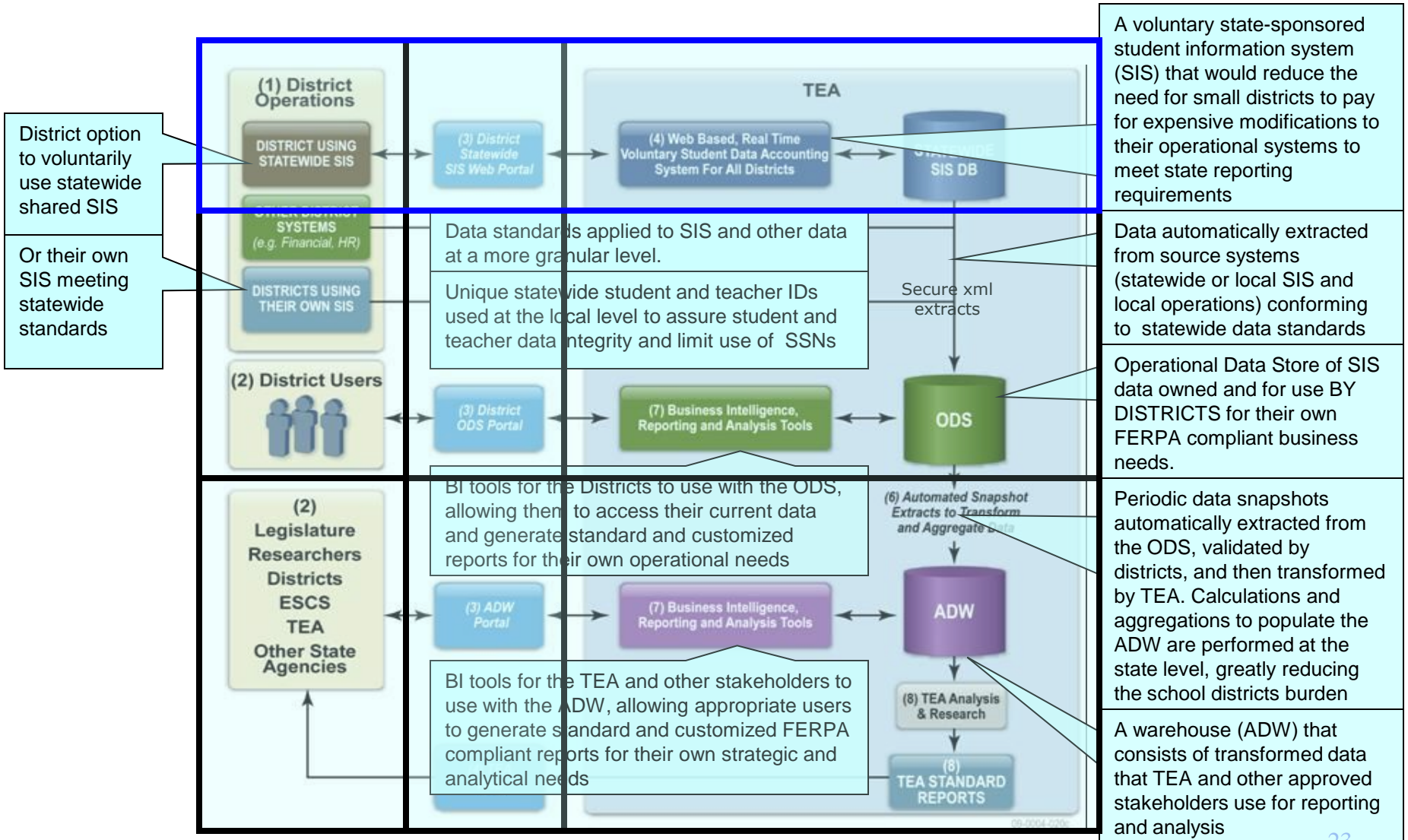
The (Likely) Future TEA Data Collection and Reporting Systems



The Future of TEA Data Collection and Reporting Systems

- Legislative status - The last session (this year) introduced but did not pass a bill or fund the efforts outlined in the TDCARSI recommendations. The last session did provide rider authority to move funds for this and other related efforts
- TEA has hired a Director of Data that has responsibility above the multiple silo business areas. This position will include efforts to unify data collection, standards and policies as well as acting as the “super” customer for the future systems
- TEA applied for and received a Statewide Longitudinal Data Systems Grant this summer.
- TEA is in the process of investigating other federal grants to help support these efforts
- TEA was just granted \$10M by the Michael and Susan Dell Foundation to help pursue specific tasks related to these efforts.

Recommended Information Management Solution





Current Efforts to Support the Future of TEA Data Collection and Reporting Systems

- SLDS I Grant includes efforts to:
 - Provide linkage between student, classroom and teacher data
 - Expand data warehouse support for this and Texas public college data
 - Support district self service performance and anonymous cohort analytics
- The PEIMS renovation project
 - Phase I (now complete)
 - Converted batch application from mainframe to ETL (DataStage) and C# on servers
 - Converted data storage from 80 column format to true relational data
 - Provided five years of PEIMS data in public data cubes (Cognos) for staffing and financial data and to TEA staff for student data
 - Phase II (starting)
 - Converting existing canned reporting to Cognos flexible reporting
 - Externalize business rules management
 - Converting data submission format from 80 column to flexible XML
- Dell Grant related efforts – ODS and Performance Standards, in planning
- SLDS II Grant – in planning



Conclusions



Conclusions

Positive Progress

- Senior management is committed to better serve the schools by providing more efficient, timely, and locally valuable data and reporting
- TEA has already purchased or is developing new technology that will support the downstream goals (e.g. Business Intelligence, Business Rules Management, XML data representation, data warehousing)
- TEA has found sources of funding helping make progress toward its goals.

Continuing Challenges

- The size and diverse technical capabilities of the individual, independent districts make changes that impact them challenging.
- Internal TEA roles must evolve to include more data consolidation and sharing and more high level coordination on policies
- Understanding and implementing new data policies will take time



Recommended Best Practices



Best Practices

What we have learned that other states could benefit from:

- Assure you have a good, representative governance model with the districts
- Assure that your internal organization includes a senior manager with an *enterprise* focus on data, in addition to silo managers
- Make your enterprise data collection independent of silos, but make the silos your customers.
- Work hard to make systems more real time and or more value to the schools, not just retrospective compliance systems
- Get off of legacy systems today
- Build or buy reusable components to simplify systems support and minimize redundant systems (e.g. SOA, business rules management, business intelligence, data warehousing)
- Investigate methods to support transparent extraction of data from source systems (statewide SIS, XML, etc.).



Addendum

What Makes Texas Special?



A Short Lesson on Texas

Texas is big, diverse and independent

- Texas is about 263,00 square miles (*bigger* than France)
- It is farther from El Paso to Texarkana than from Chicago to New York .
- The Texas Coast Line is 367 miles long, the sixth longest in the U.S. (Alaska, Florida, California, Hawaii; then Louisiana and Texas, which are roughly the same)
- The Texas Mexico border is the second longest state border with another country (1240 miles). Alaska's is longer but much less populated
- About 23 million people live in Texas
- About 30% of the people in Texas speak Spanish at home.
- About 24% of Texas children live in poverty.
- The worst U.S. disaster was the 1900 hurricane in Texas.