

## **Appendix E**

### **Texas State Education Data**

The state of Texas oversees education services to more than 4.2 million children and employs more than 300,000 teachers and other professional staff in 7,733 schools and 1,039 districts. Annual education expenditures in the state top \$30 billion. As one of the largest state education systems in the country, data collection and management have been of great importance to Texas and have resulted in education data resources used by state and national researchers and policy analysts.

#### *Overview of Existing State Data*

The Public Education Information Management System (PEIMS) encompasses all data requested and received by the Texas Education Agency about public education, including student demographic and academic performance, personnel, financial, and organizational information. According to Texas Education Agency documents, the Public Education Information Management System “is believed to be the world’s largest repository of educational data.” The Public Education Information Management System contains data necessary for the legislature and the Texas Education Agency to perform their legally authorized functions in overseeing public education. School districts submit their data to the Public Education Information Management System in a standardized electronic format. State education agency data managers also create calculated data elements derived from district submissions. Two data systems that are closely linked to the Public Education Information Management System are the Financial Accountability System and the Academic Excellence Indicator System (AEIS).

The Financial Accountability System manages the collection and reporting of financial data from Texas school districts. This system helps school districts maintain budgeting and

financial accounting and reporting systems required by the state. It also specifies principles and policies that were developed by the state to ensure uniformity in accounting. Financial data are organized into account codes at function, object, and program levels. Data are reported through the Public Education Information Management System reporting process. An online resource guide available to the public provides guidelines for district data management staff in collecting and managing financial information for the Public Education Information Management System (<http://www.tea.state.tx.us/school.finance/audit/resguide10/index.html>). The resource guide also contains a list and definitions of account codes (funds, functions, objects, programs) by which financial data are organized.

The Academic Excellence Indicator System compiles a wide range of Public Education Information Management System data on students, staff, and characteristics of each school and district in Texas. This information is put into annual Academic Excellence Indicator System reports, which are available in the fall. Academic Excellence Indicator System data are also available for download from the Texas Education Agency's Web site (<http://www.tea.state.tx.us/perfreport/aeis/>). These data include student performance indicators, student and staff demographics, staff counts, and financial summaries. The Academic Excellence Indicator System glossary describes each data item and provides the methodology and data sources for calculated values. The glossary is updated annually and can be accessed online in either English or Spanish at <http://www.tea.state.tx.us/perfreport/aeis/2003/glossary.html>.

In addition to the Public Education Information Management System, the State Board for Educator Certification (SBEC) database contains information of interest to resource allocation researchers. The State Board for Educator Certification is responsible for ensuring that educators are qualified to serve in the Texas public school system. The agency issues certification

credentials to qualified applicants and also manages the development and administration of teacher competency exams. As part of their work, State Board for Educator Certification staff collect and report on data about Texas teachers, including certification information and teacher test scores. The agency's interactive Web tool allows public users to search for information about teacher certification and teacher preparation institutions at <http://www.sbec.state.tx.us/reports/default.asp>.

Table TX1

*Summary of Existing State Databases, Texas*

Data Category	State Database	Managing Agency/Department
Instructional expenditures	Public Education Information Management System (PEIMS) Academic Excellence Indicator System (AEIS)	Texas Education Agency, School Finance and Fiscal Analysis Division
Staff characteristics	Public Education Information Management System (PEIMS) Academic Excellence Indicator System (AEIS)	Texas Education Agency, Public Education Information Management System Division
Student characteristics	Public Education Information Management System (PEIMS) Academic Excellence Indicator System (AEIS)	Texas Education Agency, Public Education Information Management System Division
Student performance	Public Education Information Management System (PEIMS) Academic Excellence Indicator System (AEIS)	Texas Education Agency, Student Assessment Division
Teacher licensure	State Board for Educator Certification (SBEC) database	State Board for Educator Certification

*Instructional Spending*

Instructional spending is tracked by school districts and organized into a standard accounting structure established by the Financial Accountability System. Information related to staff salaries is collected through the Public Education Information Management System data

collection for individual staff persons and integrated into the financial accounting structure.

Descriptions of the instructional spending variables available through state education databases appear in Table TX2 and are discussed below.

Table TX2

*Measures of Instructional Expenditures From District Financial Data, Texas*

Fiscal Measure	Variables Available	Description	Unit of Analysis
Instruction-related expenditure functions and subfunctions	Instruction and instruction-related services	This large function is composed of three subfunctions:  1. Instruction: Expenditures for activities that deal directly with the interaction between teachers and students  2. Instructional resources and media support: Expenditures that are directly and exclusively used for establishing and maintaining libraries and other major facilities dealing with educational resources and media  3. Curriculum development and instructional staff development: Expenditures that are directly and exclusively used to aid instructional staff in planning, developing, and evaluating the process of providing learning experiences for students	District School Program
	Instructional and school leadership	Expenditures that relate to the managing, directing, supervising, and leadership of staff who are providing either instructional or instructional-related services	District School Program
	Support services—student	Expenditures that are used directly for noninstructional student activities or services. Subfunctions related to this function include guidance, counseling, and evaluation services; social work services; health services; student transportation; food services; and cocurricular/extracurricular activities.	District School Program
	Administrative support services	Expenditures that are for the purposes of managing or governing the school district as an overall entity. This function is primarily composed of the subfunction general administration.	District School Program

Instruction-related expenditure objects	Payroll costs—teachers and other professional personnel	Gross salaries or wages paid to persons who are considered by the school district to be a professional staff member	District School Program
	Payroll costs—support personnel	Gross salaries or wages paid to support personnel	District School Program
	Payroll costs—employee allowances	Expenditures paid to employees for which the employee is not required to render a detailed accounting, such as contract buyouts; \$1,000 Texas Retirement System supplemental compensation; and automobile, housing, and other allowances	District School Program
	Payroll costs—employee benefits	Expenditures paid by the school district to provide benefits to employees such as federal Social Security payments, insurance, workers’ compensation, retirement, and unemployment compensation	District School Program
	Professional and contracted services	Expenditures for services rendered to the school district by firms, individuals, and other organizations, including professional services, tuition and transfer payments, education service center services, contracted maintenance and repair, utilities, and rentals	District School Program
	Supplies and materials	Expenditures for supplies and materials, including supplies and materials for maintenance and operations; textbooks and other reading materials; testing materials; and food service	District School Program
	Other operating costs	Expenditures for miscellaneous operating costs such as travel subsistence and stipends; insurance and bonding; elections; and depreciation of trust funds	District School Program
	Debt service	Expenditures for debt service including principal, interest, and other payments	District School Program
	Capital outlay—land, buildings, and equipment	Expenditures for capital assets, including land purchase and improvement; building purchase, construction, or improvement; furniture and equipment purchases of \$5,000 or more; and capital assets of less than \$5,000	District School Program
Staff salary data	Payroll amount	The annual pay that a staff person is scheduled to receive. This amount is composed of a base pay for regular duties and supplemental pay for noninstructional activities such as coaching or tutoring. The payroll amount is associated with function, object, and program fiscal categories.	Individual

*Instructional Expenditures.* Instructional expenditures are divided into four functions covering four broad areas of spending: (a) instruction and instruction-related services, (b) instructional and school leadership, (c) support services—student, and (d) administrative support services. These four functions are divided into subfunctions that provide more detailed accounting of spending within the larger categories. For each function and subfunction, expenditures are divided into payroll costs; professional and contracted services; supplies and materials; other operating costs; debt service; and capital outlay—land, buildings, and equipment.

Fiscal data are available at the district level and at the organizational level. Organizations include alternative schools, high schools, junior high/middle schools, elementary schools, and summer schools. Fiscal data are also organized by a range of program areas that include basic educational services and enhanced services (gifted and talented education, bilingual programs, etc.).

*Salaries and Benefits.* Salary data are collected through the Public Education Information Management System and are reported in the following multiple formats:

1. The Public Education Information Management System collects individual-level salaries for professional, paraprofessional, and auxiliary staff organized under more than 40 role categories (principal, teacher, education aide, etc.). These data are the basis for aggregate salary data reported in the Academic Excellence Indicator System and the Financial Accountability System.

2. Average actual salaries are compiled from Public Education Information Management System data and reported for each school through the Academic Excellence

Indicator System. The Academic Excellence Indicator System also reports average teacher salary by years of experience for each school.

3. Salary information from the Public Education Information Management System is also aggregated to the school and district levels for groups of instructional staff in the Financial Accountability System. Salary data for related staff role categories are combined and reported as object-level gross salaries or wages under several function categories. Grouping of staff salaries allows researchers access to salary information that is aligned with fiscal function categories; however, the staff groupings are large enough to limit researchers' ability to isolate the salary paid to any specific category of staff (e.g., classroom teachers). Under the instruction function, for example, the salary object represents combined expenditures to teachers, teacher aides, classroom assistants, graders, staff working in the classroom on a dedicated basis, adult basic education teachers, substitute teachers, and remote teachers.

Two object codes in the financial data relate to staff benefits. The employee allowance object includes contract buyouts, a \$1,000 Teacher Retirement System supplemental compensation, and employee allowances. The employee benefits object includes the traditional range of employee benefits (health insurance, Social Security, workers' compensation, etc.).

*Data Usability.* Table TX3 contains a summary of the usability characteristics that researchers identified regarding instructional expenditure data. Researchers found that fiscal and salary data are easily accessible and reliable for conducting research. The Texas Education Agency's Web site contains an extensive collection of data organized by school and district. These data can be searched for individual schools or districts and are also easily downloadable in multiple computer formats. Documentation of these data is also readily available and contains detailed information about the data collection process and variable definitions. Salary and

expenditure data were collected in a relatively consistent manner during the study period (1999–2003), and data managers reported only minor changes to data that might affect their accuracy. Another important strength in this state’s expenditure and salary data is the internal consistency of these data. Staff salary information in the Public Education Information Management System and fiscal expenditure data on salaries are both recorded by function, object, and program and therefore represent consistent dollar amounts. These data also have the potential to allow researchers to align salary and expenditure data with a wide range of other data such as staff characteristics, teacher certification, student performance, and school and district characteristics.

The Texas Education Agency uses a standardized procedure that checks for errors in data submitted by school districts and has a feedback mechanism that allows districts to correct mistakes or inconsistencies. Education Service Centers in the state use an automated system (EDIT+) to validate data before they allow districts to submit them to the state Public Education Information Management System database. Although EDIT+ can detect major errors and discrepancies in data prepared by school districts, it cannot identify or correct content errors or other less pervasive problems in data collection and reporting. Education Service Centers also are charged by the state to support data quality by providing training and assisting school districts with their data submissions.

Researchers encountered the following challenges associated with applying instructional expenditure and salary data to research efforts:

1. Accessibility of these data is hampered by their relative complexity. A user would need to spend a significant amount of time learning the structure of these data and the definitions of variables and how they relate to one another. For example, how individual staff salaries are

aggregated to create the object-level salaries in the fiscal database is neither explicit in the documentation nor implicit in the way these data are organized.

2. Although state data managers have a well-defined process for responding to requests for data that are not available via public sources, outside users must pay a fee to obtain such data and must wait 6–8 weeks or longer for the data request to be processed.

3. Researchers face a challenge in computing the total amount spent for staff compensation because data are not available to measure the amount spent on benefits for individual staff.

4. Although each individual staff salary is assigned a function, object, and program expenditure category for cross-referencing to the fiscal database, there is no standardized range of staff position codes aggregated within each function category. For example, districts could report the salary of an instructional officer into the fiscal expenditure function curriculum development and instructional staff development or into the function instructional and school leadership.

Table TX3

*Strengths and Challenges of Instructional Expenditure Data That Affect Their Use for Policy Research, Texas*

Criterion	Strengths	Challenges
Availability and accessibility	<ul style="list-style-type: none"> <li>Data are available from two sources: district expenditure and individual staff salaries.</li> <li>School- and district-level expenditure and salary data are publicly available from the Texas Education Agency's Web site.</li> <li>Annually updated data documentation is also available on the Texas Education Agency's Web site.</li> </ul>	<ul style="list-style-type: none"> <li>Data systems are large and of significant complexity.</li> <li>To obtain individual staff salary data researchers must submit a special request to Texas Education Agency, wait for the request to be processed, and pay a fee.</li> </ul>
Completeness	<ul style="list-style-type: none"> <li>Financial data are disaggregated to the district, school, and program levels and are available for all years of the study period.</li> <li>Staff salary data are collected for all classified and certified staff and for all years of the study period.</li> </ul>	
Accuracy	<ul style="list-style-type: none"> <li>The financial data collection process is well-established and has undergone minimal changes over the study period, increasing the accuracy of district reporting.</li> <li>Editing and data validation is conducted by regional service centers before districts submit final data reports to the Texas Education Agency.</li> </ul>	<ul style="list-style-type: none"> <li>Some data collection problems persist, especially for districts that encounter changes in leadership or accounting staff.</li> </ul>
Consistency	<ul style="list-style-type: none"> <li>No substantive changes were made in data collection procedures or variable definitions during the study period.</li> <li>Individual salary data are assigned function, object, and program labels that are consistent with fiscal data categories.</li> </ul>	
Alignment	<ul style="list-style-type: none"> <li>Individual staff salary data can be aligned with other staff characteristics.</li> <li>Staff salary data can be averaged across grades, schools, and districts.</li> </ul>	<ul style="list-style-type: none"> <li>Staff salaries are aggregated to function categories using role codes. Since role codes are assigned at the discretion of each district, there is no standard list of role codes aggregated into each function category.</li> <li>Staff benefits are collected at the district level only. Individual-level expenditures for benefits can only be estimated by averaging across all staff in a district.</li> </ul>

### *Staff Characteristics*

Information on staff characteristics is collected through the Public Education Information Management System. A wide range of staff characteristics and job-related information is collected for education staff. Basic demographic information and payroll information are collected for all staff, including nonprofessional auxiliary staff such as cafeteria workers, secretaries, and bus drivers. These variables include a district identification code, ethnicity, gender, years of experience, highest degree obtained, and payroll amount. Data on professional and paraprofessional staff also contain information about staff responsibilities such as the subject area taught, the specific position(s) held, and percentage of their full-time equivalency (FTE) allocated to multiple positions. These data are organized so that by identifying the role categories that correspond with the staff category of interest, researchers can identify a range of characteristics for individuals within these role categories. Classroom teachers, for example, can be defined with three role codes: (a) teachers, (b) special duty teachers, and (c) permanent substitutes. Staff in specific roles can be counted, combined, or matched to other characteristics such as demographics, salary, education level, or certification.

Additional teacher information is available from the State Board of Educator Certification. This state agency collects certification and teacher test data on all teachers, including educator preparation institution, route to certification, type of certification, grade and subject area of certification, and raw score on teacher competency tests (pedagogy and content areas). This agency also compiles teacher data into reports and downloadable compilations of school and district data.

Table TX4

*Staff Characteristics Available in State Databases, Texas*

Staff Characteristic	Variables Available	Unit of Analysis	Source
Position and full-time equivalency (FTE)	Position of staff person and full-time equivalency devoted to each position the individual fills	Individual	Public Education Information Management System
Experience	Years of experience in the profession	Individual	Public Education Information Management System
Education	Highest degree earned	Individual	Public Education Information Management System
	Bachelor's degree institution	Individual	State Board for Educator Certification
Demographics	Gender	Individual	Public Education Information Management System
	Race/ethnicity	Individual	Public Education Information Management System
Certification (teachers)	Subject area of license	Individual	State Board for Educator Certification
	Grade level of license	Individual	State Board for Educator Certification
	Type of license (standard, waiver, emergency, etc.)	Individual	State Board for Educator Certification
	Route to certification (standard, alternative)	Individual	State Board for Educator Certification
	Effective date of license	Individual	State Board for Educator Certification
	Raw score on teacher assessment	Individual	State Board for Educator Certification
	Special permit	Individual	Public Education Information Management System

*Staff Counts and Ratios.* Existing staff data enable researchers to use two obvious methods for determining staff counts and calculating ratios such as teacher:pupil, administrator:teacher, and administrator:pupil.

The Academic Excellence Indicator System school- and district-level staff counts and student membership counts can be used to determine staff ratios. The Academic Excellence Indicator System contains full-time equivalency counts of school/district administrators, educational aides, professional support staff, teachers, and students in each school. The limitation of this approach is that the lowest level of aggregation possible is the school level. Also, the staff counts in this database are combinations of different categories of staff. For example, the school administrator count combines seven staff categories from principal to athletic director.

The Public Education Information Management System data allow greater flexibility in calculating staff ratios. Full-time equivalency counts of particular types of staff (teachers, educational aides, principals, psychologists, librarians, etc.) could be aggregated from this information to the school and district levels.

Understanding that a school-level calculation of the teacher:pupil ratio is not an accurate representation of class size, data users can consider another measure from the Academic Excellence Indicator System data called Class Size Average. Although these data are not a true measure of class size and still rely on a pupil:teacher ratio, they are compiled by grade for elementary schools and by selected subjects for secondary schools. For elementary schools, teacher full-time equivalency counts in each grade level and the number of students per grade are used to derive a class size average. For secondary schools, each unique combination of teacher and class time is counted as a class, and an average is determined by summing the number of students served and dividing that figure by a calculated count of the number of classes in a subject.

Table TX5

*Student and Staff Counts and Ratios, Texas*

Count/Ratio Measure	Data Available	Unit of Analysis	Source
Staff full-time equivalency counts	Can be calculated from existing data	By position Grade School District Demographic subgroups	Academic Excellence Indicator System and Public Education Information Management System
Class size	Average class size variable computed (with different computations for elementary and secondary grades)	Grade School District	Academic Excellence Indicator System
Other ratios: • Pupil:teacher • Pupil:administrator • Teacher:administrator	Can be calculated from existing data	Grade (teachers) School District	Academic Excellence Indicator System and Public Education Information Management System

*Data Usability.* Staff and teacher data available in Texas are comprehensive and complex. The Public Education Information Management System collects information on all education employees in the state at an individual level, and these data can be used to create grade, school, or district averages. The Texas Education Agency also compiles staff data at these levels of aggregation through the Academic Excellence Indicator System database. The accessibility of these data is high due to the vast amounts of data on schools and districts that it contains in report format or for download from the Texas Education Agency. Documentation on data from that agency is readily available from its Web site. A strength of the Public Education Information Management System data is the error-checking mechanism that was described in the discussion on instructional expenditures. Also contributing to the consistency of these data are the clear and detailed reporting instructions the state provides to reporting districts. The state has changed or added few variables over the past 5 years. Since data are collected for individual staff

and relevant grade, school, or district labels are attached to these data, they provide great potential for aligning to student performance data, student characteristics, and school and district characteristics.

The Texas staff characteristics data also present a number of challenges for their application to policy research. The complexity of the staff data in the Public Education Information Management System database is relatively high. Understanding, for example, how a teacher with multiple roles and teaching responsibilities would be recorded requires careful study of the data documentation. Additionally, data documentation on teacher certification does not currently exist, and researchers must rely on conversations with data managers to fully understand what variables are available and their definitions. The accuracy of certain staff data variables is suspect. Data managers have explained that districts often apply the wrong instructions when recording years of experience, especially for teachers that transfer between districts. The State Board for Educator Certification estimates the number of in-field teachers in Texas schools; however, this aggregated measure is not available at an individual-teacher level and its validity is suspect given that the state does not collect information on teachers' degree major. Data on teacher characteristics required two separate requests to two separate agencies. School-level teacher characteristic data are available for download from the state education agency, and researchers can also request data from that agency to obtain individual-level data. Additional teacher variables housed at the State Board for Educator Certification must be requested from that agency. Coordinated efforts are needed in order for researchers to align data sets on staff from these two agencies, so both agencies use an identical scrambling algorithm for teachers' Social Security numbers. Additionally, licensure data are collected using a cumulative process in which updates are made to teacher information without annual archives. Researchers

must rely on the certification issue date and expiration date for each individual in order to create a subset of active, certified staff for a given study period.

Table TX6

*Strengths and Challenges of Staff Data That Affect Their Use for Policy Research, Texas*

Criterion	Strengths	Challenges
Availability and accessibility	<ul style="list-style-type: none"> <li>• Individual-level staff characteristics are collected with ability to aggregate data up to grade, school, or district levels.</li> <li>• Public Education Information Management System and Academic Excellence Indicator System data documentation are updated annually and available on the Texas Education Agency's Web site.</li> </ul>	<ul style="list-style-type: none"> <li>• Data systems are large and relatively complex.</li> <li>• To obtain individual staff data researchers must submit a special request to the Texas Education Agency, wait for the request to be processed, and pay a fee.</li> <li>• No documentation exists on data contained in State Board for Educator Certification databases.</li> </ul>
Completeness	<ul style="list-style-type: none"> <li>• Information is collected for all employees.</li> </ul>	<ul style="list-style-type: none"> <li>• Information about auxiliary staff is limited to demographic and payroll information; therefore, professional staff that also hold auxiliary positions would not have complete information about full-time equivalency of their position.</li> </ul>
Accuracy	<ul style="list-style-type: none"> <li>• Automatic error checking is conducted before data are submitted to the state.</li> </ul>	<ul style="list-style-type: none"> <li>• Accuracy of certain variables of interest are suspect (e.g., staff years of experience).</li> </ul>
Consistency	<ul style="list-style-type: none"> <li>• Few substantive changes were made in Public Education Information Management System data collection procedures or variable definitions during the study period.</li> <li>• Public Education Information Management System data collection documentation provide clear instructions with helpful examples for the user.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher test scores have changed over time and were not required prior to 1986.</li> </ul>
Alignment	<ul style="list-style-type: none"> <li>• Staff characteristics (including salaries) can be aligned with teacher certification at the individual level and student performance and characteristics at the grade, school, or district levels.</li> </ul>	<ul style="list-style-type: none"> <li>• Staff characteristics from the Public Education Information Management System and teacher certification data from the State Board for Educator Certification are housed in different agencies, and researchers need to coordinate between them to get aligned data on teachers.</li> <li>• The cumulative process used to keep the licensure data updated create the potential for misaligned data.</li> </ul>

### *Student Performance Data*

*Criterion-Referenced Tests.* Although the state of Texas has had statewide testing of its students since 1979, the performance tests most relevant for current research purposes are the Texas Assessment of Academic Skills (TAAS) and the Texas Assessment of Knowledge and Skills (TAKS).

The Texas Assessment of Academic Skills was instituted in 1990 and has undergone some expansion and modification since that year. Most significantly for consideration by researchers is that in 1993–1994 the state began testing grades 3–9 (from 3, 5, 7, and 9) and moved the exit-level test from grade 11 to grade 10. Also during this time, the state accountability system began rating schools and districts, releasing tests results to the public, and requiring passage of the exit-level test for graduation. New passing standards were instituted in 1994 that allowed a new measure, the Texas Learning Index (TLI), to compare achievement across grades. The Texas Assessment of Academic Skills was retired after the 2002 administration and replaced with the Texas Assessment of Knowledge and Skills. Texas Assessment of Knowledge and Skills is a criterion-referenced exam like the Texas Assessment of Academic Skills but was developed to align to new performance standards (Texas Essential Knowledge and Skills). Texas Assessment of Knowledge and Skills tests are administered to grades 3–11, and results will be used to determine retention of students in grades 3, 5, and 8 and graduation of students at the grade 11 administration.

Student test results are reported in a variety of formats (percentage passing, scale score, Texas Learning Index score). The Texas Education Agency also provides guidelines for conversions such as Texas Learning Index score to percentile rank or normal curve equivalent. School- and district-level test results are readily available and downloadable from the Texas

Education Agency's Web site through the Academic Excellence Indicator System. Researchers can also request individual-level test scores from the agency. The Texas Education Agency will release individual-level data stripped of identifiers and excluding subgroups smaller than five.

*State Accountability Ranking.* State statute requires annual district performance ratings with the standard accountability labels of exemplary, recognized, academically acceptable, and academically unacceptable. These labels have been determined primarily by student performance on state tests and dropout rates. Additional criteria will be added for determining the 2004 rating.

Relevant for use of these rankings by researchers is the fact that since 2 years of test data are used to calculate the improvement portion of the ranking and the state transitioned from the Texas Assessment of Academic Skills to the Texas Assessment of Knowledge and Skills in 2002–2003, rankings for 2003–2004 will not be determined, but the state will carry forward the rankings determined for 2002–2003.

Table TX7

*Student Performance Tests, Texas*

Test	Type	Scoring	Grades	Subject Areas	Notes
Texas Assessment of Academic Skills	Criterion-referenced	Raw score, scale score, Texas Learning Index	3–8, 10th grade exit	Math, reading, writing, science, social studies	Administered in the spring from 1990–2002. A Spanish version of the exam was benchmarked beginning 1996.
End-of-course exams	End of course		Upon course completion	Algebra, biology, English, U.S. history	Option for meeting graduation requirements in 1995; ended administration in 2002
Texas Assessment of Knowledge and Skills	Criterion-referenced		3–11		First administered in the spring of 2003. Replaced the Texas Assessment of Academic Skills and end-of-course exams

*Data Usability Issues.* Student performance information for Texas is available for a wide range of grades and over a long span of years. Statewide testing in a state as large as Texas also ensures that more than three million student test scores are available for research purposes each year. Data are reported by the Texas Education Agency in the form of Web reports and downloadable data down to the school level. One weakness in data usability that has arisen very recently is the transition from the Texas Assessment of Academic Skills to the Texas Assessment of Knowledge and Skills. Unless a workable conversion is made available to help equate Texas Assessment of Academic Skills and Texas Assessment of Knowledge and Skills scores, researchers are challenged to bridge the 2002–2003 and 2003–2004 test years in any longitudinal analysis.

Table TX8

*Strengths and Challenges of Student Performance Data That Affect Their Use for Policy Research, Texas*

Criterion	Strengths	Challenges
Availability and accessibility	<ul style="list-style-type: none"> <li>• School and district level performance data (percentage passing by grade) are downloadable from the Texas Education Agency's Web site.</li> <li>• Other score formats (Texas Learning Index, raw score, scale score) can be requested from the Texas Education Agency.</li> </ul>	<ul style="list-style-type: none"> <li>• Student-level data must be obtained by special request from the Texas Education Agency; agency data requests may have time and cost implications.</li> </ul>
Completeness	<ul style="list-style-type: none"> <li>• Student performance data can be requested on all test takers and also on subgroups (high poverty, high minority, special education, limited English proficient).</li> <li>• Test scores are available for a wide span of years (3–10 Texas Assessment of Academic Skills, 3–11 Texas Assessment of Knowledge and Skills).</li> </ul>	<ul style="list-style-type: none"> <li>• The universe of test takers has expanded with the introduction of the Spanish and 11th grade versions of the Texas Assessment of Academic Skills.</li> </ul>
Accuracy		<ul style="list-style-type: none"> <li>• Data available on the Texas Education Agency's Web site is limited to percentage passing, limiting the full range of variability in test results for research purposes.</li> </ul>
Consistency	<ul style="list-style-type: none"> <li>• Texas Assessment of Academic Skills testing provides a consistent span of test years and grades tested until 2002.</li> </ul>	<ul style="list-style-type: none"> <li>• The Texas Assessment of Knowledge and Skills replaced the Texas Assessment of Academic Skills in 2002–2003.</li> <li>• Texas Assessment of Academic Skills score reporting standards are not consistent.</li> </ul>
Alignment	<ul style="list-style-type: none"> <li>• Texas Assessment of Academic Skills reports student performance results using the Texas Learning Index, which provided researchers with better aligned results for longitudinal analysis.</li> <li>• Demographic and programmatic information about test takers can be matched with test results.</li> </ul>	<ul style="list-style-type: none"> <li>• The state has not developed a way to align Texas Assessment of Academic Skills and Texas Assessment of Knowledge and Skills scores for longitudinal comparisons.</li> </ul>

*Student, School, and District Characteristics*

*Student Characteristics.* The Public Education Information Management System database collects a range of individual-level student characteristics. These data are reported on the Academic Excellence Indicator System Web site at the grade, school, and district levels. The Public Education Information Management System reports on each student’s poverty status, race/ethnicity, date of birth, sex, home language, grade, and school. Students are also identified as to their eligibility for special services (migrant, bilingual, limited English proficient, at-risk, Title 1 Part A) and their enrollment in special programs (special education, gifted and talented program, English as a second language, bilingual, career and technology education, etc.).

Table TX9

*Data Available in State Education Databases on Student Characteristics, Texas*

Student Characteristic	Data Source			
	Individual	Grade	School	District
Economically disadvantaged status	Public Education Information Management System	Academic Excellence Indicator System	Academic Excellence Indicator System	Academic Excellence Indicator System
Race/ethnicity	Public Education Information Management System	Academic Excellence Indicator System	Academic Excellence Indicator System	Academic Excellence Indicator System
Gender	Public Education Information Management System	Academic Excellence Indicator System	Academic Excellence Indicator System	Academic Excellence Indicator System
Special program participation (special education, gifted/talented, bilingual/ESL, LEP, migrant, at-risk, Title I, career and technology)	Public Education Information Management System	Academic Excellence Indicator System	Academic Excellence Indicator System	Academic Excellence Indicator System

*School Characteristics.* The Academic Excellence Indicator System database provides online descriptive information about each school, including grades served (e.g., early childhood, K–5, 6–8), type (elementary, middle/junior high, high school), enrollment by grade, accountability ranking, attendance and retention rates, and student mobility rate.

*District Characteristics.* In addition to the above-mentioned student and school characteristics that could be averaged across the district as a whole, the district characteristics that would be of relevance to resource allocation research includes a measure for district wealth. An important indicator of school district wealth in Texas is the taxable value of property. The Texas Comptroller of Public Accounts determines this measure on an annual basis. This information is available by request from the Comptroller’s office, and recent years’ values are compiled by the Texas Education Agency and posted on that agency’s Web site.

Table TX10

*Data Sources for School and District Characteristics, Texas*

Characteristics	Data Sources	
	School	District
School type (elementary, high school, etc.)	Academic Excellence Indicator System	N/A
Grade range	Academic Excellence Indicator System	Academic Excellence Indicator System
Total enrollment	Academic Excellence Indicator System	Academic Excellence Indicator System
Student poverty rate	Academic Excellence Indicator System	Academic Excellence Indicator System
Student race/ethnicity	Academic Excellence Indicator System	Academic Excellence Indicator System
Number of teachers	Academic Excellence Indicator System	Academic Excellence Indicator System
Per pupil expenditure	Academic Excellence Indicator System	Academic Excellence Indicator System
District wealth	N/A	Texas Education Agency’s Web site
Accountability ranking	Academic Excellence Indicator System	Academic Excellence Indicator System

*Community Characteristics.* Education databases do not contain information about characteristics of the community within which a school and/or district is located. Census information provides a number of relevant indicators for community well-being, including family income, parent education levels, and receipt of public assistance.

### *Summary of Findings*

*Alignment.* Data on instructional dollars; staff; teacher characteristics; student performance; and student, school, and district characteristics are available in Texas state databases. These data are housed in different data systems within the Texas Education Agency (Public Education Information Management System, Academic Excellence Indicator System, and student assessment databases) and different state agencies (State Board for Educator Certification, Texas Comptroller of Public Accounts). Aligning these data depends on the existence of common identifying variables that link one dataset to another. It also depends on the willingness of agencies such as the Texas Education Agency and State Board for Educator Certification to coordinate their responses to researchers' data requests. A joint, cross-agency project is under development that addresses the need for coordinated data reporting across multiple data sets. The Texas Public Education Information Resource (TPEIR) database is a cross-agency data management system that combines primary, secondary, and higher education information. The Texas Education Agency, the Texas Higher Education Coordinating Board, and the State Board for Educator Certification are compiling data collected and managed separately by these agencies into one central location. Users may access both raw data and aggregated reports from the Texas Public Education Information Resource (TPEIR) Web site (<http://texaseducationinfo.org/Index.asp>). Although the information available currently on the

Web site is fairly limited, a range of important data elements are proposed or will be posted in the near future.

Financial data are provided down to the school level through the Public Education Information Management System (PEIMS). School-level spending is organized by function, object, and program. As a result, researchers could identify school expenditures for instruction and instruction-related functions, with the information broken down by object categories. Researchers could also identify the amount a school spends for six specific instructional program areas (bilingual/ESL, career and technology, compensatory, gifted and talented, regular, and special education). This provides the researcher with the flexibility of aligning school spending to all other types of data since all that is needed is the common identifying variable of school identifier. Financial data are not, however, reported at the classroom or individual level in Texas.

Information on staffing patterns such as counts, full-time equivalency counts, and ratios is available from the Academic Excellence Indicator System (AEIS) Web site at the school level. Researchers are also able to obtain individual-level staff data that could be aggregated to a grade level (for teachers), school level (school staff) or district level (central office staff). Teacher characteristics are available on individual-level teachers and could be aggregated to grade, school, or district levels. These staff data could be aligned to fiscal data at the school level and to student data at the grade level. Although the Public Education Information Management System dataset contains both individual student and staff information, there is no way to link students to the teachers that teach their classes, hence the need to use the grade level or school indicator as the common identifying variable between students and teachers. The grade level a teacher is assigned to, however, cannot consistently be determined, and often a single teacher will have

assignments at multiple grades. This is especially true for teachers at the middle and high school level, where teachers are linked to subject areas more often than grade.

An important consideration regarding data alignment is the fact that teacher characteristics such as courses taught and full-time equivalency of position are collected by the Texas Education Agency, while the State Board for Educator Certification collects certification data. Both of these agencies use the teachers' Social Security number as a unique identifier; however, neither agency can release these numbers due to confidentiality policies. Additionally, certification data are collected using a cumulative process in which updates are made to teacher information without annual archives. Researchers must rely on the issue date and expiration date for each individual in order to create a subset of active, certified staff for a given study period. Data users must coordinate between the two agencies so that both use the same algorithm for scrambling Social Security numbers and pull the same teachers for the same study period. This requires significant coordination of effort, and the wait time for filling data requests at each agency can vary considerably.

*Accessibility.* A strong benefit to using existing Texas state databases is their accessibility. The following two elements increase the accessibility of data:

1. A significant amount of school- and district-level data are already compiled into reports or downloadable from the Texas Education Agency's Web site. Detailed documentation about data elements is also readily available from the Web site.

2. The Texas Education Agency has public information staff persons who are charged with helping outside users with special data requests. The agency has standardized procedures for receiving and managing outside requests for data, and their confidentiality policies are clear and consistent. One part of the data request process that limits accessibility to data is that these

services are provided for a fee, and the user must budget the cost of obtaining data into the total cost of conducting new research.

*Usability.* Overall, state education data in Texas provide a valuable and vast resource for education research. Databases contain a wide range of data elements available on finances, staff, students, schools, and districts.

These data are not without problems, however, and according to interviews with state data managers in Texas, the usability of the education data they compile is highly dependent on the ability of local school districts to collect and report accurate and reliable information. For example, the years of professional experience reported for teachers are often suspect. State data managers say that districts often misinterpret the instructions regarding this data element and report the number of years a teacher has been in their district rather than in the profession.

The relative complexity of these data also reduces their usability. Data users must rely on close examination of data documentation, periodic contact with state data contacts, and careful manipulation of the data for research use. Staff data recorded in the Public Education Information Management System can be particularly complex because a single staff person is likely to have multiple records linked by a unique identifier. Each record for a particular staff person will contain critical information about the individual's position(s), classes taught, salary, and other information. Merging multiple staff records into a single profile for a staff person requires in-depth understanding of the variable definitions and data structures.

Finally, of critical concern to researchers interested in examining the relationship between resources and student performance is the need for consistent measures for student performance. Texas has, for a number of years, expanded the number of students involved in testing while maintaining relative consistency in test standards through the Texas Assessment of

Academic Skills. With the elimination of this test and replacement with the Texas Assessment of Knowledge and Skills, researchers interested in longitudinal effects must either identify a method for aligning scores from these tests or use historical Texas Assessment of Academic Skills results.