

# Texas Teacher Retention, Mobility, and Attrition

Teacher supply is the total number of eligible individuals available from all sources who are willing to supply their services to teaching under prevailing conditions. Teacher supply is influenced by the number of teachers who leave their teaching positions each year, either to take a different teaching position or to leave the profession altogether.

This *Policy Research Report* focuses on issues related to teacher supply including teacher retention, mobility, and attrition. Teacher retention refers to the proportion of teachers in one year who are still teaching in the following year. Of those teachers who are retained in the profession from year to year, teacher mobility refers to those teachers who move to another school or district to teach. Teacher attrition refers to the number of teachers in one year who are no longer teaching the following year.

There were 223,082 teachers representing 219,338 full time equivalents (FTE's) in Texas public schools in 1992-93. The following year, 81.6 percent returned to the same campus to teach, 10.4 percent moved to a different campus to teach, and 8.0 percent did not return to Texas public schools as teachers. This report presents analyses of the retention, mobility, and attrition of the Texas teaching force in the 1992-93 school year by teacher characteristics and school conditions.

The National Center for Education Statistics (NCES) has conducted a series of surveys over the past decade that collect national teacher data, including data on the characteristics of teachers who stay in the profession, those who stay in the profession but who move from school to school or district to district, and those who leave the profession altogether. Data focusing on the changing supply sources of newly hired teachers have also been collected by NCES. NCES data for teachers teaching in the 1990-91 school year, as well as longitudinal data on teachers from other states, are used for comparison of retention, mobility, and attrition.

Discrete-time survival analysis is used to provide data for this report that better examine the relationship between Texas teacher characteristics and the length of their teaching careers. Survival analysis allows examination of teachers' careers from the time they enter the profession until the time they leave. Findings from the survival analysis for this report are derived from investigating the careers of 10,381 teachers who started teaching in the Texas public schools during the 1988-89 school year. Although data collection inevitably ends before all teachers leave, this analysis allows us to make predictions about how long Texas teachers are likely to stay in the profession. Survival analysis provides us with the *survival probability*, or the proportion of an initial cohort of

teachers surviving through each of several successive years, and the *hazard probability*, or the probability that a teacher will quit in a particular year given that he or she survived through the end of the previous year.

In general, new teachers in Texas leave the profession early in their careers. Nineteen percent of the entering teachers left teaching after their first year, and of those who remained, 12 percent left teaching after their second year. By the fifth year almost half of the 10,381 Texas teachers had left the classroom.

## *Historical Trends*

Trends in teacher supply and demand have been influenced by many factors over the years, including changing demographics, changes in the labor market, modifications to public policy, and political and social considerations. The teacher population is aging, thus, more teachers will be retiring at the same time that, after years of decline, the number of children reaching school age is growing. From the mid 1970's to the mid 1980's, a presumed teacher surplus discouraged college students from choosing teaching as a career. Teachers hired during the baby boom years of the 1950's and 1960's are now reaching retirement age. In 1991, nearly one in four teachers nationally were 50 years of age or older. Statistics such as these raise some important

questions. Will there be enough teachers to teach our students in coming years? Who will these teachers be? Will they be prepared to teach an increasingly diverse student population?

In a background paper prepared for the National Commission on Teaching and America's Future (1994), it was reported that nationally, states and districts have addressed the problem of teacher shortages in different ways, including increasing salaries or providing other incentives for prospective teachers, creating

alternative paths to certification, or allowing the use of emergency or temporary credentials. In 1991, more than one in four new hires nationally either had temporary certification or did not have certification at all. Those who were hired without certification were concentrated in teacher shortage areas such as bilingual education, mathematics, science, and special education.

As has been pointed out in earlier *Policy Research Reports*, in Texas, the proportion of teachers who are ethnic minorities does not match the

proportion of students who are minorities. This disparity is particularly noteworthy among African Americans, where the number of teachers has increased only slightly over the past 10 years. In recent years, college-educated minorities and women have gained greater access to non-teaching positions traditionally held by white males. These formerly unavailable positions frequently offer higher salaries and more desirable working conditions than teaching. Additionally, national research shows that less than 60 percent of those who are certified to teach actually enter the teaching force by the year after they graduate. The rate for minority teacher candidates is even lower (Murnane, 1991).

There is a discrepancy between the qualifications of teachers entering positions in low-income districts and those entering higher income districts. The overall academic quality of new recruits is reported to be good, with almost one-fourth nationally holding graduate level degrees and coming from quality preparation programs. However, the teachers entering low income schools increasingly hold only marginal qualifications (Darling-Hammond, 1994).

The remainder of this report examines in greater detail current retention, mobility, and attrition data in relation to teacher characteristics such as gender and ethnicity and school conditions such as percent of economically disadvantaged students.

### **Teacher Characteristics**

#### ***Gender***

National data show that proportionately male and female teachers tend to stay, move, and leave teaching at approximately the same rates.

As Chart 1 shows, in Texas male teachers left at slightly higher rates

### **National Center for Education Statistics Schools and Staffing Survey**

Beginning in the 1980's, the U.S. Department of Education's National Center for Education Statistics (NCES) conducted a series of surveys designed to collect data on the demographics of the student population, the demand for teachers in different regions of the United States, the educational qualifications of school teachers and administrators, and the working conditions of teachers.

In 1985, NCES worked jointly with staff from the Rand Corporation to review and redesign the portion of their data collection concerned with teacher demand and shortage, teacher and administrator characteristics, and general conditions in school. The collaboration with Rand resulted in an integrated set of surveys called the Schools and Staffing Survey (SASS). In 1987-88, the administration of the SASS was followed by the administration of the Teacher Followup Survey (TFS), which collected information on teacher employment and teaching status, educational activities and future plans, and teacher opinion on school climate and job perceptions.

Taken together, the SASS and the TFS strive to:

- profile the nation's elementary and secondary teaching force;
- improve estimates and projections of teacher demand by teaching field, level, and geographic location;
- analyze teacher mobility and turnover;
- develop assessments of teacher quality and qualifications; and
- obtain more complete information on school policies, practices and programs, administrator characteristics, teacher characteristics, and workplace conditions.

than female teachers in 1992-93. Almost nine percent of male teachers from 1992-93 did not return to teaching in 1993-94, compared to almost eight percent of female teachers. Of those Texas teachers who stayed in teaching from 1992-93 to 1993-94, a higher percentage of male teachers moved to new campuses or districts to teach. Over 12 percent of male teachers from 1992-93 moved to a different campus in 1993-94, compared to less than 10 percent of female teachers.

As Chart 2 shows, when looking at the first five years of a teacher's career, female teachers on average leave at slightly higher rates than males, except for the first year when the risk of leaving teaching is highest for males. By the fifth year, almost half of both male and female teachers who entered the profession in 1988-89 had left teaching in Texas.

### Teacher Race/Ethnicity

Nationally, the attrition rates of white, African American, and Hispanic teachers are reported to be similar, with African American teachers being slightly more likely to leave teaching. Teachers who are Asian or Pacific Islander leave at higher rates than any of the others, while American Indian, Aluet, and Eskimo teachers leave at the lowest rates. Other national data show that when school conditions are taken into account, African American teachers are actually less likely to leave than white teachers. It was pointed out that African American teachers (as well as other minority teachers) are more likely to teach in large urban districts that serve higher proportions of poor children. Teachers who work in such school conditions are more likely to leave, regardless of race/ethnicity. When this is taken into consideration African American teachers actually have higher retention rates in the teaching workforce than white teachers.

In Texas, when district conditions such as percent of minority students, percent of low income students, and enrollment are taken into account, white teachers who began teaching in

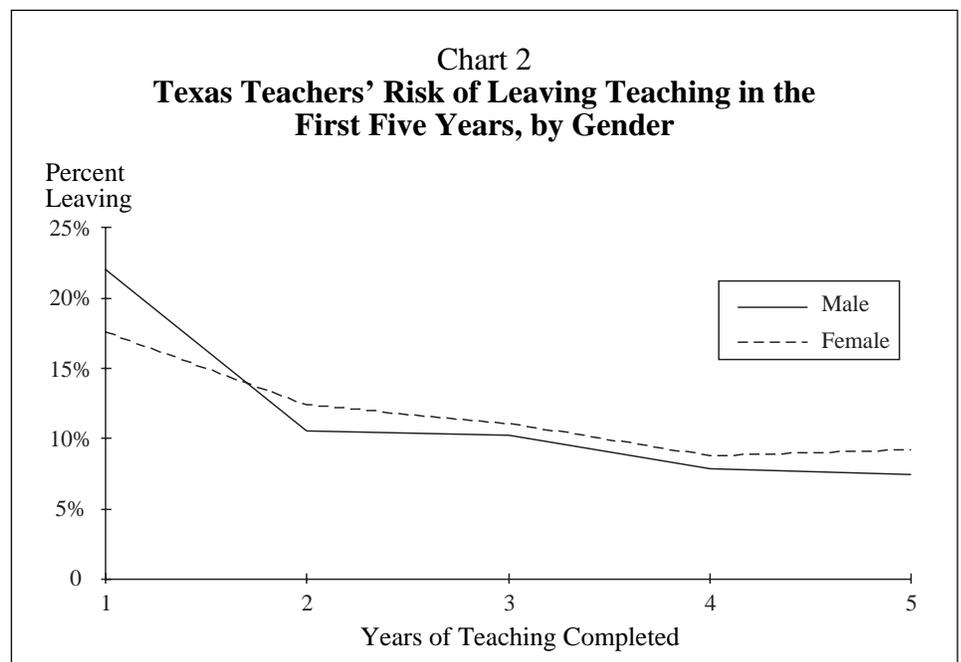
1988-89 left at higher rates than minority teachers, except after their first year of teaching, when minority teachers were more likely to leave.

**Chart 1**  
**Texas Teacher Retention and Attrition Rates by Gender — 1992-93**

Gender	Number of Teachers	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
Female	174,472	82.3%	9.9%	92.2%	7.8%
Male	48,610	79.0%	12.2%	91.2%	8.8%
Total	223,082	81.6%	10.4%	92.0%	8.0%

*A higher percentage of male teachers moved from campus to campus to teach in 1992-93 than female teachers. Male teachers also left the profession of teaching at slightly higher rates.*

Data Source: Texas Education Agency Public Education Information Management System (PEIMS).



*Of teachers who entered the profession in 1988-89, 19 percent had left teaching after their first year, and of those that remained, 12 percent left after their second year. For the first five years of teaching, the greatest difference in attrition rates for males and females occurs after the first year, with 22 percent of males leaving the profession compared to 18 percent of females. In subsequent years, females leave at slightly higher rates so that by the end of the fifth year the same percentage of females remain in teaching as males.*

Data Source: Texas Education Agency Public Education Information Management System (PEIMS).

As Chart 3 shows, however, one-year attrition rates for all Texas teachers by ethnicity shows that American Indian and Asian teachers left at the highest rates in 1992-93 while Hispanic teachers left at the lowest rates.

**Teacher Age**

As Chart 4 shows, teacher age provides a telling indicator of retention and mobility. Teachers under the age of 30 are more likely to leave the profession than those aged 30-59.

About nine percent of 1990-91 teachers under 30 nationally did not return to teaching in 1991-92. Nationally, those teachers aged 60 and over leave the profession at much higher rates than any other age group, presumably to retire. Over 40 percent of teachers 65 and over in 1990-91 left the profession nationally.

Other national and state level longitudinal research (Bobbitt, 1994; Grissmer, 1992; Murnane, 1991) confirms the trends shown in Chart 4. Attrition tends to be highest in the early years of teaching, particularly among teachers who are new to the profession, and again at the end of a teaching career as retirement age is approached. This pattern of teacher attrition forms a U-shaped picture, with teachers in their middle years staying at the highest rates, and those in their early and late years leaving at higher rates.

Among Texas teachers, one similar trend emerges, as Chart 5 shows. Texas teachers under the age of 30 also leave at higher rates than older Texas teachers. Over 10 percent of Texas teachers who were under 30 years old in 1992-93 did not return to teaching in 1993-94. Until the age of 50, Texas teachers in every age group leave at higher rates than seen nationally. However, Texas teachers of retirement age are not leaving at the higher rates that are seen nationally. Only 5.2 percent of Texas teachers who were 65 or older in 1992-93 left the profession after that year.

The reasons for teacher attrition at certain times in their careers have been attributed to a variety of factors. The NCES survey of former teachers reports that for teachers under 40 years old the main reason for leaving teaching was pregnancy or child rearing (31.6 percent); however, for teachers 40-49 years old the main reason given for leaving teaching was to pursue another career.

Teacher Ethnicity	Number of Teachers	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
American Indian	279	77.7%	9.0%	86.7%	13.3%
White	172,430	81.3%	10.4%	91.7%	8.3%
Asian	775	77.8%	11.7%	89.5%	10.5%
African American	18,496	84.1%	8.1%	92.3%	7.7%
Hispanic	31,102	82.0%	11.3%	93.3%	6.7%

Among Texas teachers, American Indian and Asian teachers left the teaching profession at the highest rates in 1992-93. Hispanic teachers in Texas left teaching at the lowest rates.

Data Source: Texas Education Agency Public Education Information Management System (PEIMS).

Teacher Age	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
Under 25	73.8%	17.2%	91.0%	9.1%
25-29	76.6%	14.3%	90.9%	9.0%
30-39	85.9%	9.9%	95.8%	4.2%
40-49	92.5%	5.5%	98.0%	2.0%
50-59	89.3%	4.0%	93.3%	6.7%
60-64	71.0%	2.2%	73.2%	26.8%
65 or more	48.9%	10.3%	59.2%	40.8%

\* Percentages may not add to 100% due to rounding.

Nationally, higher percentages of teachers under 30 years of age move from campus to campus to teach each year than older teachers. Teachers approaching retirement, those aged 60 or over, have the highest rates of leaving the profession.

Data Source: U.S. Department of Education, National Center for Education Statistics, May 1994.

(The chart on Page 7 provides additional information on reasons given for leaving teaching.)

### **Years of Experience**

As might be expected, attrition rates by years of teaching experience follow a similar trend to that of age. As Chart 6 illustrates, nationwide teachers in the beginning of their careers, with less than one year to three years of experience, tend to move and leave at much higher rates than those who have been teaching for 4-9 years, 10-19 years, or 20-24 years. Those with 25 or more years of experience also leave at high rates, presumably to retire.

Among Texas teachers a similar picture emerges. As shown in Chart 7 on Page 6, Texas teachers in their first three years tend to move and leave at higher rates than those with more years of experience. Texas teachers with 25 years of experience or more also leave at high rates, presumably to retire.

Of the 17,843 Texas teachers who left teaching after the 1992-93 school year, 2,553 or 14.3 percent moved to other fields in education the following year. As Chart 8 on Page 6 shows, of the 2,553 who remained in education, 623 became counselors, 580 became assistant principals, and 247 became librarians.

### **Teacher Salary**

The influence of salary on rates of teacher attrition has been documented in studies conducted in other states, including Michigan and North Carolina (Murnane, 1991). These studies found that teachers who were being paid at comparably lower rates were more likely to leave than those who were being paid at an average or higher rate. This effect was particularly strong in the early years of teaching careers when the retention rate is the lowest and the attrition rate is highest.

**Chart 5  
Texas Teacher Retention and Attrition Rates by Age — 1992-93\***

Teacher Age	Number of Teachers	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
Under 25	4,610	72.8%	15.9%	88.7%	11.3%
25-29	27,005	73.8%	16.2%	90.0%	10.0%
30-39	64,597	81.0%	12.1%	93.1%	6.9%
40-49	78,822	86.3%	9.0%	95.3%	4.7%
50-59	36,061	88.8%	7.1%	95.9%	4.1%
60-64	5,088	90.5%	5.6%	96.1%	3.9%
65 or more	1,123	87.8%	7.0%	94.8%	5.2%

\* Information available on teachers with reported age data only.

*In Texas, as in the nation, higher percentages of teachers under age 30 move from campus to campus to teach each year than older teachers. Young teachers in Texas, those under age 30, also leave the profession at the highest rates.*

Data Source: Texas Education Agency Public Education Information Management System (PEIMS) and Teacher Retirement System.

**Chart 6  
National Retention and Attrition Rates  
by Years of Experience — 1990-91**

Full-Time Teaching Experience	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
Less than 1 Year	51.5%	31.3%	82.8%	17.2%
1 Year	79.0%	12.6%	91.6%	8.4%
2 Years	78.7%	14.1%	92.8%	7.2%
3 Years	81.6%	12.4%	94.0%	6.0%
4-9 Years	84.8%	9.9%	94.8%	5.2%
10-19 Years	91.0%	6.5%	97.5%	2.5%
20-24 Years	93.3%	3.3%	96.6%	3.4%
25 Years or More	85.9%	3.1%	89.0%	11.0%

*Nationally, those teachers with the fewest years of experience are the most mobile, moving at the highest rates from campus to campus to teach each year. Those teachers with the most years of experience, 25 years or more, leave the profession at high rates, presumably to retire.*

Data Source: U.S. Department of Education, National Center for Education Statistics, May 1994.

These studies also reported that teachers in the lower salary groups were actually one and one-half times *more* likely to leave at the end of their first year of teaching than those teachers paid in higher salary groups. In Texas, over 26 percent of 1988-89 teachers in the lower salary groups left

after their first year of teaching compared to under 17 percent of those in the higher groups.

A study of Texas teacher salaries from the 1988-89 school year to the 1992-93 school year was conducted for the Southern Regional Education

Board (SREB) and the Texas Education Agency (TEA). Noting that the early years of teaching are marked by high attrition rates, the study found that salaries for new teachers in Texas are lower by 5-20 percent than beginning salaries in other occupations for which their training makes them eligible. The study suggests that a 10 percent increase in salary would result in a 2.4 percent increase in retention for first-year teachers, a 2.3 percent increase in retention for second-year teachers, and a 2.2 percent increase in retention for third-year teachers. Thus, for a 10 percent increase in salary the projected retention rate for first year teachers would increase from 84.2 percent to 86.6 percent, for second-year teachers, it would increase from 89.4 percent to 91.7 percent, and for the third-year teachers, from 90.3 percent to 92.5 percent.

Chart 7  
**Texas Teacher Retention and Attrition Rates by Years of Experience — 1992-93\***

Full-Time Teaching Experience	Number of Teachers	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
Less Than 1 Year	15,015	68.6%	15.6%	84.2%	15.8%
1 Year	13,655	73.9%	15.5%	89.4%	10.6%
2 Years	12,717	75.8%	14.5%	90.3%	9.7%
3 Years	10,315	76.4%	13.7%	90.1%	9.9%
4-9 Years	54,787	80.5%	11.6%	92.1%	7.9%
10-19 Years	74,552	85.9%	8.9%	94.8%	5.2%
20-24 Years	23,755	87.7%	6.7%	94.4%	5.6%
25 Years or More	18,266	82.8%	5.0%	87.8%	12.2%

\* Information available on teachers with reported years of experience data only.

*In Texas, as in the nation, teachers with the fewest years of experience are the most mobile, moving at the highest rates from campus to campus to teach each year. Those teachers with the most years of experience, 25 years or more, leave the profession at high rates, presumably to retire.*

Data Source: Texas Education Agency Public Education Information Management System (PEIMS).

Chart 8  
**Texas Teachers Who Left Teaching After the 1992-93 School Year For a Different Profession Within Education**

Profession	Number	Percent
Counselor	623	24.4%
Assistant Principal	580	22.7%
Librarian	247	9.7%
Principal	175	6.8%
Educational Diagnostician	172	6.7%
Other Education Professions	756	29.6%

*In 1992-93, the largest number of teachers who left teaching, but stayed in the education field, became counselors.*

Data Source: Texas Education Agency Public Education Information Management System (PEIMS).

***Degree Held by Teacher/Subject Area Taught***

NCES data on teachers who hold a master's degree show that these teachers are no more likely to leave teaching or move to a different campus than are those teachers with a bachelor's degree. Teachers with doctoral degrees tend to leave the profession at higher rates. The NCES data show that the subject taught does not influence teacher attrition. That is, the rate at which public school teachers of general education subjects leave teaching varies little by field. In addition, the NCES data report that science and mathematics teachers are no more likely to leave the profession than teachers of other subjects, like English and social studies.

In contrast, reports of North Carolina and Michigan data suggest that science and mathematics teachers, particularly those teaching chemistry and physics, are more likely than those teaching other subject areas to leave the profession. This same trend is reported in a longitudinal study of

*(Continued on page 8)*

## Reason for Leaving Teaching

The main reason given by former teachers nationally, both in 1987-88 and in 1990-91, for leaving the profession was to retire. Pregnancy/child rearing remained the second most common reason. More teachers left teaching in 1990-91 due to a school staffing action or to take courses to improve their career opportunities than in 1987-88. However, a larger percentage of teachers left in 1987-88 than in 1990-91 to pursue another career.

Reason for Leaving Teaching	1987-88	1990-91
To retire	22.3%	30.4%
Pregnancy/Child rearing	18.9%	10.9%
Family or Personal Move	8.7%	10.0%
To pursue another career	13.4%	7.8%
Dissatisfied with teaching as a career	8.9%	8.3%
Other family or personal reason	4.8%	5.7%
School staffing action	5.8%	9.8%
To take courses to improve career opportunities in the field of education	3.4%	6.3%
Health	2.2%	3.7%
For better salary or benefits	4.5%	3.6%
To take a sabbatical or other break from teaching	5.4%	2.1%
To take courses to improve career opportunities outside the field of education	1.4%	1.5%
Not reported	.5%	0

Data Source: U.S. Department of Education, National Center for Education Statistics, May 1994.

## Tenure by Occupation

National average tenure information is derived from special questions added to the January 1991 Current Population Survey. This survey is conducted monthly as a joint effort by the Bureau of Labor Statistics and the Bureau of the Census. Special questions related to employment are added to the survey two times a year. The survey is sent to approximately 58,000 households across the country each month, including about 5,000 in Texas. Results from the Current Population Survey are reported monthly in the Bureau of Labor Statistics publication, *Employment and Earnings*. Tenure in selected occupations is listed in contrast to that of teachers.

Profession	Average Tenure (in years) in Occupation
Preschool Teachers	6.6
Elementary Teachers	12.0
Secondary Teachers	14.1
Special Education Teachers	10.6
Vocational Education Teachers	6.6
Dentists	15.1
Veterinarians	14.0
Registered Nurse	10.6
Pharmacists	12.7
Chemists	7.6
Computer Programmers	6.2
Psychologists	8.5
Lawyers	10.4

Data Source: U. S. Department of Labor, Bureau of Labor Statistics.

## SREB Salary Study

A study of Texas teacher salaries from 1988-89 to 1992-93 was conducted for the Southern Regional Education Board (SREB) in 1994. The results allow examination of how different geographic regions, race/ethnicity, gender, and district type influence teacher supply.

The following provides a summary of the key study results.

- Salaries for new teachers are lower than beginning salaries in other occupations for which their training makes them eligible. During the first three years of teaching, entering salaries in other professions for which teachers are qualified are 5 percent to 20 percent higher than the salaries offered to teach. The early years of teaching are marked by high attrition rates.
- After about 5-8 years, depending on a teacher's area of training, district, and degree level, the teaching salary begins to come into parity with, or to exceed, the entry salary in other professions. The market incentive to leave teaching and the attrition rate are reduced.
- For the state as a whole, a 10 percent increase in the salaries of teachers, assuming competing salaries do not change, could be expected to increase teacher retention by about 0.9 percent for the entire teacher work force. This would reduce the current attrition rate of 8.0 percent to 7.1 percent. Teachers with 0-4 years of experience, who represent about 21 percent of the total teaching work force, would show the greatest increase in retention.
- Special education showed consistently lower retention rates than other subject areas while vocational education and computer science showed consistently higher retention rates.
- Elementary teachers have higher retention rates than secondary teachers except in the regions of Dallas/Ft. Worth and Houston.
- Race/ethnicity and gender also influence teacher retention. There are variations by region of the state, but overall, males have lower retention rates than females, and white teachers have lower retention rates than African American or Hispanic teachers.
- Teachers with higher academic degrees have lower retention rates.
- The kind of district—urban, suburban, or rural—had no influence on retention rates.
- Districts with lower percentages of economically disadvantaged students had higher teacher retention rates than districts with greater percentages.

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teacher attrition in Indiana, where, after five years of teaching, the attrition rate for physics and chemistry teachers was 57 percent, while the attrition rate for elementary teachers over the same period was 36 percent. The use of different study methodologies may have contributed to the differences found between the NCES survey results and the state-level longitudinal study results. The NCES data looked at attrition over a one-year period, while the other studies looked at changes over several years.

As Chart 9 on Page 10 illustrates, one-year attrition rates from 1992-93 to 1993-94 for Texas teachers by level of degree shows that teachers with doctoral degrees are much more likely to leave the classroom than are teachers with master's degrees or bachelor's degrees. Teachers with bachelor degrees leave at the lowest rate.

As shown in Chart 10 on Page 10, Texas special education teachers had the highest attrition rate and the highest mobility rate compared to teachers in other subject areas. Teachers of gifted students in Texas had among the lowest rates of attrition and mobility.

In Texas, beginning mathematics and science teachers (those in their first year of teaching in 1988-89) were no more likely to leave during the first five years of their careers than those who taught other subjects. Beginning science teachers teaching high-level courses were no more likely to leave teaching during the first five years than those teaching low-level courses. Of beginning mathematics teachers, however, those teaching high level courses were less likely to leave than those teaching low-level courses.

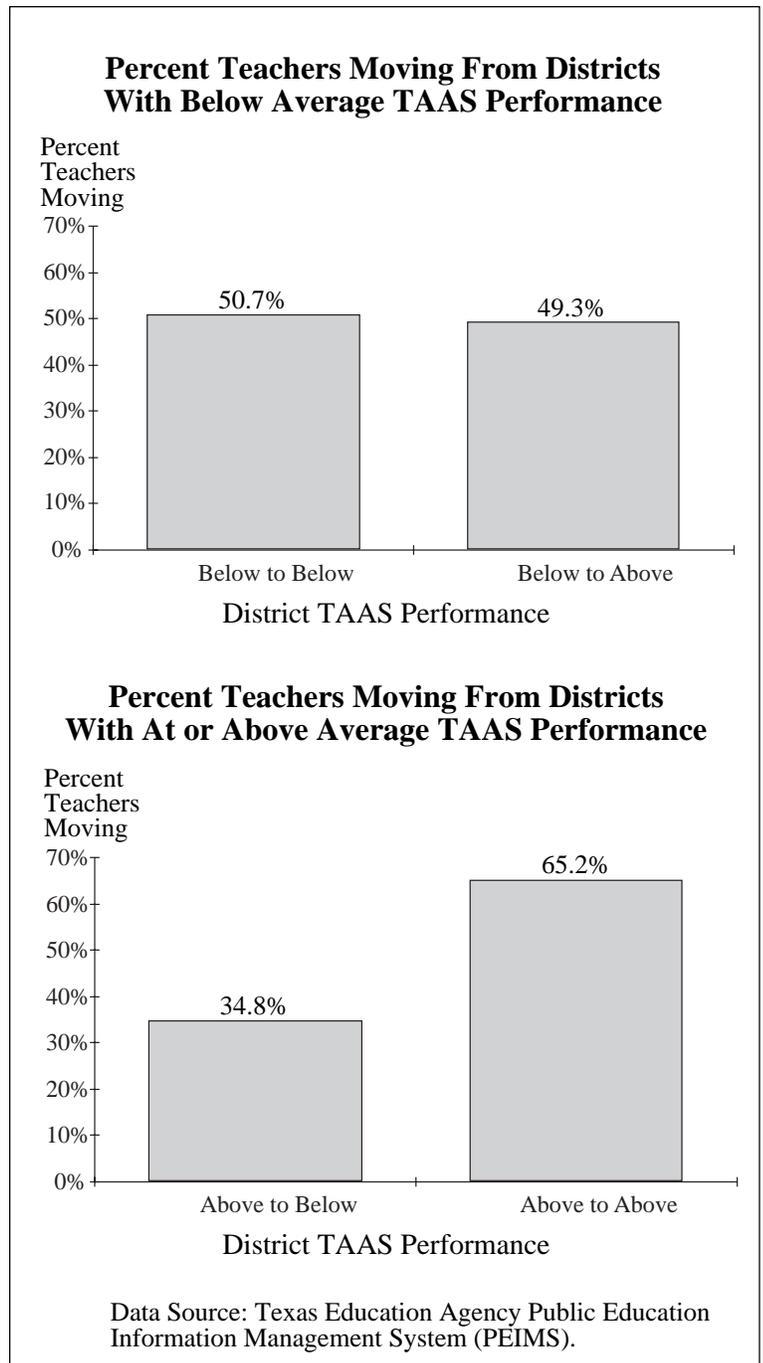
### ***Teacher Test Scores***

Nationally, those teachers with the highest standardized test scores tend  
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# Teacher Mobility by Student Performance

A three-year district mobility rate was calculated to compare teacher mobility with student performance on the Texas Assessment of Academic Skills (TAAS) test. The TAAS is a criterion-referenced test that assesses student performance in reading, mathematics, and writing. The TAAS testing program has been in place since the 1990-91 school year. In 1990-91, TAAS was administered for the first time to almost 1.2 million students in grades 3, 5, 7, and 11. In 1992-93 testing was moved from the fall of the school year to the spring, and grades tested changed to 4, 8, and 10. Beginning in 1993-94, TAAS was administered to grades 3-8, and 10. Although the testing program has gone through several changes since 1990-91, the average performance of the district can be compared across years by comparing the percent of students passing all tests taken.

In 1990-91 the average percent of students passing all TAAS tests taken was 55.5 percent. In 1993-94 the average percent of students passing all tests taken was 55.6 percent. Of Texas teachers who moved, those who taught in districts with below average TAAS performance moved equally to other districts with below and at or above the state average TAAS performance. Teachers teaching in districts at or above the state average tended to move to other districts that also were at or above average TAAS performance.



(Continued from page 8)

to have shorter teaching careers. A longitudinal study of teachers in North Carolina showed a strong positive relationship between high test scores on the National Teachers Exam (NTE) and likelihood of leaving the profession. Teachers with higher

scores on the NTE, regardless of race or years of experience, were more likely to leave teaching than those with average or low scores.

In contrast, certified Texas teachers in 1988-89 with higher scores on

the ExCET were no more likely to leave the profession in their first five years of teaching than were teachers who had average or lower scores.

## School Conditions

### School Level

As shown in Chart 11, NCES data on school level with regard to teacher attrition shows that elementary school teachers are somewhat more likely to move and leave than secondary teachers; however, teachers who teach in combined elementary and secondary schools move at the highest rates.

In Texas, overall, teachers at the middle school grades were somewhat more likely to move or leave after the 1992-93 school year than elementary or high school teachers, as Chart 12 shows. As with the national data, Texas teachers who taught in combined elementary and secondary schools moved and left at the highest rates.

Regardless of school size and student population, beginning teachers at the secondary level are more likely to leave within five years than beginning teachers at the elementary level. Of teachers who began teaching in Texas schools in 1988-89, 45 percent of secondary teachers left within five years compared to 38 percent of elementary teachers.

### School Size

National data on school size show that the size of the school was not connected to teachers' leaving or moving in 1990-91. As Chart 13 on Page 13 shows, nationally, percentages of teachers moving and leaving was highest among teachers in schools with 300-499 students, although rates did not vary greatly from smaller to larger schools.

In Texas, teachers who taught in the smallest schools, those with fewer

Chart 9  
Texas Teacher Five-Year Retention and Attrition Rates  
by Advanced Degree — 1988-89 to 1993-94

Degree Held	Number of Teachers	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
Bachelor's	154,536	81.3%	11.2%	92.5%	7.5%
Masters	65,089	82.9%	8.6%	91.5%	8.5%
Doctorate	896	78.0%	7.5%	85.5%	14.5%

\* Information available on teachers with reported degree data only.

*In 1992-93, teachers with bachelor's degrees remained in the teaching profession at higher rates than teachers with advanced degrees. Teachers with doctoral degrees had the lowest retention rates.*

Data Source: Texas Education Agency Public Education Information Management System (PEIMS).

Chart 10  
Texas Teacher Retention and Attrition Rates  
by Subject Area Taught — 1992-93

Subject Area Taught	Number of Teachers	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
Bilingual	13,601	12.5%	80.2%	92.7%	7.3%
Elementary	88,248	9.0%	83.8%	92.8%	7.2%
English	20,576	9.3%	82.3%	91.6%	8.4%
Gifted	3,985	9.2%	83.8%	93.0%	7.0%
Mathematics	13,446	10.1%	81.5%	91.6%	8.4%
Science	11,776	9.7%	81.7%	91.4%	8.6%
Social Studies	11,811	9.6%	83.5%	93.1%	6.9%
Special Education	20,579	14.8%	75.2%	90.0%	10.0%
Vocational Education	9,794	7.2%	85.4%	92.6%	7.4%
Other	29,269	13.1%	77.4%	90.5%	9.5%

*In Texas, secondary social studies teachers and those teachers teaching gifted students had the lowest attrition rates, while special education teachers had the highest.*

Data Source: Texas Education Agency Public Education Information Management System (PEIMS).

than 150 students, had the highest rate of moving and leaving after the 1992-93 school year, as Chart 14 on Page 13 shows.

Teachers who taught in schools with 150-299 students also moved at fairly high rates.

**School TAAS Performance**

As shown in Chart 15 on Page 13, schools with higher percentages of students passing all Texas Assessment of Academic Skills (TAAS) tests taken in 1992-93 had higher percentages of teachers return to the campus in 1993-94. Teacher mobility and attrition rates did not vary greatly by campus student performance, and the data do not indicate the nature of the relationship between teacher mobility and student performance. Teachers may be less likely to leave successful campuses, or students may perform better with a stable teaching force, or other factors may result in both higher student performance and higher teacher retention. Teachers on campuses where no students were tested had the highest mobility rates.

**Student Characteristics**

Nationally, the percentage of minority students at a school appears to be related to the rate of teacher attrition, such that schools with 50 percent or more minority students report teacher attrition at almost 14 percent, versus just over 10 percent for campuses with less than five percent minority students.

In Texas the percent of minority students on a campus was less related to teacher attrition than it was nationally. Texas schools with 50 percent or more minority students did have the highest rate of teacher attrition with 8.3 percent of teachers leaving the profession after the 1992-93 school year. Campuses with less than five percent minority students had attrition

*(Continued on page 13)*

rates of 7.8 percent. The lowest attrition rate, 7.0 percent, was reported for campuses with between 10 and 20 percent minority students.

The percent of economically disadvantaged students on a Texas campus also showed little association with teacher attrition from 1992-93 to

**Chart 11  
National Retention and Attrition Rates by School Level — 1990-91**

School Level	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
Elementary (Lowest grade ≤ 6 and highest grade ≤ 8)	86.6%	8.0%	94.6%	5.4%
Secondary (Lowest grade ≥ 7 and highest grade ≤ 12)	89.5%	5.6%	95.1%	4.9%
Combined (Lowest grade ≤ 6 and highest grade ≥ 8)	83.2%	11.5%	94.7%	5.3%

*Nationally, teachers who teach in combined elementary and secondary schools have the highest rate of moving from campus to campus to teach each year, followed by elementary teachers. Teachers in elementary, secondary, and combination schools tend to leave the profession at approximately the same rates.*

Data Source: U.S. Department of Education, National Center for Education Statistics, May 1994.

**Chart 12  
Texas Teacher Retention and Attrition Rates by School Level — 1992-93\***

School Level	Number of Teachers	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
Elementary (Lowest grade ≤ 5 and highest grade ≤ 8)	111,923	82.6%	10.0%	92.6%	7.4%
Middle/Junior (Lowest grade ≥ 4 and highest grade ≤ 9)	47,403	78.0%	13.5%	91.5%	8.5%
High School (Lowest grade ≥ 7 and highest grade ≥ 9)	56,114	83.8%	8.1%	91.9%	8.1%
Combined (Lowest grade ≤ 6 and highest grade ≥ 9)	6,363	78.2%	12.7%	90.9%	9.1%

\* Information available on teachers with reported school data only.

*Texas teachers at the middle/junior high school level moved from campus to campus to teach at the highest rates, followed by teachers from combination schools. Teachers in combination schools had the highest attrition rate, while elementary teachers had the lowest.*

Data Source: Texas Education Agency Public Education Information Management System (PEIMS).

# Teacher Mobility by Salary

To examine the influence of salary on the mobility of teachers in Texas, the average district salary in 1988-89 was compared to the average district salary in 1993-94. The Texas Public Education Compensation Plan sets mandatory minimum salaries for teachers based on years of experience. In 1988-89 the average base salary for all Texas teachers was \$24,876. The average teacher salary at the end of the mobility period, 1993-94, was \$28,894. Of all Texas teachers who moved from district to district during 1988-89 to 1993-94, over 44 percent were teaching in districts that were below the state average for base salary, over 20 percent were teaching in districts that were at the

state average, and about 35 percent were teaching in districts that were above the state average. At the end of the mobility period 41 percent of those who changed districts were teaching in districts that were below the state average; almost 19 percent of teachers were teaching in districts that were at the state average, and about 40 percent were teaching in districts that were above the state average.

Although there was a slight movement toward districts with higher salaries between 1988-89 and 1993-94, Texas teachers tended to move to districts with average salaries similar to the district from which they had come. Over 54

percent of teachers teaching in districts with average salaries below the state average moved to districts where the average salary also was below the state average. A surprisingly large minority of teachers from districts where salaries were at the state average—almost 40 percent—moved to districts where the average salary was below the state average.

District moving from in 1992-93	District moving to in 1993-94		
	Salary Below State Average	Salary at State Average	Salary Above State Average
Salary Below State Average	58.2%	17.2%	24.7%
Salary At State Average	39.8%	17.1%	43.1%
Salary Above State Average	26.1%	20.4%	53.4%

Average Teacher Salary in 1991 = \$26,000 to \$27,000;  
in 1994 = \$28,000 to \$29,000

Data Source: Texas Education Agency Public Education Information Management System (PEIMS).

(Continued from page 11)

1993-94. Campuses where 60 percent or more of the students were economically disadvantaged had only slightly higher attrition rates than campuses with fewer economically disadvantaged students. Campuses with 40 percent or more economically disadvantaged students did show somewhat higher teacher mobility rates than campuses with fewer economically disadvantaged students. Campuses with 80 percent or more economically disadvantaged students had the highest teacher mobility rates, with 11.8 percent of 1992-93 teachers moving to a different campus for the 1993-94 school year.

### Community Type

Texas school districts are grouped into four categories based on the type of community in which they are located—urban, suburban, nonmetropolitan, and rural. Factors such as proximity to a metropolitan area, size, and growth rate are used to determine the appropriate category for each district. The type of community in which teachers work does not seem to be linked with teacher attrition rates. There is only slight variability in teacher attrition rates by community type, with campuses in suburban districts having the highest rate (8.2 percent) of teachers leaving the profession after the 1992-93 school year, and campuses in nonmetropolitan districts having the lowest rate (7.7 percent).

There is more variability with regard to teacher mobility rates. Campuses in rural districts have the highest teacher mobility rate with 12.3 percent of 1992-93 teachers moving to a different campus to teach for the 1993-94 school year, while campuses in urban districts have the lowest rate, with 9.8 percent of teachers moving. (The chart on Page 14 presents information on five-year district mobility of Texas teachers by community type.)

(Continued on page 15)

Chart 13  
National Teacher Retention and Attrition Rates  
by School Size — 1990-91

School Size	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
Less than 150	86.6%	8.1%	94.7%	5.3%
150-299	88.0%	7.7%	95.7%	4.3%
300-499	85.8%	8.5%	94.3%	5.7%
500-749	87.7%	7.6%	95.3%	4.7%
750 or more	88.6%	6.0%	94.6%	5.4%

Nationally, rates of moving and leaving were highest for teachers in schools with 300-499 students. However, rates did not vary greatly by school size.

Data Source: U.S. Department of Education, National Center for Education Statistics, May 1994.

Chart 14  
Texas Teacher Retention and Attrition Rates  
by School Size — 1992-93

School Size	Number of Teachers	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
Less than 150	7,148	69.6%	18.2%	87.8%	12.2%
150-299	16,376	78.6%	13.4%	92.0%	8.0%
300-499	37,205	82.3%	10.2%	92.5%	7.5%
500-749	62,211	82.1%	10.2%	92.3%	7.7%
750 or more	100,142	82.3%	9.6%	91.9%	8.1%

In Texas, teachers from schools with less than 150 students had higher rates of moving and leaving than teachers from schools with larger numbers of students.

Data Source: Texas Education Agency Public Education Information Management System (PEIMS).

Chart 15  
Texas Teacher Retention and Attrition Rates  
by Percent of Students Passing TAAS — 1992-93

Percent Passing all Tests Taken	Number of Teachers	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
Under 33.3%	50,303	80.2%	11.1%	91.3%	8.7%
33.3% to under 47.2%	50,386	80.8%	11.3%	92.1%	7.9%
47.2% to under 60.5%	52,320	82.8%	9.5%	92.3%	7.7%
Over 60.5%	48,475	84.3%	8.3%	92.6%	7.4%
No students tested	20,319	79.6%	13.0%	92.6%	7.4%

Overall, retention and attrition rates were similar for teachers regardless of the TAAS performance of the students on their campus. Campuses where no students were tested had higher rates of teacher mobility than other campuses.

Data Source: Texas Education Agency Public Education Information Management System (PEIMS).

# Teacher Mobility by Community Type

The five-year district mobility rate refers to the movement of all teachers from one district to another during the five-year period from 1988-89 to 1993-94. Texas school districts are grouped into four categories—urban, suburban, nonmetropolitan, and rural. Factors such as proximity to a metropolitan area, size, and growth rate were used to determine the appropriate category for each district.

Urban districts include the eight largest school districts that serve the metropolitan areas of Austin, Corpus Christi, Dallas, El Paso, Fort Worth, Houston, and San Antonio; as well as major school districts in other large Texas cities. Suburban districts are other school districts in and around metropolitan areas and large cities. Nonmetropolitan districts include other large school districts and school districts with high growth rates. Rural districts are the remaining small school districts.

The five-year district mobility rate varies by community type, with the lowest rate occurring in rural districts and the highest rate occurring in nonmetropolitan districts. Eleven percent of all teachers moving from one district to another were teaching in rural districts. Over 35 percent of all teachers moving from one district to another were teaching in nonmetropolitan districts.

Texas teachers in schools located in suburban or nonmetropolitan areas moved to other suburban or nonmetropolitan districts to teach. Over half of all teachers moving from a suburban district moved to another suburban district to teach. Forty-five percent of teachers moving from a nonmetropolitan district moved to another nonmetropolitan district to teach.

Teachers in schools located in urban areas moved to suburban areas to teach at high rates, and teachers in rural areas moved to nonmetropolitan areas at high rates. Over half of all teachers moving from urban districts went to suburban districts to teach. Almost 47 percent of all teachers moving from rural districts went to nonmetropolitan districts to teach.

Mobility by Community Type	Percent
Urban to Urban	27.1%
<b>Urban to Suburban</b>	<b>52.1%</b>
Urban to Nonmetropolitan	17.6%
Urban to Rural	3.2%
Suburban to Urban	24.7%
<b>Suburban to Suburban</b>	<b>52.5%</b>
Suburban to Nonmetropolitan	19.3%
Suburban to Rural	3.5%
Nonmetropolitan to Urban	16.4%
Nonmetropolitan to Suburban	28.2%
<b>Nonmetropolitan to Nonmetropolitan</b>	<b>43.0%</b>
Nonmetropolitan to Rural	12.4%
Rural to Urban	8.3%
Rural to Suburban	13.8%
<b>Rural to Nonmetropolitan</b>	<b>46.7%</b>
Rural to Rural	31.2%

Data Source: Texas Education Agency Public Education Information Management System (PEIMS).

(Continued from page 13)

## ESC Region

Education Service Center (ESC) regions serve different numbers of school districts and students, and vary in the number of teachers moving in and out of the region each year.

Retention and attrition rates represent the percent of 1992-93 teachers returning to teaching and leaving the profession in 1993-94. As Chart 16 shows, the Region 12 ESC serving the Waco area shows the highest rate of teacher attrition, with 8.7 percent of 1992-93 teachers leaving the Texas public school system in 1993-94. The Region 14 ESC serving the Abilene area shows the lowest attrition rate, with 5.8 percent, and the highest overall retention rate, with 94.2 percent of 1992-93 teachers returning to Texas public schools in 1993-94.

The retention rate represents both teachers who stay on the same campus and teachers who move to another Texas public school campus the following year. The Region 8 ESC serving the Mount Pleasant area had the highest “staying” rate, with 85.6 percent of its teachers staying to teach on the same campus the following year. The Region 1 ESC in Edinburg had the highest “moving” rate, with 12.8 percent of its teachers moving to a different campus to teach the following year.

## Induction and Retention of Teachers

### Induction Programs

Induction programs are designed to provide support to beginning teachers as they make the transition to the classroom. With half of the teaching population leaving the profession within five years of beginning their careers, emphasis on induction and retention programs is

crucial. Research has shown that teachers leave the profession at the highest rates in the early years of their teaching careers, and thus effective induction programs, those programs focusing on beginning teachers, are most warranted. Although the content of induction programs varies greatly from district to district, most induction programs have the following goals.

- To improve teaching performance
- To increase the retention of beginning teachers
- To promote the personal and professional well-being of beginning teachers
- To satisfy mandated requirements related to induction
- To transmit the culture of the system to beginning teachers

Although there is great variety in the comprehensiveness and quality of these types of programs, typically some combination of the following components are present.

- Providing information such as employment conditions and school regulations to new hires
- Conducting orientation meetings

(Continued on page 17)

Region	Number of Teachers*	Stayers	Movers	Retention Rate (Stayers + Movers)	Attrition Rate (Leavers)
1 Edinburg	15,960	79.5%	12.8%	92.2%	7.7%
2 Corpus Christi	7,258	80.9%	11.3%	92.2%	7.8%
3 Victoria	3,877	84.3%	9.4%	93.7%	6.3%
4 Houston	44,333	80.8%	10.7%	91.5%	8.5%
5 Beaumont	5,512	84.8%	7.5%	92.3%	7.7%
6 Huntsville	7,525	81.7%	10.7%	92.4%	7.6%
7 Kilgore	10,452	84.7%	8.4%	93.1%	6.9%
8 Mount Pleasant	3,775	85.6%	7.8%	93.4%	6.6%
9 Wichita Falls	2,904	84.3%	8.8%	93.1%	6.9%
10 Richardson	28,395	82.6%	9.4%	92.0%	8.0%
11 Fort Worth	19,631	81.7%	10.4%	92.1%	7.9%
12 Waco	7,980	79.4%	11.9%	91.3%	8.7%
13 Austin	13,728	80.3%	12.0%	92.3%	7.7%
14 Abilene	3,725	84.9%	9.3%	94.2%	5.8%
15 San Angelo	3,531	82.2%	10.6%	92.8%	7.2%
16 Amarillo	5,460	82.3%	9.4%	91.7%	8.3%
17 Lubbock	6,131	80.5%	11.3%	91.8%	8.2%
18 Midland	5,320	81.8%	10.0%	91.8%	8.2%
19 El Paso	8,898	79.9%	11.7%	91.6%	8.4%
20 San Antonio	18,563	83.9%	8.5%	92.4%	7.6%

\* Information available on teachers with reported school data only.

*The Region 14 ESC, serving the Abilene area, shows the lowest attrition rate, with 5.8 percent, and the highest overall retention rate, with 94.2 percent of 1992-93 teachers returning to Texas public schools in 1993-94.*

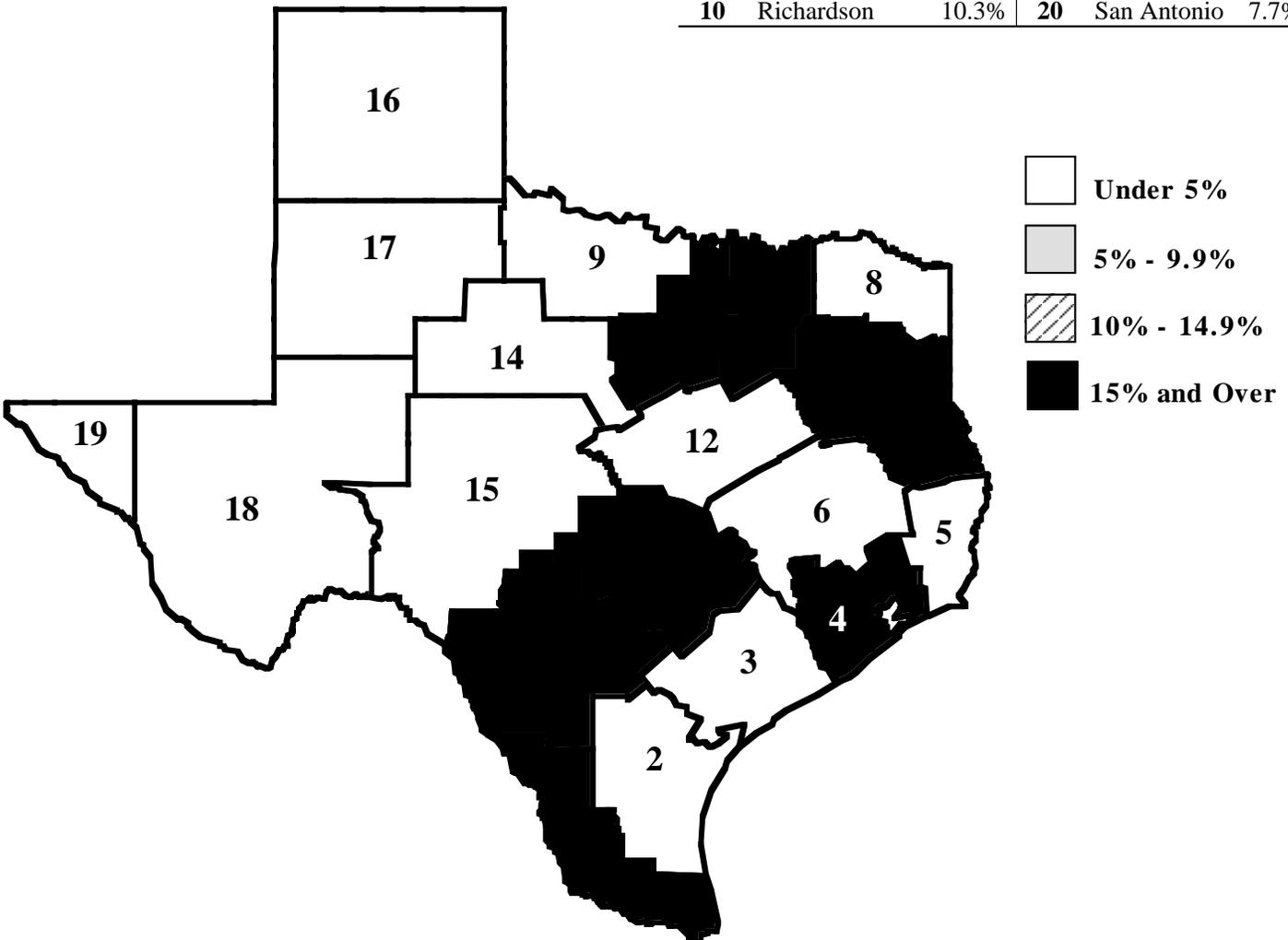
Data Source: Texas Education Agency Public Education Information Management System (PEIMS).

# Teacher Mobility by Education Service Center Region

The five-year district mobility rate represents the percent of teachers moving from one *district* to another at least once during the five-year period from 1988-89 to 1993-94. The Region 4 ESC serving the Houston area has the highest five-year district mobility rate of 17 percent. This region also has the greatest within-region movement; that is, the greatest movement of teachers from one district to another within the same region. The greatest movement between regions took place from Region 10 serving the Richardson area to Region 11 serving the Ft. Worth area. Region 10 has the second highest five-year district mobility rate, with over 10 percent mobility. The lowest mobility rate occurs within Region 9 in Wichita Falls, with just under 1.5 percent of teachers moving from one district to another at any time between 1988-89 to 1993-94.

**Education Service Center Regions**

Headquarters		Mobility Rate	Headquarters		Mobility Rate
<b>1</b>	Edinburg	7.7%	<b>11</b>	Fort Worth	6.7%
<b>2</b>	Corpus Christi	4.2%	<b>12</b>	Waco	4.7%
<b>3</b>	Victoria	2.2%	<b>13</b>	Austin	6.3%
<b>4</b>	Houston	17.0%	<b>14</b>	Abilene	2.4%
<b>5</b>	Beaumont	2.6%	<b>15</b>	San Angelo	2.2%
<b>6</b>	Huntsville	4.5%	<b>16</b>	Amarillo	2.9%
<b>7</b>	Kilgore	5.7%	<b>17</b>	Lubbock	3.7%
<b>8</b>	Mt. Pleasant	2.0%	<b>18</b>	Midland	2.9%
<b>9</b>	Wichita Falls	1.4%	<b>19</b>	El Paso	2.7%
<b>10</b>	Richardson	10.3%	<b>20</b>	San Antonio	7.7%



## Texas Teacher Preparation Study

A study of first-year Texas teachers by their preparation routes was undertaken by the Texas Education Agency (TEA) in 1993. The goal of the study, which is in its second and final year, is to assess the quality of first-year teachers in Texas relative to the type of teacher preparation program completed. The study is examining the main avenues into the profession: undergraduate and post-baccalaureate programs leading to certification; the Alternative Certification Program (ACP); and certification for teachers entering Texas with credentials issued in other states. Specifically, the study is designed to:

- determine who is entering the teacher work force and where they are teaching,
- examine teacher experiences in the classroom with regard to avenues of preparation, and
- analyze the relative retention over time of these teachers in the work force.

As part of this study, a survey of 5,002 first-year teachers across Texas was conducted. The survey requested information on the teachers' educational backgrounds and prior work experience; their characterization of their teacher training; and their first-year teaching experiences. Site visits were conducted to 28 campuses in 11 school districts. Each site visit included classroom observations of first-year teachers and mentor teachers; and interviews with first-year teachers, mentor teachers, and campus administrators. Results from the first year of this study are reported in the publication *Texas Teacher Preparation Study 1993-94 Interim Report*.

(Continued from page 15)

- Conducting seminars and training sessions on effective teaching topics
- Being observed by supervisors or peers
- Conducting follow-up meetings with observers
- Consulting with experienced teachers
- Being paired with a mentor or buddy
- Observing more experienced teachers
- Conducting support meetings with other beginning teachers
- Assigning to a team teaching situation

Research conducted on the effectiveness of teacher induction programs has shown positive results. Studies have reported that beginning teachers served by induction programs had improved teaching performance and higher retention rates after their first year than did beginning teachers not served by induction programs. Beginning teachers also reported that the emotional support they received through induction programs was among the most beneficial aspect of the program (Holdaway, 1994; Huling-Austin, 1990).

Texas Education Code §13.038, *Teacher Induction*, established in 1991 the requirement for an induction year for all new Texas teachers. It was specified that the induction year contain (1) new teacher orientation and (2) assignment of a mentor for each new teacher. No funding was appropriated to establish these induction programs and districts were responsible for conducting mentor training out of their own budgets.

To assist districts, the Texas Education Agency prepared a mentoring manual, *Mentoring Frameworks for Texas Teachers*. The manual includes a rationale for mentoring programs, needs of new teachers,

information on what is working in mentoring programs, evaluation suggestions, a composite of the various mentoring and induction models, a glossary, and an annotated bibliography that contains sections on mentoring, discipline management, peer coaching, and classroom management.

## Conclusion

This report focused on issues related to teacher supply, including teacher retention, mobility, and attrition. The characteristics of teachers who stay in the profession of teaching and those who leave were examined by gender, ethnicity, age, years of teaching experience, salary, degree held, subject area taught, and teacher test scores. School conditions of teachers who stayed, moved, and left were also examined.

Five-year data on Texas teachers show that attrition rates do not vary greatly by gender or ethnicity. Teachers with lower salaries are more likely to leave the profession after their first year of teaching than teachers with higher salaries. However, those who remain in the profession are only slightly more likely to move to districts with higher average salaries than to districts with the same or lower salaries over the next five years.

Texas teachers with advanced degrees, though representing a small percentage of all teachers, tend to leave teaching at higher rates than teachers with bachelor's degrees. While data from other states report that teachers with the highest scores on teacher certification examinations leave teaching at higher rates than those with average or lower scores, the same trend is not true in Texas. Teachers with higher scores on the ExCET are no more likely to leave in their first five years of teaching than are teachers who have average or lower scores.

School conditions such as school size and the type of community in which the school is located are not related to teacher attrition rates. However, there is a mobility pattern of teachers moving from rural districts to nonmetropolitan districts, and from urban districts to suburban districts.

The characteristics of students on the campus, such as percent minority students or percent of students who are economically disadvantaged, were likewise not related to teacher attrition. Although not strong, there is a relationship between teacher mobility and attrition and campus performance on TAAS.

In Texas, as in the nation, teachers with the fewest years of experience are the most mobile, moving from campus to campus and leaving the profession at high rates. Teachers with the most years of experience, 25 or more, leave the profession at the highest rates, presumably to retire. Age is also associated with mobility and attrition.

In an effort to retain teachers in the profession, especially during the early years of teaching when attrition is high, induction programs have been implemented to provide support to beginning teachers. Induction programs have been mandated in Texas schools since 1991.

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