

TEACHER TURNOVER IN TEXAS:

PROBLEMS AND PROSPECTS

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The Texas Educational Excellence Project (TEEP) is a joint program of the Department of Political Science and the George Bush School of Public Service at Texas A&M University. It also has research associates at the University of Texas-Pan American and Oakland University. TEEP conducts scholarly research on educational policy issues in order to make recommendations for greater quality and equity in Texas school systems.

Teacher Turnover in Texas: Problems and Prospects

During its 1999 session, the Texas Legislature passed legislation increasing teacher salaries by \$3,000. Increasing teacher salaries should not only attract more people into teaching, it should also reduce teacher turnover rates, thus increasing teacher supply. Because attracting more individuals to teaching is a relatively long-term activity, the more immediate impact of salary increases should be on the retention of current teachers. Indeed, much previous research confirms the assumption that increasing teacher salaries increases the length of initial employment in a state (Murnane and Olsen 1989; Murnane, Singer, and Willett 1989; Murnane and Olsen 1990; Rickman and Parker 1990; Grissmer and Kirby 1992).

An increase in teacher supply is necessary in Texas given the increasing school enrollments, which mirror the increasing school enrollments throughout the nation. In 1996, 51.5 million students were enrolled in grades K-12. This number is projected to grow to over 54.3 million by the year 2007 (Gerald and Hussar 1997; Kirby, Berends, and Naftel 1999). Given these large increases in student enrollments, and given that a large number of teachers are approaching retirement age and will need to be replaced, some studies have estimated that the nation will need about two million new teachers over the next decade (National Commission on Teaching and America's Future 1996). Because Texas' population growth exceeds that of the U.S. as a whole, teacher shortages in Texas could well be more severe than those nationwide. If Texas is going to meet its share of this demand, it must attract and retain qualified teachers. The recently passed bill increasing teacher salaries is one attempt to do so.

Although earlier research provides convincing evidence that increasing teacher salaries reduces teacher turnover rates, the effects of an increase are certain to vary from state to state and from time period to time period. Kovach (1995) compares three similar employee surveys since World War II and finds that "good wages" are of more importance to younger workers (those under 30 years old) and to workers in lower income brackets (under \$25,000) than they are to older workers and workers in higher income brackets (Kovach 1995, 101). Since many new teachers in Texas will fall into both of these categories, the increase in teacher salaries should have a significant effect on reducing teacher turnover. This study uses the latest data available from Texas school districts to estimate as accurately as possible the effect that the proposed increase in teacher salaries should have on teacher turnover.

In addition to exploring the effect of salary increases on teacher turnover, this study also examines the effect of other factors on teacher turnover, such as reducing class size. By exploring these factors along with teacher turnover, we not only will be able to gain a fuller understanding of teacher turnover in general, but we will also better understand how to meet the growing demands for elementary and secondary teachers.

Each year Texas school districts hire approximately 20,000 new teachers, while Texas schools of education graduate only 14,000 majors. In essence, each year Texas runs a 6,000 teacher deficit which must be compensated for by recruiting from out of state, by attracting non-education majors to teaching, or by hiring non-certified teachers. Texas is not the only state to have a high demand for teachers. Nationally, there is a shortage of qualified teachers especially in the areas of math and science. National shortages mean that in future years, recruiting teachers from out-of-state will become more difficult. For this reason, Texas must find ways to increase

the number of college bound students who train to become teachers and keep qualified teachers from leaving for out-of-state jobs. Current research identifies five key factors in teacher retention--Fiscal Incentives, Job Support, Teacher Autonomy, Job Challenge and Experience.

Fiscal Incentives

Money may not be the key to happiness, but the bottom line is that at the end of the month you have to make both ends meet. Maslow (1943, 1968, 1971, 1987) puts forth probably the best known theory of motivation. This theory posits that human behavior is influenced by an individual's unsatisfied needs. Maslow hypothesizes that human needs are ordinal in nature and can be classified in a dependent hierarchy. From bottom to top of this hierarchy, Maslow explains that humans cannot fulfill higher needs until lower needs are met. Further, this theory states that to motivate individuals, the unmet needs must be identified and met (Maslow 1943). The very first stage of this hierarchy is the safety needs. These are concerned with the physical maintenance of the individual such as shelter and protection from physical harm. Direct application of this theory indicates that unless teachers are paid enough to have a home and car and all the basic necessities, they will be unsatisfied.

Maslow's theory fits well with economic theories of employment and the findings of contemporary researchers who find that pay *does* matter (Murnane and Olsen 1989; Murnane, Singer, and Willett 1989; Murnane and Olsen 1990; Rickman and Parker 1990; Grissmer and Kirby 1992; Kovach 1995). Our measure in the analysis is the average teacher salary in a district. Salary alone is not sufficient to predict teacher turnover. As any teacher in Sonora will attest, the value of a dollar has far less meaning in some parts of the state than others. For a teacher to be *satisfied* with their wage, they must be receiving compensation that is reasonable to

the local mean. In other words, a teacher who makes \$35,000 annually can live reasonably well in an area where the mean income is around that level. In areas such as the Woodlands where the median wage is much higher, it is more difficult for a teacher to cover basic living expenses. Higher non-education salaries in the local area can also persuade teachers to leave teaching for other jobs. For these reasons, we include a measure of the median family income for the district in dollars. All dollar figures are converted to constant dollars.

Finally, money not in salaries might induce teachers to stay in the profession. For a teacher to be effective, they must have access to quality materials in the classroom. School resources including monies spent on classroom material, books, and facilities are important to teachers. To measure the effect of school resources, we include an indicator of per student spending on instruction.

Supervision

Several scholars indicate that autonomy is rewarding to individuals in the workplace. Locus of Control Theory indicates individuals will be more motivated when they perceive greater internal control than external control (internal control is defined as that within the individual's purview while external controls are beyond the individual's scope of control Zimmerman [1990]). This theory is similar in concept to the empowerment strategies now prevalent in the public administration literature. This theory contends that more administrators and larger bureaucracies will limit the perceived internal control of teachers and cause dissatisfaction.

An alternative hypothesis exists, however. Additional bureaucrats may not serve to limit teacher autonomy, but in fact to broaden it. Having a sufficient bureaucracy to deal with administrative functions frees teachers from the mundane tasks of *paper pushing* and allows

them to focus on the job of teaching. We include a measure of the number of bureaucrats per 100 students and a ratio of the number of teachers to administrators to test these conflicting views of administration.

Job Support

The relative difficulty of teaching varies with the number of students a teacher is required to teach in one sitting. Increased class size not only reduces personal contact between teacher and student but also makes maintaining class discipline more difficult. As structural impediments make teaching more complicated, teachers are likely to be less satisfied with the teaching environment and with the job in general. We include a measure of average district class size to account for these effects. In addition, teacher's aides are often used to assist a teacher in large classes. Ideally, the use of aides should allow a teacher to *manage* larger classes with less difficulty. The number of teacher's aides per 100 students employed by the district is included in this model.

Job Challenge

Returning to the work of Maslow, challenge is an important component of a job. People work to make money, but once these base-level needs are met, the importance of work becomes a motivational factor. For work to really be satisfying there must be some sense of accomplishment. Teachers, for the most part, want to teach. The main output of teaching is the knowledge accumulated through the teaching process. Unfortunately this measure is not the same for all students. Meier, Stewart and England (1989) find that specific systematic barriers inhibit the performance of minority students. Additionally, many researchers find that poverty affects the performance of students. We include district TAAS scores to measure performance

and measures of student diversity and poverty to control for the effects of diversity and poverty in the student body.

Experience

Contemporary literature indicates that more experienced teachers will have a higher retention rate than new teachers. This is caused by several factors. The longer a teacher is at a particular district, the greater attachments they have in the school. The school curriculum becomes second nature, and there is less adaptation necessary from year to year. Experienced teachers also have roots in the community. They own homes, have friends and social circles. They may even have children of their own within the school system. This makes the *cost* of relocation much higher for experienced teachers. We consider a teacher to be *experienced* if he or she has taught in the same location for more than six years. A measure is included for the percent of teachers with greater than six years of experience in a district.

Evaluating Teacher Retention

The data for this study cover all school districts with more than 1000 students from 1994 to 1998. The study used a least squares model with fixed time effects. Coefficients are interpreted as one unit shift in the variable produces a shift in teacher retention equal to the coefficient for that variable. This model explains 33% of the variation in teacher turnover. The findings are presented in table one.

[Table 1 about here]

Money does indeed matter in teacher retention. The teacher salary variable is significant and negative. This indicates that with all other factors held constant, a one thousand-dollar increase in mean teacher salary will produce a .938% decrease in teacher turnover in the district.

Based on this finding, with all other variables held constant, Texas school districts should expect to see a 2.8% reduction in annual teacher turnover as a result of the \$3,000 dollar pay increase legislated last year. The reduction is predicted if all things remain equal. The continued growth of the economy and other factors that affect labor markets mean all things will not remain equal. In other words, this prediction should be viewed as how much worse the situation would have been without the pay raise rather than in comparison to previous turnover rates.

Additional findings of this study show that district income has a positive significant effect on teacher turnover. Districts where incomes are relatively high are having greater problems with teacher turnover simply because teachers can find better-paying opportunities outside of teaching in their home communities. Surprisingly, school spending has a positive correlation with teacher turnover. This is most likely a reflection of other factors such as the need to repair old and outdated facilities, or building new facilities to meet the demands of overcrowding.

The Job Support variables provide more insight into the mix of teacher retention. Class size is positively related to teacher turnover. This variable indicates that increasing the average class size by just five students will cause a 2.3% increase in teacher turnover. Additionally, the use of Teacher Aides does not seem to have any effect on this outcome; the coefficient is not significant and, therefore, not statistically different from zero. A lack of teacher autonomy also increases teacher turnover. Increases in oversight through additional bureaucracy are associated with greater teacher turnover (the impact of the teacher/administrator ratio while significant is extremely small and may be disregarded).

The Job Challenge variables offer mixed support. This study shows that higher TAAS scores lead to greater teacher retention; however, conditions of high diversity and poverty lead to

greater teacher losses. These results suggest that teachers prefer to teach where learning can take place and where teaching is not restricted by the problems associated with poverty. Finally, experienced teachers are associated with lower rates of turnover.

Summary

The newly legislated pay raise was a significant first step in boosting teacher retention in Texas, but still more can be done. If districts intend to keep the teachers they have, attention must be paid to the relative cost of living in those areas. Continued prosperity in these areas that goes unmatched in teacher salaries could well create *teacher flight*. Additionally, this model indicates that Texas, as a whole, can benefit from improved teaching conditions across the board. Better facilities, smaller class sizes and less red tape should be incorporated in any plan for long-term educational improvement. Improving conditions in this manner should lead to more teachers establishing ties to the communities they serve, and in turn, further reduce teacher turnover rates.

Texas faces a serious shortage of qualified teachers. Texas school districts have been draining the five-state area of teachers for some time, and this tide will soon turn. Our neighboring states can no longer afford to educate teachers for Texas at the cost of their own educational systems. Before these states move to reverse this trend, Texas must take steps now to secure an adequate supply of trained teachers.

The economic trends examined here suggest that the teacher shortage can only be eased at the margins by retaining more teachers and by recruiting heavily from other states. In the long run, additional individuals need to be recruited as teachers. Salaries and other factors also influence students to select teaching as a career, but creating new teachers inherently takes more

time than retaining teachers who are already in the job. Only by pursuing both strategies is Texas likely to meet its needs for qualified teachers.

**Determinants of Teacher Turnover:
Texas Districts 1994-98**

Independent Variable	Slope	Error	T-score
Financial Incentives			
Teacher Salaries (K)	-.938	.0579	16.19
District Income (K)	.1298	.0139	9.37
School Spending (K)	.9135	.1615	5.77
Job Support			
Class Size	.4658	.0857	5.44
Teacher Aides	-.0196	.0101	1.94
Teacher Autonomy			
Teacher/Administrator Ratio	.0437	.0214	2.04
Bureaucracy	.8335	.1052	7.92
Job Challenge			
TAAS Scores	-.1458	.0122	11.96
Student Diversity	1.1296	.4436	2.55
Student Poverty	.0301	.0084	3.57
Experience			
Teachers 6+ years %	-.0938	.0159	5.90

R-Square .33 Adjusted R-Square .33 F = 77.53

Standard Error = 3.82 Dependent Variable Mean = 13.21

All coefficients except teacher's aides significant at .05
Coefficients for individual years not reported.

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