The Education Trust

# Their FAIR Share

## *How Texas-Sized Gaps In Teacher Quality Shortchange Low-Income and Minority Students*

Over the past 15 years, the hard work of Texas educators and forward-looking state policymakers has led to unusually strong gains in academic achievement for Texas students. Not only have Texas students racked up steady improvements on the state's own exams, but they also are among the nation's biggest gainers on the National Assessment of Educational Progress, earning Texas a reputation as a leader in education reform and a pacesetter in student achievement.

All Texans should take pride in this progress because all groups of students have benefited. However, many of the state's citizens are right to wonder, "With all this progress, why are so many young Texans—especially Hispanics, African-Americans and students from low-income families—still so far behind?"

Most Texans know the problem often begins before children reach school. We know children who grow up in homes with parents who are themselves poorly educated, non-English speaking and/or struggling with economic hardship are more likely than others to enter school behind.

Less understood, though, is what happens once these children reach school. Instead of providing them with the good teaching they need to catch up, Texas school districts systematically shortchange these students in the very resource that matters most to their academic success: strong teachers.

Year after year, Hispanic, African-American and low-income students are *less* likely to be assigned to teachers who know their subject matter, *less* likely to be in classrooms with experienced teachers and *less* likely to attend schools with a stable teaching force. Not surprisingly, their teachers are paid less, too.

Both research and common sense suggest:

- Teachers are more likely to lead their students successfully through courses like Algebra I if the teachers themselves have a strong background in mathematics.[1] But poor and minority students in Texas are far less likely than others to have certified math teachers. The teacher qualifications in schools serving predominately African-American students are particularly worrisome: only 58 percent of their Algebra I teachers are certified in math, compared to 82 percent of the teachers in schools with the fewest African-American students.[2]
- Brand new teachers—those who are still learning their craft—are less likely to be effective in enabling their students to meet state standards than teachers with at least a few years of experience.[3] But once again, Texas schools do exactly the opposite of what it takes to help low-income students catch up. Of the state's 50 largest school districts, 43 have the highest concentration of novice teachers in their poorest schools.

## Good Teachers Make an Enormous Difference

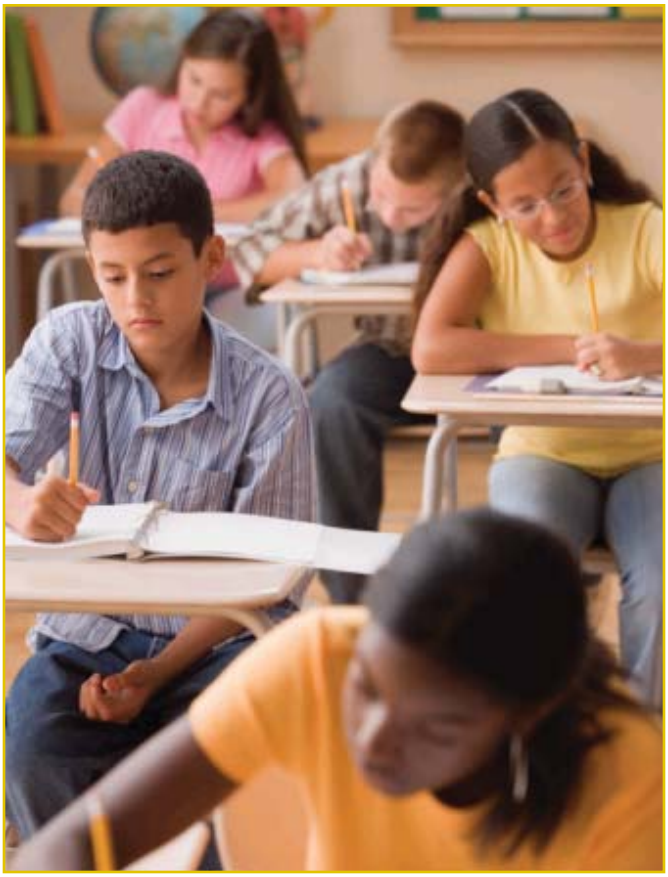
Teacher quality gaps like those found in Texas's largest districts contribute enormously to the achievement gaps separating different groups of students. Repeated research findings show even one year with an ineffective teacher can do significant damage to a student's achievement trajectory.[4] And those negative effects accumulate over time. Based on analyses of Dallas data, researchers warn that assigning low-performing students to a series of ineffective teachers is "educationally deadly."[5]

Fortunately, research also confirms that changing current teacher distribution patterns would have a tremendously positive effect on low-income and minority students.

- In a 2002 study of Texas data, researchers determined that "having a high-quality teacher throughout elementary school can substantially offset or even eliminate the disadvantage of a low-socioeconomic background."[6]
- A similar analysis of teacher and student data in Los Angeles concluded that "having a top-quartile teacher rather than a bottom-quartile teacher four years in a row would be enough to close the black-white test score gap."[7]

Yes, you read that correctly. By assigning poor and minority students to stronger teachers, Texas schools could produce much better results, regardless of the outside-of-school factors that affect student success. This is particularly important for a state whose economic future literally depends on closing its achievement gaps. Some states might be able to thrive economically without addressing the achievement problems of low-income and minority students, but Texas cannot afford to do so.[8]

Simply put, if we don't change current patterns of achievement for the poor and "minority" students who now form a majority of the state's young people, Texas is sunk.



Successful efforts to ensure low-income and minority students get their fair share of strong teachers will depend on making the schools they attend attractive to good teachers and on rewarding those teachers who help their students make *extraordinary* gains with something more than *ordinary* pay. Texas has already taken some small but important steps in the right direction. We hope that the data provided in this report will serve as the foundation for bolder efforts.

## The Teacher Credential Gap

In order to teach something, you need to know it and know it well. And to ensure teachers possess that knowledge—both in the subjects they teach as well as in how to teach them—states set thresholds teachers must meet in order to prove their readiness to enter the classroom.

The Texas State Board for Educator Certification sets the basic requirements for what it takes to become a teacher in Texas. Not surprisingly, the state mandates teachers possess a bachelor's degree in an academic major from an accredited college or university; successfully pass tests of content knowledge and professional knowledge; and complete teacher training through an approved program.[9]

But Texas makes exceptions to these requirements, allowing people who have not met the requirements for full state certification to enter classrooms anyway. While some of these "probationary" teachers will eventually get full state certification, evidence strongly suggests as many as 40 percent of them will not.[10]

Whether or not these individuals eventually become fully certified by the state, the bottom line is they have not yet demonstrated the same knowledge and skills as other teachers.

Common sense tells us we should not assign such probationers to the students who most need skilled, knowledgeable teachers. Yet across Texas, at every school level and in all core subjects (English, math, science and social studies), Hispanic, African-American and low-income students are more likely than their more affluent and white peers to be taught by teachers who do not meet state requirements.

**For example:**

- In middle schools serving the highest percentages of low-income students, 32 percent of teachers aren't fully certified in the subjects they are assigned to teach, a rate one-and-one-half times as high as the rate (19.1 percent) in schools with the fewest low-income students.[11]
- In high schools with the highest enrollment of low-income students, 36.9 percent of teachers lack certification in the subjects they are teaching, more than twice the rate (16.1 percent) in the most affluent high schools. At both the middle and high school level, a small number of these teachers are certified in other fields, but most are fully certified in nothing.

Common sense alone suggests this is a particularly dangerous practice in courses

required for high school graduation. Yet even in courses like English and social studies, where there are no documented teacher shortages, schools serving large numbers of minority and low-income students have more than their fair share of uncertified teachers. The numbers are especially devastating where the "minority" in question is African-American.

**For example:**

- Almost half (49 percent) of English I teachers in high schools with the highest African-American enrollment lack certification in English, a rate three times as high as the rate (16 percent) in high schools with the fewest African-American students. Moreover, about one in four English I teachers in the highest-poverty high schools are not certified in English (26 percent), a rate twice as high as in the lowest-poverty high schools (13 percent).
- Similarly, nearly 30 percent of Algebra I teachers in schools serving the most low-income students lack certification in math—compared to 15 percent of teachers in schools with the most affluent students. In schools with the highest concentration of African-American students, 42 percent of Algebra I teachers lack certification in math.

The consequences for students are devastating and it shows in the data. In 2006, less than half of African-American and Hispanic ninth-graders met or exceeded state standards on the mathematics Texas Assessment of Knowledge and Skills, compared to more than three-fourths of white students—achievement patterns that have been consistent over the past three years.[12] Granted, these students may have entered school somewhat behind their white peers. But can Texas schools honestly say they didn't contribute to the problem by assigning poor and minority students disproportionately to teachers with weak subject knowledge?

## The Teacher Experience Gap

Unfortunately, teachers with weak credentials are not the only teacher-related problem poor and minority students in Texas face. They also face more than their share of novices—teachers who are still learning how to teach.

Parents and teachers have long believed novice teachers are generally less effective than their more-experienced colleagues. As the Austin teachers' association president Louis Malfaro said to the *Austin American-Statesman* last year, "Novice teachers have good hearts, good heads and good intentions. But they're not as good as those more experienced teachers."[13]

Considerable research now supports those beliefs. Of course, there are exceptional novice teachers, just as there are weak veteran teachers. But researchers consistently find that as teachers gain experience during at least their first two or three years, student performance increases.[14]

Importantly, the beneficial effects of an experienced teacher are *stronger* than other educational interventions such as reducing class size. According to researchers in North Carolina, a teacher with three to five years of experience has *four to seven times* the impact on students' math achievement as reducing class size by five students.[15]

### Out-of-Field Teaching* Most Prevalent in Highest-Poverty Schools

| School Type | School Level | | | Total |
|---|---|---|---|---|
| | Elementary | Middle | High | |
| Lowest-Poverty | 95.2 | 80.8 | 83.9 | 88.2 |
| Highest-Poverty | 84.8 | 67.6 | 63.1 | 78.4 |

* In core subject areas: English, math, science and social studies.

**Note:** Lowest-poverty refers to schools with less than 25 percent low-income student enrollment. HIghest-poverty refers to schools with greater than 75 percent low-income student enrollment.

**Source:** Analysis of 2006-2007 Teacher Employment Records from the Public Education Information Management System by Ed Fuller, Ph.D., University of Texas at Austin.

Despite all this, though, 42 of the state's 50 largest school districts saddle the highest-poverty and highest-minority schools with disproportionate numbers of rookie teachers.[16] In some districts, the differences are particularly stark.

- In Fort Worth, almost one in five teachers (17 percent) in the highest-minority schools have fewer than three years of teaching experience, nearly twice the rate of novice teachers in the district's lowest-minority schools.[17]
- In Austin, the highest-poverty schools have almost *three times* the concentration of novice teachers as the most affluent schools (22.7 and 7.9 percent, respectively).

Rather than organizing their teaching resources to match children who enter school behind with teachers who have the experience to accelerate their learning, Texas schools have exacerbated achievement gaps by assigning low-income and minority students to a series of inexperienced teachers, year after year. For a full list of districts and the percentages of teachers with fewer than three years of experience, see Appendix A.

## The Teacher Salary Gap

Given differences in credentials and experience, it is hardly surprising that there are big differences in average teacher salaries in the highest-minority and highest-poverty schools compared to average salaries in schools with more white and affluent students.

- In Arlington, for example, the average teacher salary in the district's highest-poverty middle schools is $4,750 *less* than the average teacher salary in the more-affluent middle schools.
- In Amarillo, teachers working in elementary schools serving mostly Hispanic and African-American children earn on average $2,405 *less* than those in the elementary schools serving greater numbers of white students.

Arlington and Amarillo are only two district examples of a statewide problem. For a full listing of teacher salary gaps by district, see Appendix B, Tables 1 and 2 or visit http://www.theirfairshare.org.

## A Tale of Two Schools

The consequences of the teacher salary gap can also mean big dollar losses for an individual school's budget. Consider, for example, Westpark Elementary and Oaklawn Elementary schools. Both are in Fort Worth, but they serve very different student populations. Most of the students at Oaklawn (97 percent) are Hispanic or African-American. Westpark, on the other hand, serves mostly white students (82 percent).

Almost nine out of 10 students (87 percent) at Oaklawn receive free or reduced-price lunches compared to only 22 percent of the students at Westpark. Some say this economic discrepancy helps explain why Westpark has earned an "exemplary" designation from the state, while Oaklawn is rated only as "academically unacceptable."[18] But this rationale ignores an important fact: students at Westpark are taught by more highly paid and experienced teachers.

Not only does Westpark employ far fewer first-year teachers than Oaklawn (1.9 percent compared to 4.5 percent, respectively), Westpark also has *more than four times* as many veteran teachers—teachers who bring more than 20 years of experience to student instruction every day.[19]

Teachers at Westpark are paid an average of $4,428 per year more than teachers at Oaklawn.[20] If Oaklawn spent as much on teacher salaries as Westpark did, the Oaklawn budget would grow by more than $99,000 per year—money that could go a long way toward improving instruction.[21]

Even though students at Oaklawn actually generate more dollars for their school district (because more of them qualify for federal funding programs designated for low-income students) than students at Westpark, each Oaklawn student will have a total of $26,568 less spent on his or her teachers over the course of that student's elementary years than a student at Westpark.[22]

These schools are not isolated examples. Looking across the city, teachers in Fort Worth's highest-poverty elementary schools earn $1,299 less on average than teachers who work at the elementary schools serving the fewest low-income students.[23]

For a full listing of teacher salary gaps by district, see Tables 1 and 2 in Appendix B, or go to http://www.theirfairshare.org.

## The Stability Gap

While a few teachers inevitably leave each year, teacher turnover that is high and remains high for several years is usually a sign something is wrong with the school's leadership. And high turnover in one or more schools in a district that continues year after year is a signal that something is wrong with the district's leadership.

Whether the teachers are leaving the school to go to another building in the district or leaving the district altogether, the destabilizing influence of high teacher turnover affects everyone involved. Students' academic success is jeopardized by the lack of stability in their learning environment; remaining teachers must fill the voids; and administrators must spend more of their time and energy in recruitment, hiring and induction.

In 44 of the 50 largest school districts in Texas, teacher turnover in the highest-poverty and highest-minority schools is consistently higher than it is in more affluent schools and schools serving more white students.[24]

**For example:**

- In Arlington, the five-year average teacher turnover rate in the district's highest-poverty and highest-minority schools is almost twice as high as in the lowest-poverty and lowest-minority schools.
- Cypress-Fairbanks's highest-minority schools lost, on average, 27 percent of their teachers annually over the past five years, compared to around 18 percent in the lowest-minority schools.
- In Round Rock and Clear Creek, annual teacher turnover rates in the districts' poorest schools averaged about 25 percent over the past five years, compared to about 15 percent in the most-affluent schools in the district.

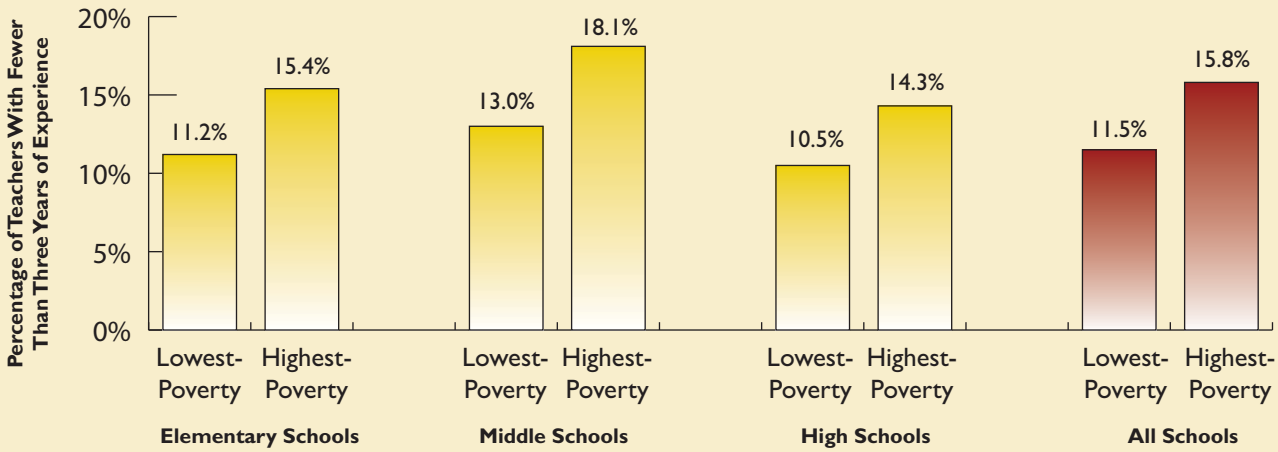
We often talk a lot about damage done by the lack of stability in low-income and minority students' home lives, but we rarely examine the effect of instability in their school lives. For a full list of districts and the five-year average teacher turnover rates, see Appendix C.

## Paying Teachers Differently?

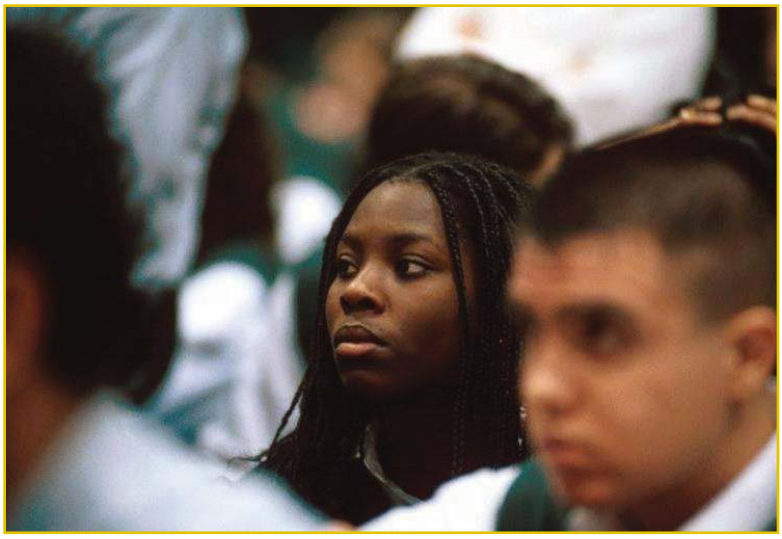
Common sense suggests it might help to pay strong teachers more to teach in schools that do not have their fair share of good teachers. Some efforts are already under way to do just that.

- The state's Texas Educator Excellence Grant (TEEG) makes awards to high-poverty schools that have demonstrated the highest level of student achievement or improvement in the state. Seventy-five percent of TEEG dollars must be used to award incentives to classroom teachers.

### Highest-Poverty Schools Assigned the Most Inexperienced Teachers




**Source:** Analysis of 2005-2006 publicly available data from the Texas Education Agency's Public Education Information Management System by Ed Fuller, Ph.D., University of Texas at Austin.



- The Texas Legislature also recently created a new District Awards for Teacher Excellence (D.A.T.E.) program to catalyze reform in teacher compensation beginning in the 2008–2009 academic year.[29] While districts are not restricted to using these dollars only in their high-poverty or hard-to-staff schools, they can choose to do so. However, if they decide to use the funds in fewer than all of their schools, they must focus on high-need campuses.
- Several Texas districts, including Austin and Dallas, have launched their own differentiated pay systems and apply federal and local funds to these initiatives.

Certainly, these efforts may help some schools. In truth, though, they are mostly just modest add-ons to a system that at its core does not focus on equity.

## What More Can Be Done?

The challenge facing Texas today is how to leverage its strengths—a long-term, bipartisan commitment to public school improvement efforts, robust school-level data and dedicated educators across the state—to effectively address the teacher quality gap that is hobbling so many of its children.

## The Myth of Class Size Reduction

Many Texas school districts will argue that while there may indeed be more inexperienced and poorly paid teachers in their highest-poverty schools, they are compensating for that by putting additional teachers in these schools—effectively reducing the class size by about one or two students per teacher. Austin, for example, has 14 students per teacher in its highest-poverty schools compared to 16 in the lowest-poverty schools in the district. Similarly, Fort Worth has 17 students per teacher in its highest-poverty schools compared to 18 in its lowest-poverty schools. Unfortunately for the students in these schools, these additional teachers generally lack experience and certification.

But doesn't smaller class size offset the limited qualifications and experience of the teachers? The answer is a resounding "no." Research confirms reducing class size by one or two students has a less powerful impact than ensuring that a quality teacher is assigned to those students. In 2007, researchers in North Carolina found licensed elementary teachers had two to three times greater impact on student achievement than reducing class size by **five** students.[25]

Districts that have chosen to reduce staff-to-student ratios in high-poverty schools by adding more inexperienced and uncertified teachers should reconsider the effectiveness of this strategy and whether it is the best use of their dollars.

**For more information about these gaps in teacher quality, visit:**

**http://www.theirfairshare.org**

## Moving Beyond Proxies

### Measuring Teachers' Effectiveness and Acting Upon It

No matter which measures of teacher quality we use—experience, credentials or turnover in schools—there is a pernicious pattern: low-income and minority children in Texas are being assigned to the least-qualified, least-experienced teachers in the least-stable schools. Some might argue these measures of teacher quality are merely proxies—after all, these measures do not tell us exactly how effective a teacher is with her students.

A statistical approach called "value-added" allows districts to measure the individual contributions of a teacher to each student's learning. The value-added approach measures each student's progress over the course of a year compared to the predictions of growth for that child. A teacher's results can be compared to the gains of other, similar teachers to determine whether the teacher produced more growth, average growth or less growth than was expected.

Using value-added data in Tennessee, researchers found, on average, previously low-achieving students gained about 14 points each year on the Tennessee state test when taught by the least-effective teachers, but more than 53 points when taught by the most-effective teachers.[26]

Predictably, value-added data echo Texas's patterns of teacher distribution. In Dallas, one of the few Texas districts to have calculated teachers' value-added scores for the past decade, data show previously low-performing students were almost half as likely as previously high-performing students to be assigned to a sequence of effective teachers.[27] This defies logic—assigning low-performing students to a sequence of ineffective teachers—when the intervention they most need is effective instruction.

By using the value-added approach, principals can identify both highly effective and less-effective teachers in their school—those who produce more than a year's worth of academic growth during one year with their students, and those who produce far less. This information can help principals and school districts make better decisions, such as designing individualized professional development plans with their teachers. It can ensure that the less-effective teachers receive the professional support they need to reach their full potential in the classroom—and highly effective teachers can be recognized and offered incentives to teach where students need the most help.

Here are some actions worth considering right now:

- **Districts participating in the state's D.A.T.E. initiative should focus available funding, first and foremost, on closing their teacher quality gaps.** These dollars are available from the state now, and can be used to make the highest-poverty and highest-minority schools more attractive to teachers with salary inducements and extra professional development and support. D.A.T.E. funding should be used to attract and retain highly effective teachers in hard-to-staff schools and to reward those teachers who produce the highest academic results.
- **The Texas Education Agency (TEA) should not approve any D.A.T.E. plans that do not show promise to help close the teacher quality gap.** Anything less would compromise the state's future.
- **The Texas Legislature should simplify its TEEG program to provide immediate rewards to teachers in high-poverty schools that produce the biggest growth in student achievement.** The current program is excessively complicated, delaying rewards for more than a year to the teachers who earned them.

Over the longer term, there are several additional steps that will help guarantee better teachers for the children who need them the most:

- **As it completes work on its state data system, TEA should put the basics in place to provide school districts with value-added data on teachers who teach in core subject areas.** Dallas has had such data for more than a decade; other districts need the same information.
- **With such rich data on teachers, TEA and the districts should issue an annual report on the distribution of teacher quality among highest- and lowest-poverty schools and highest- and lowest-minority schools within districts. The report should include various metrics of teacher quality—not just be limited to the "highly qualified" designation.**
- **To ensure a fairer distribution of resources among schools serving different kinds of children, both state and district policymakers should implement a weighted student funding formula to direct federal, state and local dollars to all schools by need.** Right now, a lot of money intended to help low-income and other disadvantaged students is directed to schools that are good at "working the system." Opaque and arcane budget practices should be replaced with a straightforward and fair way of allocating resources. Schools should get resources that are proportional to the challenges their students present.
- **At every level, accountability systems need a clear focus on teacher quality—and school and district leaders need targeted resources for keeping effective teachers at high-poverty schools.** The state should hold districts accountable for closing their teacher quality gaps, and districts should hold their principals accountable for reducing turnover of effective teachers—the factor that contributes most to the teacher quality gap. But district and school leaders need to have flexible resources to meet these goals.
- **State and district leaders—together with teacher leaders—should work toward establishing a new compensation system that places its highest value on producing student learning gains with students who face the biggest challenges.** The practice of tacking add-ons to an outmoded compensation system should be discontinued. Band-aids won't do the job. An effective teacher compensation system should not be based on the simple accumulation of experience or college credits.

None of these steps are easy. Those who benefit from the status quo will always push back. But Texas has to choose. Left alone, the current teacher quality gaps in the state guarantee that the state's large and growing numbers of Hispanic, African-American and low-income children will remain on the bottom of the achievement distribution. Left alone, the current teacher quality gaps in the state won't just continue to limit achievement gains in the schools but will limit access to and success in college as well. Left alone, the state's current teacher quality gaps will not only diminish the state's economic future, but they'll also erode the well-being of Texas's families and communities.

It doesn't have to happen this way. Like they have before, Texans can choose another path. Just as they chose to lead the country in holding schools accountable for achievement gaps, they can choose to lead the country in tackling teacher quality gaps.

# Appendix A:

## Percentage of Teachers With Fewer Than Three Years of Teaching Experience

| District Name | Lowest-Poverty Schools | Highest-Poverty Schools | Lowest-Minority Schools | Highest-Minority Schools |
|---|---|---|---|---|
| Aldine ISD | 18.5 | 16.7 | 18.6 | 20.2 |
| Alief ISD | 16.8 | 19.1 | 20.5 | 18.6 |
| Amarillo ISD | 12.6 | 16.8 | 11.1 | 19.1 |
| Arlington ISD | 6.6 | 15.3 | 6.0 | 16.0 |
| Austin ISD | 7.9 | 22.7 | 8.2 | 20.9 |
| Birdville ISD | 12.2 | 20.0 | 14.7 | 19.6 |
| Brownsville ISD | 11.1 | 14.7 | 9.7 | 14.7 |
| Carrollton-Farmers Branch ISD | 15.4 | 22.6 | 18.0 | 22.8 |
| Clear Creek ISD | 7.2 | 10.7 | 9.6 | 10.2 |
| Conroe ISD | 21.2 | 26.7 | 21.9 | 25.8 |
| Corpus Christi ISD | 10.3 | 12.6 | 9.1 | 13.0 |
| Cypress-Fairbanks ISD | 12.2 | 24.5 | 11.4 | 25.9 |
| Dallas ISD | 9.0 | 13.6 | 10.9 | 11.4 |
| Ector County ISD | 9.8 | 13.9 | 10.2 | 13.9 |
| Edinburg CISD | 7.6 | 14.3 | 8.7 | 12.6 |
| El Paso ISD | 10.6 | 10.7 | 11.3 | 10.3 |
| Fort Bend ISD | 13.4 | 16.9 | 12.7 | 15.9 |
| Fort Worth ISD | 9.8 | 16.7 | 9.9 | 14.7 |
| Galena Park ISD | 25.4 | 18.9 | 25.5 | 21.3 |
| Garland ISD | 11.4 | 17.6 | 13.1 | 16.5 |
| Grand Prairie ISD | 12.9 | 14.8 | 11.0 | 17.0 |
| Houston ISD | 12.5 | 14.3 | 12.4 | 15.8 |
| Humble ISD | 11.6 | 17.1 | 11.6 | 17.1 |
| Irving ISD | 21.5 | 23.5 | 22.1 | 24.7 |
| Katy ISD | 8.3 | 15.3 | 8.1 | 15.3 |
| Keller ISD | 13.0 | 15.2 | 12.3 | 15.2 |
| Killeen ISD | 15.1 | 17.9 | 14.5 | 17.0 |
| Klein ISD | 6.9 | 15.5 | 6.9 | 15.6 |
| La Joya ISD | 16.4 | 23.0 | 16.0 | 17.6 |
| Laredo ISD | 16.5 | 18.8 | 11.3 | 20.2 |
| Leander ISD | 19.6 | 17.3 | 19.6 | 17.8 |
| Lewisville ISD | 10.7 | 10.9 | 10.7 | 10.9 |
| Lubbock ISD | 7.2 | 19.1 | 13.2 | 11.7 |
| Mansfield ISD | 9.1 | 6.8 | 7.5 | 10.6 |
| McAllen ISD | 5.7 | 11.0 | 6.4 | 9.7 |
| Mesquite ISD | 17.8 | 17.6 | 17.8 | 16.6 |
| Midland ISD | 9.9 | 12.2 | 8.8 | 12.2 |
| North East ISD | 9.6 | 13.3 | 9.1 | 12.8 |
| Northside ISD | 10.3 | 15.4 | 10.0 | 15.8 |
| Pasadena ISD | 18.2 | 22.7 | 18.3 | 23.7 |
| Pharr-San Juan-Alamo ISD | 13.8 | 16.6 | 15.4 | 15.5 |
| Plano ISD | 13.9 | 14.7 | 12.5 | 14.7 |
| Richardson ISD | 14.8 | 27.1 | 14.8 | 28.0 |
| Round Rock ISD | 9.0 | 14.2 | 8.0 | 16.4 |
| San Antonio ISD | 12.2 | 11.3 | 12.0 | 10.5 |
| Socorro ISD | 11.7 | 17.7 | 14.7 | 17.7 |
| Spring Branch ISD | 7.4 | 19.9 | 7.3 | 20.4 |
| Spring ISD | 18.6 | 25.2 | 18.9 | 25.1 |
| United ISD | 9.2 | 21.8 | 9.0 | 22.9 |
| Ysleta ISD | 11.6 | 9.0 | 10.1 | 8.8 |

**Note:** Analysis of the publicly available data from the Texas Education Agency's Public Education Information Management System and the Academic Excellence Indicator System by Ed Fuller, Ph.D, University of Texas at Austin.

# Appendix B:

## Table 1: Average Teacher Salary Gaps among the Highest- and Lowest-Poverty Schools in the 50 Largest Districts in Texas

| District Name | Elementary School | Middle School | High School |
|---|---|---|---|
| Aldine ISD | $635 | $380 | -$999 |
| Alief ISD | -$18 | -$911 | $297 |
| Amarillo ISD | -$2,202 | -$1,942 | -$1,393 |
| Arlington ISD | -$2,762 | -$4,750 | -$3,194 |
| Austin ISD | -$2,668 | -$3,006 | -$2,413 |
| Birdville ISD | -$694 | -$2,064 | $648 |
| Brownsville ISD | -$1,153 | -$443 | -$3,627 |
| Carrollton-Farmers Branch ISD | $443 | -$144 | $816 |
| Clear Creek ISD | $404 | -$1,554 | $288 |
| Conroe ISD | -$50 | $232 | -$719 |
| Corpus Christi ISD | $1,103 | -$977 | -$1,175 |
| Cypress-Fairbanks ISD | -$1,741 | -$1,076 | -$3,343 |
| Dallas ISD | -$1,191 | $491 | -$1,863 |
| Ector County ISD | -$1,145 | $156 | -$284 |
| Edinburg CISD | -$4,075 | -$1,090 | -$487 |
| El Paso ISD | $448 | -$1,156 | -$564 |
| Fort Bend ISD | -$354 | -$513 | -$1,861 |
| Fort Worth ISD | -$1,299 | -$2,529 | -$1,137 |
| Galena Park ISD | $456 | -$483 | $1,374 |
| Garland ISD | $219 | $21 | -$495 |
| Grand Prairie ISD | -$1,750 | -$886 | -$1,370 |
| Houston ISD | -$315 | -$1,018 | -$708 |
| Humble ISD | -$1,295 | -$1,665 | $146 |
| Irving ISD | $860 | -$324 | -$2,780 |
| Katy ISD | -$1,391 | -$1,036 | $36 |
| Keller ISD | $356 | -$1,113 | $112 |
| Killeen ISD | -$1,445 | -$89 | $1,676 |
| Klein ISD | -$1,988 | -$2,358 | -$2,208 |
| La Joya ISD | -$2,168 | -$887 | $922 |
| Laredo ISD | -$678 | -$1,099 | $1,143 |
| Leander ISD | $1,147 | $3,042 | -$42 |
| Lewisville ISD | $920 | -$696 | $2,002 |
| Lubbock ISD | -$1,420 | -$3,786 | -$957 |
| Mansfield ISD | $1,385 | $888 | -$681 |
| McAllen ISD | -$1,018 | -$2,408 | -$592 |
| Mesquite ISD | -$195 | $530 | $650 |
| Midland ISD | -$1,055 | $205 | -$1,444 |
| North East ISD | -$845 | $190 | -$474 |
| Northside ISD | -$513 | -$2,475 | -$972 |
| Pasadena ISD | -$936 | -$3,153 | -$308 |
| Pharr-San Juan-Alamo ISD | -$1,939 | $1,702 | -$1,716 |
| Plano ISD | -$31 | -$666 | -$11 |
| Richardson ISD | -$2,413 | -$185 | -$1,646 |
| Round Rock ISD | -$1,491 | -$1,076 | -$5,048 |
| San Antonio ISD | -$430 | -$264 | $566 |
| Socorro ISD | -$475 | -$2,664 | -$2,731 |
| Spring Branch ISD | -$690 | -$2,174 | -$2,080 |
| Spring ISD | -$289 | -$3,152 | -$4,211 |
| United ISD | -$265 | -$2,526 | -$1,550 |
| Ysleta ISD | -$569 | $469 | -$1,609 |

**Note:** Negative numbers indicate that the average teacher salary in the highest-poverty schools during the 2005-2006 school year was less than the average teacher salary in the lowest-poverty schools.

**Source:** Analysis of the publicly available data from the Texas Education Agency's Public Education Information Management System and the Academic Excellence Indicator System by Ed Fuller, Ph.D., University of Texas at Austin.

# Appendix B (continued):

## Table 2: Average Teacher Salary Gaps among the Highest- and Lowest-Minority Schools in the 50 Largest Districts in Texas

| District Name | Elementary School | Middle School | High School |
|---|---|---|---|
| Aldine ISD | -$1,798 | -$520 | $805 |
| Alief ISD | $431 | -$1,107 | -$1,296 |
| Amarillo ISD | -$2,405 | -$2,590 | -$1,393 |
| Arlington ISD | -$3,070 | -$4,750 | -$3,194 |
| Austin ISD | -$3,010 | -$2,862 | -$2,413 |
| Birdville ISD | -$1,014 | -$722 | $648 |
| Brownsville ISD | -$1,547 | -$2,780 | -$621 |
| Carrollton-Farmers Branch ISD | $209 | -$481 | $816 |
| Clear Creek ISD | -$828 | -$1,544 | $288 |
| Conroe ISD | $234 | $1,019 | -$719 |
| Corpus Christi ISD | $1,510 | -$1,086 | -$686 |
| Cypress-Fairbanks ISD | -$2,066 | -$1,535 | -$2,367 |
| Dallas ISD | -$424 | $1,522 | -$1,088 |
| Ector County ISD | -$660 | $156 | -$284 |
| Edinburg CISD | -$3,249 | -$1,090 | -$487 |
| El Paso ISD | $1,077 | -$1,156 | -$309 |
| Fort Bend ISD | -$418 | -$513 | -$1,411 |
| Fort Worth ISD | -$1,666 | -$2,492 | -$1,413 |
| Galena Park ISD | -$111 | -$483 | $1,374 |
| Garland ISD | $482 | $725 | $836 |
| Grand Prairie ISD | -$1,719 | -$1,692 | -$1,370 |
| Houston ISD | -$1,074 | $425 | $1,080 |
| Humble ISD | -$1,295 | -$1,665 | $146 |
| Irving ISD | $913 | -$324 | -$1,386 |
| Katy ISD | -$2,036 | -$328 | -$24 |
| Keller ISD | -$252 | -$1,113 | $112 |
| Killeen ISD | -$1,658 | -$2,055 | -$2,364 |
| Klein ISD | -$1,616 | -$2,358 | -$2,208 |
| La Joya ISD | -$2,358 | $314 | $922 |
| Laredo ISD | -$1,340 | -$587 | $1,143 |
| Leander ISD | $932 | $3,042 | -$42 |
| Lewisville ISD | $107 | -$696 | $2,002 |
| Lubbock ISD | $1,330 | -$3,786 | -$957 |
| Mansfield ISD | -$453 | -$1,815 | -$681 |
| McAllen ISD | -$2,164 | -$2,591 | -$777 |
| Mesquite ISD | $88 | $1,194 | -$2,081 |
| Midland ISD | -$901 | -$765 | -$1,444 |
| North East ISD | -$1,338 | -$5 | -$398 |
| Northside ISD | -$521 | -$3,014 | -$972 |
| Pasadena ISD | -$1,166 | -$2,678 | -$308 |
| Pharr-San Juan-Alamo ISD | -$504 | $2,114 | $2,470 |
| Plano ISD | -$525 | -$666 | -$699 |
| Richardson ISD | -$2,526 | -$1,023 | -$1,646 |
| Round Rock ISD | -$2,493 | -$1,076 | -$5,048 |
| San Antonio ISD | $109 | $843 | $590 |
| Socorro ISD | -$1,113 | -$695 | -$2,731 |
| Spring Branch ISD | -$915 | -$2,960 | -$2,080 |
| Spring ISD | -$1,864 | -$3,152 | -$4,211 |
| United ISD | -$1,599 | -$2,526 | -$2,210 |
| Ysleta ISD | -$597 | $1,967 | -$796 |

**Note:** Negative numbers indicate that the average teacher salary in the highest-minority schools during the 2005-2006 school year was less than the average teacher salary in the lowest-minority schools.

**Source:** Analysis of the publicly available data from the Texas Education Agency's Public Education Information Management System and the Academic Excellence Indicator System by Ed Fuller, Ph.D, University of Texas at Austin.

# Appendix C:

## Percentage Five-Year Average Teacher Turnover Rates among the Highest- and Lowest-Poverty and Minority Schools in the 50 Largest Districts in Texas

| District Name | Lowest-Poverty Schools | Highest-Poverty Schools | Lowest-Minority Schools | Highest-Minority Schools |
|---|---|---|---|---|
| Aldine ISD | 25.2 | 21.0 | 23.2 | 22.3 |
| Alief ISD | 21.6 | 24.1 | 21.6 | 23.4 |
| Amarillo ISD | 13.1 | 16.9 | 13.1 | 17.3 |
| Arlington ISD | 11.8 | 21.4 | 12.1 | 22.1 |
| Austin ISD | 12.6 | 28.7 | 13.0 | 28.0 |
| Birdville ISD | 16.4 | 19.6 | 17.1 | 19.4 |
| Brownsville ISD | 12.7 | 15.4 | 11.9 | 14.7 |
| Carrollton-Farmers Branch ISD | 19.3 | 25.7 | 19.5 | 25.4 |
| Clear Creek ISD | 15.4 | 24.3 | 15.7 | 26.3 |
| Conroe ISD | 18.1 | 23.5 | 17.8 | 23.6 |
| Corpus Christi ISD | 15.7 | 17.8 | 15.7 | 17.5 |
| Cypress-Fairbanks ISD | 18.7 | 26.9 | 17.8 | 27.4 |
| Dallas ISD | 18.5 | 23.7 | 19.5 | 22.1 |
| Ector County ISD | 16.5 | 19.5 | 17.5 | 18.9 |
| Edinburg CISD | 12.6 | 16.0 | 14.0 | 14.8 |
| El Paso ISD | 16.7 | 19.4 | 17.6 | 19.7 |
| Fort Bend ISD | 18.0 | 23.6 | 17.6 | 22.9 |
| Fort Worth ISD | 17.0 | 22.4 | 16.4 | 22.6 |
| Galena Park ISD | 18.1 | 16.8 | 19.5 | 21.4 |
| Garland ISD | 16.4 | 22.2 | 16.0 | 21.4 |
| Grand Prairie ISD | 20.1 | 24.1 | 18.1 | 22.9 |
| Houston ISD | 17.5 | 22.6 | 17.1 | 23.3 |
| Humble ISD | 17.4 | 21.9 | 17.4 | 21.9 |
| Irving ISD | 23.4 | 24.3 | 23.9 | 23.5 |
| Katy ISD | 16.3 | 19.7 | 16.6 | 19.2 |
| Keller ISD | 19.8 | 22.0 | 20.4 | 22.0 |
| Killeen ISD | 20.2 | 22.8 | 19.7 | 27.9 |
| Klein ISD | 14.1 | 22.7 | 14.1 | 22.3 |
| La Joya ISD | 21.3 | 27.5 | 23.5 | 28.8 |
| Laredo ISD | 14.9 | 17.2 | 13.8 | 17.2 |
| Leander ISD | 25.6 | 24.4 | 25.6 | 23.9 |
| Lewisville ISD | 17.5 | 19.9 | 17.0 | 20.2 |
| Lubbock ISD | 30.5 | 33.9 | 31.9 | 31.5 |
| Mansfield ISD | 17.9 | 18.1 | 19.3 | 22.3 |
| McAllen ISD | 11.6 | 15.2 | 11.6 | 16.5 |
| Mesquite ISD | 19.1 | 19.7 | 19.2 | 19.2 |
| Midland ISD | 18.4 | 21.2 | 17.9 | 21.2 |
| North East ISD | 13.7 | 18.8 | 13.8 | 18.9 |
| Northside ISD | 15.3 | 20.5 | 15.6 | 21.0 |
| Pasadena ISD | 15.7 | 19.4 | 15.5 | 20.9 |
| Pharr-San Juan-Alamo ISD | 16.0 | 17.3 | 17.8 | 15.1 |
| Plano ISD | 18.7 | 24.9 | 18.5 | 24.9 |
| Richardson ISD | 23.7 | 31.8 | 23.9 | 32.6 |
| Round Rock ISD | 15.0 | 24.7 | 14.6 | 26.0 |
| San Antonio ISD | 16.8 | 17.1 | 16.2 | 16.4 |
| Socorro ISD | 16.4 | 19.3 | 18.0 | 21.1 |
| Spring Branch ISD | 15.8 | 20.8 | 16.3 | 21.0 |
| Spring ISD | 22.6 | 28.2 | 22.7 | 30.6 |
| United ISD | 15.7 | 18.5 | 15.1 | 19.9 |
| Ysleta ISD | 14.4 | 16.4 | 14.3 | 16.1 |

**Note:** The five-year average teacher turnover rate is the average of one-year teacher turnover rates for five years in a row—the 2001-2002, 2002-2003, 2003-2004, 2004-2005 and 2005-2006 school years. The one-year turnover rate is the percentage of teachers who leave a school during one school year. For example, one-year turnover is the percentage of teachers at a school during the 2001-2002 school year who were no longer at the school in 2002-2003 school year.

# Endnotes

[1] Dan D. Goldhaber and Dominic J. Brewer. 2000. "Does Teacher Certification Matter? High School Certification Status and Student Achievement." *Education Evaluation and Policy Analysis*, 22: 129-145.

[2] Analysis of publicly available 2006 data from the Texas Education Agency's Public Education Information Management System by Ed Fuller, Ph.D., University of Texas at Austin.

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[5] Sitha Babu and Robert Mendro. 2003. *Teacher Accountability: HLM-Based Teacher Effectiveness Indices in the Investigation of Teacher Effects on Student Achievement in a State Assessment Program.* Paper prepared for the Annual Meeting of the American Educational Research Association, p. 12.

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[7] Gordon, Kane and Staiger. 2006.

[8] U.S. Census Bureau. 2005. http://www.census.gov/Press-Release/www/releases/archives/population/005514.html.

[9] For information on Texas's requirements for teacher certification, see: http://www.sbec.state.tx.us/SBECOnline/certinfo/becometeacher.asp?width=800&height=600#basicreq. For information about the required tests, see: http://www.texes.ets.org/tecprogram/.

[10] Celeste Alexander and Ed Fuller. 2003. *Teacher Supply and Demand in Texas.* Presented to the Joint Committee on Education, Texas State Legislature, November, 2003. Austin, TX; State Board for Educator Certification.

[11] In this section, high-poverty refers to schools with greater than 75 percent low-income student enrollment.

[12] Source: http://www.tea.state.tx.us/perfreport/aeis/index.html. We report the 2006 Texas Assessment of Knowledge and Skills data here because it corresponds to the 2005-2006 teacher data used in the overall analysis.

[13] Raven L. Hill. 2006. "Teachers' Pet Schools." *Austin American-Statesman,* May 22.

[14] Donald Boyd, Pamela Grossman, Hamilton Lankford, Susanna Loeb and James Wyckoff. 2005. *How Changes in Entry Requirements Alter the Teacher Workforce and Affect Student Achievement.* Teacher Pathways Project. Available: http://www.teacherpolicyresearch.org/portals/1/pdfs/how_changes_in_entry_requirements_alter_the_teacher_workforce.pdf . See also Charles T. Clotfelter, Helen F. Ladd and Jacob L. Vigdor. 2007. *How and Why Do Teacher Credentials Matter for Student Achievement?* The National Center for Analysis of Longitudinal Data in Education Research. Available: http://www.caldercenter.org/PDF/1001058_Teacher_Credentials.pdf.

[15] Clotfelter, Ladd and Vigdor. 2007. *How and Why Do Teacher Credentials Matter for Student Achievement?* The National Center for Analysis of Longitudinal Data in Education Research.

[16] In 42 out of 50 Texas districts, the highest-minority schools have more novice teachers than do the lowest-minority schools. In 43 out of 50 Texas districts, the highest-poverty schools have more novice teachers than do the lowest-poverty schools. The terms "highest-poverty" and "highest-minority" refer to schools in the highest quartile of low-income and minority enrollment in their district. Source: Analysis of 2005-2006 publicly available data from the Texas Education Agency's Public Education Information Management System by Ed Fuller, Ph.D., University of Texas at Austin.

[17] Novice teachers are those with fewer than three years of teaching experience.

[18] The accountability ratings range from "exemplary" to "recognized" to "academically acceptable" to "academically unacceptable" on Texas's Academic Excellence Indicator System.

[19] 38.2 percent of teachers at Westpark and 8.9 percent of teachers at Oaklawn have more than 20 years of experience. 2006 Academic Excellence Indicator System Campus Report. Available at: http://www.tea.state.tx.us/perfreport/aeis/2006/campus.srch.html.

[20] Analysis of publicly available 2006 data from the Texas Education Agency's Public Education Information Management System by Ed Fuller, Ph.D., University of Texas at Austin.

[21] (22.4 full-time-equivalent positions at Oaklawn) x ($4,428.01 salary gap) = $99,187.42

[22] ($4,428.01 salary gap) x (6 years of K–5 education) = $26,568.06 (Note: Westpark Elementary includes grades K-5, while Oaklawn Elementary covers PK-5. We compared the gap in teacher salaries for the K-5 period common to both schools.)

[23] Analysis of publicly available 2006 data from the Texas Education Agency's Public Education Information Management System by Ed Fuller, Ph.D., University of Texas at Austin.

[24] In 47 of the 50 largest districts in Texas (94 percent), the five-year average teacher turnover was greater in the highest-poverty schools than in the lowest-poverty schools. In 44 of the 50 Texas districts (88 percent), schools with the highest concentration of Hispanic and African-American students had a higher five-year average teacher turnover.

[25] Clotfelter, Ladd and Vigdor. 2007.

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[27] Babu and Mendro. 2003.

[28] Texas Educator Excellence Grant. Available: http://www.tea.state.tx.us/ed_init/teeg/.

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