

# **African Americans Closing Gap on TAAS Scores - Margin Remains Large**

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Scores for African American students on the 2000 TAAS exam continue to close the gap with Anglo American students. However, statewide averages do mask impressive gains by individual school districts. In 2000, 68.3 percent of African American students and 89.3 percent of Anglo American students passed the TAAS compared to 55.7 percent and 84.9 percent in 1997, respectively.

## **Identifying Superior Districts**

The Texas Educational Excellence Project (TEEP) believes the first step in improving African American test scores is to identify school districts that better educate African American students. These districts can then be used as an example by other districts to improve performance.

One of these districts, the Ferris Independent School District, improved TAAS scores from 74.5 percent in 1997 to 87.2 percent in 2000. This improvement resulted from efforts by school district leaders and teachers to identify effective programs and ensure district-wide implementation. These programs include testing students at an early age, then identifying and developing skills in areas of weaknesses. While this testing does not target African American students, districts do produce results.

The Ferris district is small; therefore, the approach may not directly transfer to large urban districts. However, urban districts can receive dramatic improvements by implementing similar programs. The Aldine school district also increased their TAAS scores from 67.4 percent in 1997 to 76 percent in 2000.

Aldine also used early intervention programs such as testing to identify student weaknesses. Once student weaknesses have been identified, efforts are then made to provide the student with the additional instruction needed to convert these weaknesses into strengths.

For example, teachers may give math lessons, which cover a variety of TAAS objectives. After the instruction has been provided, students are given periodic exams to see if the TAAS objectives have been met. Student performance on these exams is recorded and if a student misses several problems under one objective, they then attend after-school tutorials.

## **How did we examine and identify these districts?**

TEEP examines school districts across the state to identify districts that do a superior job of educating African American students. By using analytical tools to develop general ideas and projection regarding overall performance in the education of African American students, TEEP then makes comparisons across individual school districts.

The study examines student performance on the TAAS tests in direct correlation to contributing factors including student-teacher ratio, student attendance, family income levels, teacher salaries and experience, and school funding. Based on these contributing factors TEEP was able to project how well students in districts should score on standardized testing. These projected scores were then compared to actual TAAS results. The difference, if any, indicates how well or how poorly districts are educating African American students.

### **A School as an Organization.**

Like any organization or business, school districts work off of inputs, such as students and funding, to produce outputs, or educated students. This structure lays out a standard for evaluating performance. The output, educated students, is examined year after year to document any trends.

Inputs generally fall into four categories including environment, financial resources, teacher qualifications and district policies or regulations. The environment includes the poverty level of students and the number of community members, more than 25 years of age, who have a high school degree. Financial resources include funding received from the state (state aid), teacher's salaries, and instructional funds.

By examining the inputs and outputs, conclusions can be drawn. In school districts where there are a higher percentage of students in gifted classes, smaller class sizes, and a higher attendance record, performance should increase. By the same principle, in districts where there is a high level of students at poverty level, projections show that performance should decrease.

## **What does our test show?**

Tests found that the factors contributing to the African American scores include mostly environmental factors. Test scores increased with higher attendance records and when the number of African American adults with a high school degree in the community was higher. Districts with a high number of low-income students in the districts also produced lower scores.

## **Programs to increase performance and education**

School districts in Texas that performed better than expected on the pass rate for African American students have been identified by this study. These districts can serve as role models for other districts in Texas.

The districts have a wide variety of programs for early diagnosis, coordination of curriculum, and parental involvement. Not all of the districts use the same approach, indicating that success can be attained in a variety of ways. If effective programs and performances from these districts are identified, then they can be transferred to other districts with an overall benefit to African American students.

## **What can *you* do to help increase performance and education?**

Additional improvement is needed in these districts as well as other districts to close the test gap between African American and Anglo American students. Substantial progress has been made in the last few years; however, a great distance remains. Improving educational opportunities for all Texas children requires a long-term commitment to education. Our tests showed that environmental factors played a large role in individual testing. Students must attend school on a regular basis in order to receive early testing and identification of weaknesses. Outside factors affecting the education of African American students include the income level and the number of educated adults in the community. However, even at a disadvantage, communities can play a large role in education by helping to implement district-wide programs, such as testing and tutorials that could negate these outside issues and increase the overall education of African Americans.

*The Texas Educational Excellence Project seeks to apply scholarly research to educational policy issues in order to make recommendations for greater quality and equity in Texas school systems. TEEP is a joint program of the George Bush School of Government and Public Service and the Texas A&M University's Department of Political Science, with transition research associates at the University of Texas -Pan American and Oakland University.*

## **ACADEMIC REPORT**

*Check our facts.*

The Texas Educational Excellence Project uses a technique of analysis known as multiple regression to identify school districts that do a superior job of educating African American students. This analytical tool makes it possible to develop generalizations regarding overall performance of Texas school districts in how well they educate African American students, while also providing information that can be used to make comparisons across individual school districts. Our model is based on what is generally known as an education "production function" where student performance (defined as African American pass rates on the TAAS) is a function on inputs into the educational process, such as operating expenditures, student-teacher ratios, and various education policies. Estimation of this production function results in predictions about how well districts are expected to do, given the level of inputs available to them. Based on the results of the production function model, we compare how well districts actually perform to how well the statistical model predicts they should have performed based on their inputs. The difference, if any, between the actual results and the predictions indicates how well districts are doing in educating African American students.

### **An Education Production Function**

School districts are organizations. They receive inputs, such as resources and students, from their environment and produce outputs, educated students among others. A vast literature has designated a variety of education production functions whereby the outputs of school systems can be evaluated relative to their inputs (Burtless 1996; Smith 1995; Hanushek 1986; 1989; 1996).

Our dependent variable is the school district's pass rate for African American students on the TAAS exam. This dependent variable remains constant year after year because the state of Texas requires all school districts to administer exams to students in several grades on an annual basis. We make no claim that results on TAAS exams account for all of the overall learning experience of African American students. Student performance is a multi-dimensional concept that can be measured in a variety of different ways. However, pass rates on TAAS exams do measure whether students are picking up basic academic skills from grade to grade. Our dependent variable, therefore, focuses primarily on how well districts perform in teaching African American students basic skills, and should not be construed as an overall measure of African American student learning.

The independent variables fall into four general types -- environmental constraints, financial resources, teacher qualifications, and district policies. Environmental constraints are factors that restrict agency performance. In the case of education the key constraint is how difficult/easy it is

to educate students. In the context of education policy, poverty is a serious constraint on student performance. The measures of constraint are the percent of poor students (defined as those eligible for free school lunches) and the percentage of African American families that live in poverty. We also measure the educational level of African Americans in the school district using the percentage of African Americans in the school district over age 25 with at least a high-school diploma. The education variable should be positively related to student performance and the other two measures should be negatively related to African American pass rates.

Financial resources are the basic raw materials of any organization's attempt to meet its goals. Three measures of financial resources are included per student -- instructional funds, average teacher's salary, and percent of funds received via state aid. These represent total resources devoted to education, the attractiveness of teaching positions in a competitive marketplace, and state efforts to overcome the unequal distribution of local financial resources. The relationship between expenditures and educational outcomes is one of the most contested questions in all of educational policy. Hanushek (1986; 1989; 1996) contends that there is no consistent relationship between money and student outcomes. Although this finding has been challenged by others, (Hedges and Greenwald 1996) it remains the conventional wisdom. In recent longitudinal studies, however, Murray (1995), Evans, Murray and Schwab (1997), and Murray, Evans and Schwab (1995) found that districts that increased expenditures had improved performance afterward. Bohte (1999) found that expenditures were correlated with higher test scores even when controlling for the previous year's test scores. We consider expenditures a critical variable for inclusion in the model. All relationships should be positive.

The two teacher qualification measures (or lack thereof) are the percent of teachers who hold a temporary certification in a subject specialty (as opposed to a permanent certification) and the average number of years of teacher experience. The relationship for non-certification should be negative while the expectation is that more experienced teachers will lead to higher student outcomes.

Finally, the education production function contains three policy measures--the percentage of students taking gifted classes, class size, and student attendance (percent attending on an average day). Performance should be positively related to gifted classes and attendance and negatively related to class size.

Texas has a large number of school districts; many are very small or deal with a homogeneous student body. In an effort to use a set of organizations relatively similar in the task that they perform, we have restricted our analysis to school districts with a least 1000 students and at least 10 percent African American students. These restrictions resulted in a total of 174 districts in the study, an increase of four district from the 2000 study.

The data analysis is a pooled time series with data from the years 1997 through 2000. In any pooled time series one needs to control for serial correlation resulting from any trend in the variables over time. A series of dummy variables are introduced to achieve this.

The basic production function is shown in table 1. Several variables are powerful predictors of African American student pass rate. These include background, and policy variables. The

African American student pass rate is strongly influenced by the percentage of African American adults age 25 and older with at least a high school education. Attendance also is strongly and positively related to the African American student pass rate. The greater the percentage of low-income students in the district, the lower the African American student pass rate. No other variable achieved statistical significance.

The results of this model allow us to compare school districts as to how well they do above (or below) expectations. As an illustration, the model predicted that the Houston Independent School District would have an average African American pass rate of 57.52% from 1997-2000. Houston's actual pass rate of 63.42 represents a 5.90 percentage point improvement over this standard. Based on this method, the top ranked school district for African American students in Texas was Linden-Kildare with a rating of +23.28% followed closely by Pittsburg with a +22.17 score and Ferris with a +20.70 score.

The top 25 districts are shown in table 2. The first column is the average pass rate for African American students from 1997 to 2000. The second column is the numerical score on which the districts are ranked, and the third column is the ranking score for 2000 only. These twenty-five districts represent a variety of different types of school districts located throughout the state.

Table 3 reports the 25 best districts for African American students in 2000 only. A comparison of this table with Table 2 gives some indication of relative movement among the rankings of school districts. The New Boston school district's performance in 2000 is striking in magnitude. Recent gains are likely the result of the benefits of policies adopted at an earlier date. This means these are districts are likely to continue to be rated highly in future studies.

Although our top 25 includes districts of all sizes, large districts often cannot change as rapidly as small districts simply because so many students are involved. Table 4 presents the top ten large districts (those with 15,000 or more students). Aldine, Goose Creek, Galena Park and Houston top this list of large districts.

The table in the Appendix gives an alphabetical listing of all of the school districts examined in this study, along with their scores. Any person interested in a specific school district can examine the Appendix to locate that district and identify the score and rank.

This study has identified those school districts in Texas that performed better than expected on the pass rate for African American students. These districts can serve as role models for other districts in Texas. The districts have a wide variety of programs for early diagnosis, coordination of curriculum, and parental involvement. Not all of the districts use the same approach, indicating that success can be attained in a variety of ways. If effective programs and performances from these districts are identified, then they can be transferred to other districts with an overall benefit to African American students.

**Table 1. The Education Production Function**

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<b>Independent Variable</b>	<b>Slope</b>	<b>Standard Error</b>
Low Income Student	-.0941	.0323
Gifted Students	.1673	.1026
Attendance	3.0432	.5093
Teacher Salaries (k)	.4947	.3007
Class Size	-.3980	.3874
Noncertified Teacher	-.0514	.1183
Teacher Experience	-.0057	.2721
State Aid	.0167	.0203
Instructional Funding (k)	1.2456	1.6457
Black Education Levels	1.7357	.6330
Black Poverty	-.6740	.4327

R-Square	.38
Adjusted R-Square	.37
F	29.49
N of cases	696

**Table 2. Twenty-Five Best Districts for African American Students 1997-2000**

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Rank	District	TAAS	Score	2000 Score
1	Linden-Kildare	88.88	23.28	18.14
2	Pittsburg	83.10	22.17	18.84
3	Ferris	80.80	20.70	22.11
4	Atlanta	84.07	18.97	20.57
5	Hooks	79.57	17.76	18.83
6	Sweeny	81.65	15.26	14.64
7	Angleton	81.80	14.18	17.07
8	Del Valle	70.22	13.16	8.60
9	El Campo	73.00	12.13	12.37
10	McGregor	79.63	11.68	6.47
11	Newton	69.32	11.56	15.34
12	Texas City	71.28	10.66	7.21
13	New Boston	78.38	10.54	20.52
14	Woodville	68.60	10.45	10.57
15	Connally	76.00	10.19	4.46
16	Aldine	72.70	10.18	7.23
17	DeKalb	74.40	10.18	4.80
18	Sulphur Springs	75.35	9.93	14.18
19	Tatum	71.77	9.93	10.03
20	Rosebud-Lott	72.05	9.76	16.60
21	Sabine	74.75	9.60	9.89
22	Galena Park	72.93	8.95	11.68
23	Hillsboro	67.63	8.89	16.03
24	Kountze	68.50	8.80	6.74
25	Goose Creek	68.10	8.33	8.43



**Table 3. Best Districts for 2000**

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Rank	School District	2000
1	Ferris	22.11
2	Atlanta	20.57
3	New Boston	20.52
4	Pittsburg	18.84
5	Hooks	18.83
6	Linden-Kildare	18.14
7	Angleton	17.07
8	Rosebud-Lott	16.60
9	Hillsboro	16.03
10	Newton	15.34
11	Sweeny	14.64
12	Sulphur Springs	14.18
13	Wharton	12.67
14	El Campo	12.37
15	Galena Park	11.68
16	Columbia-Brazoria	11.46
17	Woodville	10.57
18	Rice Cons	10.21
19	Tatum	10.03
20	Sabine	9.89
21	La Marque	9.52
22	Groesbeck	9.21
23	Waco	8.84
24	Dangerfield-Lonestar	8.68
25	Del Valle	8.60

**Table 4. The Best Large School Districts (Enrollment 15,000+)**

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Rank	District	TAAS	Score	2000 Score
1	Aldine	72.70	10.18	7.23
2	Galena Park	72.93	8.95	11.68
3	Goose Creek	68.10	8.33	8.43
4	Houston	63.42	5.90	4.61
5	Garland	71.85	5.69	5.37
6	Beaumont	64.60	5.07	4.26
7	Waco	58.90	4.61	8.84
8	Grand Prairie	71.27	4.54	1.94
9	Cypress-Fairbanks	74.47	4.41	4.82
10	Amarillo	62.38	3.83	2.64