STUDENTS AND TEACHERS IN AT-RISK SETTINGS

In this chapter, we first define our measure of risk and then use this measure to characterize school districts as low, medium, and high risk. We present a profile of students who are being served by these at-risk districts and of their teachers.

DEFINING "AT-RISK"

One of the two main objectives of the report is to examine the characteristics of the districts who serve large numbers of students at risk of educational failure. To do so, we need to identify what constitutes high risk for educational failure. Prior research has shown that poverty tends to be highly correlated with lower student achievement (Berends and Koretz, in press; Grissmer et al., 1994; Hill and O'Neill, 1994). Texas district data included a variable called "percent economically disadvantaged," which encompassed all those eligible for free or reduced-price meals under the National School Lunch and Child Nutrition Program as well as those eligible for other forms of public assistance. Children who come from families with incomes below 185 percent of the poverty level ($30,433 for a family of four in 1998) are eligible for reduced-price meals and as such would be included in this measure. We based our definition of risk on this measure and categorized school districts as low, medium, and high risk based on the percentage economically disadvantaged in the district: fewer than 40 percent, 40–59 percent, and 60 percent and higher.[1]

_____

[1]It might be helpful to provide some basic information about the school districts in Texas. There are over 1,000 school districts and they vary greatly in size as measured

These cutoffs, although somewhat arbitrary, were based on an analysis of the relationship between percentage economically disadvantaged and student achievement, measured by the number of students passing all Texas Assessment of Academic Skills (TAAS) tests they attempted as a percentage of the total number of students who took one or more tests. This measure includes all students tested in grades 3 through 8 and 10 in reading and mathematics, and grades 4, 8, and 10 in writing.[2]

We find that in 1995–96, three-quarters of students in the low-risk category passed all tests, compared with 65 percent in the medium-risk districts and 56 percent in districts classified as high risk.[3] Figure 2.1 shows the boxplots for the percentage passing all tests for the three categories of districts. Boxplots provide information about the center, spread, and symmetry of a distribution and are especially valuable when comparing two or more distributions.[4] The middle 50 percent of low-risk districts all performed better than the middle 50 percent of high-risk districts. In fact, an above-average high-risk district—for example, one at the 75th percentile—has a passing rate that would place it only in the bottom 10 percent of low-risk districts. The

_____

by enrollment. They range from Houston with over 200,000 students to 45 districts that have fewer than 100 students each. Most districts are rural and small, with more than 500 districts serving fewer than 1,000 students each.

[2]We did not use the percentage passing the TAAS as our measure of risk because the TAAS was introduced only in the early 1990s and we wanted a consistent, more general, descriptive measure that we could use to track changes in numbers of at-risk districts over time as well as to be crosswalked to national data.

[3]These differences are not due simply to the larger numbers of low-scoring economically disadvantaged students in high- and medium-risk districts. We find that within different categories of students, passing rates are higher in low-risk districts. For example, 61 percent of economically disadvantaged students in low-risk districts passed all tests, compared with 52 and 51 percent of these students in medium- and high-risk districts. A similar pattern of lower performance in at-risk districts was found for different racial/ethnic groups.

[4]Figure 2.1 is a box-and-whisker diagram that shows the distribution of the percentage of students passing all tests by risk category. In a box-and-whisker diagram, the line in the box is at the median value—half the schools fall above the line and half fall below. Each box captures the middle 50 percent of the schools. The lines, called whiskers, at each end of the box show the range of scores beyond the upper and lower quartiles. Outlier districts are indicated by the shaded circles. The box-and-whisker plot thus allows us to compare the centers (median or center of the box), spread (measured by the interquartile range or the height of the box), and tails of the different distributions.
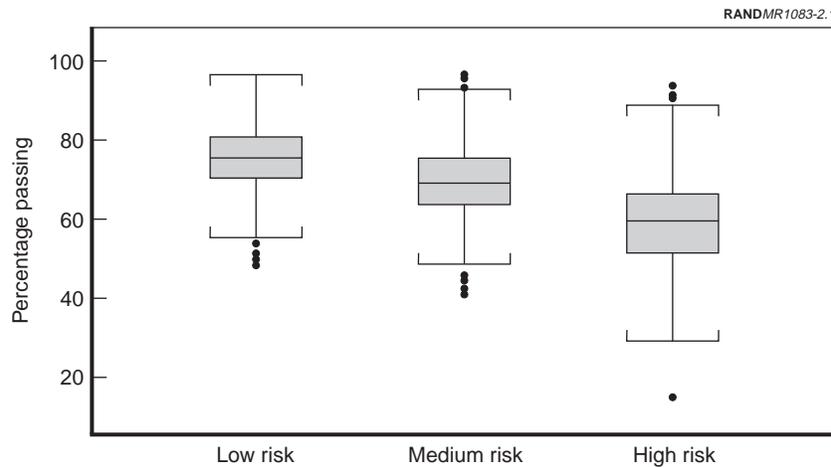
RAND*MR1083-2.1*

Figure 2.1—Percentage of Students Passing All Achievement Tests, in Low-, Medium-, and High-Risk Districts, 1995–96

spread among high-risk districts is larger than among low-risk districts, with longer tails in the distribution.

Our measure of risk is also related to other measures of student performance. The average high-risk district has an annual dropout rate that is 50 percent higher than the average low-risk district.[5] For students who remain in school and are expected to graduate, Texas school districts keep track of college entrance test scores. Among low-risk districts, 17.4 percent of graduates scored at or above a criterion score (1,000 on the Scholastic Aptitude Test or 24 on the American College Test) whereas among high-risk districts, only 7.5 percent did so. Thus, our measure of risk—percentage economically disadvantaged—seems to track well with risk of educational failure. Students in high-risk districts have lower achievement scores on the

_____

[5]Some of the largest districts, which are urban and high risk, have the highest dropout rates. So, when looking at actual numbers of students instead of district averages, the differences between high- and low-risk districts are even greater. Though low- and high-risk districts have about the same total enrollment, high-risk districts had twice the number of dropouts in 1995–96.

TAAS, higher dropout rates, and among those who graduate, are far less likely to take and then score well on college entrance tests.

We use our measure of risk to categorize districts as low, medium, and high risk to see whether and how such districts differ in terms of characteristics that might have an effect on the quality of schooling offered in these districts. These characteristics include taxable values per pupil, sources of total revenue per pupil, instructional expenditures per pupil, beginning salaries for teachers, and student/teacher ratios as a proxy for working conditions. The results of the analysis are presented in Appendix A. The main conclusion is that there are few differences among these districts with respect to overall revenue, teacher pay, or student/teacher ratios. However, there are substantial differences among these districts in terms of the demographic composition of the student body and teacher force. The next section addresses this issue.

STUDENTS IN AT-RISK DISTRICTS

Trends in Student Enrollment

The number of students enrolled in Texas public schools has been increasing steadily since 1980–81, from 2.9 million to a little over 3.7 million, an increase of around 28 percent. The numbers of minority students and students classified as economically disadvantaged, which tend to be highly correlated, have been increasing at an even faster pace in recent years. From 1990–91 to 1995–96, the number of economically disadvantaged students rose from 1.3 million (39 percent of students) to 1.74 million (47 percent of students)—an increase of 436,000 potentially high-risk students in a five-year period. In addition, since 1990–91, minority students have become the majority, largely because of a big increase in the number of Hispanic children.

Figure 2.2 shows the racial/ethnic composition of the student body from 1980–81 to 1995–96. In 1995–96, two out of every five children in Texas schools were Hispanic. These increases in economically disadvantaged and minority students can be linked to high levels of immigration in Texas, different demographic trends among population subgroups, and economic conditions in Texas.
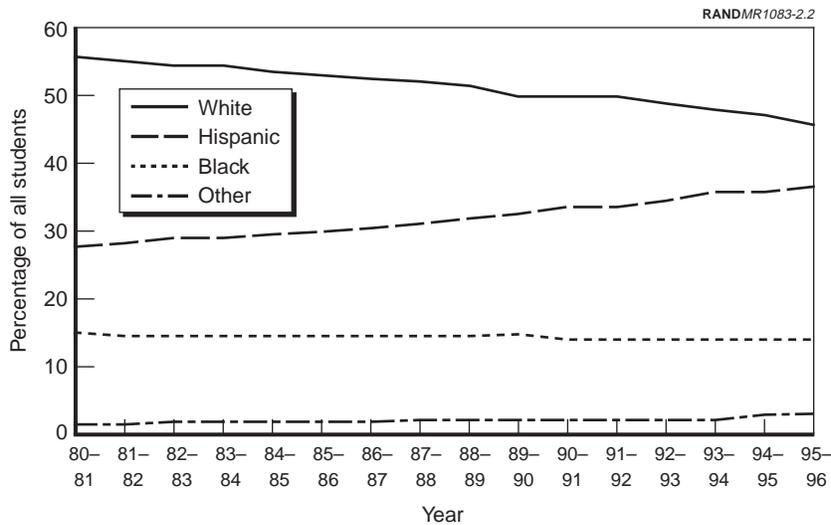
Figure 2.2—Racial/Ethnic Composition of Students, 1980–81 to 1995–96

Increase in the Number of At-Risk Districts

The number of districts classified as medium to high risk has grown substantially over time. Figure 2.3 shows that by 1995–96, of the 1,044 districts in Texas, 642 were medium or high risk. Since 1984–85, close to 300 districts classified as low risk have had increases in the number of low-income students, moving them across the threshold into the medium- or high-risk category. As the number of districts at risk has increased, the total numbers of students in these medium- and high-risk districts have more than doubled.

Figure 2.4 shows the number of students enrolled in low-, medium-, and high-risk districts since 1984–85. The districts in the three risk categories now have nearly equal total enrollment figures, despite the fact that there are only about 200 high-risk districts. This is largely because the two largest districts—Houston and Dallas—are both classified as high risk. Together medium- and high-risk districts serve about 2.3 million students.
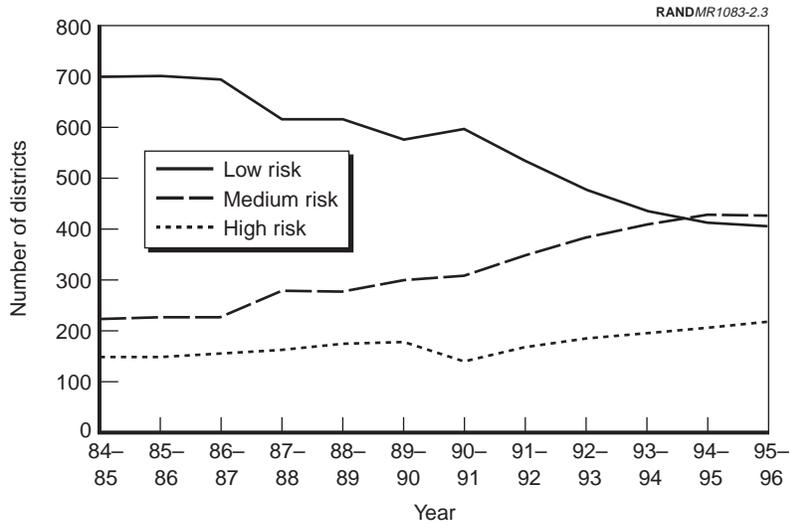
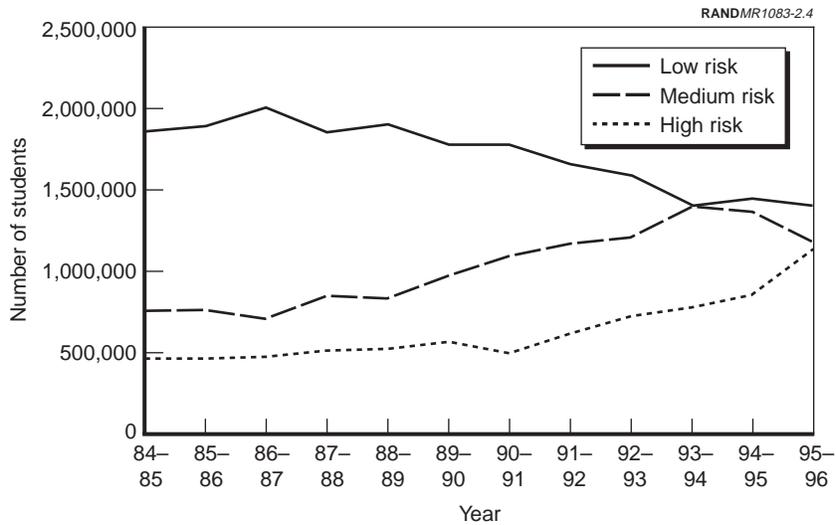**Figure 2.3—Number of Low-, Medium-, and High-Risk Districts,
1984–85 to 1995–96**

**Figure 2.4—Student Enrollment in Low-, Medium-, and High-Risk
Districts, 1984–85 to 1995–96**

The increase in the population of economically disadvantaged children is not limited to certain types of communities. As Figure 2.5 shows, all have experienced some increase over the five-year period. Major urban areas—defined as the largest school districts in the state, which serve the seven metropolitan areas of Houston, Dallas, San Antonio, Fort Worth, Austin, Corpus Christi, and El Paso—experienced an increase of almost 10 percent in the number of students classified as economically disadvantaged. In 1995–96, 64 percent of the over 700,000 students in these districts were classified as economically disadvantaged. About half of the students in both central cities and rural areas are classified as at risk. In contrast, major suburban districts adjacent to major urban areas (with an enrollment of over one million) had the lowest proportion of at-risk students: fewer than a third, although this was about 8 percentage points higher than the corresponding figure five years earlier.
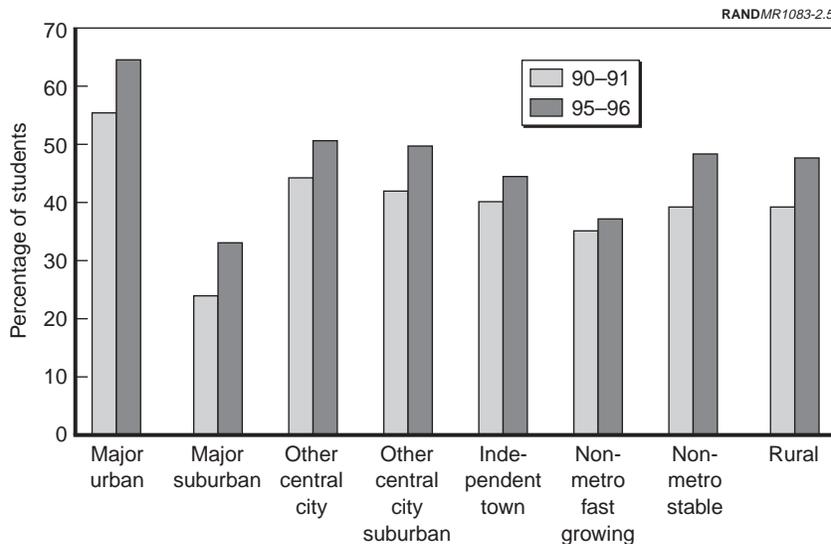

Figure 2.5—Percentage of Students Economically Disadvantaged in Different Types of Communities, 1990–91 and 1995–96

Demographic Composition

We find striking differences in the racial/ethnic composition of the student body in the three risk categories. Figure 2.6 shows clearly that both high-risk and medium-risk districts tend to have larger proportions of minorities. In fact, Hispanics account for about 70 percent of student enrollment in high-risk districts compared with less than 15 percent in low-risk districts, where the school population tends to be primarily non-Hispanic white.
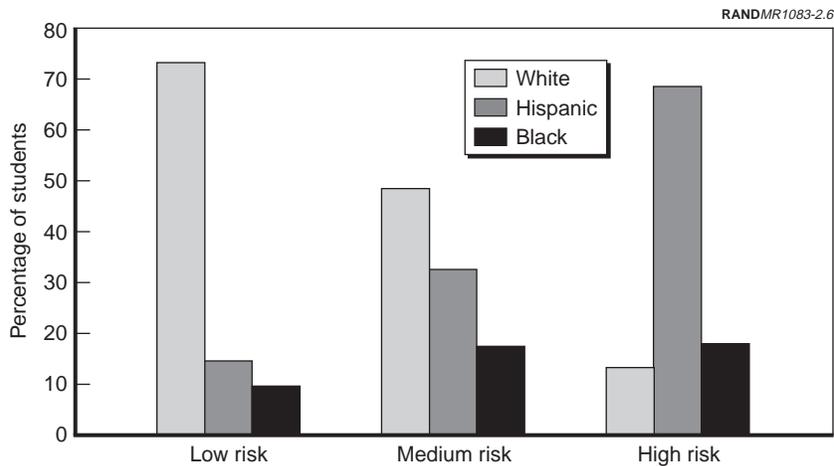

Figure 2.6—Racial/Ethnic Composition of Students in Low-, Medium-, and High-Risk Districts, 1995–96

WHO'S TEACHING IN HIGH-RISK DISTRICTS?

About 37 percent of teachers teach in low-risk districts, another third teach in medium-risk districts, and 30 percent teach in high-risk districts. However, if we examine the distribution of teachers by race/ethnicity and by where they are teaching, we find that minority teachers are teaching disproportionately in high-risk districts (Figure 2.7). For example, in low-risk districts, non-Hispanic white teachers account for 95 percent of the teaching force; in contrast, in high-risk districts, non-Hispanic white teachers account for less than half of all

teachers. This underscores the importance of what we said above: The recruiting and retention of minority teachers, who disproportionately make up the teaching force of high-risk districts, is a crucial and urgent issue if we are not to face troubling shortages in districts that are already facing the most challenges.

We now examine the components of overall teacher supply and demand, paying special attention to minority teachers and, where data permit, to at-risk districts.
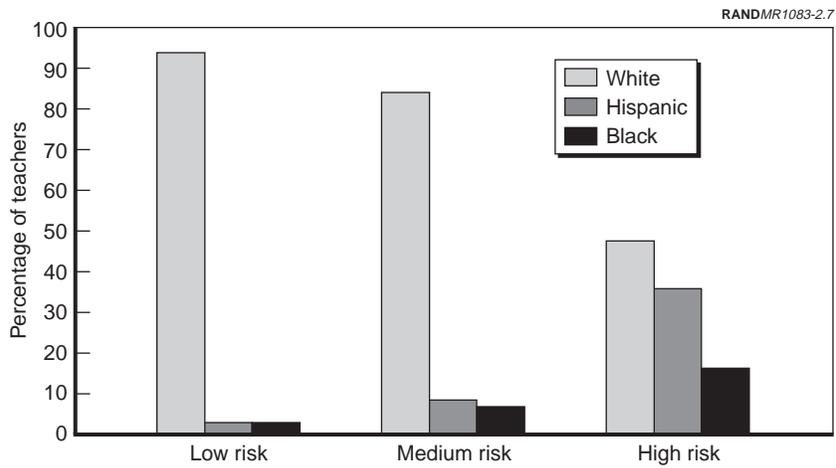

Figure 2.7—Racial/Ethnic Composition of Teachers in Low-, Medium-, and High-Risk Districts, 1995–96