



***Reading Literacy
in the
United States***

Demonstrating that nations, and student groups within nations, differ in their average levels of reading comprehension serves as an initial indication of whether there may be a problem in an education system. As shown in the preceding section of this report, among the nations participating in the IEA International Reading Literacy Study, American students on average do as well as or better than most, and even our most disadvantaged student groups read well compared to the average OECD student. Still, not all U.S. students understand written text equally well and some readily defined student groups differ substantially from each other in this respect.

Findings that show within-nation differences between student groups raise questions. For example, are all student groups being provided equal access and opportunity to learn? Considerations of this kind drive research that seeks to *explain* why groups of U.S. students differ in their reading comprehension.

In this section of the report, we move closer to accounting for differences between U.S. student groups in their reading comprehension. We build our explanation from very basic elements—the relationships between reading comprehension and a variety of attributes of students, families, communities, schools, and teachers. Prior research and experience have led us to believe that the selected variables are each likely to make a difference in the development of these necessary reading comprehension skills. But any one variable, in and of itself, will not explain group differences. Instead, each of these variables operates within a web of relationships, all acting simultaneously and in ways that interact with each other. For example, the differences in achievement between racial/ethnic groups may in part be attributed to associated socioeconomic differences. Statistical procedures make it possible to disentangle the effect of each variable from other related variables. In this way we can consider the effect of each variable uncomplicated by confounding variables—we can look at the effect of racial/ethnic differences separate from other variables such as family wealth.

In the pages that follow, we have condensed findings from the larger set of analyses reported in *Reading Literacy in the United States: Technical Report*. In the interests of a simplified presentation, we have limited our data displays and discussion to narrative comprehension among 4th graders. With this as the focus, we look at its relationship to aspects of family background and disentangle the web of relationships by statistically isolating each variable from other related variables in order to estimate the effects of each variable as purely as possible, uncomplicated by

confounding influences. For example, we take out the part of racial/ethnic differences that is due to parallel socioeconomic differences. Similarly, we look at aspects of provision within schools and separate out that part due to provision alone from that part due to attributes of students themselves.

The discussion here centers on two basic sets of influences: (1) family influences on students, and (2) schools and communities as they influence both teachers and students. Using a large array of variables from both categories we constructed a two-level model of factors related to reading achievement. We have chosen to highlight the influence of four salient student and family variables—family structure, family wealth, race/ethnicity, and parents’ education. Similarly, the discussion of community and school attributes is narrowed to three—parent involvement in the school, instructional time, and class size. In each case the unique relationship shown becomes apparent because of statistical controls on the full spectrum of variables listed in **Exhibit 4**.

Each presentation consists of two views of the highlighted relationship—*observed* averages based directly on the data as collected, and *adjusted* averages, which are an estimate of what the observed averages would be, other things equal. *Other things equal* means that we have statistically manipulated the data so that the effects of all the other variables listed in Exhibit 4 do not enter into the relationship being presented. Further, the performance of each subpopulation is shown relative to the overall average. Thus, one can readily see which groups do better or worse than U.S. students as a whole.

Family Influences

Given the amount of time children spend at home before they begin school and, later, outside of school hours, it is not surprising that the Commission on Reading reported that “parents play roles of inestimable importance in laying the foundation for learning to read.”¹⁴ There have been numerous studies related to family structure and school-related performance. Family structure has been looked at from many perspectives. These have included the number of parents in the home, the family size, the birth order, and gender distribution. These variables have been considered in relation to changes in economic status, parental time availability, and parental role models. In addition, the reasons for a particular family configuration, perhaps due to divorce or death, are considered to have an important impact on school-related performance.

Exhibit 4	
Variables Included in the U.S. IEA Analyses	
Student Attributes	age, gender, race/ethnicity, mother tongue
Family Attributes	family structure, father’s and mother’s education, family wealth
Community Attributes	region, community resources, parental involvement
School and Class Attributes	public/private, minority composition, instructional time, library resources, specialist staff, principal’s leadership style, class size

Family Structure

Over the past three decades the structure of American families has changed dramatically. The picture of the nuclear family as a father, mother at home, and two children is being transformed as divorce rates, the number of children born to unwed mothers, and the number of mothers entering the labor force climb. The annual number of divorces increased approximately 120 percent between 1965 and 1989, and about 1 million children are involved in divorces each year.¹⁵ While overall birth rates have been declining since 1950 (106.2 live births per 1,000 women in 1950 to 63.0 live births per 1,000 women in 1988), the number of births to unmarried women has been increasing (14.1 per 1,000 live births in 1950 to 38.6 per 1,000 in 1988).¹⁶ And the labor force participation of women with children under 18 years of age has markedly increased from 11.8 million in 1970 to 22.3 million in 1991. As divorce, remarriage, and single-motherhood increase, and as women maintain their jobs throughout the period of child rearing, the families in which children learn to read take on an entirely new profile when compared to past generations.

Observers usually think the changes we are witnessing in American families have a negative impact on children's literacy development because they may reduce the level of parent-child interaction thought crucial to early language development and later progress in reading skill. Studies in support of this position are common. As a whole, the evidence supports the hypothesis that children of intact families do better than those in families where the parents have remarried.¹⁷ While the research and literature as a whole tends in this direction, more recent work raises concerns about the validity of this position.¹⁸

As noted earlier four categories of family structure were distinguished:

- *Two-parent biological families*—both biological parents are present;
- *Two-parent blended families*—one or both of the parents is a stepparent or guardian;
- *One-parent mother-only families*—single-parent families headed by mothers; and
- *Other*—father-only families as well as other configurations not described above.

Figure 20 shows the relationship between family structure and narrative comprehension for 4th graders from the four types of families. The solid bars represent the *observed* average score for each of the four student groups. These mean scores are shown relative to the average score for all 4th graders—the horizontal broken line across the graph at zero on the comprehension scale.

Although these mean scores may not be significantly different from one another, it appears as if the observed mean for two-parent biological and one-parent mother-only families are above the average for all students, while those for two-parent blended and other families are below. Similarly, it appears that students from two-parent biological families do best, those from one-parent mother-only families are next, children from two-parent blended families are third, and those in other groupings show the lowest performance.

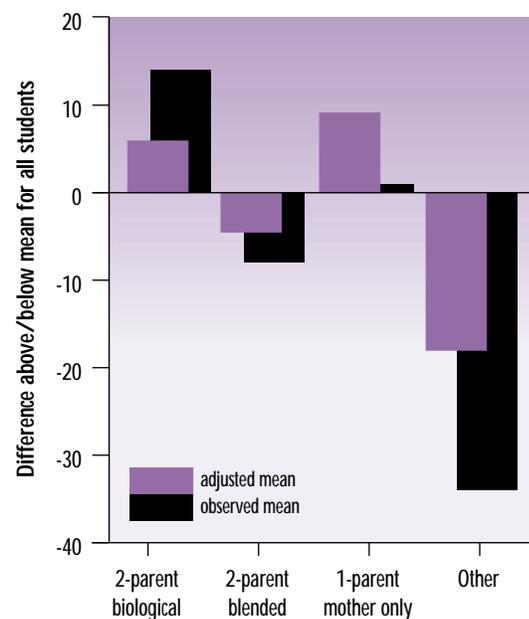
In terms of the statistical significance of these observed differences, 4th graders from all family configurations comprehend narrative better on average than students from the “other” category, and the two-parent biological configuration seems to confer an advantage on children in this respect relative to the two-parent blended families. However, 4th graders from one-parent mother-only families comprehend narrative text at about the same level as 4th graders from either of the two-parent configurations.

The shaded bars in Figure 20 represent the parallel *adjusted* means, estimates of what the observed means would be if the variables listed in Exhibit 4 were factored out. Put another way, these are estimates of what the average reading comprehension of each group would be if all the students were equally wealthy, came from families with identical educational and social backgrounds, attended the same kinds of schools, and so on, differing only in the structure of their family.

Under these conditions, we see that children from one-parent mother-only families do better than we might expect from simple observation alone. Separating out the disadvantages associated with single-mother families in the population as a whole suggests that children from these families do better than those from two-parent biological families, but the difference is not statistically significant. And, in fact, 4th graders from one-parent mother-only families do have higher levels of narrative comprehension than students in two-parent blended and other family types.

Figure 20

Family Structure: Observed and Adjusted Relationships; 4th Grade Narrative Score

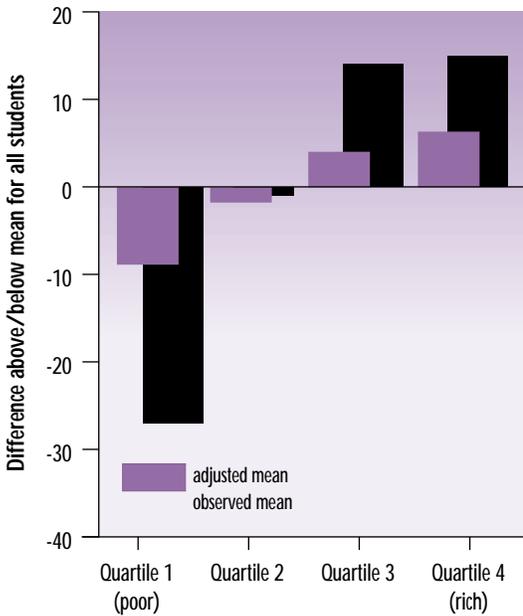


NOTE: The solid bars show the observed difference between the category average and the average for the total group. The shaded bars provide an estimate of this same difference adjusted statistically for other related influences shown in Exhibit 4.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Reading Literacy in the United States: Technical Report*. Washington D.C.: 1994.

Figure 21

Family Wealth: Observed and Adjusted Relationships;
4th Grade Narrative Score



NOTE: The solid bars show the observed difference between the category average and the average for the total group. The shaded bars provide an estimate of this same difference adjusted statistically for other related influences shown in Exhibit 4.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Reading Literacy in the United States: Technical Report*. Washington D.C.: 1994.

The obverse of this holds for 2-parent biological families; separating out their social and economic advantages, broadly conceived, suggests that this configuration per se offers less real advantage than we might have suspected. For other family configurations, the data suggest that the apparent disadvantages are not as pronounced when we take into account the range of related variables listed in Exhibit 4. Tests of statistical significance make one thing clear; 4th graders living in family configurations other than two-parent or one-parent mother-only are consistently disadvantaged with regard to narrative comprehension.

Family Wealth

Simple observation and evidence suggest that poverty is generally a handicap for students in school. Children from low-income families are less likely to attend prekindergarten programs than children from high-income families.¹⁹ They are more likely to repeat a grade and to drop out if they had repeated than those from middle- or high-income families.²⁰ In high school, a higher percentage of students from low-income families drop out each year,²¹ a fact reflected in the larger percentage of 19- to 20-year-olds from low-income families out of school without high school diplomas. Further, it is often argued that differences in family income account for much of the difference in dropout rates between racial and ethnic groups.²²

However, the situation may not be quite as simple as it appears. Differences in family wealth are paralleled by differences in a variety of other attributes of students' families—race/ethnicity, for example. While 16 percent of white children live in poverty, 39 percent of Hispanic children and 46 percent of black children do.²³ Similarly, differences in parental educational attainments, and in the structure of families, are also related to differences in family economic circumstance. It follows that the observed reading comprehension deficit of poor children may not be due solely to poverty. Other family attributes related to family wealth may play roles that, without careful consideration, may be wrongly attributed to wealth.

A comparison of the *observed* and *adjusted* means in Figure 21 offers some support for this notion. Again, the solid bars depict the *observed* group means as deviations from the population mean, and the shaded bars represent the *adjusted* means in the same way. In terms of the *observed* means, we see that students from poor families on average score 27 points below the mean for all students. Students from rich families have an average comprehen-

sion score 15 points above the average of all students. Thus, the gap between the poorest and richest is over 40 points. At first look, then, 4th graders from poor families are at a decided disadvantage in terms of their comprehension of narrative prose.

This view of the effects of being poor is modified, however, when we factor out the effects of confounding variables (all other variables listed in Exhibit 4). The *adjusted* category means shown by shaded bars indicate that, other things equal, the poor are not as disadvantaged, nor the rich as advantaged, by family wealth per se as simple observation might lead us to believe. Nevertheless, even after adjusting for those related influences shown in Exhibit 4, the gap between the rich and the poor remains, but at 15 points rather than 42.*

Race/Ethnicity

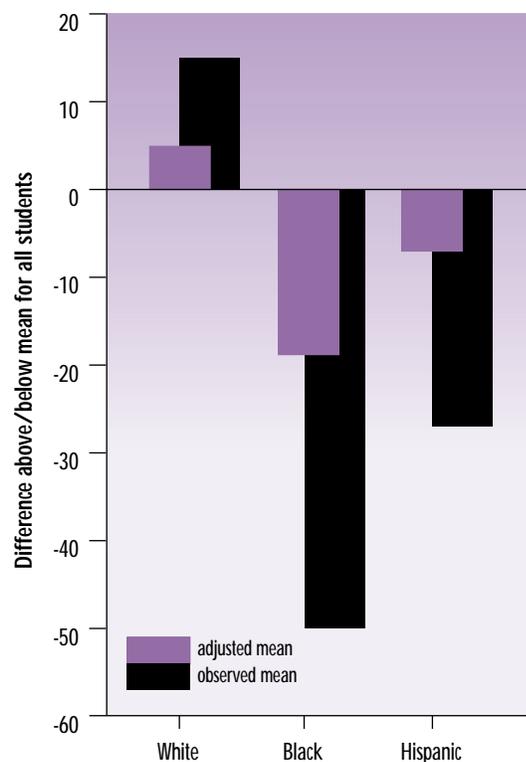
The growth of racial and ethnic diversity in the United States is most evident in the nation's schools, where the minority student population has increased from 24 to 33 percent, and the proportion of Hispanic students doubled, in the period between 1976 and 1991.²⁴ One in every two of these 114 million minority students lives in poverty.²⁵ Most minority groups suffer some degree of educational disadvantage—lower high school completion rates and lower levels of college entry.

The achievement deficit of minority students shows up with respect to reading comprehension. **Figure 22** shows clearly the differences in average reading comprehension levels across the three racial/ethnic categories in the form of *observed* and *adjusted* means for narrative comprehension among 4th graders. The *observed* means, shown as solid bars, indicate that whites, on average, score 15 points above the narrative comprehension mean for all 4th grade students, the average black student scores 50 points below this national average, and the average Hispanic student, 27 points below. As noted earlier, this pattern of disadvantage in reading comprehension is consistent across the two grades and the three comprehension measures.

A variety of explanations have been offered for this pattern of disadvantage: it is a reflection of the fact that minority status is confounded with socioeconomic status;²⁶ between-group differences in achievement motivation, aspiration, and expectations are responsible;²⁷ or it reflects differences in child-rearing

Figure 22

Race/Ethnicity: Observed and Adjusted Relationships; 4th Grade Narrative Score



NOTE: The solid bars show the observed difference between the category average and the average for the total group. The shaded bars provide an estimate of this same difference adjusted statistically for other related influences shown in Exhibit 4.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Reading Literacy in the United States: Technical Report*. Washington D.C.: 1994.

* From the standpoint of statistical significance, the adjusted mean for the poor is reliably different from the means of quartile 3 and the rich, but not quartile 2. The latter three groups do not differ significantly from each other.

practices.²⁸ Some explanations place responsibility on school practices such as isolating black students in separate classes or providing them a lower level of instruction.²⁹ Also, many teachers and administrators believe that minority children cannot or will not learn. Thus, some researchers believe that these low expectations become a self-fulfilling prophecy.³⁰ A similar line of argument has focused on the disparity between the culture and the language of the home and that of the school.³¹ Some believe that home/school differences in conversational patterns, nonverbal communication, and social interactions are strong influences on academic achievement, particularly with regard to reading, writing, and forms of argument.³²

We can only address these issues in a limited way, to the extent of holding a number of confounding factors constant (those identified in Exhibit 4) while looking at the relationship between race/ethnicity and reading comprehension. A comparison of the solid bars in Figure 22 identifies an *observed* difference between blacks and whites of a substantial 65 points. *Adjustment* for confounding factors reduces this black/white gap by more than half, to one of 24 points. Even at that level the difference remains statistically significant. Similarly, the observed white/Hispanic gap of 42 points is reduced to 12 points after the same kind of statistical adjustment, a difference that is no longer statistically significant. These analyses suggest that about two-thirds of the gap between majority and minority achievement can be accounted for by the other factors listed in Exhibit 4.

Parents' Education

Data in *The Condition of Education*³³ provide a good picture of the relationship between parents' educational attainment and overall student achievement. The pattern is captured in the following statistics: when compared to students with college educated parents, high school students whose parents have not completed high school are less likely to be in academic programs; are more likely to be in general or vocational/technical programs; have lower average academic achievement and lower verbal and math SAT scores; and are more inclined to report lower levels of parent expectations.³⁴

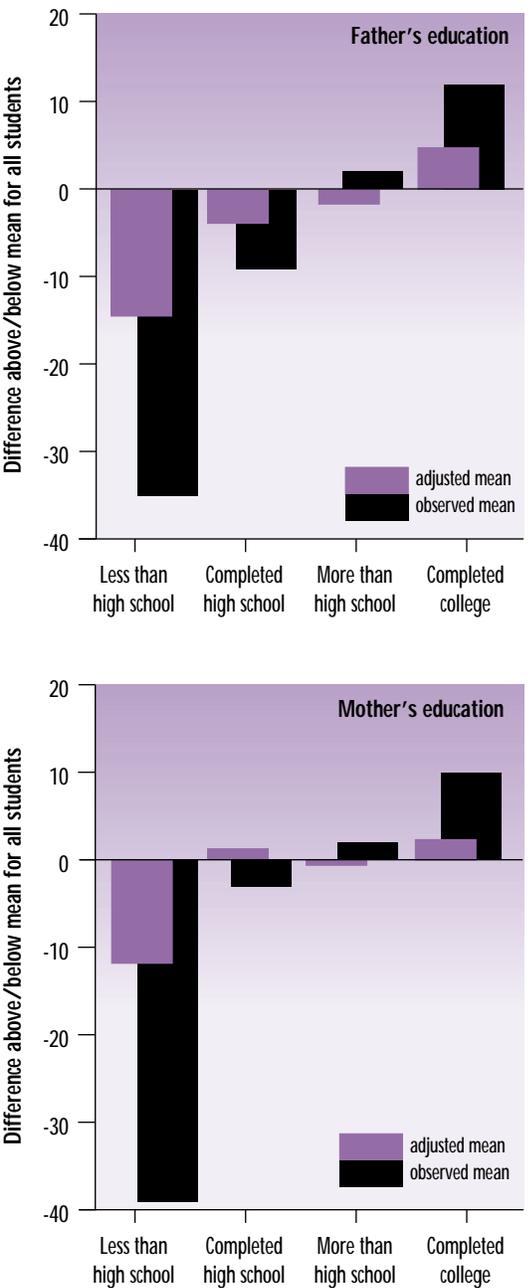
A similar pattern appears for reading comprehension—the children of better educated parents tend to read better than the children of less educated parents. **Figure 23** shows *observed* and *adjusted* group means using the same format as previously. Irrespective of whether we are looking at father’s or mother’s education, students whose parents have not graduated from high school have reading comprehension scores well below the U.S. average. Students whose parents have completed college have reading scores above the national average.

However, we know that well-educated parents also tend to have higher status occupations, make more money, read more, and encourage their children to read. Thus, the differences among the four groups defined by parent’s education may not be attributable solely to parents’ educational attainments. Looking at the *adjusted* group means (shaded bars) relative to the *observed* means (solid bars) makes this point clear. The effect of parents’ education is considerably reduced when confounding variables are taken into account. For example, an apparent gap of 47 points between the means of 4th graders in the highest and lowest father’s education groups is reduced to 19 points after adjustment. While this is still a statistically significant difference, it is only 40 percent of the observed difference. Similar changes occur in connection with mother’s education—an apparent gap of 49 points between the means of 4th graders in the highest and lowest mother’s education groups is reduced to 14 points after adjustment. This is still a statistically significant difference, but only 29 percent of the observed gap.

In short, other things equal, students whose parents did not complete high school are not as disadvantaged by their parents’ educational attainments, and students whose parents have completed college are not as advantaged, as it might seem from simple observation alone. For either parent the advantages/disadvantages to students of parents’ educational attainments tend to be located at the extremes—less than high school on the one hand and a college degree on the other, though the differences between less than high school and more than high school are also significant in the case of father’s education.

Figure 23

Parental Education: Observed and Adjusted Relationships; 4th Grade Narrative Score



NOTE: The solid bars show the observed difference between the category average and the average for the total group. The shaded bars provide an estimate of this same difference adjusted statistically for other related influences shown in Exhibit 4.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Reading Literacy in the United States: Technical Report*. Washington D.C.: 1994.

Families and Reading Comprehension

The illustrations provided above were limited to a few family status characteristics among those investigated as part of the study proper—the educational and economic aspects of socioeconomic status, racial/ethnic status, and the parent configuration of families.

On the whole we were able to make two points clear: first, there are substantial differences in the average levels of reading comprehension between student groups defined in terms of these family attributes; second, these between-group differences have their origins in many factors rather than one. Disentangling these multiple influences to isolate that part unique to each offers a slightly different view of the world and one not always in accord with simple observation. The configuration of parents present in families matters, but one-parent mother-only families per se do not appear to disadvantage children in this respect. Racial/ethnic differences are large, but much of it is due to racial/ethnic differences in education and wealth, among other things. Family wealth matters too, but not as much as we might suppose from simple observation. Differences in parental education are also important, but not as important as we might expect, and then only at the extremes of educational attainment.

Community and School Influences

We now shift attention from the student as an individual to the student as a member of a class, within a school and a community. Schools are set within communities, which vary greatly according to population, resources, and the extent of parents' involvement and cooperation. This broad context serves as the background in which the school operates. Within that framework, schools define the more immediate context within which students learn to read. Their structure, size, resources, social composition, and leadership are believed to influence what goes on in classrooms and, hence, what students learn. Consistent with this view we look at these contextual influences as influences on student classroom groups rather than students as individuals. That is, we look at the effects of community, school, and classroom context on the average reading comprehension of students grouped in classes.

The IEA International Reading Literacy Study measured a number of contextual variables with presumed links to reading comprehension. For the purposes of illustrating the findings of the study as a whole, we focus our attention on three of these—parent involvement, instructional time, and class size. As before the data presentations are limited in focus to the narrative domain of reading literacy among 4th grade students.

Parent Involvement with Schools

Parent involvement with schools tends toward one or more of three types:³⁵ reinforcing at home what is learned in school; being part of a closely knit parent-school community where parents join in school activities and share a set of common values;³⁶ and a more managerial type of involvement where parents and community members have a voice in policy decisions affecting the school.*

The IEA measure of parent involvement was a question to school principals about the degree of parent support for the school's principles and goals. Response alternatives ranged from "much below average" to "much above average" on a five-point scale. On the surface the measure seems to tap that form of parent involvement supporting the formation of a cohesive family-school community.

The relationship between parental involvement and the reading comprehension level of classrooms is shown in **Figure 24** where both *observed* and *adjusted* means for the narrative comprehension of 4th grade classrooms are shown for each of the four parent involvement categories.** The substantial relationship between parent involvement for the school and the reading comprehension levels of 4th grade classrooms is obvious. Where involvement is low, classroom means average 46 points below the national average, and where involvement is high, classrooms score 28 points above the national average—a gap of 74 points. Even after adjustment for the other attributes of communities, schools, principals, classes, and students that might well confound this relationship, the association between parent involvement and classroom achievement remains, though the observed gap of 74 points between the two extreme groups is reduced to 44 points.

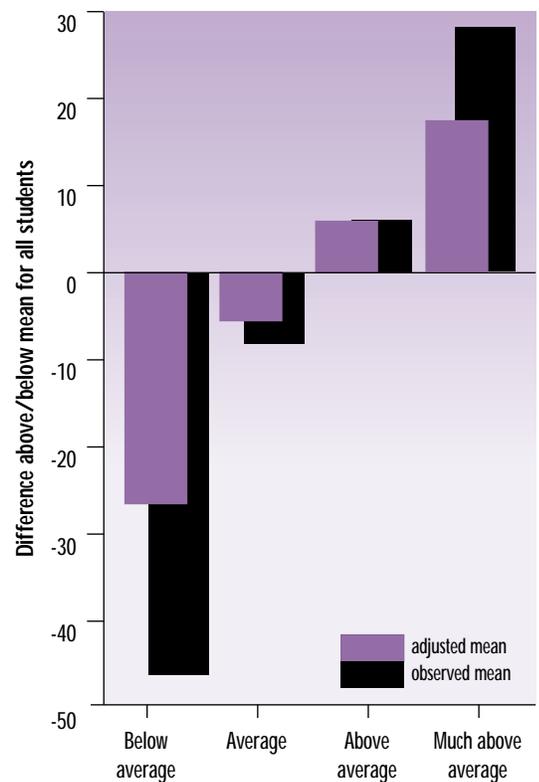
Our findings here are consistent with the literature on effective schools; "All other things being equal, schools in which parents are highly involved, cooperative, and well-informed are more likely to develop effective organizations than schools in which parents do not possess these qualities."³⁷

Instructional Time

Instructional time is measured as the hours of instruction that the school provides for all subject areas. As such, the measure requires the assumption that more time available for learning generally results in more time for reading instruction and a greater level of

Figure 24

Parental Involvement: Observed and Adjusted Relationships; 4th Grade Narrative Score



NOTE: The solid bars show the observed difference between the category average and the average for the total group. The shaded bars provide an estimate of this same difference adjusted statistically for other related influences shown in Exhibit 4.

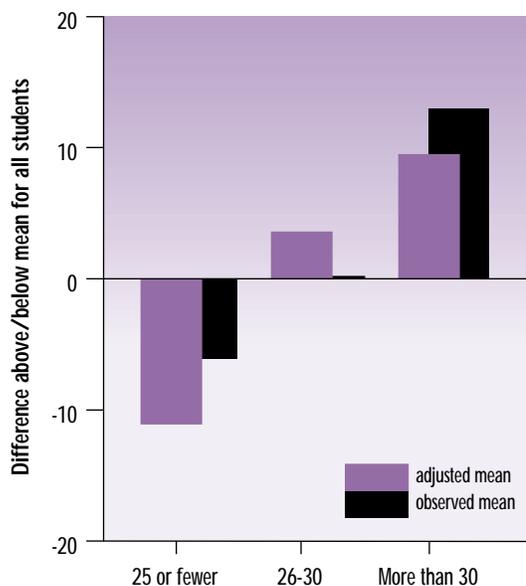
SOURCE: U.S. Department of Education, National Center for Education Statistics, *Reading Literacy in the United States: Technical Report*. Washington D.C.: 1994.

*Here, parental involvement is seen as part of the move toward school-site management, community control, and more consequential parent-school partnerships.

**Since few principals indicated support was "much below average," we merged this category with that for "below average" to create a four-point response scale.

Figure 25

Instructional Time: Observed and Adjusted Relationships; 4th Grade Narrative Score



NOTE: The solid bars show the observed difference between the category average and the average for the total group. The shaded bars provide an estimate of this same difference adjusted statistically for other related influences shown in Exhibit 4.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Reading Literacy in the United States: Technical Report*. Washington D.C.: 1994.

reading achievement, other things equal.³⁸ Principals' reports of instructional time ranged from 20 to 40 hours per week. For the purpose of this presentation the full distribution has been collapsed into three groups: 25 hours or fewer, 26 to 30 hours, and more than 30 hours. **Figure 25** displays *observed* and *adjusted* means for narrative comprehension among 4th grade classrooms for each of the three categories of instructional time.

Looking at the solid bars representing the observed means, it seems that schools offering more instructional time each week also have higher narrative comprehension levels in their 4th grade classrooms; however, the differences between the observed means across the three categories are not statistically significant.

The results of adjusting these category means for other potentially confounding factors is shown by the shaded bars. The effect of this adjustment is to suggest that, other things equal, 30 hours or more of instruction has somewhat less of an advantaging effect than we might suppose, while 25 or fewer hours has more of a disadvantaging effect that we would expect on the basis of simple observation. Further, the differences between the 25 or fewer category and each of the other two categories reach statistical significance.

Obviously some of the other attributes of students and schools noted in Exhibit 4 are related to both instructional time and reading comprehension. In the case of schools offering 25 hours or week or fewer, these factors are somehow compensating for the adverse effect of limited time since, if other things were equal, we would expect these "low-time" schools to do much worse than we observe. Nevertheless, it is clear that in schools that provide more than 5 hours of schooling per day for 4th graders, students learn to comprehend narrative text somewhat better than students in schools where the instructional day is shorter.

Class Size

The relationship between class size and achievement has a long and contentious history in educational thought. The contention arises out of the clash between economics and pedagogy. Since teacher salaries make up the greater part of school expenditures, policymakers would prefer large classes if students learned equally well in them. On the other hand, if effective learning depends heavily on teachers being able to interact with students individually and tailor their approaches to the needs of each student, then larger class sizes could be less effective. As class size increases, each student gets a smaller share of the finite amount of the teacher's time. Further, classroom management problems can multiply as class size increases, thus reducing the time teachers can spend on the instruction of either individuals or the class as a whole.

The literature on this issue is not entirely conclusive, although one meta-analysis by Glass and Smith has emerged as the most definitive statement on the matter.³⁹ Their study synthesized the results of 80 or so studies and concluded that for class size to make much of a difference to learning, it had to drop below 15 students. Since this is an economic impossibility for most school systems, the Glass and Smith finding has provided tacit support for larger classes.

The matter did not end there, of course. Opponents have argued that Glass and Smith’s evidence was flawed, and to the extent that their finding was valid, it was limited to elementary school classes.⁴⁰ Others have argued that the effect of class size on learning varies across grade levels, among subject areas, and by instructional methods.⁴¹

Most recently, two major state-level studies have looked at the same issue. Indiana’s Project Primetime showed that after 1 year smaller classes produced significant improvement in reading and math scores. However, after 3 years the benefits of the smaller classes vanished. Tennessee’s Project STAR showed a one-time, one-quarter of a standard deviation improvement in test scores for the kindergarten or 1st grade children in small classes. Although the initial gain was maintained, scores did not continue to improve in subsequent years.

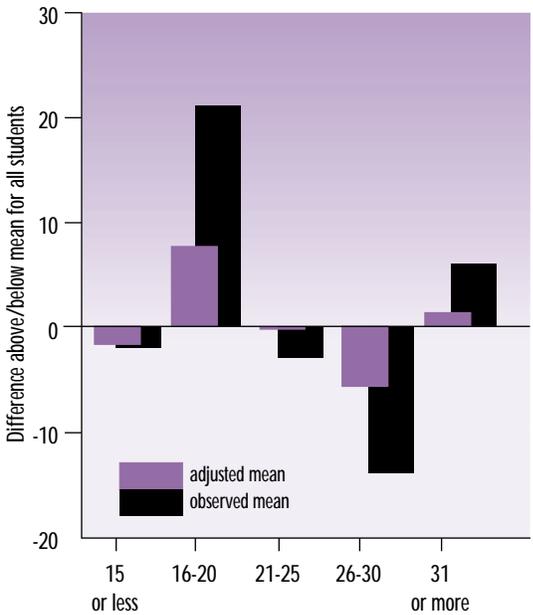
Both projects offered some resolution to the issue of class size. However, in both cases there were many associated factors that might have equally affected the results.⁴² The analysis reported here contributes something to this debate, though the data do not suggest that the relationship is a simple one.

For the purposes of this presentation we grouped class sizes into five categories: 15 or fewer, 16–20, 21–25, 26–30, and 31 or more. **Figure 26** shows the usual set of *observed* and *adjusted* category means. The *observed* relationship captured by the solid bars suggests a less than straightforward interpretation that holds also, though with less force, for the *adjusted* means. Tests of statistical significance indicate significant differences between the *observed* narrative comprehension means of classes of 16–20 students and those with either of 21–25 or 26–30 students. Fourth graders in classes of 16–20 students read better, on average, than 4th graders in these two categories of larger classes.

The differences between these class groups persist after statistical adjustment for the confounding influences noted in Exhibit 4 but fail to reach statistical significance. So, strictly speaking, we are unable to say (with at least 95 percent certainty) that, other things equal, there are differences in narrative comprehension due to the size of the class in which a student is located.

Figure 26

Class Size: Observed and Adjusted Relationships; 4th Grade Narrative Score



NOTE: The solid bars show the observed difference between the category average and the average for the total group. The shaded bars provide an estimate of this same difference adjusted statistically for other related influences shown in Exhibit 4.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Reading Literacy in the United States: Technical Report*. Washington D.C.: 1994.

The inconsistencies in the pattern shown in Figure 26 probably reflect the effects of unmeasured influences on class size, tracking by ability among them. Since classes of the same size are created for different reasons and with students of varying ability levels—matters not adjusted for in these analyses—the interpretations provided must remain somewhat equivocal.⁴³ Nevertheless, the only statistically significant difference in this analysis does favor smaller classes.

Communities, Schools, and Reading Comprehension

In our discussions of communities and schools and their capacity to foster higher levels of reading comprehension among students, we found that three attributes clearly make contributions to differences in the reading performance of classrooms: parent involvement, instructional time, and class size.

Having parents actively participating in their children's elementary schools seems to make a difference to 4th grade reading achievement. This is true even after controlling for parent education, wealth, attributes of the school, and class size, as well as all other variables in our study. Findings like this have led to the notion that the creation of a network that ties the parents, the community, and the school together will enhance the ability of students to read well.

A school that provides more instructional time each week is likely to have higher levels of reading comprehension, other things equal. As the literature points out, however, this instructional time should not be confused with overall time counted just as days or hours. Instructional time means just that—time devoted to instruction, not assemblies, lunch, recess, announcements, and the like.

Our analyses contribute something to the continuing debate on class size. Basically, we find that relatively small classes in the range of 16–20 students appear to do better than somewhat larger classes of 21–25 and 26–30 students at 4th grade and for narrative comprehension. Statistical adjustments for confounding influences leave this pattern intact but render the differences statistically nonsignificant so it is not entirely clear what we can say about the effects of class size per se on reading achievement in the nation's classrooms.

None of these findings may seem especially surprising. However, we have demonstrated the importance of each separate factor free from other confounding influences. School policymakers may find a use for this information as they make decisions about school practices and policies.