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Report

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The Role of Schools in the English Language Learner Achievement Gap

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Executive Summary

Students designated as English language learners (ELL) tend to go to public schools that have low standardized test scores. However, these low levels of assessed proficiency are not solely attributable to poor achievement by ELL students. These same schools report poor achievement by other major student groups as well, and have a set of characteristics associated generally with poor standardized test performance—such as high student-teacher ratios, high student enrollments and high levels of students living in or near poverty. When ELL students are not isolated in these low-achieving schools, their gap in test score results is considerably narrower, according to a Pew Hispanic Center analysis of newly available standardized testing data for public schools in the five states with the largest numbers of ELL students.

About 4 million U.S. public school students received ELL services in the 2003–04 school year, accounting for 8% of all public school enrollment that year (NCES, 2006). Public schools in the states that are the focus of this report (Arizona, California, Florida, New York and Texas) educated about 70% of the nation's ELL students.

Prior analyses of assessment data uniformly indicate that ELL students are much less likely than other students to score at or above proficient levels in both mathematics and reading/language arts. This report quantifies the extent of ELL concentration in low-achieving public schools and the degree to which this isolation is associated with the large achievement gap in mathematics between ELL students and other major student groups.

The new standardized test data show that in each of the five states examined in this report about 90% of the ELL students who took the state assessment test were educated in public schools that had at least a minimum threshold number of ELL students. ELL students tended to make up either a majority or substantial minority of the student populations of these schools. For example, in the California public schools in which ELL test-takers were concentrated, they constituted 45% of all test-takers. In the other California public schools (where the number of ELL students was below the minimum threshold), ELL test-takers were just 6% of all test-takers.

In all five states investigated and irrespective of grade levels ELL students were much less likely than white students to score at or above the state's proficient level. However, when ELL students attended public schools with at least a minimum threshold number of white students, the gap between the math proficiency scores of white students and ELL students was considerably narrower, the Pew Hispanic Center analysis has found. This suggests that the lag in test

score achievement of ELL students is attributable in part to the characteristics of the public schools they attend.

ELL students perform better on the state's standardized math assessment test if they attend a public school with at least a minimum threshold number of white students. For example, among eighth-grade ELL students in Florida, about 30% score at or above the proficient level in math if they attend a middle school that has a minimum threshold number of white students. Among Florida ELL eighth-graders at middle schools that do not have a sufficient number of white eighth-grade students, only about 10% scored at or above the proficient level in math.

The relatively poor proficiency levels at public schools with high concentrations of ELL students is underscored by comparing the standardized test scores of white and black students who attend the schools in which ELL students are concentrated with the scores of white and black student who attend other public schools. In California, 75% of white third-grade students who attend public schools without the minimum threshold number of ELL students perform at or above the proficient level on the state's mathematics assessment test, whereas just 67% of the white California third-graders who attend schools with the minimum threshold number of ELL students score at or above the proficient level.

The average proficiency rate in math for black third-graders who attend California public schools without the minimum threshold number of ELL third-grade students is 46%. In contrast, 34% of black third-grade students who attend California public schools with the minimum threshold number of ELL students score at or above the proficient level on the state's mathematics assessment test.

Most of this report's findings are based on analyses using three U.S. Department of Education databases. The analysis of mathematics performance on state-designed assessments across different types of public schools utilizes the new National Longitudinal School-Level State Assessment Score Database. The NLSLSASD maintains state standardized assessment test results for every public school in a state. Because the NLSLSASD is a school-level data set, we can identify for the first time which public schools tested English language learner students and thus measure at the state level the degree of concentration of ELL students in particular schools. Using the NLSLSASD's standardized testing results by subgroup, the analysis illuminates the potential role of school isolation in student test score performance.[1]

Previous Pew Hispanic Center analyses of standardized testing data for public schools revealed a large achievement gap between ELL students and other

[1] The NLSLSASD has also recently been used to investigate the effects of racial/ethnic isolation on minority student achievement (Harris, 2006).

students in math and reading proficiency (Fry, How Far Behind in Math and Reading are English Language Learners?, Pew Hispanic Center, June 6, 2007), and that black and Hispanic students are increasingly isolated from white students in the public schools (Fry, The Changing Racial and Ethnic Composition of U.S. Public Schools, Pew Hispanic Center, Aug. 30, 2007). This report builds on those findings by illustrating that the educational isolation of ELL students is associated with the math proficiency gap between English language learners and other students. It also shows that white and black students who attend the public schools in which ELL students are concentrated are doing worse than their peers who attend public schools with few English language learner students.

Among the report's other key findings:

- Nationally, the English language learner student population is expected to grow rapidly. The projected number of school-age children of immigrants will increase from 12.3 million in 2005 to 17.9 million in 2020, accounting for all the projected growth in the school-age population.[2] A significant portion of these children of immigrants will likely require ELL services.

- In the five states with large ELL student populations, the proportion of ELL students scoring at or above the proficient level on the state mathematics test is often below the proportion of black students scoring at or above the proficient level. For example, in Texas 22% of ELL eighth-graders scored at or above the proficient level on the math assessment, compared with 44% of black eighth-graders.

- In both elementary grades and middle school grades in these states, ELL students are much less likely than white students to score at or above the proficient level in mathematics. The measured gaps are in the double-digits. For example, in Florida 45% of ELL third-graders scored at or above the proficient level on the math assessment, compared with 78% of white third-graders, yielding a white-to-ELL gap of 34 percentage points.

- ELL students who took the state mathematics assessment were heavily concentrated in the public schools that had to disclose publicly the English language learner testing results — that is, public schools with a minimum threshold number of ELL students taking the test. White test-takers and black test-takers were much less concentrated in the public schools reporting ELL testing outcomes. For example, in New York more than 90% of the fourth-grade ELL students taking the math test attended the 763 elementary schools that reported their test scores. The New York

[2] See Passel and Cohn (2008) for U.S. population projections to 2050.

public schools that reported results for ELL fourth-graders educated less than 20% of white fourth-grade test-takers in the state and slightly more than half of black fourth-grade test-takers.

- In the five states with large ELL student populations, the public schools in which ELL test-takers are concentrated are much more likely to be central city schools.
- The public schools in which ELL test-takers are concentrated have a much higher enrollment, on average, than other public schools in the state.
- The middle schools in which ELL test-takers are concentrated have, on average, significantly higher student-to-teacher ratios than other public schools in the state.
- The public schools in which ELL test-takers are concentrated have, on average, a substantially greater proportion of students qualifying for free or reduced-price school lunches.
- The public schools in which English language learner students are concentrated are significantly more likely to be designated Title I schools. A Title I school has a student body with a large proportion of economically disadvantaged students and receives additional federal funding. For example, in Arizona 92% of the schools that reported test results for ELL students on the third-grade math assessment were eligible for Title I funds. Of the other Arizona elementary schools, half were Title I-eligible.

About the Author

Dr. Richard Fry is a senior research associate at the Pew Hispanic Center. He has recognized expertise in the analysis of U.S. education and demographic data sets and has published more than 35 articles and monographs on the characteristics of U.S. racial, ethnic and immigrant populations. Before joining the Pew Hispanic Center in 2001, he was a senior economist at the Educational Testing Service.

A Note on Terminology

The terms “white” and “black” refer to the non-Hispanic components of those students.

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1. Introduction

English language learners (ELL) have been and will likely continue to be one of the fastest-growing student groups in the nation's public schools. Although ELL students are not identical to limited English-speaking students, the percentage of school-age children with limited English speaking abilities nearly doubled from from 2.8% in 1979 to 5.4% in 2005 (NCES, 2007c), reflecting increased immigration to the U.S. Looking to the future, the Pew Hispanic Center projects that the number of school-age children will increase by 5.4 million from 2005 to 2020.[3] All of the growth will be composed of children of immigrants (Table 1). Since about one-in-five school-age children of immigrants have limited English-speaking abilities, compared with one-in-100 native-born children of native-born parents (Federal Interagency Forum on Child and Family Statistics, 2005), the number of enrolled children with limited English-speaking abilities will likely continue to increase.

Terminology in This Report

"Limited English-speaking" students refers to Census Bureau data on students who report speaking a language other than English at home and who say they speak English "well," "not well" or "not at all." English language learner (ELL) students are designated by public schools as students who cannot excel in an English language classroom. Designation procedures vary across states and school districts but often include a test of the student's English reading and writing skills as well as listening and speaking abilities.

Table 1
Projected U.S. School-Age Population, 2005 and 2020, by Generation

	Total	Foreign Born		U.S.-Born of Foreign-Born Parents		U.S.-Born of Native-Born Parents	
2005	53,038,520	2,911,394	5%	9,431,423	18%	40,695,703	77%
2020	58,474,685	3,965,640	7%	13,905,491	24%	40,603,553	69%
Increase	5,436,164	1,054,246	19%	4,474,068	82%	-92,150	-2%

Notes: School age refers to 5 to 17-year-olds. In this table, people born in Puerto Rico are classified as foreign born.
Source: Pew Hispanic Center, unpublished estimates

Schools will designate many, if not most, of these children as English language learners. These decisions will depend on individual school and school district policies rather than a single nationally accepted definition of English language learners. Nevertheless, the nature of the future growth of children in public

[3] Unpublished projections by Pew Hispanic Center Senior Demographer Jeffrey Passel. The wider population projections and methodology were reported in Passel and Cohn (2008).

schools indicates that the ELL student population is likely to continue to increase in size.

The continued growth of the ELL student population will present large challenges for some public schools and school districts in meeting requirements of the No Child Left Behind Act. NCLB mandates that all groups of students, including ELLs, meet state proficiency standards in mathematics and reading by 2014. Recent results from national and state assessments indicate that ELL students are among the groups least likely to meet state proficiency standards. One of the fastest-growing groups of students is also one of the lowest-achieving student groups in both mathematics and reading.

This report uses newly available school-level assessment data (the National Longitudinal School-Level State Assessment Score Database) to identify one significant source of the relatively poor academic achievement of ELL students: the schools that ELL students attend. Until recently, it was possible to compare ELL students' academic achievement with other students' performance based only on their assessment test scores statewide. As a result of the assessment test mandates of NCLB and the requirement that the test results be publicly disclosed, it is now possible to know in which public schools ELL students are enrolled and how well they performed on math and reading assessment tests compared with other students in the same school.

This report examines the contribution of low-achieving public schools to the relatively poor academic achievement of ELL students. It quantifies the extent of concentration of ELL students who take the assessment tests in particular public schools. It then demonstrates that part of the ELL achievement gap is due to the concentration of ELL test-takers in particular schools.

Using the school-level assessment data, the report also shows that white and black test-takers scored lower if they were educated at public schools in which ELL students were concentrated. Finally, it examines possible explanations for the relatively low overall achievement levels at public schools in which ELL students were concentrated by examining some of the other characteristics of these public schools.

The assessment data analyzed is the National Longitudinal School-Level State Assessment Score Database. Funded by the U.S. Department of Education, the NLSLSASD collects the state testing results from about 90,000 public schools and records them in a uniform format. The most recent year available is assessment data from the 2004–05 school year. Further details on the NLSLSASD are discussed in Appendix A.

More than two-thirds of ELL students were educated in six large states: California, Texas, New York, Florida, Illinois and Arizona. The analysis of ELL

achievement in this report focuses on ELL assessment test-takers in these six states. In the NLSLSASD, very few Illinois public schools reported their ELL assessment test scores and thus Illinois was excluded from the analysis.

NCLB mandated annual statewide tests for students in grades 3 through 8 beginning with the 2005–06 school year. The analysis presented in this report examined proficiency scores for those six grades. For simplicity of presentation, results for an early elementary grade (typically grade 3) are reported as well as a middle school grade (typically grade 8).[4]

Since analyses of ELL students' performance on assessment tests indicate that ELL students demonstrate greater proficiency in mathematics than in reading/English language arts and do not trail as far behind their white and black peers in math proficiency compared with reading/English language arts proficiency, this analysis exclusively examines mathematics achievement.

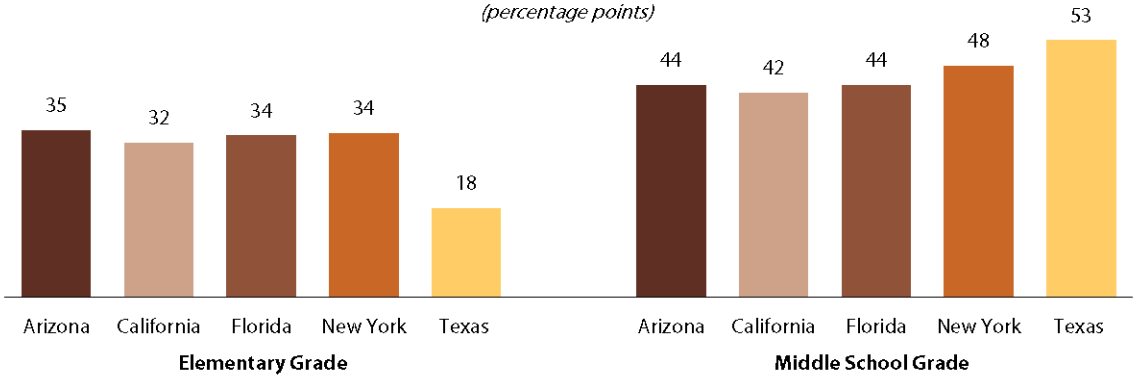
Even though the NLSLSASD collects data from all 50 states, it is important to note that each state designs and administers its own mathematics assessment and determines the proficiency level necessary to meet the state standard. All students within a state were administered the same mathematics assessment and thus comparisons of the percentage of test-takers at or above the proficient level within a state are valid. However, because students from different states were administered different tests and proficiency levels vary across states, student performance and achievement gaps cannot be compared across states.

2. The Mathematics Pass Rate of English Language Learners

In the wake of the NCLB legislation, several recent analyses have examined the measured school achievement of English language learners (ELLs) at both the national and state level (Batalova, Fix and Murray, 2007; Fry, 2007). In both reading and mathematics, a majority of ELL students who took assessment tests scored below proficiency standards. Furthermore, ELL test-takers were far behind the other major racial/ethnic groups in measured achievement in elementary school. The gaps with other major racial/ethnic groups widen from elementary grades to eighth grade.

[4] In the 2004–05 school year, not all states had begun assessing students in all grades from 3 to 8. For the elementary grades, grade 3 results are reported for all states except for New York, in which grade 4 results are reported. For the middle school grades, grade 8 results are reported except for California, in which grade 7 results are reported.

Figure 1
Difference in White and ELL Student Math Proficiency Rates
(percentage points)



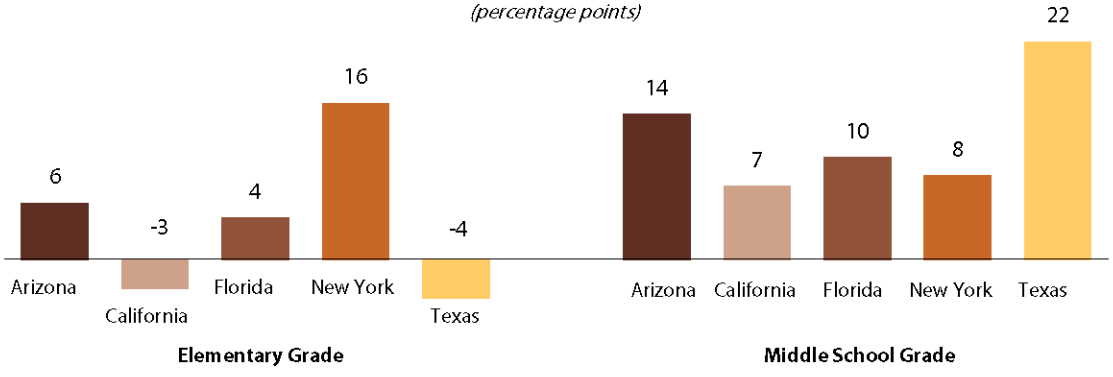
Note: The difference is calculated by subtracting the ELL proficiency rate from the white proficiency rate.
Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD)

For the five states with large ELL student populations studied in this report, Figure 1 illustrates the difference in the share of white test-takers who scored at or above each state's proficient level in mathematics and the share of ELL test-taking students who scored at or above the proficient level (or the difference in the "proficiency rates" on the mathematics assessment). For example, according to the 2004–05 NLSLSASD, 49% of Arizona grade 3 ELL test-takers met or exceeded the Arizona math standard on Arizona's Instrument to Measure Standards (AIMS).[5] Nearly 84% of grade 3 Arizona white test-takers met or exceeded the standard. Thus, Arizona ELL test-takers trailed their white counterparts by 35 points, or the difference in white and ELL grade 3 math proficiency rates was 35 points in Arizona.[6] In all five states, the measured mathematics achievement difference increases from the early elementary grade (typically grade 3) to the middle school grade (typically grade 8).

[5] The NLSLSASD, being a school-level data set, records the percentage of test-takers in each public school who meet or exceed state-designated assessment cut points. The state aggregate "proficiency rate" for group i is simply the weighted average of the public schools' proficiency rates for group i, where the weight is the number of group i's test-takers in a public school. That is, school proficiency rates with larger numbers of group i test-takers receive more weight in state aggregate "proficiency rates."

[6] It should be noted that when comparing ELL test-takers to the major racial/ethnic groups of test-takers, one is not comparing mutually exclusive groups. That is, ELL status is not a racial/ethnic category. An ELL test-taker's performance is included in both the ELL group and one of the major racial/ethnic groups. ELL is a public school-designated status, and school administrative data sources do not reveal the race or ethnicity of ELL test-takers. So, fundamentally, we do not know the exact overlap between the ELL test-takers and racial/ethnic groups of test-takers. However, Census Bureau data suggest that the overlap between public school students with limited English-speaking abilities and white public school students and black public school students is quite minimal. Nationally, only about 1 percent of white public school students have limited English-speaking abilities. A similar percentage applies to black public school students. This suggests that nationally most white and black test-takers are not also ELL test-takers. Granted, in the five large ELL states examined in this report, there is probably more overlap between white and black test-takers and ELL test-takers than is the case nationally, but it is still likely not to be extensive.

Figure 2
Difference in Black and ELL Student Math Proficiency Rates
(percentage points)



Note: The difference is calculated by subtracting the ELL proficiency rate from the black proficiency rate.
Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD)

In the 2004–05 NLSLSASD, the ELL test-takers often trail black test-takers in measured math proficiency (Figure 2). In grade 3 math in California and Texas, ELL test-takers were more likely than their black counterparts to meet or exceed the state standard, but otherwise ELL test-takers trailed their black peers. Fry (2007) reported large differences between standardized test scores for black and ELL students, based on an analysis of data from the 2005 National Assessment of Educational Progress (NAEP).

3. The School Isolation of English Language Learner Test-Takers

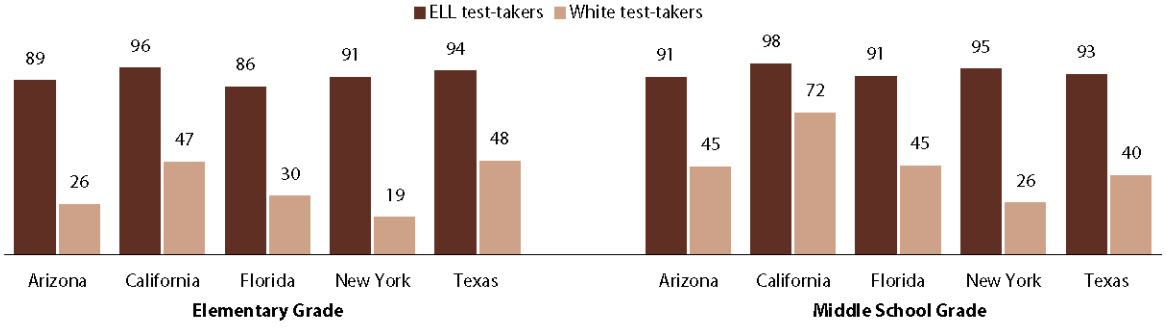
One common explanation for the lagging math achievement of ELL students is that these students tend to have different income, demographic and family characteristics than do other students. This report focuses on another set of differences between ELL students and other students — the differences in the characteristics of the schools they attend.

Nationally, ELL students do not attend the same public schools as other students. At the elementary level, almost 70% of ELL students were educated in about 5,000 elementary schools, about 10% of the nation's roughly 50,000 elementary schools. Only 13% of all elementary school students were enrolled in these 5,000 schools. Nearly half of the nation's elementary schools educated no ELL students (Cosentino de Cohen, Deterding and Clewell, 2005).

It is not surprising that ELL students are concentrated in a subset of public schools, given the geographic concentration of students with limited English-speaking abilities. Census data show that almost 70% of public school students

with limited English-speaking abilities reside in the six states with large ELL student populations (California, Texas, New York, Florida, Illinois and Arizona).

Figure 3
Share of Enrollment in ELL Reporting Schools for ELL and White Student Test-Takers
(%)



Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD)

The NLSLSASD shows that ELL students who took proficiency assessment tests in each state were highly concentrated in a subset of elementary schools and middle schools. This report refers to that subset of schools as "ELL reporting schools."[7] For example, among third-grade math test-takers in California, 96% of ELL test-takers were enrolled at the 3,398 ELL reporting schools (Figure 3). In contrast, those 3,398 California ELL reporting schools educated less than half (47%) of the white test-takers. Perhaps reflecting the concentration of New York ELL test-taking students in New York City public schools, New York appears to have the greatest degree of isolation of ELL test-takers among the five large ELL states. More than 90% of New York fourth-grade ELL students who took proficiency tests were in schools that reported math test scores for ELL students. In comparison, the New York ELL reporting schools educated just 19% of fourth-grade white test-takers.

Middle school ELL students who took proficiency assessment tests were also highly concentrated in middle schools that report ELL scores. For example, in California nearly all seventh-grade ELL test-takers were in ELL reporting middle schools. In comparison, those schools enrolled 72% of seventh-grade white test-takers.

Though there is more overlap between ELL reporting schools and the schools that largely educate black students than in the case of the schools educating white

[7] "ELL reporting schools" are schools having a sufficient number of ELL test-takers in the grade that the school reports the test scores. Each state sets its minimum number for reporting purposes. In Arizona and Florida, an ELL reporting school has at least 10 ELL test-takers in a grade. California requires at least 11 ELL test-takers. New York and Texas ELL reporting schools have at least five ELL test-takers in a grade.

students, Appendix B Tables B1 and B2 also show that ELL test-takers and black test-takers were not largely educated in the same schools. Again, the 3,398 elementary schools in California that reported ELL student test scores educated about three-quarters of black test-takers but virtually all the ELL test-takers. Relative to the other states, in Florida ELL students and black students tend not to be enrolled in the same set of public schools.

4. The Consequences of ELL School Concentration for Math Achievement

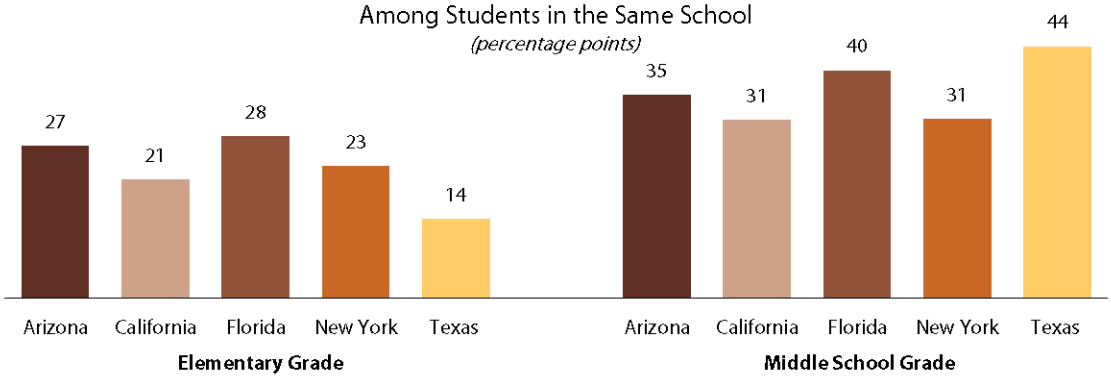
The concentration of ELL students in schools that report ELL test scores is positively associated with their lagging performance on mathematics achievement tests. Although white test-takers and ELL test-takers are largely not educated in the same public schools, there are public schools that educated both white and ELL students.[8] To gauge how much of the ELL achievement gap is due to white students and ELL students attending different schools, this section of the report measures the difference in math proficiency, based on the state assessment tests, between ELL students and white students who attend the same schools. Figure 4 illustrates the difference in math proficiency rates between ELL and white students among the subset of public schools that educate both ELL and white students.[9]

When ELL students and white students attend the same schools, the measured difference in proficiency rates shrinks considerably (Figure 5). For example, statewide in Arizona 84% of white third-grade test-takers passed the state standard, compared with 49% of ELL third-grade test-takers, for an aggregate difference of 35 percentage points. However, if we examine the subset of Arizona elementary schools that educate both white and ELL students, ELL test-takers trailed their white classmates by only 27 percentage points. In each state, and in both elementary grades and middle school grades, a significant portion of the aggregate difference in math proficiency can be accounted for by the fact that ELL students and white students tend not to attend the same public schools.

[8] As mentioned in Footnote 6, ELL students can be of any racial/ethnic origin and some ELL students were also non-Hispanic white students. The vast preponderance of non-Hispanic white students were not English language learner students.

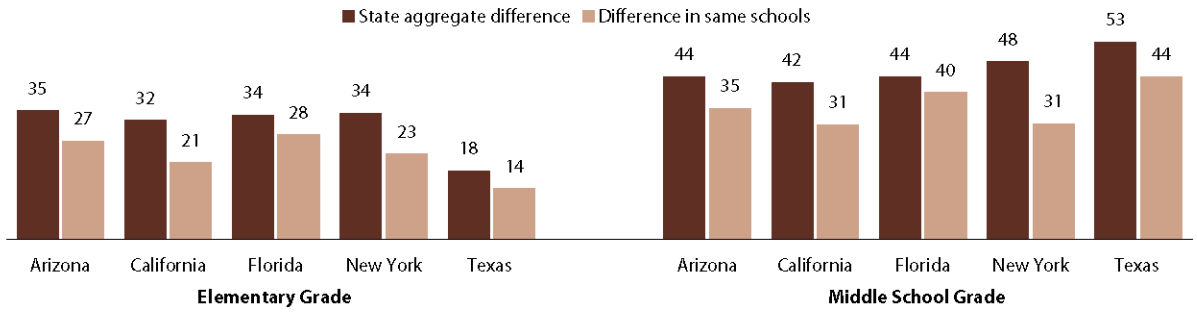
[9] The difference for each public school is obtained by subtracting the ELL proficiency rate from the white proficiency rate. However, the ELL proficiency rate, by definition, is available only for ELL reporting schools. And the white proficiency rate is available (among ELL reporting schools) only for ELL reporting schools educating enough white students to report the white proficiency rate. As a result, Figure 4 shows the average difference in proficiency among the subset of ELL reporting schools that educate at least a minimum threshold of white students. Appendix A reports on the overlaps of the different types of public schools in the NLSLSASD.

Figure 4
Difference in White to ELL Math Proficiency
Among Students in the Same School
(percentage points)



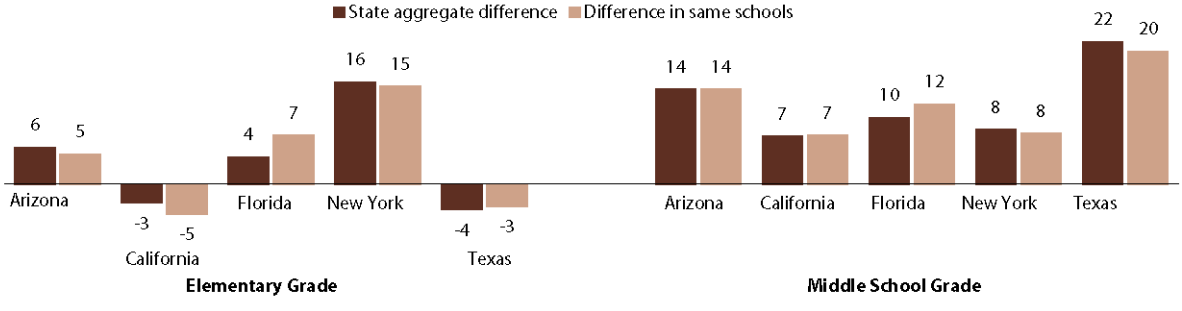
Note: The difference is calculated by subtracting the ELL proficiency rate from the white proficiency rate.
Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD)

Figure 5
Difference in White to ELL Math Proficiency Due to Different Schools
(percentage points)



Note: The difference is calculated by subtracting the ELL proficiency rate from the white proficiency rate.
Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD)

Figure 6
Difference in Black to ELL Math Proficiency Due to Different Schools
(percentage points)



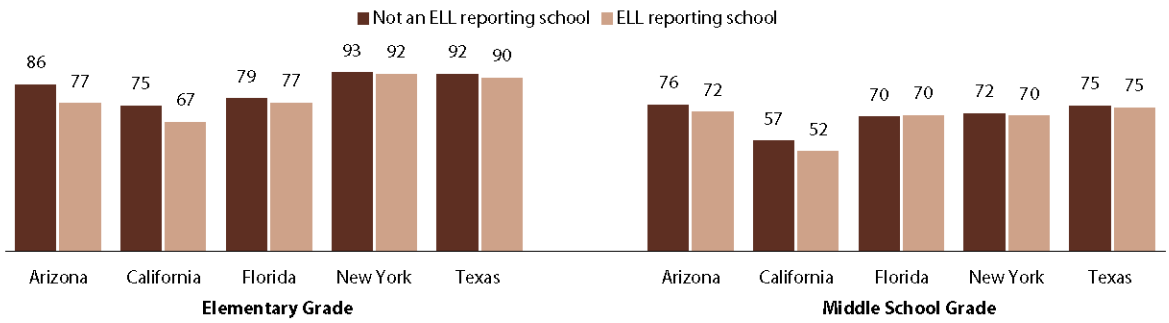
Note: The difference is calculated by subtracting the ELL proficiency rate from the black proficiency rate.
Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD)

Similarly, difference in math proficiency between black and ELL students may be due in part to their attending different schools. Figure 6 shows the aggregate statewide difference in ELL and black proficiency rates and the difference calculated on the basis of ELL test-takers and black test-takers who attend the same schools. Again, with the exception of Florida, the difference in math proficiency rates shrinks when examining students who attend the same public schools.

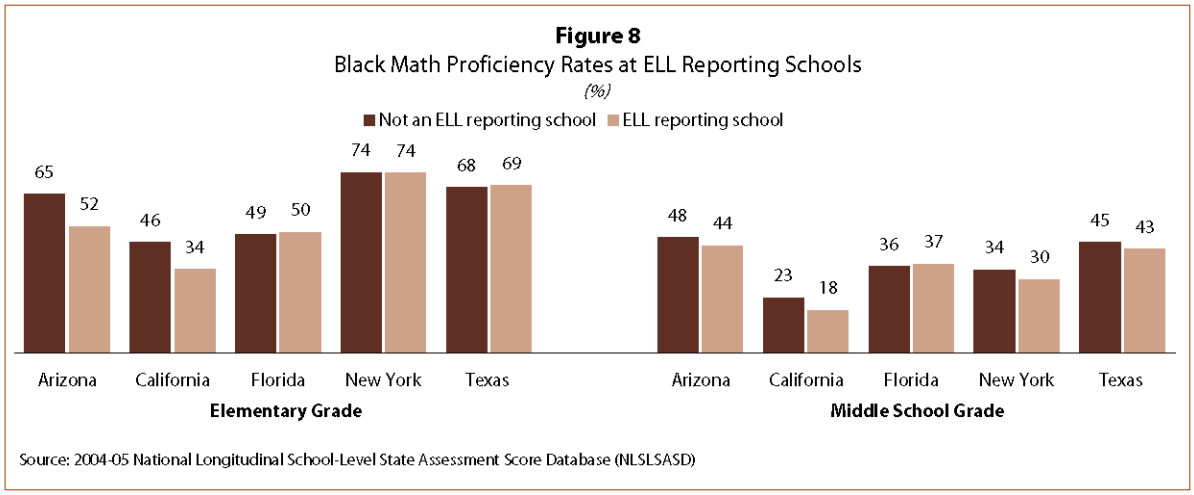
5. Math Achievement at ELL Reporting Schools for White and Black Students and ELL Students

ELL test-takers trail far behind the other major racial/ethnic groups of test-takers partly because they are concentrated in schools that report the assessment test scores of ELL students and those schools tend to be low-achieving schools. Average proficiency rates in math are lower at ELL reporting schools not only for ELL students, but also for white and black students who attend those schools. In the NLSLSASD, the average proficiency rate for white test-takers was lower if they were educated in ELL reporting schools rather than in schools that had below the minimum number of ELL test-takers required to report the school ELL proficiency rate (in other words, a public school with few ELL test-takers) (Figure 7). The average black test-takers' proficiency rate was also lower if they were educated at ELL reporting schools (except in Florida) (Figure 8).

Figure 7
White Math Proficiency Rates at ELL Reporting Schools
(%)

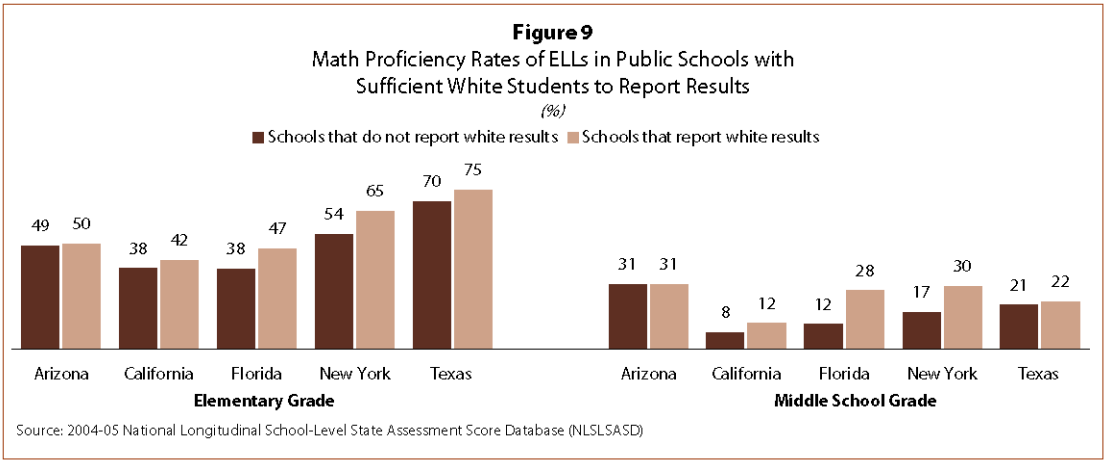


Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD)



It is impossible to determine whether ELL students had higher mathematics proficiency rates if they attended public school that did not have enough ELL students to report ELL assessment test scores because, by definition, ELL proficiency rates in math were not reported for public schools that were not ELL reporting schools. But the school achievement data certainly suggest that ELL math achievement is positively associated with schools that have larger numbers of white students.

Some ELL reporting schools have so few white students that the schools do not report assessment test results for white students. Figure 9 shows that ELL proficiency rates were higher at ELL reporting schools that had sufficient numbers of white students to report the white achievement results.



In the five states examined, ELL math achievement follows a consistent pattern. ELL student math proficiency rates tend to be highest at ELL reporting schools with sufficient numbers of white students to report the white results (Table 2). ELL proficiency rates are lower at ELL reporting schools with neither enough

white students to report the white results nor sufficient black students to report the black results. Finally, ELL math achievement tends to be lowest at ELL reporting schools with sufficient black students to report the black results (but not enough white students to report the white results).

Table 2
Percent of ELL Test-Takers Meeting or Exceeding State's Math Proficiency Standard by Type of Public School

	ELEMENTARY GRADE					MIDDLE SCHOOL GRADE				
Type of Public School	Arizona	California	Florida	New York	Texas	Arizona	California	Florida	New York	Texas
Reports white achievement results[1]	50	42	47	65	75	31	12	28	30	22
Does not report white or black results	49	38	42	53	70	31	9	21	19	21
Reports black achievement results but not white	46	38	36	55	69	28	6	10	17	18

[1]Public schools with sufficient white and black test-takers to report both white and black achievement results are included in this category.

Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD)

Other achievement data in addition to the state assessments in the NLSLSASD support the assertion that public schools with concentrations of ELL students tend to be low-achieving schools. Table 3 reports math achievement results from the 2007 National Assessment of Education Progress. The NAEP uses representative samples of students and is the basis for the well-known “Nation’s Report Card” (NCES, 2007a). Table 3 reports the average scale score (on a scale of 0 to 500) for both white and black fourth- and eighth-graders. NAEP categorizes the public school by the percentage of its student enrollment identified as LEP, or limited English proficient. White and black math achievement tends to be lower at public schools whose LEP enrollment exceeds 5 to 10 percent.

Returning to Figures 5 and 6, there are two basic reasons that the ELL achievement gaps shrink when ELL test-takers attend the same schools as white and black test-takers. First, the math achievement scores of white and black students decline if they attend schools that report ELL test scores, shrinking the gap. Second, measured ELL math achievement tends to improve when ELL students are educated at schools that have sufficient numbers of white students (reducing the difference).

Table 3
NAEP Mathematics Achievement by Percentage of Student Body Identified as Limited English Proficient (LEP)

Percent of school enrollment identified as LEP	WHITE		BLACK	
	Grade 4 Average Scale Score	Grade 8 Average Scale Score	Grade 4 Average Scale Score	Grade 8 Average Scale Score
National[1]				
0%	245	288	217	254
1-5%	249	292	224	261
6-10%	249	292	228	263
11-25%	248	288	223	258
26-50%	243	284	222	252
51-75%	238	268	215	252
76-90%	236	‡	217	‡
Over 90%	238	290	215	‡
Arizona				
0%	244	289	‡	‡
1-5%	249	292	‡	‡
6-10%	247	280	‡	‡
11-25%	244	286	‡	‡
26-50%	237	‡	‡	‡
51-75%	‡	‡	‡	‡
California				
0%	253	‡	‡	‡
1-5%	253	294	‡	‡
6-10%	248	292	231	‡
11-25%	246	284	221	252
26-50%	240	281	215	243
51-75%	236	‡	207	‡
Florida				
0%	241	292	220	‡
1-5%	255	290	228	260
6-10%	248	285	229	262
11-25%	249	284	223	258
26-50%	239	‡	228	‡
51-75%	‡	‡	223	‡
Illinois				
0%	244	287	214	251
1-5%	253	293	222	258
6-10%	251	294	221	259
11-25%	246	299	216	‡
26-50%	240	289	‡	‡
51-75%	‡	‡	‡	‡
New York				
0%	245	290	219	265
1-5%	254	289	230	260
6-10%	249	286	230	255
11-25%	253	291	225	261
26-50%	‡	‡	219	‡
51-75%	‡	‡	‡	‡
Texas				
0%	‡	302	220	‡
1-5%	251	302	233	272
6-10%	255	295	237	273
11-25%	254	289	232	269
26-50%	249	‡	230	‡
51-75%	257	‡	223	‡

[1]Refers to national performance in public schools.

‡ Reporting standards not met.

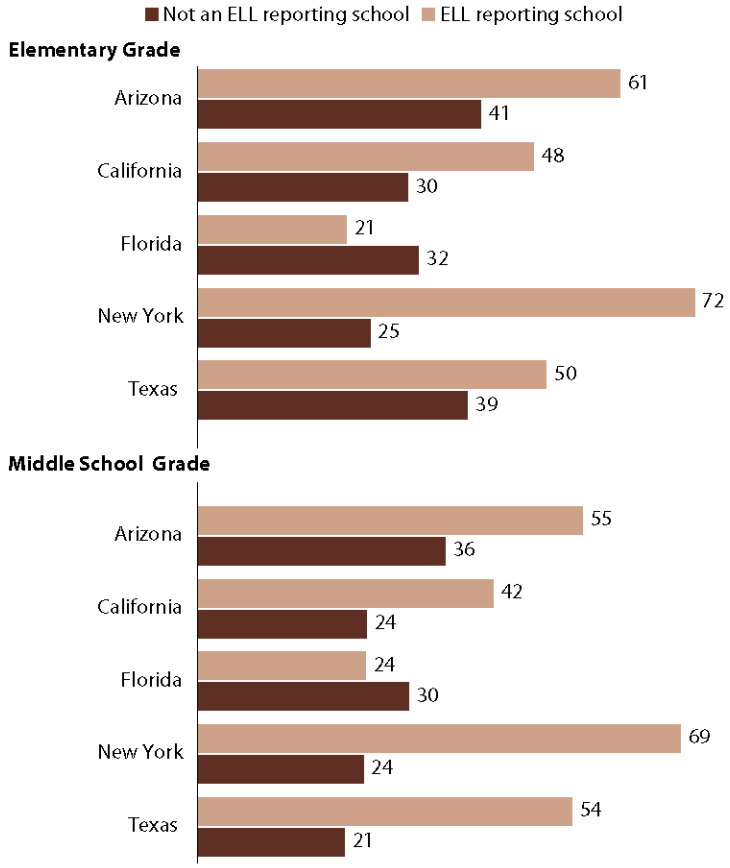
Note: Scale scores range from 0 to 500.

Source: National Center for Education Statistics, National Assessment of Educational Progress (NAEP) Data Explorer, 2007 Mathematics Assessment.

6. Additional Characteristics of ELL Reporting Public Schools

The ELL reporting public schools that educate the overwhelming majority of ELL students who take the math assessment tests in these five states tend to be low-achieving public schools. They also have other distinct characteristics associated with lower levels of student performance on standardized tests.[10]

Figure 10
Location in Central City by School Type
(%)



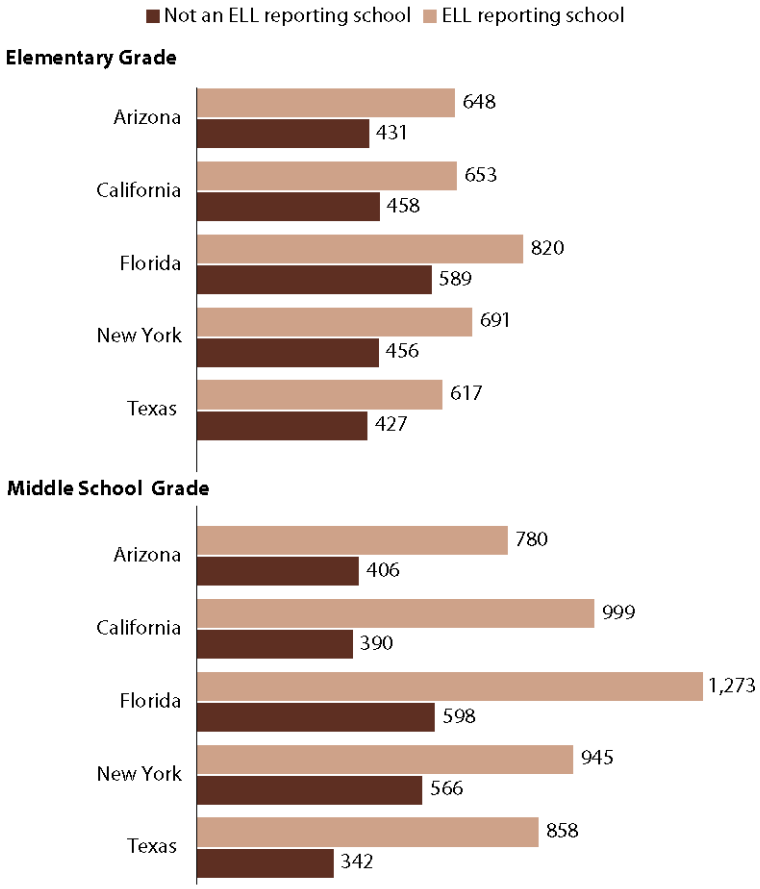
Source: U.S. Department of Education, Common Core of Data (CCD), 2004-05 Public Elementary/Secondary School Universe Surveys

With the exception of Florida, ELL reporting schools were much more likely to be in central cities than in suburban or rural areas (Figure 10). For example, in New York about seven-in-ten ELL reporting schools were central city schools. In comparison, only about one-in-four New York schools that had few ELL test-takers were located in the central city. Generally, students in central city schools have lower mathematics standardized test scores than students in schools in other geographic areas (NCES, 2005).

[10] Most schools in the NLSLSASD can be successfully matched to public school information contained in the NCES Common Core of Data (CCD) Public School Universe survey. Because the NLSLSASD records achievement data for the 2004–05 school year, this section reports public school characteristics from the CCD 2004–05 school year. The averages reported in the figures are the unweighted averages, i.e., each public school receives equal weight.

ELL reporting schools had higher student enrollments (Figure 11). This is particularly true for ELL reporting middle schools, which were much larger than middle schools that had few ELL test-takers and that therefore did not report ELL student test scores. For example, in Texas the typical ELL reporting middle school enrolled 858 students. Texas middle schools with insufficient ELL test-takers to report ELL test results had 342 students enrolled. In California, a similar pattern is present. The average middle school in California that reported ELL test scores had a total student enrollment of 999 students. The average California middle school that did not report ELL achievement results had only 390 students enrolled.

Figure 11
Average School Enrollment by School Type

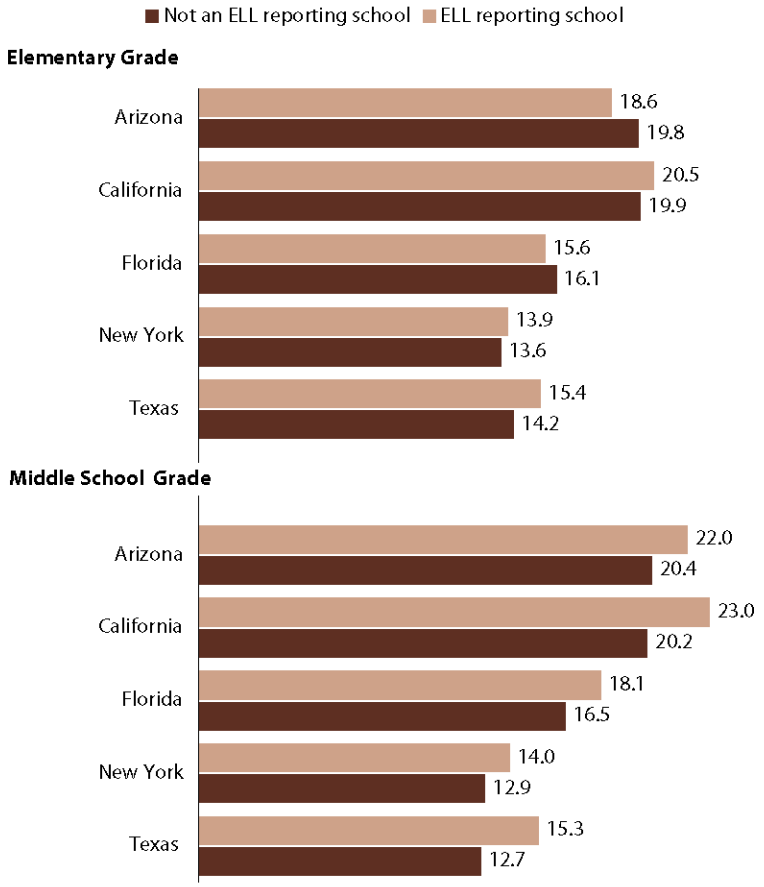


Source: U.S. Department of Education, Common Core of Data (CCD), 2004-05 Public Elementary/Secondary School Universe Surveys

Student-to-teacher ratios, a crude measure of instructional resources, are positively associated with school size (NCES, 2007c) and, indeed, ELL reporting schools in the five states tend to have higher student-to-teacher ratios (Figure 12). Again, the difference in this characteristic is largest for middle schools. For example, the average ELL reporting middle school in California and Texas has about three more students per full-time equivalent teacher than middle schools with few ELL test-takers.

Two measures suggest that schools that report ELL student assessment test scores were more likely to be "high-poverty" schools, or those in which a greater proportion of the students were from economically disadvantaged families. The percentage of students qualifying for free or reduced-price lunches is a proxy for the share of students living in or near poverty. On average, a majority of the students at ELL reporting schools in the five large ELL states qualified for free or reduced-price lunches. And those students were more likely to qualify for free or reduced-price lunches than students in schools with few ELL test-takers (Figure 13). The NAEP shows that student mathematics achievement is negatively associated with the percentage of students in the school eligible for free or reduced-price lunches (NCES, 2005). Furthermore, ELL reporting schools were significantly more likely to be designated Title I schools (Figure 14).[11] Title I schools are not necessarily low-achieving schools. However, they are high-poverty schools, and "achievement levels in schools where children from low-income families are concentrated are on average lower than in schools where most children are from families with higher incomes" (Kosters and Mast, 2003).

Figure 12
Student-to-Teacher Ratios by School Type



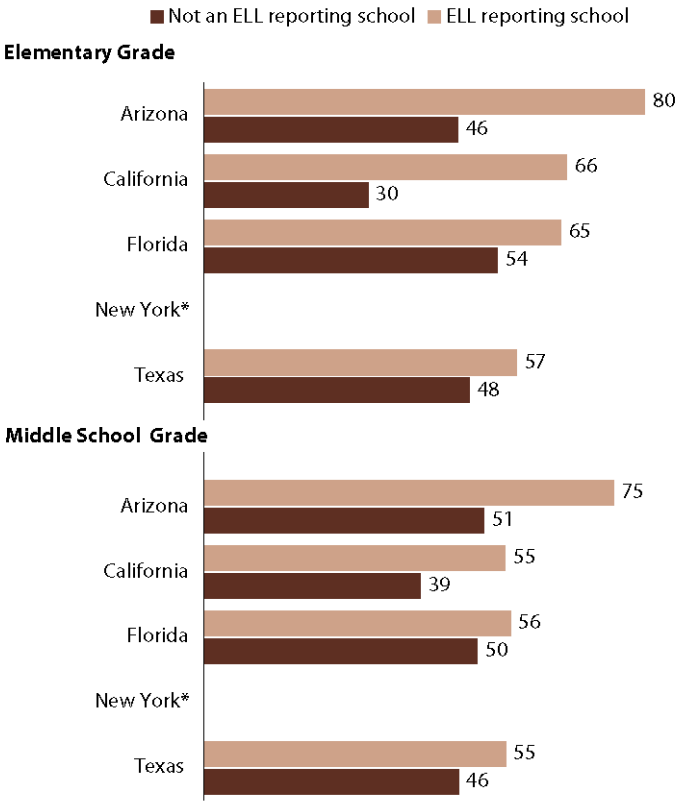
Source: U.S. Department of Education, Common Core of Data (CCD), 2004-05 Public Elementary/Secondary School Universe Surveys

Finally, ELL reporting schools tend to have had a much lower proportion of white students attending them compared with schools that do not report the assessment test scores of ELL students because they have few ELL students. In the five large

[11] Title I schools are eligible to receive federal funds under the Elementary and Secondary Education Act of 1965. The schools tend to be high-poverty schools in districts with high concentrations of poor children. The funding seeks to support state and local efforts to help all children reach challenging standards.

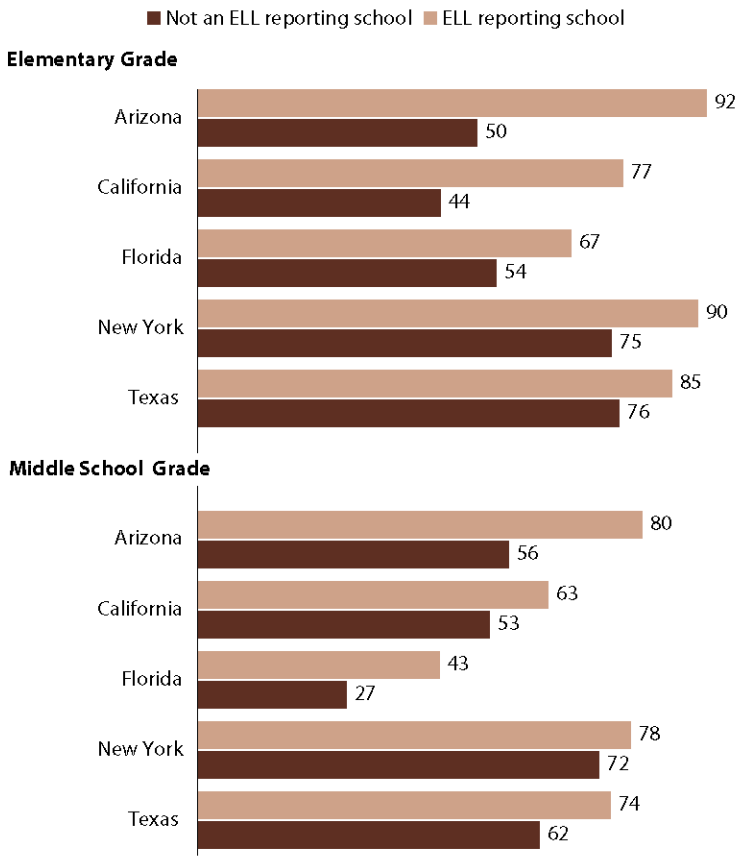
ELL states, ELL reporting schools had about a quarter to a third white enrollment (Appendix B Tables B3 and B4). In contrast, schools with few ELL test-takers were on average majority-white schools.

Figure 13
Proportion of Student Body Qualifying for Free or Reduced-Price Lunches, by School Type
(%)



*Data for New York not available.
Source: U.S. Department of Education, Common Core of Data (CCD), 2004-05 Public Elementary/Secondary School Universe Surveys

Figure 14
Title I School by School Type
(%)



Source: U.S. Department of Education, Common Core of Data (CCD), 2004-05 Public Elementary/Secondary School Universe Surveys

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Appendix A: Data Sources

The mathematics achievement tabulations analyzed in this report are based on the U.S. Department of Education's National Longitudinal School-Level State Assessment Score Database.[12] The NLSLSASD records in uniform fashion the scores on state achievement tests for more than 80,000 public schools (McLaughlin, 2005). The achievement data are for public schools, not individual students. Among the NLSLSASD's virtues is that public schools are identified by their National Center for Education Statistics school identification number. Using this, one can easily obtain further information on the characteristics of the public school contained in the National Center for Education Statistics' Common Core of Data (CCD) Public Elementary/Secondary School Universe Survey (for example, school size, student-to-teacher ratio and Title I eligibility). The 2004–05 school year is the latest year available in the NLSLSASD.

The limited data on English language learner achievement in public schools in Illinois precluded including the state in the analysis. Census data indicate that Illinois ranks fifth among states in the size of the public school population that has limited English speaking proficiency. Arizona ranks sixth, and both Arizona and Illinois had about 400,000 Hispanic students enrolled in their public schools in 2004–05 (NCES, 2007b). In the NLSLSASD, 408 Arizona public schools reported results for English language learners in grade 3 mathematics. Only 18 Illinois public schools reported ELL results for grade 3 mathematics. The dearth of Illinois public schools reporting achievement results does not apply to white students. Illinois has more than twice as many white public school students as Arizona, and 1,663 Illinois public schools reported white achievement results for grade 3 mathematics compared with 722 Arizona public schools. Given the size of the limited English speaking population in Illinois, it is surprising how few Illinois public schools report ELL achievement results in the NLSLSASD.

[12] The NLSLSASD can be downloaded from http://www.schooldata.org/.

For the five states examined in this report (California, Texas, New York, Florida and Arizona), coverage of public schools in the NLSLSASD approximates the universe of regular public schools according to the National Center for Education Statistics' Common Core of Data:

Table A1
Coverage of Public Schools in the 2004-05 NLSLSASD

State	Number of Public Schools in 2004-05 NLSLSASD	Number of 2004-05 Regular Public Schools Having Membership
California	8,191	8,046
Texas	6,976	6,967
New York	3,329	4,290
Florida	3,028	3,200
Illinois	3,761	3,888
Arizona	1,803	1,823
Total	27,088	28,214

Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD) and NCES (2007b)

NLSLSASD records the results of a school's ELL test-takers. Because ELL enrollments by grade and public school are not available in the CCD, it is difficult to gauge the extent to which the number of ELL mathematics test-takers in the NLSLSASD represents the universe of the ELL student population. According to the NLSLSASD, however, most public schools that administered the mathematics assessment in a grade also tested their ELL students:

Table A2
Public Schools Administering a Mathematics Assessment, 2004-05

	GRADE					
	3	4	5	6	7	8
Public Schools Testing in Math						
Arizona	1,082	.	1,077	.	.	697
California	5,217	5,198	5,188	3,592	2,066	.
Florida	1,878	1,870	1,875	954	848	845
New York	.	2,339	.	.	.	1,169
Texas	3,847	3,820	3,582	2,330	1,871	1,881
Public Schools Testing ELL Students in Math						
Arizona	824	.	780	.	.	457
California	4,848	4,787	4,720	3,172	1,715	.
Florida	1,392	1,356	1,322	632	567	584
New York	.	1,424	.	.	.	660
Texas	3,222	2,777	2,526	1,608	1,186	1,156
Percent of Public Schools Testing ELL Students in Math						
Arizona	76	.	72	.	.	66
California	93	92	91	88	83	.
Florida	74	73	71	66	67	69
New York	.	61	.	.	.	56
Texas	84	73	71	69	63	61

Note: A dot indicates that a state assessment was not administered.
Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD)

The fact that a nontrivial proportion of public schools did not test any ELL students might be because some public schools do not have any ELL students enrolled.

While many public schools tested ELL students in mathematics, many of those public schools need not report the results of their ELL test-takers' performance. Under NCLB, disaggregation of test-taker scores is not required when a subgroup of students is too small to yield statistically reliable information or when the results would reveal information about individual students (Commission on No Child Left Behind, 2007). As a result of the minimum threshold requirements for reporting a group, the number of public schools reporting results for ELL test-takers is less than the number of public schools testing its ELL students:

Table A3
Public Schools Reporting Math Achievement Results by Subgroup, 2004-05

	GRADE					
	3	4	5	6	7	8
Public Schools Reporting Scores for ELL Students in Math						
Arizona	408	.	361	.	.	213
California	3,398	3,186	2,962	2,003	1,187	.
Florida	662	531	434	319	303	292
Illinois	18	.	161	.	.	49
New York	.	763	.	.	.	370
Texas	2,071	1,530	1,379	930	675	631
Public Schools Reporting White Student Results in Math						
Arizona	722	.	716	.	.	416
California	3,225	3,249	3,272	2,375	1,403	.
Florida	1,464	1,447	1,436	717	650	661
Illinois	1,663	.	1,560	.	.	964
New York	.	1,305	.	.	.	683
Texas	2,697	2,699	2,436	1,747	1,483	1,478
Public Schools Reporting Black Student Results in Math						
Arizona	107	.	115	.	.	140
California	964	1,029	1,094	852	736	.
Florida	1,220	1,236	1,166	624	584	583
Illinois	748	.	769	.	.	573
New York	.	822	.	.	.	538
Texas	1,877	1,819	1,684	1,150	899	893
Public Schools Reporting ELL and White Student Results in Math						
Arizona	241	.	199	.	.	137
California	1,775	1,659	1,512	1,226	927	.
Florida	508	412	322	291	281	268
Illinois	14	.	59	.	.	31
New York	.	378	.	.	.	215
Texas	1,350	887	717	669	549	513
Public Schools Reporting ELL and Black Student Results in Math						
Arizona	81	.	71	.	.	101
California	778	802	793	680	652	.
Florida	493	399	312	291	282	271
Illinois	2	.	49	.	.	22
New York	.	444	.	.	.	279
Texas	1135	801	701	613	487	449

Note: A dot indicates that a state assessment was not administered.
Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD)

For example, 5,217 California public schools tested third-grade students in mathematics. Of these, 4,848 tested third-grade ELL students in mathematics and 3,398 had a sufficient number of third grade ELL test-takers to report ELL results for the school. If we want to compare how white test-takers performed in the same public schools, it is important to note that many of the 3,398 public schools reporting ELL performance do not have sufficient numbers of white test-takers to

report results for their white test-takers. The number of California public schools that reported both ELL test-taker results and white test-taker results in grade 3 mathematics was 1,775.

Appendix B: Additional Tables

Table B1
Distribution of Elementary Grade Test-Takers by Type of Public School

	Schools	TEST-TAKERS					
		Total	ELLs	Whites	Blacks	Hispanics	Asians
Arizona							
Not an ELL reporting school	674	39,271	1,678	26,845	1,742	7,777	1,326
ELL reporting school	408	40,063	13,820	9,329	2,267	25,093	570
Total	1,082	79,334	15,498	36,174	4,009	32,870	1,896
% of 3rd-grade test-takers in ELL schools		50	89	26	57	76	30
California							
Not an ELL reporting school	1,819	115,559	7,098	69,834	7,801	20,635	10,687
ELL reporting school	3,398	343,271	154,459	62,932	26,407	211,541	26,303
Total	5,217	458,830	161,557	132,766	34,208	232,176	36,990
% of 3rd-grade test-takers in ELL schools		75	96	47	77	91	71
Florida							
Not an ELL reporting school	1,216	111,443	2,885	66,043	26,264	12,401	2,208
ELL reporting school	662	91,696	17,501	28,034	21,550	36,761	2,095
Total	1,878	203,139	20,386	94,077	47,814	49,162	4,303
% of 3rd-grade test-takers in ELL schools		45	86	30	45	75	49
New York							
Not an ELL reporting school	1,576	118,000	1,393	88,898	17,132	7,182	4,150
ELL reporting school	763	87,143	13,927	20,741	21,708	34,207	10,113
Total	2,339	205,143	15,320	109,639	38,840	41,389	14,263
% of 4th-grade test-takers in ELL schools		42	91	19	56	83	71
Texas							
Not an ELL reporting school	1,776	101,448	2,620	57,752	15,252	25,136	2,680
ELL reporting school	2,071	174,433	41,585	53,111	24,587	88,875	7,101
Total	3,847	275,881	44,205	110,863	39,839	114,011	9,781
% of 3rd-grade test-takers in ELL schools		63	94	48	62	78	73

Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD)

Table B2
Distribution of Middle School Grade Test-Takers by Type of Public School

	Schools	TEST-TAKERS Total	ELLs	Whites	Blacks	Hispanics	Asians
Arizona							
Not an ELL reporting school	484	30,576	923	20,995	1,315	5,871	824
ELL reporting school	213	47,549	9,162	17,224	2,688	23,150	909
Total	697	78,125	10,085	38,219	4,003	29,021	1,733
% of 8th-grade test-takers in ELL schools		61	91	45	67	80	52
California							
Not an ELL reporting school	879	64,373	2,149	40,764	3,971	11,030	4,801
ELL reporting school	1,187	402,315	98,837	107,382	33,003	208,368	34,864
Total	2,066	466,688	100,986	148,146	36,974	219,398	39,665
% of 7th-grade test-takers in ELL schools		86	98	72	89	95	88
Florida							
Not an ELL reporting school	553	83,752	1,003	55,233	18,012	6,992	1,517
ELL reporting school	292	118,145	10,473	45,711	28,432	38,582	2,742
Total	845	201,897	11,476	100,944	46,444	45,574	4,259
% of 8th-grade test-takers in ELL schools		59	91	45	61	85	64
New York							
Not an ELL reporting school	799	110,414	643	88,163	12,762	5,921	2,960
ELL reporting school	370	107,813	12,331	31,752	29,314	35,648	10,761
Total	1,169	218,227	12,974	119,915	42,076	41,569	13,721
% of 8th-grade test-takers in ELL schools		49	95	26	70	86	78
Texas							
Not an ELL reporting school	1,250	114,737	1,119	71,638	13,764	25,599	3,141
ELL reporting school	631	177,147	13,883	48,515	26,911	95,298	5,764
Total	1,881	291,884	15,002	120,153	40,675	120,897	8,905
% of 8th-grade test-takers in ELL schools		61	93	40	66	79	65

Source: 2004-05 National Longitudinal School-Level State Assessment Score Database (NLSLSASD)

Table B3
Characteristics of Public Elementary Schools

	Number of Schools	Enrollment	PERCENTAGE OF STUDENTS				Pupil-to-Teacher Ratio	Percent of Students Qualifying for Free or Reduced-Price Lunch	Percent Title I Schools	Percent in Central City
			White	Black	Hispanic	Asian				
Arizona										
Not an ELL reporting school	670	431	64	5	23	3	19.8	46	50	41
ELL reporting school	408	648	23	5	62	1	18.6	80	92	61
California										
Not an ELL reporting school	1,819	458	58	7	20	10	19.9	30	44	30
ELL reporting school	3,394	653	20	8	59	12	20.5	66	77	48
Florida										
Not an ELL reporting school	1,212	589	58	29	11	2	16.1	54	54	32
ELL reporting school	661	820	32	26	39	2	15.6	65	67	21
New York										
Not an ELL reporting school	1,571	456	73	16	7	3	13.6	na	75	25
ELL reporting school	762	691	24	26	39	11	13.9	na	90	72
Texas										
Not an ELL reporting school	1,775	427	51	16	31	2	14.2	48	76	39
ELL reporting school	2,068	617	25	13	59	3	15.4	57	85	50

Source: U.S. Department of Education, Common Core of Data (CCD), 2004-05 Public Elementary/Secondary School Universe Surveys

Table B4
Characteristics of Public Middle Schools

	Number of Schools	Enrollment	PERCENTAGE OF STUDENTS				Pupil-to-Teacher Ratio	Percent of Students Qualifying for Free or Reduced-Price Lunch	Percent Title I Schools	Percent in Central City
			White	Black	Hispanic	Asian				
Arizona										
Not an ELL reporting school	483	406	59	6	26	2	20.4	51	56	36
ELL reporting school	213	780	27	6	57	1	22.0	75	80	55
California										
Not an ELL reporting school	875	390	54	8	27	6	20.2	39	53	24
ELL reporting school	1,186	999	27	8	51	12	23.0	55	63	42
Florida										
Not an ELL reporting school	547	598	58	29	11	1	16.5	50	27	30
ELL reporting school	290	1,273	40	26	32	2	18.1	56	43	24
New York										
Not an ELL reporting school	791	566	75	15	7	2	12.9	na	72	24
ELL reporting school	367	945	27	29	36	8	14.0	na	78	69
Texas										
Not an ELL reporting school	1,245	342	58	13	28	1	12.7	46	62	21
ELL reporting school	631	858	25	14	58	3	15.3	55	74	54

Source: U.S. Department of Education, Common Core of Data (CCD), 2004-05 Public Elementary/Secondary School Universe Surveys