



Where do English language learner students go to school? Student distribution by language proficiency in Arizona

Prepared by

**Eric Haas
WestEd**

**Min Huang
WestEd**

August 2010





REL Technical Briefs is a report series from Fast Response Projects that helps educators obtain evidence-based answers to their specific requests for information on pressing education issues. REL Technical Briefs offer highly targeted responses across a variety of subjects, from reviews of particular studies or groups of studies on No Child Left Behind Act implementation issues to compilations or quick summaries of state or local education agency data, appraisals of particular instruments or tools, and short updates of Issues & Answers reports. All REL Technical Briefs meet Institute of Education Sciences (IES) standards for scientifically valid research.

August 2010

This technical brief responds to a request from the Arizona Department of Education for information to inform policies, programs, and resources supporting the education of students who are English language learners.

This REL Technical Brief was prepared for IES under Contract ED-06-CO-0014 by Regional Educational Laboratory West, administered by WestEd. The content of the publication does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

This REL Technical Brief is in the public domain. While permission to reprint this Technical Brief is not necessary, it should be cited as:

Haas, E., and Huang, M. (2010). *Where do English language learner students go to school? Student distribution by language proficiency in Arizona*. (REL Technical Brief, REL 2010–No. 015). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory West. Retrieved from <http://ies.ed.gov/ncee/edlabs>.

This REL Technical Brief is available on the regional educational laboratory web site at <http://ies.ed.gov/ncee/edlabs>.

Summary

Across Arizona and the United States, there is widespread interest in how to successfully educate the growing number of English language learner students in K–12 schools.¹ Research suggests that a school may face challenges in effectively teaching its English language learner students—and closing the achievement gap with native English speakers—when concentrations of English language learner students are high, especially in middle and high schools; when there are many socioeconomically disadvantaged students; and when the school is located in an urban or rural (as opposed to suburban) area. Research also suggests that open enrollment programs may increase the concentrations of English language learner students and socioeconomically disadvantaged students in some schools.

This technical brief analyzes 2007/08 student-level data to determine how the number and percentage of English language learner students vary by public school in Arizona and how the percentage of English language learner students varies by school level (primary, middle, and high school), percentage of students eligible to receive free or reduced-price lunch (an indicator of socioeconomic disadvantage), school type (traditional, alternative, and charter), and school location.

The study shows that statewide in 2007/08, 168,199 (16 percent) of Arizona public school students were classified as English language learner students. Their distribution throughout the 1,878 Arizona public schools in this study ranged from 0 to 853 students (0–87 percent) in individual schools. Schools and counties faced different levels of accountability and challenge in helping these students reach required levels of academic achievement, based on the number of English language learner students. Forty-one percent of Arizona public schools (those with 19 or fewer English language learner students) were not required to submit disaggregated adequate yearly progress reports for English language learner students or to implement the state English Language Development pull-out program. But 45 percent of schools (those with 40 or more English language learner students) were required to do both.

Concentrations of English language learner students varied within and across schools and counties and by school characteristics. Schools with greater than 50 percent English language learner students were more prevalent among primary schools than among middle and high schools, among traditional public schools than among alternative and charter schools, and among schools with more than 75 percent eligibility for free or reduced-price lunch than among schools with smaller percentages of eligible students. Schools with no English language learner students were more prevalent in high schools, charter schools, and schools with less than 75 percent eligibility for free or reduced-price lunch. Differences were also evident by county. Maricopa and Pima Counties, with the largest total student enrollment among counties, had schools with 0 percent English language learner students close to schools with greater than 50 percent English language learner students. Of Arizona's 15 counties, the 6 with low student enrollment (1,000–50,000) had schools with 0 percent

English language learner students and no schools with greater than 50 percent English language learner students.

The study responds to a request from the Arizona Department of Education for information on the distribution of English language learner students across Arizona public schools and on the variation in English language learner concentration by school characteristics.

Note

1. In general, “English language learner students” are students in grades K–12 whose primary or first language is not English and who have not passed their state’s English language proficiency test.

Technical brief

Why this brief?

Across Arizona and the United States, there is widespread interest in how to successfully educate the growing number of English language learner students in grades K–12 (Bodfield 2008; Horwitz et al. 2009; Quality Counts 2009).¹ Research cited below suggests that a school may face challenges in effectively teaching its English language learner students—and closing the achievement gap with native English speakers—when concentrations of English language learner students are high, especially in middle and high schools; when there are many socioeconomically disadvantaged students; and when the school is located in an urban or rural (as opposed to suburban) area. Research also suggests that open enrollment programs may increase the concentrations of English language learner students and socioeconomically disadvantaged students in some schools.

This technical brief responds to a request from the Arizona Department of Education for information to inform policies, programs, and resources to support the education of English language learner students.² Specifically, the Department of Education wanted to know how English language learner students are distributed across schools statewide and how concentrations of English language learner students vary across school characteristics such as level (primary, middle, and high school), percentage of students eligible for free or reduced-priced lunch, type (traditional, alternative,³ and charter), and location (urban, suburban, and rural locales and geographic location).

Implications of high concentrations of English language learner students

There are several implications of high concentrations of English language learner students in a school. The number and percentage of English

language learner students appear to influence these students' ability to learn English. Higher concentrations of English language learner students might reduce the positive effects of interactions with fluent English speaker peers in both formal and informal settings during the school day (Carhill, Suarez-Orozco, and Paez 2008; Jia and Aaronson 2003; Rumberger and Anguiano 2004).

Schools with higher numbers of English language learner students are subject to additional accountability and curriculum requirements. These schools are held more directly accountable for the performance of English language learner students than are schools with smaller numbers of this subgroup (for example, Arizona Department of Education 2008a; Capps et al. 2005). Arizona schools with 40 or more English language learner students must report test scores of these students as a separate subgroup in their adequate yearly progress targets under the No Child Left Behind (NCLB) Act of 2001 (U.S. Department of Education 2005).⁴ Reports of low pass rates by English language learner students on state standardized subject matter content tests (for example, Gándara and Rumberger 2009⁵) suggest that schools with larger numbers of English language learner students are more likely to receive NCLB sanctions (such as requiring schools to inform parents of their school choice options or to offer supplemental educational services outside the school day, and even replacing some or all of the school staff).

Requirements for instructional programs vary with the number of English language learner students as well. Recent Arizona legislation requires schools with 20 or more English language learner students to create a minimum four hour a day English language development program for English language learner students that meets specific English language program requirements (Arizona Department

of Education 2008a,b; Arizona House of Representatives 2006; Arizona State Legislature 2006).⁶ To meet this requirement, some schools have had to reorganize, for example, increasing some mainstream class sizes to accommodate the small English language development classes with currently available staff levels (Bodfield 2008).

School characteristics and English language learner students

Research has associated certain school characteristics with greater challenges in assisting their English language learner students in meeting academic proficiency goals.

School level. There is some research evidence that elementary age students more readily transition to speaking English as their primary language outside the home than do middle and high school students, who tend to speak their native language with like peers (Jia and Aaronson 2003).

Economic status. Research suggests that higher levels of student poverty (generally defined in public school systems by eligibility for free or reduced-price lunch) are linked with lower academic achievement, including for English language learner students (Berliner 2006; Gándara et al. 2003; Parrish et al. 2006; Rumberger and Gándara 2004). In addition, higher concentrations of English language learner students have been associated with higher concentrations of student poverty (Rumberger and Anguiano 2004).

School type. Certain school types (traditional public, alternative, charter) may have systematically different concentrations of English language learner students. For example, research by Cobb and Glass (2009) and Koedel et al. (2009) suggests that unregulated choice or open enrollment programs,

including charter schools in the Phoenix and San Diego areas, tend to have greater concentrations of school population grouping distinguished by language, as well as by race, class, and achievement.

School location. School location can affect the feasibility of program and policy interventions (Rumberger, Gándara, and Merino 2006). For example, rural and urban schools will likely need to offer greater incentives to get sufficient numbers of qualified and experienced teachers of English as a second language than will schools in suburban areas (Berry 2008; Honawar 2009; Smith-Davis 2004). In addition, choice options to reduce concentrations of English language learner students may be more effective in urban areas, where schools are closer together and closer to public transportation, than in suburban or rural areas (Rumberger, Gándara, and Merino 2006).

What this study addresses

During the 2007/08 school year, 168,199 of Arizona's 1,076,720 students (16 percent) were designated as English language learner students.⁷ This technical brief addresses two questions relevant to this subgroup:

1. How do the number and percentage of English language learner students vary by public school in Arizona?
2. How does the percentage of English language learner students in Arizona public schools vary by school level, percentage of students eligible for free or reduced-price lunch, school type, and school location?

This technical brief provides a descriptive analysis of the data. Since the entire population of Arizona schools and students is included in the analysis, no statistical tests were computed. The data sources are described in box 1; the methodology is presented in appendix A.

BOX 1

Data sources

This study relied on three data sources.

- The Arizona Department of Education provided anonymous, individual student data for all public school students (traditional, alternative, and charter) for 2007/08. The data included school name, district name, identification as an English language learner student (yes/no), and identification as eligible to receive free or reduced-price lunch (yes/no).

- Publicly available data identifying school type for 2008/09 (traditional, alternative, and charter) was also available from the Arizona Department of Education web site.
- The Common Core of Data (U.S. Department of Education 2009) provided school-level information, most recently for school year 2007/08, including school level, location with longitude and latitude, and urban-centric designation.

To the extent possible, any missing data were filled in through searches of the Arizona Department of Education web site and the web sites of individual schools. Students with missing data (less than 1 percent of student records) were excluded from the study. In addition, 3 of Arizona's 1,881 public schools had missing student enrollment data for 2007/08 and were also excluded from the study. For all but 3 of the remaining 1,878 public schools that had missing school-level data points, the missing data were found (the missing data were school level for one school and school locale for two others).

Study findings

During 2007/08, numbers and concentrations of English language learner students varied across Arizona, both within individual public schools and in the distribution by school characteristics and across counties. As a result, Arizona public schools and counties faced different levels of accountability and challenges in helping their students achieve required levels of academic proficiency. Of the 1,878 Arizona public schools studied, 41 percent were not required to submit disaggregated adequate yearly progress reports for English language learner students or to implement the state English Language Development pull-out program because they had 19 or fewer English language learner students. Another 45 percent were required to do both because they had 40 or more English language learner students. Of these schools, 56 percent (470 of 843) were in the top quartile by number of English language learner students, with 113–853 English language learner students per school.

Concentrations of English language learner students per school also differed by county. The two counties with the highest student enrollments, Maricopa and Pima, had some schools

with no English language learner students and some with greater than 50 percent English language learner students, often in close proximity. Six counties, each among the lowest in student enrollment, had schools with no English language learner students and no schools with greater than 50 percent English language learner students.

Differences in the concentration of English language learner students were also evident by public school characteristics. A higher percentage of primary schools than middle or high schools had student populations with greater than 50 percent English language learner students—and a lower percentage had student populations with 25 percent or fewer English language learner students. No schools with 0 percent eligibility for free or reduced-price lunch had concentrations of English language learner students higher than 25 percent, while 64 percent of schools with more than 75 percent lunch eligibility had concentrations greater than 25 percent (some greater than 50 percent). Traditional public schools had the highest share of schools with concentrations of English language learner students greater than 50 percent. Charter schools had the highest share of schools with no English language learner students.

How do the number and percentage of English language learner students vary by public school in Arizona?

The number and percentage of English language learner students varied across Arizona's 1,878 public schools in 2007/08 (table 1). The number of English language learner students ranged from 0 to 853 per school, and the percentage ranged from 0 to 87. Half the schools had 31 or fewer English language learner

students. The most common number of English language learner students in a school was 0.

The distribution of schools into four equal groups of 470 schools (quartiles) by number of English language learner students in the school shows that 69 percent of English language learner students attended schools with 113–853 English language learner students, the quartile with the highest concentration of English language learner students (table 2).

The distribution of schools by the number and concentration of English language learner students is skewed, as shown by the findings that the mean is higher than the median and that the mode is 0—the lowest possible value—for both the number and percentage of English language learner students.

The number of English language learner students in Arizona public schools affects school accountability and curriculum requirements. Forty-five percent of schools had 40 or more English language learner students and were required to disaggregate English language learner achievement scores and to implement the English Language Development pull-out program (table 3). Fourteen percent of schools had 20–39 English language learner students and were required to implement the state English Language Development pull-out program but not to disaggregate

TABLE 1
Number and percentage of English language learner students in Arizona public schools, 2007/08

| Descriptive statistic | English language learner students | |
|-----------------------|-----------------------------------|---------|
| | Number | Percent |
| Minimum | 0 | 0 |
| Median | 31 | 7 |
| Maximum | 853 | 87 |
| Mean | 86 | 15 |
| Mode | 0 | 0 |

Note: Total number of schools was 1,878.

Source: Author's analysis of data from the Arizona Department of Education for 2007/08. See box 1 and appendix A for details.

TABLE 2
Arizona public schools ranked by number of English language learner students per school, by quartile, 2007/08

| Quartile | Quartile range (number of English language learner students per school) | English language learner students in quartile | |
|----------|--|---|---------|
| | | Number | Percent |
| 1 | 0–5 | 666 | 1 |
| 2 | 5–31 | 8,865 | 8 |
| 3 | 31–113 | 41,587 | 25 |
| 4 | 113–853 | 115,319 | 69 |

Note: Total number of schools is 1,878, with 470 per quartile. Percentages do not sum to 100 because some students attended more than one school and because of rounding.

Source: Author's analysis of data from the Arizona Department of Education for 2007/08. See box 1 and appendix A for details.

TABLE 3

Number and percentage of Arizona public schools required to submit adequate yearly progress reports disaggregated for English language learner students and to implement the English Language Development pull-out program, 2007/08

| | | Implement English Language Development pull out program ^a | | |
|--|---|---|---|-----------------|
| | | NO 19 or fewer English language learner students per school | YES 20 or more English language learner students per school | Total |
| Disaggregate adequate yearly progress reports for English language learner students | NO 39 or fewer English language learner students per school | 766 (41%) | 269 (14%) | 1,035 (55%) |
| | YES 40 or more English language learner students per school | na | 843 (45%) | 843 (45%) |
| | Total | 766 (41%) | 1,112 (59%) | 1,878 (100%) |

na is not applicable.

a. The program provides direct instruction of “phonology (pronunciation—the sound system of a language), morphology (the internal structure and forms of words), syntax (English word order rules), lexicon (vocabulary), and semantics (how to use English in different situations and contexts) . . . [as well as] reading and writing, aligned to the Arizona K–12 English Language Learner Proficiency Standards” (Arizona Department of Education 2008, p. 3). Students remain in the program until they pass Arizona’s English language proficiency test.

Source: Author’s analysis of data from the Arizona Department of Education for 2007/08. See box 1 and appendix A for details.

their English language learner students’ achievement scores. And 41 percent of schools had 19 or fewer English language learner students and were not required to submit disaggregated adequate yearly progress reports for English language learner students or to implement the state English Language Development pull-out program.

How does the percentage of English language learner students in Arizona public schools vary by school level, percentage of students eligible for free or reduced-price lunch, school type, and school location?

Numbers and concentrations of English language learner students varied across Arizona by several school characteristics.

School level. The distribution of English language learner students in Arizona varied by school level (primary, middle, high, other; figure 1 and table 4). More than three-quarters of public schools (78 percent) had English language learner concentrations of 0–25 percent. Concentrations were lower at higher school levels. The share of schools with 25 percent or fewer English language learner students rises from 71 percent for primary schools to 83 percent for middle schools and 93 percent for high schools (see the row percentages for the first two columns of table 4). Similarly, the share of schools with high percentages (greater than 50 percent) of English language learner students declines from the primary school level (11 percent) to the

TABLE 4
Distribution of Arizona public schools by school level and percentage of English language learner students, 2007/08

| School level ^a | Percentage of English language learner students | | | | Total number and percent |
|---------------------------|---|--------------|------------|-----------------|--------------------------|
| | 0 | 1–25 | 26–50 | Greater than 50 | |
| Primary school | | | | | |
| Number | 99 | 683 | 203 | 120 | 1,105 |
| Row percent | 9 | 62 | 18 | 11 | 100 |
| Column percent | 42 | 55 | 73 | 92 | 59 |
| Middle school | | | | | |
| Number | 20 | 198 | 43 | 3 | 264 |
| Row percent | 8 | 75 | 16 | 1 | 100 |
| Column percent | 9 | 16 | 16 | 2 | 14 |
| High school | | | | | |
| Number | 86 | 282 | 26 | 3 | 397 |
| Row percent | 22 | 71 | 7 | 1 | 100 |
| Column percent | 37 | 23 | 9 | 2 | 21 |
| Other | | | | | |
| Number | 28 | 74 | 5 | 5 | 112 |
| Row percent | 25 | 66 | 4 | 4 | 100 |
| Column percent | 12 | 6 | 2 | 4 | 6 |
| Total number | 233 | 1,237 | 277 | 131 | 1,878 |
| Percent | 12 | 66 | 15 | 7 | 100 |

Note: Percentages may not sum to 100 because of rounding. School level for one school could not be determined.

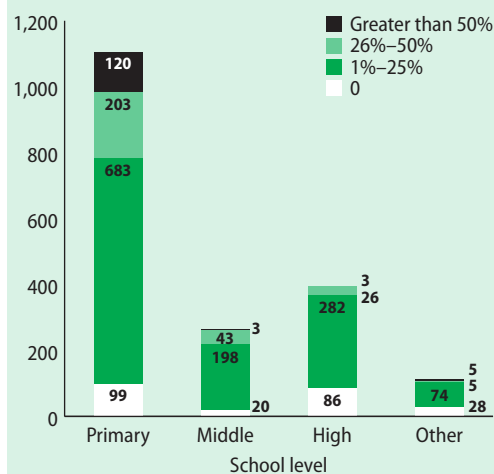
a. Primary schools cover from PreK–3 to PreK–8; middle schools cover from grades 4–7 to grades 4–9; high schools cover from grades 7–12 to grade 12 only; “other” is any configuration not falling within these categories, including ungraded.

Source: Author’s analysis of data from the Arizona Department of Education for 2007/08 and U.S. Department of Education (2009). See box 1 and appendix A for details.

middle school (1 percent) and high school (1 percent) levels.

School economic status (free or reduced-price lunch). The percentage of English language learner students varied with the percentage of students in a school who were eligible for free or reduced-price lunch. Of the schools with no students eligible for free or reduced-price lunch, 94 percent had no English language learner students, and 6 percent had 1–25 percent English language learner students (figure

FIGURE 1
Number of Arizona public schools by school level and percentage of English language learner students, 2007/08



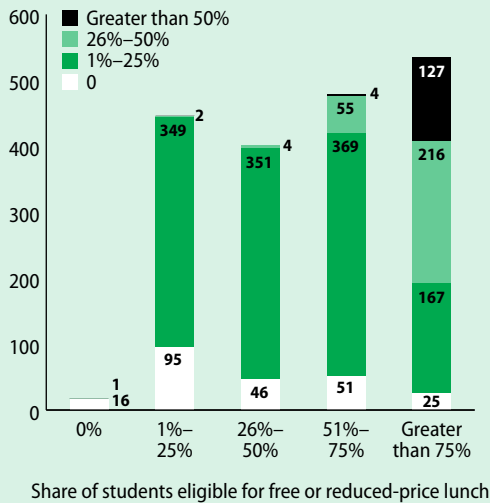
Note: Primary schools cover from PreK–3 to PreK–8, middle schools cover from grades 4–7 to grades 4–9, and high schools cover from grades 7–12 to grade 12 only; “other” is any configuration not falling within these categories, including ungraded.

Source: Author’s analysis of data from the Arizona Department of Education for 2007/08 and U.S. Department of Education (2009). See box 1 and appendix A for details.

2 and table 5). For the next three levels of free or reduced-price lunch eligibility (schools with 1–25 percent of students eligible, 26–50 percent, and 51–75 percent), only four schools had concentrations of English language learner students greater than 50 percent. But the majority of schools with more than 75 percent eligibility for free or reduced-price lunch had English language learner concentrations greater than 25 percent. Twenty-four percent had concentrations greater than 50 percent, 40 percent had concentrations of 26–50 percent, and 5 percent had no English language learner students.

School type. The concentration of English language learner students varied by school type (traditional, alternative, or charter). Charter schools had a higher percentage of schools

FIGURE 2
Number of Arizona public schools by percentage of students eligible for free or reduced-price lunch per school and percentage of English language learner students, 2007/08



Source: Author's analysis of data from the Arizona Department of Education for 2007/08. See box 1 and appendix A for details.

with no English language learner students (35 percent) than did alternative (22 percent) or traditional public schools (5 percent; table 6 and figure 3). Traditional public schools had a higher percentage of schools with greater than 50 percent English language learner students (9 percent) than did charter schools (2 percent) and alternative public schools (1 percent).

School locale. In all three school locales (urban, suburban, and rural),⁸ there were schools in each of the four levels of concentrations of English language learner students (0, 1–25 percent, 26–50 percent, greater than 50 percent; figure 4 and table 7). While the majority of public schools in all three locales had a concentration of English language learner students of 25 percent or less, there were differences across locales. In urban areas, 10 percent of schools had concentrations of English language learner students greater than 50 percent, whereas just 6

TABLE 5
Distribution of Arizona public schools by percentage of students eligible for free or reduced-price lunch and percentage of English language learner students, 2007/08

| Percentage of schools eligible for free or reduced-price lunch | Percentage of English language learner students | | | | Total number and percent |
|--|---|--------------|------------|-----------------|--------------------------|
| | 0 | 1–25 | 26–50 | Greater than 50 | |
| 0 | | | | | |
| Number | 16 | 1 | 0 | 0 | 17 |
| Row percent | 94 | 6 | 0 | 0 | 100 |
| Column percent | 7 | 0 | 0 | 0 | 1 |
| 1–25 | | | | | |
| Number | 95 | 349 | 2 | 0 | 446 |
| Row percent | 21 | 78 | 0 | 0 | 100 |
| Column percent | 41 | 28 | 1 | 0 | 24 |
| 26–50 | | | | | |
| Number | 46 | 351 | 4 | 0 | 401 |
| Row percent | 11 | 88 | 1 | 0 | 100 |
| Column percent | 20 | 28 | 1 | 0 | 21 |
| 51–75 | | | | | |
| Number | 51 | 369 | 55 | 4 | 479 |
| Row percent | 11 | 77 | 11 | 1 | 100 |
| Column percent | 22 | 30 | 20 | 3 | 26 |
| More than 75% | | | | | |
| Number | 25 | 167 | 216 | 127 | 535 |
| Row percent | 5 | 31 | 40 | 24 | 100 |
| Column percent | 11 | 14 | 78 | 97 | 28 |
| Total number | 233 | 1,237 | 277 | 131 | 1,878 |
| Percent | 12 | 66 | 15 | 7 | 100 |

Note: Percentages may not sum to 100 because of rounding.

Source: Author's analysis of data from the Arizona Department of Education for 2007/08. See box 1 and appendix A for details.

percent of rural schools and 2 percent of suburban schools had concentrations this high.

School county. All 15 counties had some public schools with no English language learner students, while 9 counties had public schools with greater than 50 percent English language learner students (map 1 and table 8). The six counties with no schools with concentrations of English language learner students greater

TABLE 6
Distribution of Arizona public schools by school type and percentage of English language learner students, 2007/08

| School type | Percentage of English language learner students | | | | Total number and percent |
|----------------------------------|---|--------------|------------|-----------------|--------------------------|
| | 0 | 1–25 | 26–50 | Greater than 50 | |
| Traditional public school | | | | | |
| Number | 62 | 939 | 236 | 120 | 1,357 |
| Row percent | 5 | 69 | 17 | 9 | 100 |
| Column percent | 27 | 76 | 85 | 92 | 72 |
| Alternative public school | | | | | |
| Number | 16 | 49 | 8 | 1 | 74 |
| Row percent | 22 | 66 | 11 | 1 | 100 |
| Column percent | 7 | 4 | 3 | 1 | 4 |
| Charter school | | | | | |
| Number | 155 | 249 | 33 | 10 | 447 |
| Row percent | 35 | 56 | 7 | 2 | 100 |
| Column percent | 67 | 20 | 12 | 8 | 24 |
| Total number | 233 | 1,237 | 277 | 131 | 1,878 |
| Percent | 12 | 66 | 15 | 7 | 100 |

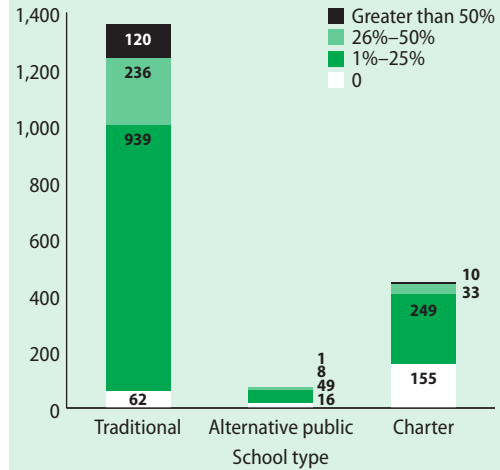
Note: Percentages may not sum to 100 because of rounding.

Source: Author's analysis of data from the Arizona Department of Education for 2007/08 and U.S. Department of Education (2009). See box 1 and appendix A for details.

than 50 percent had lower levels of total student enrollment. In 13 of the 15 counties, the majority of public schools had a concentration of English language learner students of 25 percent or less, while 11 percent or fewer public schools in these counties had concentrations of English language learner students greater than 50 percent. In the two remaining counties, Santa Cruz and Yuma, half or more of public schools had English language learner student concentrations of greater than 25 percent (including greater than 50 percent). For Santa Cruz, the largest number of public schools were those with greater than 50 percent English language learner students.

Plotting the location of Arizona public schools with concentrations of English language learner students of 0 percent (white dots on map 1) and those with concentrations greater than

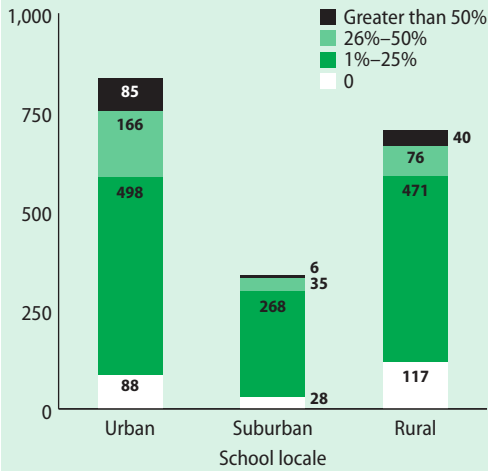
FIGURE 3
Number of Arizona public schools by school type and percentage of English language learner students, 2007/08



Source: Author's analysis of data from the Arizona Department of Education for 2007/08 and U.S. Department of Education (2009). See box 1 and appendix A for details.

50 percent (black dots) shows that the schools were not distributed uniformly across Arizona. Schools with greater than 50 percent English language learner students were located primarily in urban centers (Phoenix in Maricopa County and Tucson in Pima County); near the Mexican border; and in the northeastern areas, which include large American Indian populations. Schools with 0 percent English language learner students were located primarily in a central band running northwest to southeast, which includes the two counties with the largest total student enrollments, Maricopa and Pima. In Maricopa and Pima Counties, schools with 0 percent concentrations of English language learner students were located in close proximity to schools with greater than 50 percent concentrations. In the counties with lower levels of total student enrollment, schools with these two concentration levels were generally more distant from each other, if located in the same county at all.

FIGURE 4
Number of public schools by school locale and percentage of English language learner students, 2007/08



Source: Author's analysis of data from the Arizona Department of Education for 2007/08 and U.S. Department of Education (2009).

Study strengths and limitations

A key strength of this study is its analysis of the entire population of Arizona public schools and students and the small amount of missing data.

There are also three key limitations. First, this study may be conservative in identifying students with English fluency difficulties because it considers only students designated as English language learner students during the 2007/08 school year. Students designated as English language learners in previous years were not included nor were non-native English speakers who were never designated as English language learner students because they passed Arizona's English language proficiency test. In both groups, there will likely be some, possibly many, students who are less proficient in English than native English speakers and who will continue to have English fluency difficulties for some time after passing Arizona's (or any state's) English language proficiency test. Including both these groups would have raised

TABLE 7
Distribution of Arizona public schools by school locale and percentage of English language learner students, 2007/08

| School locale | Percentage of English language learner students | | | | Total number and percent |
|---------------------|---|--------------|------------|-----------------|--------------------------|
| | 0 | 1–25 | 26–50 | Greater than 50 | |
| Urban | | | | | |
| Number | 88 | 498 | 166 | 85 | 837 |
| Row percent | 11 | 60 | 20 | 10 | 100 |
| Column percent | 38 | 40 | 60 | 65 | 45 |
| Suburban | | | | | |
| Number | 28 | 268 | 35 | 6 | 337 |
| Row percent | 8 | 80 | 10 | 2 | 100 |
| Column percent | 12 | 22 | 13 | 5 | 18 |
| Rural | | | | | |
| Number | 117 | 471 | 76 | 40 | 704 |
| Row percent | 17 | 67 | 11 | 6 | 100 |
| Column percent | 50 | 38 | 27 | 31 | 37 |
| Total number | 233 | 1,237 | 277 | 131 | 1,878 |
| Percent | 12 | 66 | 15 | 7 | 100 |

Note: Percentages may not sum to 100 because of rounding.

Source: Author's analysis of data from the Arizona Department of Education for 2007/08 and U.S. Department of Education (2009). See box 1 and appendix A for details.

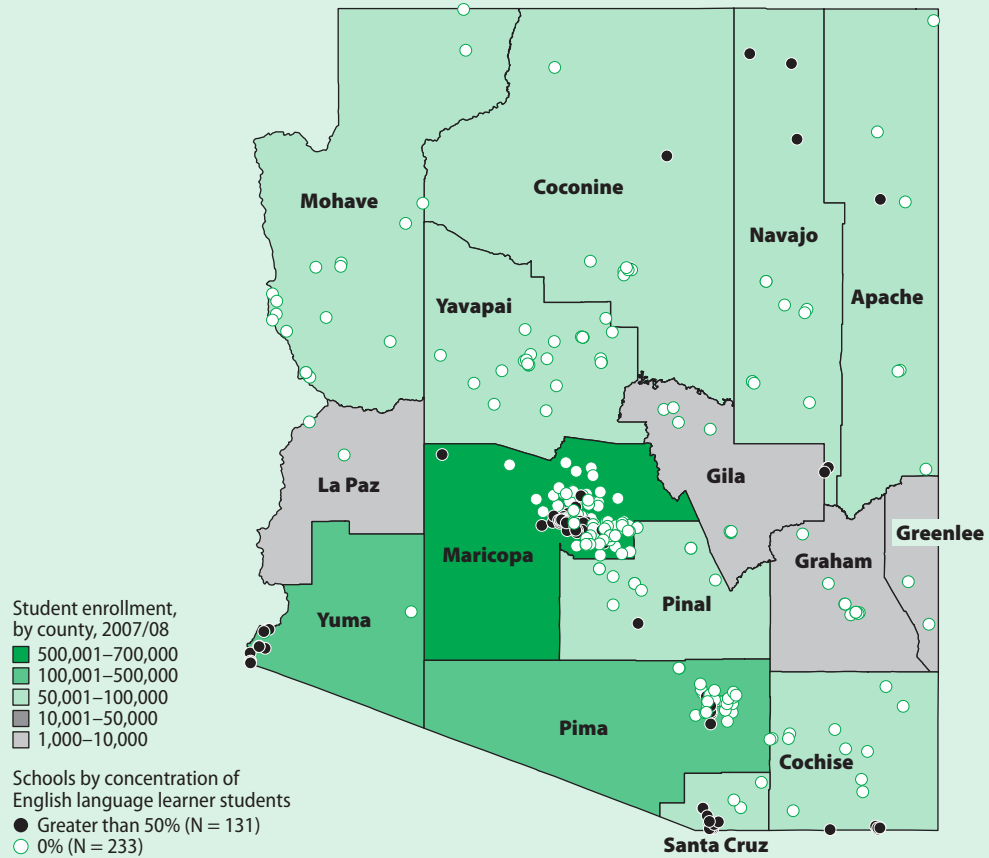
the percentage of non-native English-speaking students in the analysis, especially in schools with consistently high numbers of English language learner students.

Second, this study reported results by individual school characteristics. Not analyzed was the distribution of English language learner students in schools grouped by multiple, overlapping characteristics, such as school level and eligibility for free or reduced-price lunch or school type and location.

Third, data on school type from the Arizona Department of Education web site was for 2008/09, not 2007/08. This difference is not likely to have had any substantive impact: the designations of traditional public, alternative, and charter probably did not change for individual schools during the one-year time span of the study.

MAP 1

Locations of Arizona public schools with 0 percent English language learner students and schools with greater than 50 percent English language learner students, by county, 2007/08



Schools in each county, 2007/08

| County | Number of schools | Concentration of English language learner students | |
|----------|-------------------|--|----|
| | | >50% | 0% |
| Apache | 39 | 1 | 5 |
| Cochise | 61 | 6 | 10 |
| Coconino | 46 | 2 | 7 |
| Gila | 31 | 0 | 7 |
| Graham | 21 | 0 | 9 |
| Greenlee | 6 | 0 | 2 |
| La Paz | 13 | 0 | 2 |

| County | Number of schools | Concentration of English language learner students | |
|------------|-------------------|--|----|
| | | >50% | 0% |
| Maricopa | 980 | 81 | 90 |
| Mohave | 57 | 0 | 17 |
| Navajo | 55 | 6 | 7 |
| Pima | 322 | 8 | 38 |
| Pinal | 83 | 1 | 9 |
| Santa Cruz | 24 | 10 | 3 |
| Yavapai | 83 | 0 | 26 |
| Yuma | 57 | 16 | 1 |

Source: Author’s analysis of data from the Arizona Department of Education for 2007/08 and U.S. Department of Education (2009). See box 1 and appendix A for details.

TABLE 8
Distribution of Arizona public schools by county and percentage of English language learner students, 2007/08

| County | Percentage of English language learner students | | | | Total number and percent |
|-----------------|---|------|-------|-----------------|--------------------------|
| | 0 | 1–25 | 26–50 | Greater than 50 | |
| Apache | | | | | |
| Number | 5 | 21 | 12 | 1 | 39 |
| Row percent | 13 | 54 | 31 | 3 | 100 |
| Cochise | | | | | |
| Number | 10 | 38 | 7 | 6 | 61 |
| Row percent | 16 | 62 | 11 | 10 | 100 |
| Coconino | | | | | |
| Number | 7 | 26 | 11 | 2 | 46 |
| Row percent | 15 | 57 | 24 | 4 | 100 |
| Gila | | | | | |
| Number | 7 | 23 | 1 | 0 | 31 |
| Row percent | 23 | 74 | 3 | 0 | 100 |
| Graham | | | | | |
| Number | 9 | 12 | 0 | 0 | 21 |
| Row percent | 43 | 57 | 0 | 0 | 100 |
| Greenlee | | | | | |
| Number | 2 | 4 | 0 | 0 | 6 |
| Row percent | 33 | 67 | 0 | 0 | 100 |
| La Paz | | | | | |
| Number | 2 | 11 | 0 | 0 | 13 |
| Row percent | 15 | 85 | 0 | 0 | 100 |
| Maricopa | | | | | |
| Number | 90 | 651 | 158 | 81 | 980 |
| Row percent | 9 | 66 | 16 | 8 | 100 |
| Mohave | | | | | |
| Number | 17 | 38 | 2 | 0 | 57 |
| Row percent | 30 | 67 | 4 | 0 | 100 |
| Navajo | | | | | |
| Number | 7 | 33 | 9 | 6 | 55 |
| Row percent | 13 | 60 | 16 | 11 | 100 |
| Pima | | | | | |
| Number | 38 | 229 | 47 | 8 | 322 |
| Row percent | 12 | 71 | 15 | 2 | 100 |
| Pinal | | | | | |
| Number | 9 | 70 | 3 | 1 | 83 |
| Row percent | 11 | 84 | 4 | 1 | 100 |

(CONTINUED)

TABLE 8 (CONTINUED)

Distribution of Arizona public schools by county and percentage of English language learner students, 2007/08

| County | Percentage of English language learner students | | | | Total number and percent |
|------------------------|---|-------|-------|-----------------|--------------------------|
| | 0 | 1–25 | 26–50 | Greater than 50 | |
| Santa Cruz | | | | | |
| Number | 3 | 9 | 2 | 10 | 24 |
| Row percent | 13 | 38 | 8 | 42 | 100 |
| Yavapai | | | | | |
| Number | 26 | 53 | 4 | 0 | 83 |
| Row percent | 31 | 64 | 5 | 0 | 100 |
| Yuma | | | | | |
| Number | 1 | 19 | 21 | 16 | 57 |
| Row percent | 2 | 33 | 37 | 28 | 100 |
| Total number | 233 | 1,237 | 277 | 131 | 1,878 |
| Percent of all schools | 12 | 66 | 15 | 7 | 100 |

Note: Percentages may not sum to 100 because of rounding.

Source: Author's analysis of data from the Arizona Department of Education for 2007/08 and U.S. Department of Education (2009). See box 1 and appendix A for details.

Appendix A Data and analysis

The data used in this study came from three main sources.

The Arizona Department of Education provided anonymous, individual student data for all public school students (traditional, alternative, and charter) for the 2007/08 school year (table A1).

The Arizona Department of Education also provided a list of all public schools that had one or more grades from kindergarten through grade 12. There were 1,881 schools on this list.

These data made it possible to calculate the following information for every public school in Arizona with student data for 2007/08:

- Total student enrollment.
- English language learner student enrollment.
- English language learner student enrollment as a percentage of total enrollment.
- Students eligible to receive free or reduced-price lunch as a percentage of total student enrollment.

TABLE A1
Student information provided by the Arizona Department of Education for the 2007/08 school year

| Type of information | Data provided |
|---|---|
| Students attending Arizona public schools | Anonymous, individual student ID number |
| Name of attending school | Arizona school ID number |
| Name of attending school district | Arizona district ID number |
| English language learner student | Identification as English language learner student (Yes/No) |
| Eligible to receive free or reduced-price lunch | Identification as eligible to receive free or reduced-price lunch (free/reduced/No) |

Source: Arizona Department of Education data for 2007/08.

From the Arizona Department of Education web site, publicly available data for 2008/09 yielded the following lists of Arizona schools:

- Official charter schools as designated by state law.
- Alternative schools.
- Traditional public schools (neither charter nor alternative).

The U.S. Department of Education (2009) Common Core of Data provided school-level information for school year 2007/08. Data on school level and location were used to describe the characteristics of Arizona public schools (table A2).

TABLE A2
Data on school level and location from the Common Core of Data, 2007/08

| School characteristic | Variable | Description |
|-----------------------|-------------------------------|--|
| School level | School level code | <ul style="list-style-type: none"> • <i>Primary</i>: from PreK–3 to PreK–8. • <i>Middle</i>: from grades 4–7 to grades 4–9. • <i>High</i>: from grades 7–12 to grade 12 only. • <i>Other</i>: any other configuration not falling in the above three categories, including ungraded. |
| Location, geographic | School longitude and latitude | Global map coordinates |
| Location, locale | Urban-centric locale | <p>The 12 Common Core of Data categories that describe a school’s location relative to populous areas were condensed into three groups:</p> <ul style="list-style-type: none"> • <i>Urban</i>: (1) city: large, (2) city: midsize, and (3) city: small. • <i>Suburban</i>: (4) suburb: large, (5) suburb: midsize, (6) suburb: small, and (7) town: fringe. • <i>Rural</i>: (8) town: distant, (9) town: remote, (10) rural: fringe, (11) rural: distant, and (12) rural: remote. <p>These three groups were formed based on Common Core of Data category labels and population hierarchy from most concentrated (city: large) to least concentrated (rural: remote).</p> |

Source: U.S. Department of Education (2009).

The three databases were merged, with school-level elements linked through the commonly shared “State (AZ) School ID.”

Some data were missing from these databases. To the extent possible, missing data were filled in through searches of the Arizona Department of Education web site and the web sites of individual schools. Students with missing data (less than 1 percent of student records) were excluded from the study. In addition, 3 of the 1,881 public schools had missing student enrollment data for 2007/08 and were excluded from the study. For all but 3 of the remaining 1,878 public schools that had missing school-level data points, the missing data were found. (The missing data were school level for one school and school locale for two others.) So there were 1,878 schools in the study.

English language learner students per school were calculated using the average total

number of English language learner students per school on the three calculation days in Arizona (October 1, 2007; December 15, 2007; February 1, 2008) and rounding to the tenths place. Results presented in tables and figures were rounded to the units place.

Schools were grouped by the percentage of English language learner students: 0 percent, 1–25 percent, 26–50 percent, and greater than 50 percent. These groupings are the same as those used in Gándara et al. (2003).

Counties were grouped by size of total student enrollment: 1,000–10,000; 10,001–50,000; 100,001–500,000; and 500,001–700,000; no counties had enrollments in the 50,001–100,000 range.

The mapping software program, MapInfo, was used to construct map 1 using the longitude and latitude of each school.

Notes

1. In general, “English language learner students” are students in grades K–12 whose primary or first language is not English and who have not passed their state’s English language proficiency test. Arizona’s test is the Arizona English Language Learner Assessment.
2. This technical brief is one of three Regional Educational Laboratory West research projects to help Arizona leaders better understand the issues facing this important student population. One study examines student mobility in Arizona, with a focus on English language learner students. Another analyzes patterns of English language learner test scores on the Arizona English Language Learner Assessment and on the state’s subject matter content test (Arizona’s Instrument to Measure Standards).
3. Arizona’s alternative schools are schools operated by a school district with “a mission statement that clearly identifies its purpose and intent to serve a specific student population that will benefit from an alternative school setting.” These specific student populations include students with behavioral issues, dropout students, students one year or more behind in academic credits or exhibiting a pattern of failure, pregnant or parenting students, and adjudicated youth. For further details, see Arizona Department of Education (2002).
4. The group size of 40, which was approved in 2005, is an increase from the previous group size of 30 (Arizona Department of Education 2003; U.S. Department of Education 2005).
5. Analyzing California Department of Education data, Gándara and Rumberger (2009, p. 758) report that for grade 10 English language learner students in 2005, “only 3% were able to pass the state’s English language arts (ELA) test.”
6. The focus of these English Language Development pull-out classes is direct instruction of “phonology (pronunciation—the sound system of a language), morphology (the internal structure and forms of words), syntax (English word order rules), lexicon (vocabulary), and semantics (how to use English in different situations and contexts) . . . [as well as] reading and writing, aligned to the Arizona K–12 English Language Learner Proficiency Standards” (Arizona Department of Education 2008a, p. 3). Students remain in the program until they pass Arizona’s English language proficiency test.
7. Student enrollment for 2007/08 was calculated as the average of student enrollments on three dates: October 1, 2007; December 15, 2007; and February 1, 2008.
8. For this analysis, the 12 values for *urban-centric locale* from the Common Core of Data (U.S. Department of Education 2009) were condensed into three categories that describe a school’s location relative to populous areas: *urban* (includes city: large, city: midsize, and city: small); *suburban* (includes suburb: large, suburb: midsize, suburb: small, and town: fringe); and *rural* (includes town: distant, town: remote, rural: fringe, rural: distant, and rural: remote). See appendix A for more description.

References

- Arizona Department of Education. (2002). *Arizona LEARNS: alternative school definition*. Phoenix, AZ. Retrieved from www.azed.gov/azlearns/2001-2002/A7-AltVSchDefinition.pdf.
- Arizona Department of Education. (2003). *State of Arizona Consolidated State Application Accountability Workbook*. Phoenix, AZ: Arizona Department of Education.
- Arizona Department of Education. (2008a). *Structured English immersion models of the Arizona English Language Learners Task Force*. Retrieved February 27, 2008, from www.ade.state.az.us/ELLTaskForce/2008/SEIModels05-14-08.pdf.
- Arizona Department of Education, Office of English Language Acquisition Services. (2008b). *HB 2064 key components: review and update* (PowerPoint presentation). Retrieved March 2, 2009, from www.ade.state.az.us/oelas/Presentations/OELASRegionalTrainings-HB2064-August2008.pdf.
- Arizona House of Representatives. (2006). House Bill 2064. Retrieved February 26, 2009, from www.azleg.gov/legtext/47leg/2r/bills/hb2064c.pdf.
- Arizona State Legislature. (2006). Revised Statutes, article 3.1, sec 15-756–757. *English language education for children in public schools*. Retrieved February 27, 2008, from www.azleg.gov/legtext/47leg/2r/bills/hb2064c.pdf.
- Berliner, D. (2006). Our impoverished view of educational reform. *Teachers College Record*, 108, 949–995.
- Berry, B. (2008). Staffing high-needs schools: insights from the nation's best teachers. *Phi Delta Kappan*, 89(10), 766–771.
- Bodfield, R. (2008, August 30). ELL students' class time isn't great, but it's good enough. *Arizona Daily Star*. Retrieved March 4, 2009, from www.azstarnet.com/metro/255244.
- Capps, R., Fix, M., Murray, J., Ost, J., Passel, J., and Herwanto, S. (2005). *The new demography of America's schools: immigration and the No Child Left Behind Act*. Washington, DC: Urban Institute.
- Carhill, A., Suarez-Orozco, C., and Paez, M. (2008). Explaining English language proficiency among adolescent immigrant students. *American Educational Research Journal*, 45(4), 1155–1179.
- Cobb, C. D., and Glass, G. V. (2009). School choice in a post-desegregation world. *Peabody Journal of Education*, 84(2), 262–279.
- Gándara, P., and Rumberger, R. (2009). Immigration, language, and education: how does language policy structure opportunity? *Teachers College Record*, 111(3), 750–782.
- Gándara, P., Rumberger, R., Maxwell-Jolly, J., and Callahan, R. (2003, October 7). English learners in California schools: unequal resources, unequal outcomes. *Educational Policy Analysis Archives*, 11(36). Retrieved December 15, 2008, from <http://epaa.asu.edu/epaa/v11n36/>.
- Honawar, V. (2009). Teacher gap: training gets boost; faced with a shortage of teachers specializing in English as a second language, states and districts move to grow their own. *Education Week*, 28(17), 28–29.
- Horwitz, A. R., Uro, G., Price-Baugh, R., Simon, C., Uzzell, R., Lewis, S., and Casserly, M. (2009, October). *Succeeding with English language learners: lessons learned from the great city schools*. Washington, DC: Council of Great City Schools. Retrieved November 10, 2009, from www.cgcs.org/publications/ELL_Report09.pdf.
- Jia, G., and Aaronson, D. (2003). A longitudinal study of Chinese children and adolescents learning English in the United States. *Applied Psycholinguistics*, 24, 131–161.
- Koedel, C., Betts, J. R., Rice, L. A., and Zau, A. (2009). The integrating and segregating

- effects of school choice. *Peabody Journal of Education*, 84(2), 110–129.
- Parrish, T., Merickel, A., Perez, M., Linqanti, R., Socia, M., Spain, A., Speroni, C., Esra, P., Brock, L., and Delancey, D. (2006). *Effects of the implementation of Proposition 227 on the education of English language learners, K–12: findings from a five-year evaluation*. Palo Alto, CA: American Institutes for Research.
- Quality Counts. (2009). Portrait of a population: how English language learners are putting schools to the test. *Education Week*, 28(17).
- Rumberger, R., and Anguiano, B. A. (2004). *Understanding and addressing the California Latino achievement gap in early elementary school*. Santa Barbara, CA: UC Santa Barbara, Linguistic Minority Research Institute. Retrieved March 2, 2009, from www.lmri.ucsb.edu/publications/04_rumberger-arellano.pdf.
- Rumberger, R., and Gándara, P. (2004). Seeking equity in the education of California's English learners. *Teachers College Record*, 106(10), 2032–2056.
- Rumberger, R., Gándara, P., and Merino, B. (2006). Statistical brief: where California's English learners attend school and why it matters. *UC LMRI Newsletter*, 15(2). Retrieved March 6, 2009, from <http://lmri.ucsb.edu/publications/newsletters/v15n2.pdf>.
- Smith-Davis, J. (2004). The new immigrant student needs more than ESL. *The Education Digest*, 69(8), 21–26.
- U.S. Department of Education. (2005, September 15). *Decision letter on request to amend Arizona accountability plan*. Retrieved February 26, 2009, from www.ed.gov/admins/lead/account/letters/acaz3.html.
- U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. (2009). Common Core of Data, Build a table school data for 2007/08. Retrieved September 14, 2009, from <http://nces.ed.gov/ccd/bat/index.asp>.