



Arizona's Invisible Achievement Gap

*Education Outcomes of Students in Foster Care
in the State's Public Schools*

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This report presents the findings of a study funded by the Arizona Venture Fund for Quality Education at the Arizona Community Foundation. It is a replication of a report on the education outcomes of students in foster care in California—*The Invisible Achievement Gap, Part 1: Education Outcomes of Students in Foster Care in California’s Public Schools* (2013). The California study, funded by the Stuart Foundation, was conducted by the same lead authors (Vanessa X. Barrat and BethAnn Berliner) from WestEd. Accordingly, some of that report’s format and language have been adapted for use in this report.

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Executive summary

One of the most vexing problems for Arizona, a state that is committed to providing high-quality public education for all students, has been the persistently low academic achievement of racial/ethnic minority students, English language learners, students raised in poverty, and students with disabilities. For many years, closing these achievement gaps has been a priority. Yet, until recently, reform efforts have rarely acknowledged another group of students who also persistently underperform: students in foster care.

As is the case for many other states, Arizona has had little statewide information about the education of school-aged children and youth who are in the child welfare system and for whom the state is legally responsible. This is largely due to challenges related to the availability, collection, and sharing of information about these students across the education and child welfare systems, which do not have a common unique student identifier for students who are in both systems. As a result, the education needs of these students have often gone unrecognized and unmet—leaving many of them trailing their classmates in academic achievement. It is this achievement gap that has been largely invisible to educators and child welfare professionals alike.

This report, *Arizona’s Invisible Achievement Gap: Education Outcomes of Students in Foster Care in the State’s Public Schools*, sponsored by the Arizona Venture Fund for Quality Education at the Arizona Community Foundation, contributes to a growing body of research that finds that students in foster care constitute a distinct subgroup of academically at-risk students—a message that has not yet been clearly or fully translated from research to policy to practice.

The study on which this report is based breaks new ground in Arizona by linking individual student education data and child welfare data to create the state’s first-ever education snapshot of all K–12 students in foster care. It describes the previously undocumented achievement gap for Arizona students in foster care, by comparing their academic outcomes to those of the state’s K–12 population as a whole and to other at-risk subgroups with documented achievement gaps, specifically, low-socioeconomic-status (low-SES) students, English language learners, and students with disabilities. Given the strong association that research has found between family poverty and children’s placement in foster care, the comparison between students in foster care and low-SES students was particularly important for uncovering any differences in education outcomes for these two student populations.

The findings reported below are especially timely given current efforts to improve accountability in the state’s child welfare system. Taken together, they show that Arizona students in foster care have unique characteristics that justify their identification as a separate at-risk student subgroup and that this subgroup has a significant achievement gap compared to the other student groups. These findings serve as new evidence for policymakers to use in pursuing efforts to improve the academic success of students in foster care.

A count of the number of students in foster care and the findings follow.

Understanding students in foster care—by the numbers.

In Arizona, 1,108,795 K–12 students ages 5–17 were enrolled in the state’s public schools during the 2012/13 school year. Among them were 10,770 students—about 1 percent of students—who had spent a period of time in foster care that year.

In 2012/13, about 1 in 4 Arizona public school districts reported enrolling no students in foster care and the majority of districts reported having between 1 and 49 students in foster care. In fact, for the time period of this study, the majority of Arizona students in foster care were enrolled in a small number of districts. Specifically, over two thirds were enrolled in 11 percent of the state’s public school districts, with each of these districts enrolling at least 100 students in foster care.

Finding 1: Students in foster care constituted an at-risk subgroup that was distinct from low-SES students.

In this study, students in foster care had a different demographic profile than their K–12 classmates statewide and than their classmates who were classified as low SES. Students in foster care were more likely than low-SES students to be African American or White, but less likely than low-SES students to be Hispanic or to be designated as English language learners. They were also classified with a disability at twice the rate of both comparison groups, and, among students with disabilities, students in foster care were over four times more likely to be classified with an emotional disturbance than other students statewide.

Finding 2: Students in foster care were more likely than other students to change schools during the school year.

Students in foster care experienced much higher rates of school mobility than other students. Only 58 percent of students in foster care attended the same school for the full school year. In contrast, about 90 percent of the low-SES and the statewide student populations attended the same school all year. Furthermore, nearly 1 in 7 students in foster care attended three or more schools during the school year, a level of school mobility experienced by only about 1 percent of the low-SES and statewide student populations.

Finding 3: Students in foster care were more likely than the statewide student population to be enrolled in low-performing schools.

At the time of the study, Arizona used the A–F Letter Grade Accountability System, an annual measure of school test-score performance to rate schools. Based on these ratings, students in foster care, like low-SES students, were consistently less likely to attend the state’s highest-performing schools and more likely than the statewide population to attend the state’s low-performing schools. Some 17 percent attended schools rated with a letter grade of A, the highest-performing schools in the state, nearly half the percentage of all students (30 percent) who attended the state’s highest-performing schools.

Finding 4: Students in foster care were more likely to attend a nontraditional school than other students.

Across grades K–12, some 11 percent of students in foster care attended nontraditional schools—such as alternative schools, juvenile justice schools, and non-public schools—compared with about 3 percent each for the other student populations. In high school, nearly a third attended nontraditional schools, more than double the enrollment of low-SES students and triple the enrollment of the statewide student population.

Finding 5: Students in foster care had the lowest participation rate in Arizona’s statewide testing program.

At the time of this study, all Arizona public school students in grades 3–8 and 10 took Arizona’s Instrument to Measure Standards (AIMS) in mathematics, reading, and writing. In addition, students of any grade could be administered the Arizona English Language Learner Assessment (AZELLA), a standards-based assessment that measures English language proficiency for students who have been identified as second language learners. At every grade level in which testing occurred, students in foster care were less likely than the other student groups to participate in statewide testing. Whereas 94 percent took a statewide assessment in grades 3 and 4, on par with the other subgroups, the rate of test-taking decreased to 81 percent in grade 8 and to 77 percent during the last year of testing in grade 10.

Finding 6: Statewide testing showed an achievement gap for students in foster care.

AIMS results showed that students in foster care fell short in meeting or exceeding standards in mathematics and reading.

Only 40 percent of students in foster care met or exceeded standards in mathematics, far below the percentage of students who met or exceeded standards for low-SES and all students. The achievement rates of students in foster care who were also classified as English language learners or as students with disabilities were below the rates for all English language learners and all students with disabilities. English language learners in foster care had the lowest levels of mathematics achievement of all subgroups (13 percent).

Similarly, only 61 percent of students in foster care met or exceeded standards in reading, far below the percentage of students who met or exceeded standards for low-SES and all students but above the percentage for English language learners or students with disabilities. The achievement rates of students in foster care who were also classified as English language learners or as students with disabilities were below the rates for all English language learners and all students with disabilities. English language learners in foster care had the lowest level of reading achievement of all subgroups (20 percent).

Finding 7: High school students in foster care had the highest dropout rate and among the lowest graduation rates.

During 2012/13, across the high school grades, students in foster care were more likely than all comparison groups to drop out. The single-year dropout rate for students in foster care was 12 percent in grade 9, three times greater than the percentage for low-SES

students, English language learners, or student with disabilities (each at 4 percent), and four times the percentage of all students statewide (3 percent). The single-year dropout rate increased each year for all groups but was consistently higher for students in foster care, rising to 18 percent in grade 12, and peaking at 21 percent for students in foster care with disabilities.

Finally, the 2012/13 graduation rate for all grade-12 students statewide was 78 percent, but for students in foster care, it was just 33 percent—one of the lowest rates among the at-risk student subgroups. And among students in foster care, only 28 percent who were also classified with disabilities graduated from high school.

Acknowledgments

We thank our many colleagues who contributed to this report. This study would not have been possible without the vision, dedication, and expertise of our partners at FosterEd Arizona, Jesse Hahnel, Peter Hershberger, and Michelle Traiman. Under their stewardship and advocacy, the findings in this report will strengthen the field of child welfare and outcomes for Arizona's children and youth in foster care.

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Introduction

“Children in foster care encounter challenges that most of us can’t even imagine. Many experience abuse, neglect, and threats in their homes from people they love and trust, and are removed from their families. They often move from placement to placement before a permanent arrangement is found, changing schools, losing friends, and facing an uncertain future.

“Despite the pain and disruption in their lives, many of these kids are resilient. While some do well in school and overcome the odds stacked against them to build productive lives as young adults, too many don’t make it. In Arizona, we need better ways for all of us—especially those of us entrusted to protect children professionally—to ensure that they have a brighter future!”

— Arizona career educator

One of the most vexing problems for Arizona, a state that is committed to providing a high-quality public education for all students, has been the persistently low academic achievement of racial/ethnic minority students, English language learners, students raised in poverty, and students with disabilities. For many years, closing these achievement gaps has been a priority for the state’s education reformers. Yet, these reform efforts have rarely acknowledged another group of students who also persistently underperform: students in foster care.

While Arizona tracks the progress of other academically vulnerable student groups, it has had little statewide information about the education of school-age children who are in the foster care system and for whom the state is legally responsible. As is also the case for many other states, Arizona has not tracked how many of these students attend public schools, where they are enrolled, how well they fare academically, or whether they receive the education supports and services they need for success. At the school level, classroom teachers and other educators are generally unaware of students’ foster care status. This is largely due to challenges related to the availability, collection, and sharing of information about these students across the education and child welfare systems, which have neither a shared definition of the foster-care population nor a common unique student identifier for students who are in both systems. As a result, the education needs of these students have often gone unrecognized and unmet—leaving many of them trailing their classmates in academic achievement.

It is this achievement gap that has been largely invisible to educators and child welfare professionals alike.

“My best memory of school is those teachers who took the time to listen to me. Being seen and heard was empowering.”

— Arizona student in foster care

Each year, about 25,000 children from birth to age 18 in communities across Arizona are found through the state’s Department of Child Safety to be unsafe in their homes due to the existence or risk of abuse or neglect. These children may be removed from their homes and placed in the foster care system, with the goal of finding a safe and permanent home for each child, either through reunification with the child’s family (after the family has met certain conditions), through adoption, or through placement with a permanent legal guardian. While these children are in the foster care system, the state assumes legal responsibility for their safety, health, and well-being and should also be accountable for ensuring that they thrive in school.

Arizona’s public schools, which play a critical role in the successful development of all children, have an especially important role to play for students in foster care. When these students are able to continue at the same school, familiar teachers and friends may help lessen the distress of being removed from their family home or, as happens for some students, being moved from one foster placement to another. In addition, for students in foster care, what they learn and experience at school is all the more influential in seeding their economic, social, and personal aspirations, opportunities, and accomplishments over their lifetimes.

Unfortunately, for too many students in foster care, academic success remains elusive.

A growing amount of research has begun to make the case that students in foster care are especially at risk for school failure, as evidenced by poor grades and high rates of absenteeism, grade retention, disciplinary referrals, and dropping out of high school.¹ Yet the message that students in foster care comprise a distinct subgroup of at-risk students has not yet been clearly or fully translated from research to state policy to local practice.

“It’s easy being a foster care kid to go unnoticed. I feel it’s important that schools engage with us. I know it made a big difference in my life.”

— *Arizona student in foster care*

Arizona’s Invisible Achievement Gap, sponsored by FosterEd Arizona and the Arizona Community Foundation, breaks new ground by linking statewide education and child welfare data to create a first-ever education snapshot of all K–12 students in foster care in Arizona. The study report begins by describing the demographic characteristics of these students, the frequency with which they change schools, and the types of school they attend. Given the strong association between family poverty and children’s placement in foster care,² and given the federal policy of designating all students in foster care as eligible for the school free or reduced-price lunch program and, thus, as having low socioeconomic status (SES), the study includes comparisons of students in foster care with low-SES students. The intent was to uncover any differences in the education experiences and outcomes of these socioeconomically similar student groups. To provide a broader

¹ Barrat & Berliner, 2013; Christian, 2003; Leone, & Weinberg, 2010; Smithgall, Gladden, Howard, George, & Courtney, 2004; Wulczyn, Smithgall, & Chen, 2009.

² Barth, Wildfire, & Green, 2006; Putnam-Hornstein, Needell, King, & Johnson-Motoyama, 2013.

perspective, the study also compares students in foster care with the state's K–12 population as a whole.

The report then turns to academic achievement and education outcomes for students in foster care. Here, in addition to comparing these students to the statewide student population and to low-SES students, it compares them to other at-risk subgroups with documented achievement gaps, specifically students who are classified as English language learners, and students classified with disabilities and who are eligible to receive special education services.

Taken together, this study's findings show that Arizona students in foster care have unique characteristics that justify their identification as a separate at-risk student subgroup and that this subgroup has a significant achievement gap that needs to be accounted for and addressed. These findings serve as new evidence for, and add urgency to, conversations about what policymakers and educators can and must do to continue to improve the odds of academic success for students in foster care.

This report is especially timely. With strong bipartisan support from state leaders to better support Arizona's most vulnerable children, in 2014 new laws created and funded the Department of Child Safety. This followed an outcry for reform after the public learned that several thousands of cases of reported abuse and neglect were not investigated, at a time when case reports were also increasing dramatically. To address this backlog and decades of problems made worse by budget cuts in recent years, the state is determined to improve accountability and oversight of child welfare by increasing staffing, training, and resources; strengthening the system for responding to case reports; and better supporting distressed families. In this context of reform, policymakers are also asking new questions about how well students in foster care fare academically in Arizona's public K–12 schools.

The Arizona Department of Child Safety and the Arizona Department of Education made possible this first-ever description of the achievement gap of Arizona's students in foster care by collaborating to share data and by making a far-reaching commitment to improve the education outcomes for students in foster care.

In providing a more complete education picture of Arizona students in foster care, this study serves multiple purposes:

- Raising awareness among education and child welfare policymakers and practitioners, as well as the courts, about the particular academic vulnerability of students in foster care.
- Creating a baseline for tracking the academic progress of this student group.
- Providing critical information to use in strengthening policy and practice aimed at narrowing the achievement gap between students in foster care and their classmates.

- Underscoring the need for accessible linked, comprehensive, and current education and child welfare data to inform and facilitate greater collaboration across agencies in order to better meet the needs of this particular student population.

As one of the few states in the nation to examine the academic progress of its students in foster care, *Arizona's Invisible Achievement Gap* calls for state policymakers at all levels to do more to support the success of these students.

Data and Definitions

The findings of this study are derived from a unique database that links statewide individual student education data from the Arizona Department of Education (ADE) longitudinal data system with individual child records from the Arizona Department of Child Safety (DCS). For this study, these two data sources were matched to identify the education records of all K–12 students ages 5–17 who had a foster care placement between August 1, 2012 and June 1, 2013. The demographic characteristics and the types of school attended by students in foster care are analyzed and compared with the statewide K–12 student population as well as with the population of students classified as coming from a low-socioeconomic background. The education outcomes of students in foster care are also compared with these two groups (i.e., all students statewide and low-socioeconomic-status students), as well as with other at-risk student subgroups with documented achievement gaps, specifically English language learners and students with disabilities. Each student population was defined as follows:

Statewide student population is composed of all K–12 students enrolled in an Arizona public school during school year 2012/13 who were 5–17 years old as of September 1, 2012 (1,108,795 students). All of the student subgroups described below are part of this statewide student population, and the subgroups are not mutually exclusive.

Students in foster care are students with an out-of-home foster care placement at any point during the 2012/13 school year. About 1 percent of the statewide student population had a foster care placement.

Low-socioeconomic-status (low-SES) students are those whose family income qualifies the student for eligibility for a school's free or reduced-price lunch program. Approximately half of the statewide student population was classified as low SES.

English language learners are students whose primary language is not English and who have a less than proficient overall proficiency level on the Arizona English Language Learner Assessment (AZELLA). Those students are considered to lack the level of English language skills that is necessary to succeed in the school's regular instructional program and are enrolled in special language services. Around 6 percent of students in the statewide student population were classified as English language learners.

Students with disabilities are students classified with a disability who are eligible for special education services; around 11 percent of the statewide student population was eligible for those services.

Because students in foster care have the option to exit the child welfare system at age 18, the study population was restricted to students under age 18 at the start of school year 2012/13. This restriction affects the comparability of the study estimates with other statewide reports. Additionally, the number of students in foster care reported by district is based on students' first school of enrollment during school year 2012/13. Given the changing foster care status of these students, and their high rates of school mobility, the number of students reported by district is likely an undercount. Further details about the study methodology are presented in appendix A.

Understanding students in foster care—by the numbers

In Arizona, 1,108,795 K–12 students ages 5–17 were enrolled in the state’s public schools during the 2012/13 school year. Among these students were 10,770—about 1 percent of the students—who spent a period of time in foster care that year.

In that same school year, Arizona had 687 school districts, including 228 public school districts (33 percent) and 412 public charter entities (60 percent). All other school districts were composed mainly of juvenile justice schools, non-public schools (i.e., approved private day schools that serve public school students), and other schools with exceptional status.

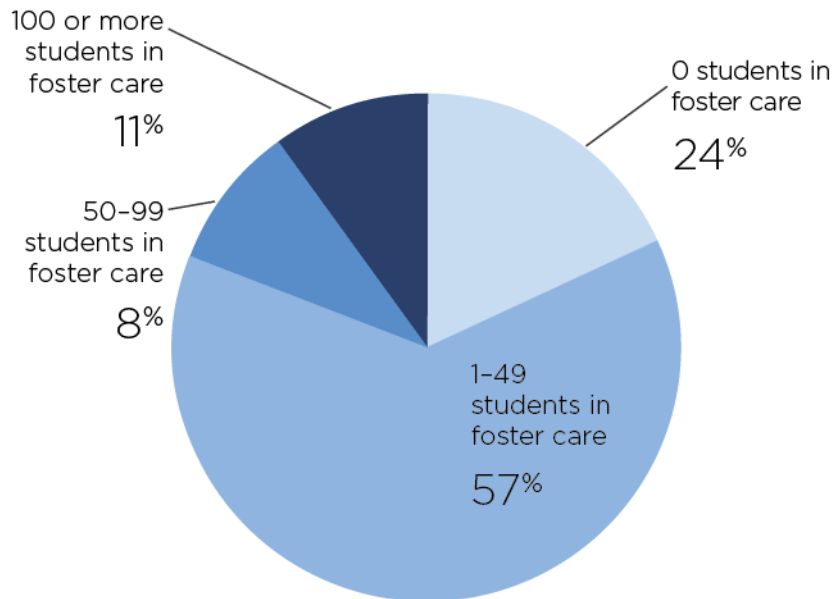
Of the 228 public school districts in the 2012/13 school year, 55 (24 percent) enrolled *no* students in foster care while the majority (130 districts, 57 percent) enrolled between 1 and 49 students in foster care (figure 1). Another 17 districts (8 percent) enrolled between 50 and 99 students in foster care, and 26 districts (11 percent) enrolled at least 100. Among the public charter entities, over 1 in 3 of these schools (36 percent) had *no* students in foster care while 64 percent (263 charter schools) enrolled between 1 and 49 students in foster care. There was only one charter school in the state that enrolled more than 50 students in foster care.

As a result, most students in foster care were enrolled in a public school district (86 percent). About 1 in 10 (11 percent) were enrolled in a public charter school district—a slightly smaller share than the 13 percent of students across the state who attended public charter schools. An additional 3 percent of students in foster care were enrolled in other types of districts, including juvenile justice schools, non-public schools, and other schools with exceptional status that were also classified as a school district, in contrast with only 0.3 percent of all students in the state. One in 10 students in those other types of schools/districts was a student in foster care, compared to the public school districts and public charter school districts that had less than 1 in 100 students in foster care.

“It’s like no one at school noticed me. They never saw nothing. Never knew I was in the foster care system and nobody helped. They didn’t know what I was going through. That’s why I worked my butt off at school—to get out.”

— *Arizona student in foster care*

Figure 1. Distribution of public school districts by the number of students in foster care enrolled in the district, 2012/13



Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

The majority of Arizona students in foster care were enrolled in a small number of districts. Specifically, 70 percent of students in foster care were enrolled in the 19 percent of the state's public school districts enrolling at least 50 students in foster care. Collectively, the 10 districts with the most students in foster care served over a third (36 percent) of this student population (table 1). Tucson Unified School District alone enrolled over 1,000 students in foster care, 10 percent of the state's total number of these students.

Table 1. The 10 Arizona school districts enrolling the most students in foster care, 2012/13

County	School district	Number of students in foster care
Pima	(1) Tucson Unified School District	1,087
Maricopa	(2) Mesa Unified School District	542
Maricopa	(3) Peoria Unified School District	333
Maricopa	(4) Deer Valley Unified School District	326
Maricopa	(5) Washington Elementary School District	319
Maricopa	(6) Dysart Unified School District	318
Pima	(7) Amphitheater Unified School District #10	298
Maricopa	(8) Phoenix Union High School District	250
Pima	(9) Sunnyside Unified School District	228
Maricopa	(10) Glendale Elementary School District	211
	Total for 10 school districts	3,912
	Total for Arizona	10,770

Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

The study's findings, which follow, serve as a compelling justification for keeping track of—and being accountable for—students in foster care.

Key findings about the characteristics of students in foster care and the schools they attend

Findings

1. Students in foster care constituted an at-risk subgroup that was distinct from low-SES students.
2. Students in foster care were more likely than other students to change schools during the school year.
3. Students in foster care were more likely than the statewide student population to be enrolled in low-performing schools.
4. Students in foster care were more likely to attend a nontraditional school than other students.

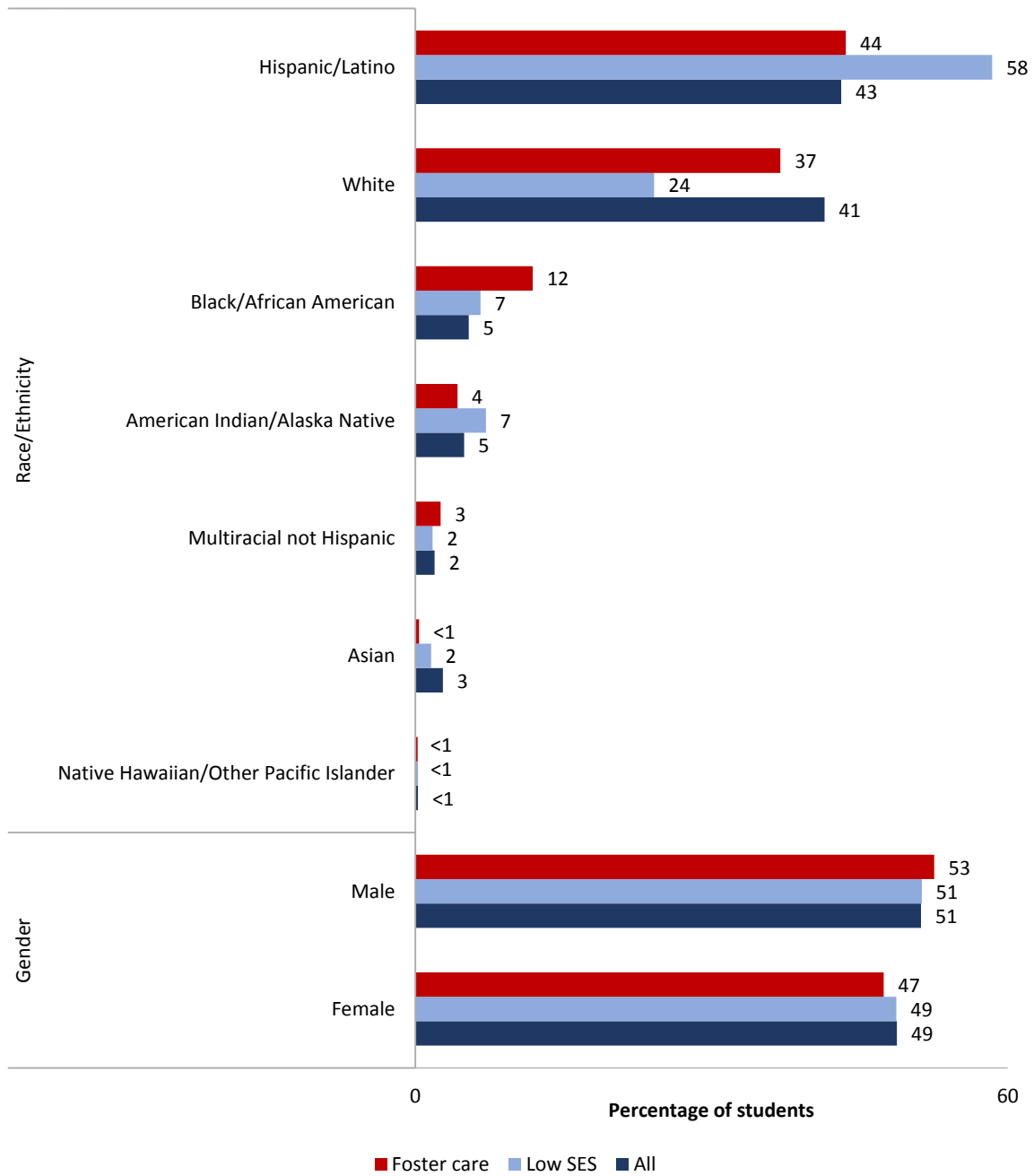
These first four findings are based on comparisons of students in foster care with low-SES students and all students statewide.

Finding 1: Students in foster care constituted an at-risk subgroup that was distinct from low-SES students.

Students in foster care were more likely to be Black/African American or White and less likely to be Hispanic/Latino than low-SES students in the state.

The racial/ethnic makeup of students in foster care differed in several ways from the makeup of the statewide student population and from the low-SES student population (figure 2). The largest racial/ethnic group among students in foster care was Hispanic/Latino (44 percent), which was comparable to the percentage for all Hispanic/Latino K–12 students statewide (43 percent); yet students in foster care were less likely to be Hispanic/Latino than students who were classified as low-SES (58 percent). Over a third (37 percent) of students in foster care were White; this was larger than the share of White students among low-SES students (24 percent) but less than the share among the statewide student population (41 percent). At 12 percent, the proportion of students in foster care who were Black/African American was greater than in either of the other student groups, for which the share of Black/African American students was between 5 and 7 percent. Finally, students in foster care were almost as likely (4 percent) to be of American Indian/Alaskan Native descent as the total (5 percent) K–12 statewide population but were less likely than low-SES students (7 percent). Each of the other racial/ethnic groups represents a small percentage (3 percent or less) in each of the three comparison populations.

Figure 2. Distribution of students by race/ethnicity and by gender, for students in foster care, low-socioeconomic-status students, and all students in Arizona public schools, 2012/13



Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

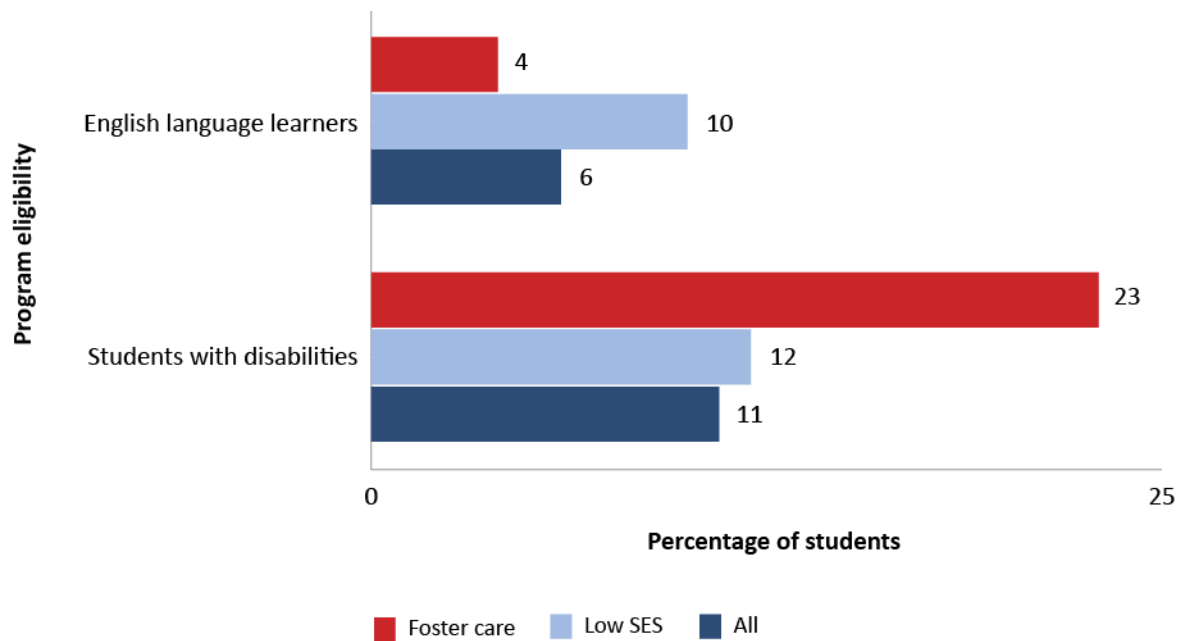
Note. Percentages are computed for 1,108,795 students ages 5–17, including 10,770 students in foster care and 535,681 low-socioeconomic-status students. Numbers and percentages for all demographic categories are presented in appendix table B1.

SES = socioeconomic status.

Nearly 1 in 4 students in foster care was classified with a disability.

Students in foster care qualified for special education services at a much higher rate than either comparison groups (figure 3). Nearly a quarter of students in foster care were classified with a disability (23 percent), twice the rate of low-SES students (12 percent) and the statewide student population (11 percent). In contrast, only 4 percent of students in foster care were classified as English language learners, a little under a half of the rate of low-SES students (10 percent) in the state and less than the rate of the statewide student population (6 percent).

Figure 3. Percentage of students eligible to receive English language and special education program supports, for students in foster care, low-socioeconomic-status students, and all students in Arizona public schools, 2012/13



Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. Percentages are computed for 1,108,795 students ages 5–17, including 10,770 students in foster care, and 535,681 low-socioeconomic-status students. Numbers and percentages for all demographic categories are presented in appendix table B1.

SES = socioeconomic status.

Among students with disabilities, students in foster care had a higher rate of emotional disturbance.

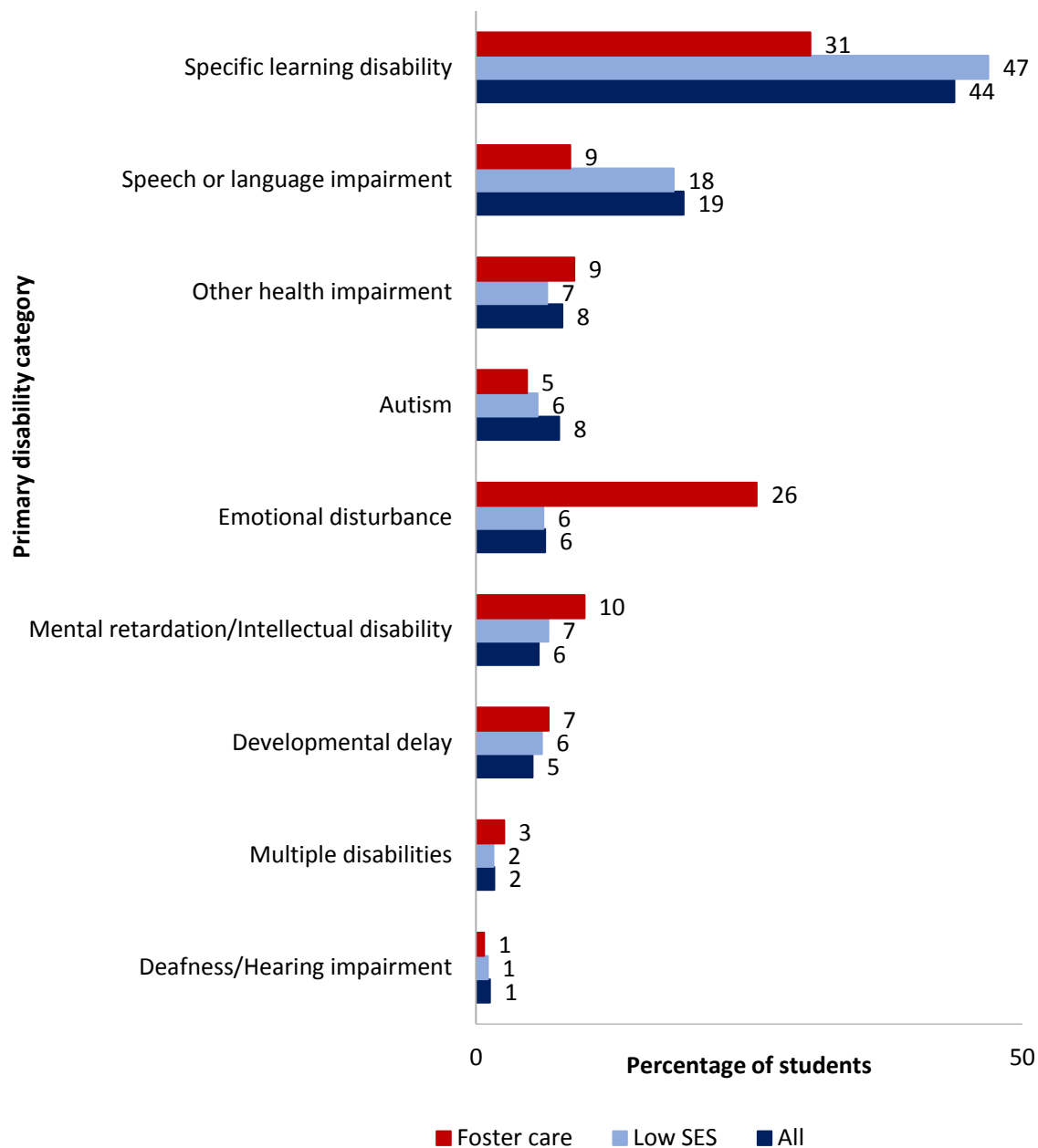
Figure 4 shows the breakdown by primary disability category for all students classified with a disability. Among students with disabilities, students in foster care had by far the highest rate of *emotional disturbance*, which is a disability associated with difficulty maintaining relationships, inappropriate behaviors, and depression. More than 1 in 4 (26 percent) students in foster care with a disability were classified with emotional disturbance, a rate over four times higher than the rate for low-SES students (6 percent) and for the statewide student population (6 percent).

Also notable was the higher rate of students in foster care classified with *intellectual disability* (10 percent) compared to low-SES students (7 percent) and all students in Arizona (6 percent). Intellectual disability is a disability associated with significant limitations in both intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills.

The largest primary disability classification for students in foster care was *specific learning disability* (31 percent), an impairment associated with challenges related to thinking, reading, writing, and/or calculating. However, this percentage was smaller than for low-SES students (47 percent) and all students statewide (44 percent).

Students in foster care were also less than half (9 percent) as likely to be classified with a *speech or language impairment* as the comparison groups of low-SES students (18 percent) and all students statewide (19 percent).

Figure 4. Distribution of students with disabilities by primary disability category, for students in foster care, low-socioeconomic-status students, and all students in Arizona public schools, 2012/13



Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. Percentages are computed for 111,682 students with disabilities, including 2,163 students in foster care and 61,463 low-socioeconomic-status students. Disability category information was missing for 6,064 students with disabilities (5 percent) including 3,184 low-socioeconomic-status students. Disability categories that represented 1 percent or less of all student populations, including deaf-blindness, traumatic brain injury, and visual impairment, are not included in the graph; the numbers and percentages are presented in appendix table B1.

SES = socioeconomic status.

Finding 2: Students in foster care were more likely than other students to change schools during the school year.

More than 40 percent of students in foster care changed schools at least once during the school year, about four times the rate of the low-SES or statewide student populations.

Students changing schools for reasons other than normal grade promotion is associated with a number of negative outcomes, such as lower achievement, a need for academic remediation, increased risk of dropout, and disruptions in peer relationships. At each new school there may also be problems transferring records and credits, causing students to repeat classes or grades or miss education services. For students in foster care, the effects of school change can be especially difficult, contributing to instability beyond that experienced through placement in foster care itself.

Students in foster care experience much higher rates of school mobility than other students (figure 5). While about 90 percent of the low-SES students and the statewide student populations attended the same school during the academic year, only 58 percent of students in foster care attended the same school for the full school year.

Over a quarter (27 percent) of students in foster care attended two schools during the year compared to less than 1 in 10 students in the comparison groups.

“I changed schools a lot. At least a dozen times while in foster care, and that doesn’t include all the schools I went to before I entered the system. I can’t even remember some of their names.”

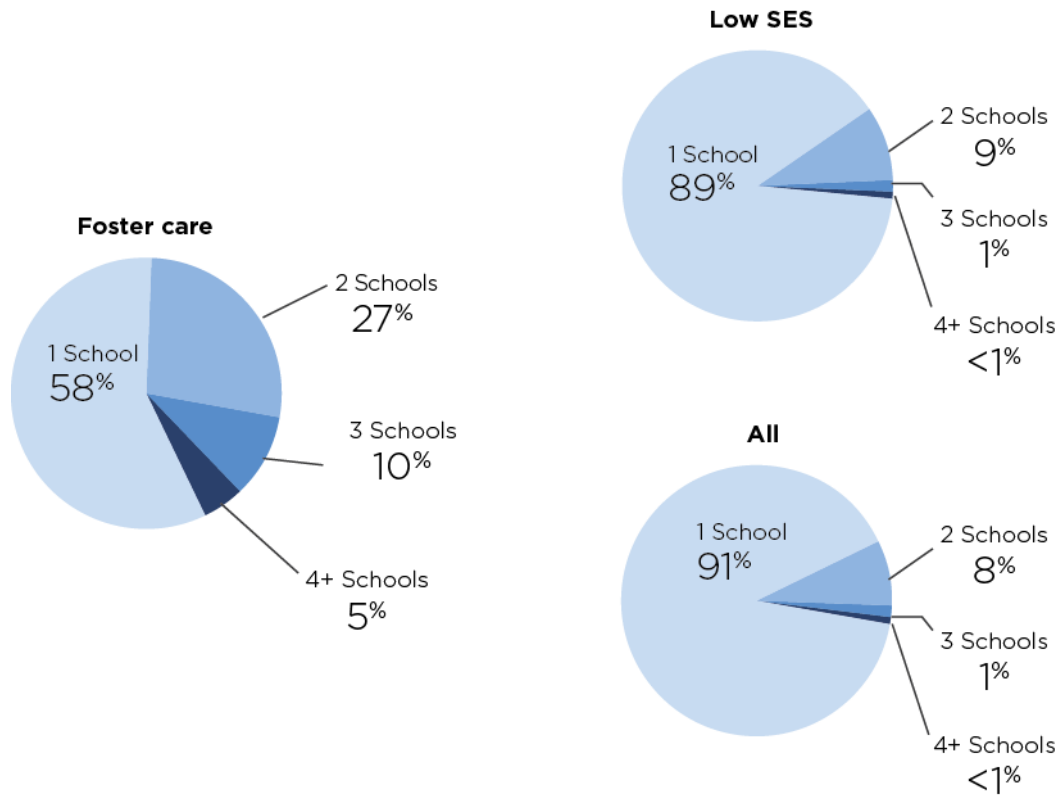
— Arizona student in foster care

“I went to six high schools. Each year was different and difficult.”

— Arizona student in foster care

Furthermore, 15 percent of students in foster care attended three or more schools during the school year, a level of school mobility experienced by only about 1 percent of the low-SES and statewide student populations.

Figure 5. Number of schools attended during the 2012/13 school year, for students in foster care, low-socioeconomic-status students, and all students in Arizona public schools, 2012/13



Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. Percentages are computed for 1,108,795 students ages 5–17, including 10,770 students in foster care and 535,681 low-socioeconomic-status students. Due to rounding, percentages may not add up to 100. Numbers and percentages are presented in appendix table B2.

SES = socioeconomic status.

Finding 3: Students in foster care were more likely than the statewide student population to be enrolled in low-performing schools.

Arizona A–F Letter Grade Accountability System

The A–F Letter Grade Accountability System was the state's accountability system during the 2012/13 school year. Through this accountability system, the state made annual accountability determinations for schools and local education agencies based on student academic outcomes and growth on standardized assessments.

- “A” schools demonstrated an excellent level of performance.
- “B” schools demonstrated an above average level of performance.
- “C” schools demonstrated an average level of performance.
- “D” schools demonstrated a below average level of performance.
- “F” schools demonstrated a failing level of performance. These schools scored a letter “D” for three consecutive years and, as a consequence, were placed in a school improvement program by the Arizona Department of Education.
- Schools with insufficient data were classified as “Not Rated.”

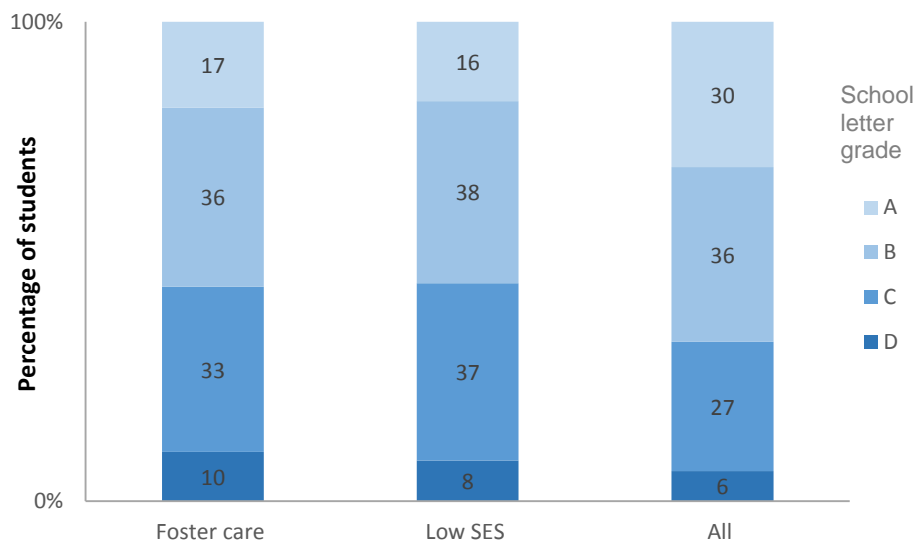
See <http://www.azed.gov/research-evaluation/files/2013/11/2013-a-f-technical-manual.pdf> for more detailed information.

Students in foster care, like low-SES students, were more likely to attend schools receiving lower A–F school letter grades.

Through its A–F Letter Grade Accountability System, Arizona makes annual accountability determinations for schools and districts based on student academic outcomes and growth on standardized assessments (see text box above and appendix A for details). Figure 6 presents the percentage of students in Arizona public schools by the school letter grade of their first school of enrollment during school year 2012/13. The percentages of students in foster care (17 percent) and low-SES students (16 percent) who attended the highest-performing schools in the state—schools with a letter grade of A—were nearly half of the percentage of all students in Arizona (30 percent) who attended these schools.

While the percentage of students who attended schools with a B letter grade was similar across all populations, 43 percent of students in foster care and 45 percent of low-SES students attended public schools that the state rated as C, D, or F, compared to 33 percent of all students statewide.

Figure 6. Percentage of students in foster care, low-socioeconomic-status students, and all students enrolled in Arizona public schools by the statewide school letter grade, 2012/13



Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. Students in all category groups who attended schools with a letter grade of F represented less than 1 percent for each category and are not displayed. Students in all category groups who attended schools with a letter grade of "Not Rated" are also not included in the figure. For these reasons percentages may not add up to 100 percent. Percentages are computed for 1,105,259 students ages 5–17, including 10,409 students in foster care and 535,007 low-socioeconomic-status students. The numbers and percentages of students enrolled in Arizona public schools by the statewide school letter grade are presented in appendix table B2. SES = socioeconomic status.

Finding 4: Students in foster care were more likely to attend a nontraditional school than other students.

In high school, the percentage of students in foster care enrolled in nontraditional schools was over twice as high as for the other student groups.

Across grades K–12, some 11 percent of students in foster care were enrolled in nontraditional schools, compared with about 3 percent each for the other student population groups.

Nontraditional schools were all schools evaluated through the alternative accountability system in Arizona as well as juvenile justice schools, non-public schools, and all other type of schools that were not traditional schools.

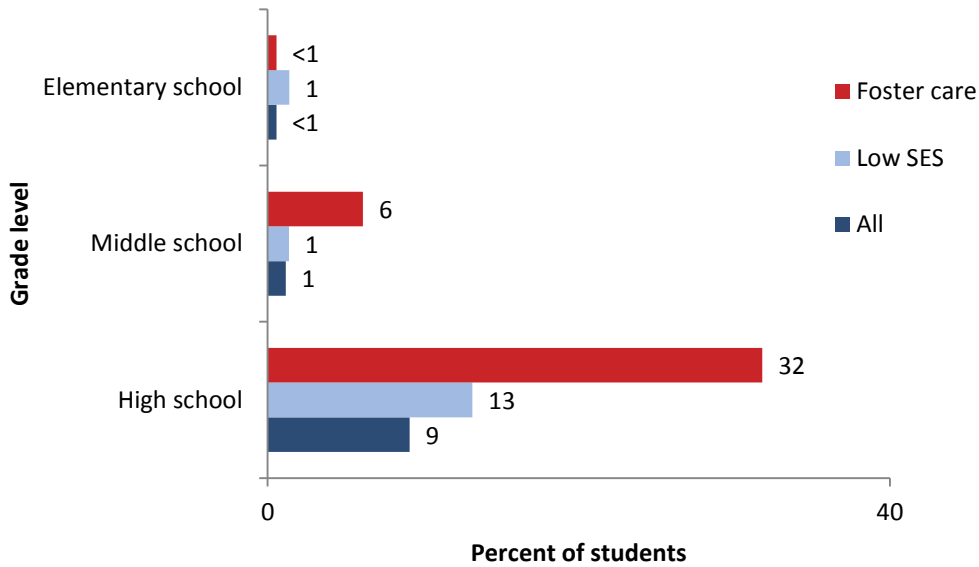
While the percentage enrolled in nontraditional schools was 1 percent or less for all groups in elementary schools, 6 percent of students in foster care in the middle grades (grades 6–8) attended a nontraditional school compared to 1 percent for the other two student populations (figure 7).

In high school, nearly one third of the students in foster care attended a nontraditional school compared to 13 percent for low-SES students and 9 percent for all students statewide.

“Moving around schools a lot, I noticed there were differences in quality. I graduated from a high school that didn’t offer the math classes I needed to get into college, so I took them on my own online. No one helped me.”

— *Arizona student in foster care*

Figure 7. Percentage of students enrolled in a nontraditional school for students in foster care, low-socioeconomic-status students, and all students in Arizona public schools, 2012/13



Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. Percentages are computed for 1,108,795 students ages 5–17, including 10,770 students in foster care, and 535,681 low-socioeconomic-status students. The numbers and percentages of students enrolled in nontraditional schools by school levels are presented in appendix table B3.

SES = socioeconomic status.

Key findings about the academic achievement and education outcomes of students in foster care

Findings

5. Students in foster care had the lowest participation rate in Arizona's statewide testing program.
6. Statewide testing showed an achievement gap for students in foster care.
7. High school students in foster care had the highest dropout rate and among the lowest graduation rates.

The following three findings are based on comparisons of students in foster care with the statewide student population as a whole, as well as with three other at-risk subgroups—low-SES students, English language learners, and students with disabilities.

Finding 5: Students in foster care had the lowest participation rate in Arizona's statewide testing program.

At every grade level, students in foster care were less likely than the other student subgroups to participate in statewide testing.

At the time of this study, all Arizona public school students in grades 3–8 and 10 took Arizona's Instrument to Measure Standards (AIMS) in mathematics, reading, and writing (see text box on Arizona Standardized Tests in 2012/13). In addition, students of any grade could be administered the Arizona English Language Learner Assessment (AZELLA), a standards-based assessment that measures students' English language proficiency for students who have been identified as second language learners. Figure 8 charts the percentage of students who were tested in mathematics or reading with AIMS or AIMS Alternate (AIMS A) or took the AZELLA during the 2012/13 school year.

At every grade level, students in foster care were less likely than the other student groups to participate in statewide testing (figure 8).

The participation rate for the statewide population, as well as for all low-SES students, students with disabilities, and English language learners, was around 96 percent throughout the early grades. The participation rate decreased slowly over the grades to about 93 percent in grade 10 for the statewide population and low-SES students, and 91 percent for students with disabilities. For English language learners the participation rate started to decline in the middle school grades, dropping to 86 percent in grade 10. For students in foster care, 94 percent took a statewide assessment in grades 3 and 4, on par with the other subgroups. However, the rate of test taking started to decrease sharply in grade 7, dropping to 81 percent in grade 8, and 77 percent in grade 10.

Arizona Standardized Tests in 2012/13

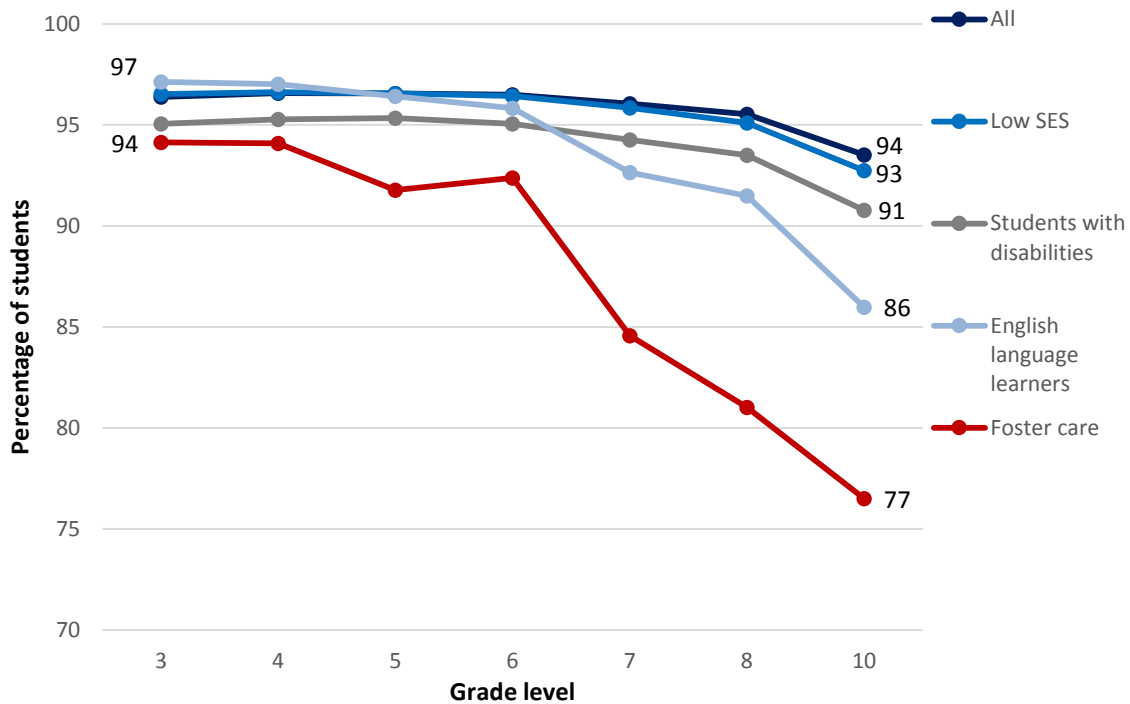
At the time of the study, Arizona's Instrument to Measure Standards (AIMS) was a standardized test administered by the state of Arizona. The state has since replaced this test with the Arizona Measurement of Educational Readiness to Inform Teaching (AzMERIT).

Students in grades 3–8 and 10 took the AIMS in mathematics, reading, and writing. For each assessment, students receive one of four ratings: *falls far below standard*, *approaches the standard*, *meets the standard*, or *exceeds the standard*, with a goal of meeting or exceeding state standards for all students. Students had to pass (i.e., achieve scores at the meets or exceeds the standard levels) the grade-10 exam in order to graduate from high school.

Arizona's Instrument to Measure Standards Alternate (AIMS A) was administered to eligible students with significant cognitive disabilities. This assessment was administered in mathematics, reading, and science and was aligned with the Arizona Alternate Academic Standards. This study reports the percentage of students who met or exceeded standards in AIMS or AIMS A in mathematics and reading in grades 3–8 and 10.

The Arizona English Language Learner Assessment (AZELLA) is a standards-based assessment that measures student English language proficiency for both placement and reassessment purposes. Students identified as second language learners on the state's Home Language Survey take the AZELLA placement test, and their scores determine placement for instruction.

Figure 8. Percentage of students who participated in statewide testing, by grade, for students in foster care, other at-risk student subgroups, and all students in Arizona public schools, 2012/13



Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. The population of analysis includes only students that were ages 5–17. The numbers and percentages of students who participated in statewide testing are presented in appendix table B4.

Students who participated in statewide testing included students who were tested in reading or mathematics with the AIMS or AIMS A, or took the AZELLA during the 2012/13 school year.

SES = socioeconomic status.

Finding 6: Statewide testing showed an achievement gap for students in foster care.

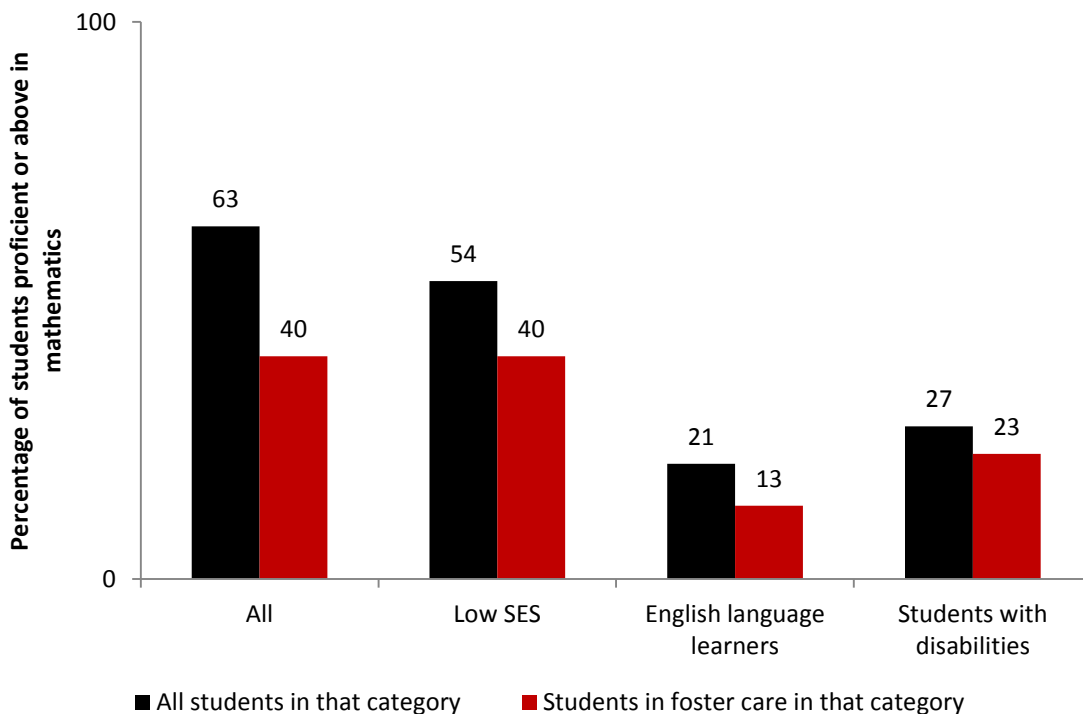
Students in foster care fell short in meeting or exceeding standards in mathematics and reading.

The AIMS/AIMS A results for mathematics in grades 3–8 and 10 during school year 2012/13, are presented in figure 9.

Only 40 percent of students in foster care met or exceeded standards in mathematics—far below the percentage of all students (63 percent) and low-SES students (54 percent) but above the percentage of students classified as English language learners (21 percent) or with disabilities (27 percent) who achieved at these levels (figure 9).

However, these achievement rates for students in foster care who were also classified as English language learners or as students with disabilities were below the rates for all English language learners and all students with disabilities. English language learners in foster care had the lowest levels of meeting or exceeding standards in mathematics of all subgroups (13 percent).

Figure 9. Percentage of students who met or exceeded standards in mathematics on the AIMS/AIMS A for students in foster care, other at-risk student subgroups, and all students in Arizona public schools, grades 3–8 and 10, 2012/13



Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. All students in foster care are eligible for school free or reduced-priced lunch and, thus, are classified as low SES. The AIMS/AIMS A results in grade 10 are for students in the 2015 graduating cohort in grade 10. The numbers and percentages of students with AIMS/AIMS A scores are presented in appendix table B5.

AIMS = Arizona Instrument to Measure Standards; SES = socioeconomic status.

The AIMS/AIMS A results for reading in grades 3–8 and 10 are presented in figure 10.

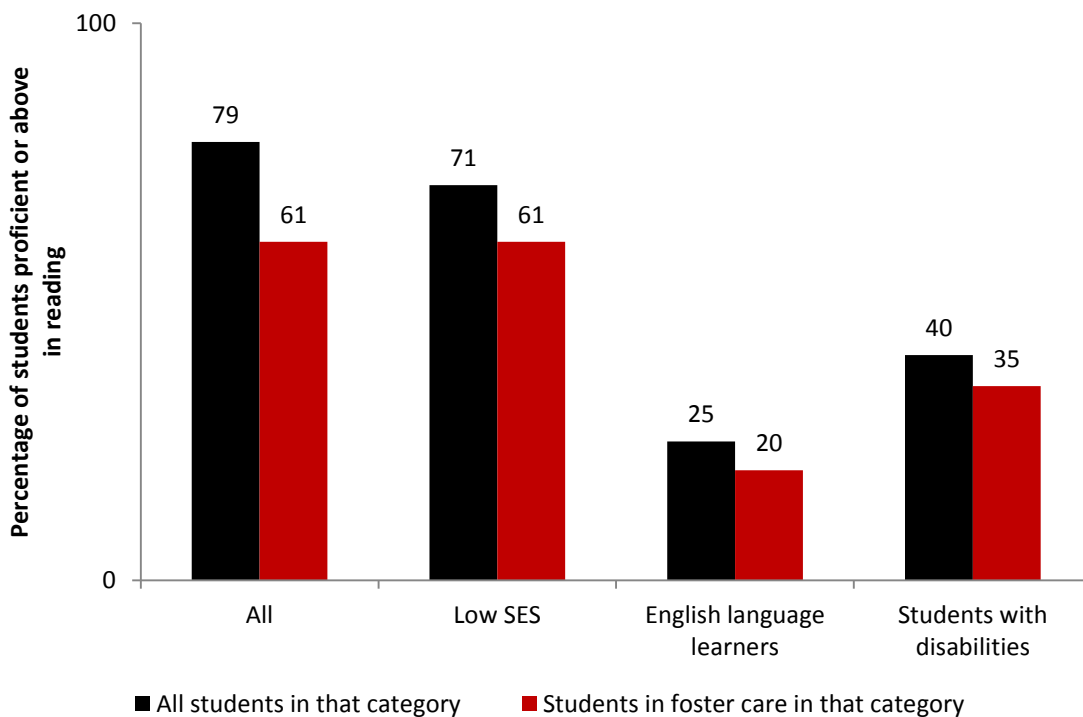
Only 61 percent of students in foster care met or exceeded standards in reading—below the percentage of all students (79 percent) and low-SES students (71 percent) achieving at this level but above the percentage for English language learners (25 percent) or students with disabilities (40 percent) who met or exceeded standards (figure 10).

“Academically, going to school was a cakewalk. Going to school and being treated so badly was a real challenge every day.”

— Arizona student in foster care

However, these achievement rates for students in foster care who were also classified as English language learners or as students with disabilities were below the rates for all English language learners and all students with disabilities. English language learners in foster care had the lowest level of achievement in reading (20 percent) of all subgroups.

Figure 10. Percentage of students who met or exceeded standards in reading on the AIMS/AIMS A for students in foster care, other at-risk student subgroups, and all students in Arizona public schools, grades 3–8 and 10, 2012/13



Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. All students in foster care are eligible for school free or reduced-priced lunch and, thus, are classified as low SES. The AIMS/AIMS A results in grade 10 are for students in the 2015 graduating cohort in grade 10. The numbers and percentages of students with AIMS/AIMS A scores are presented in appendix table B5.

AIMS = Arizona Instrument to Measure Standards. SES = socioeconomic status.

Dropout and Graduation

Reducing dropout rates and boosting high school graduation rates are state education priorities. Because high school completion is so crucial to the future success of students and the state, Arizona educators closely monitor these rates for student subgroups already identified at risk of school failure; however, they have not yet begun to track these rates for students in foster care.

The dropout and graduation rates for this study were computed as follows:

Dropout rate: An event-rate methodology was used to calculate the single-year dropout rate for students in grades 9–12 in Arizona. It is a ratio of dropouts to the total enrollment of students enrolled during 2012/13. Dropouts included students who formally dropped out, withdrew from school without an excuse, had a status of unknown, or were expelled.

Grade-12 graduation: Students enrolled in grade 12 were counted as graduates only if they completed a course of study for high school; passed all three high school AIMS assessments required for graduation (i.e., mathematics, reading, and writing) or completed an individualized education program (IEP); and fulfilled the AIMS requirement specified in their IEP. Other types of completers, such as students who completed the General Equivalency Degree (GED) or students who completed a course of study at a Joint Technical Education District (JTED), did not earn a standard diploma and therefore, as is the convention nationally, were not included among the graduates.

Because students in foster care have the option to exit the child welfare system at age 18, the study population was restricted to students under age 18 at the start of school year 2012/13. This restriction especially affected the comparability of dropout and graduation rates and is likely to underestimate the final graduation rate for at-risk students who may have fallen behind in course credits and therefore needed more time to graduate.

The study data were for school year 2012/13 only and it was not possible to compute cohort graduation and dropout rates. Students who dropped out during the school year and returned in a subsequent year were still counted as dropouts in the study. Similarly, grade-12 students who did not graduate at the end of the school year but graduated in subsequent years were still counted as non-graduates.

Finding 7: High school students in foster care had the highest dropout rate and among the lowest graduation rates.

Students in foster care dropped out at a higher rate than the other at-risk student subgroups and the statewide student population.

Figure 11 presents the single-year dropout rate for students in grades 9–12—that is, the proportion of students enrolled in fall 2012 that dropped out during the 2012/13 school year. Across each of the student groups in this study, dropout rates increased at each high school grade level, from grade 9 through 12. Students in foster care had the highest dropout rate among the at-risk subgroups.

There are various ways to calculate a dropout rate, each describing the magnitude of the rate differently. The single-year rate, used in this study, typically produces the lowest dropout rate.

The adjusted cohort rate—now used in Arizona—typically produces the highest and most complete rate, but it requires longitudinal data that were unavailable for this study.

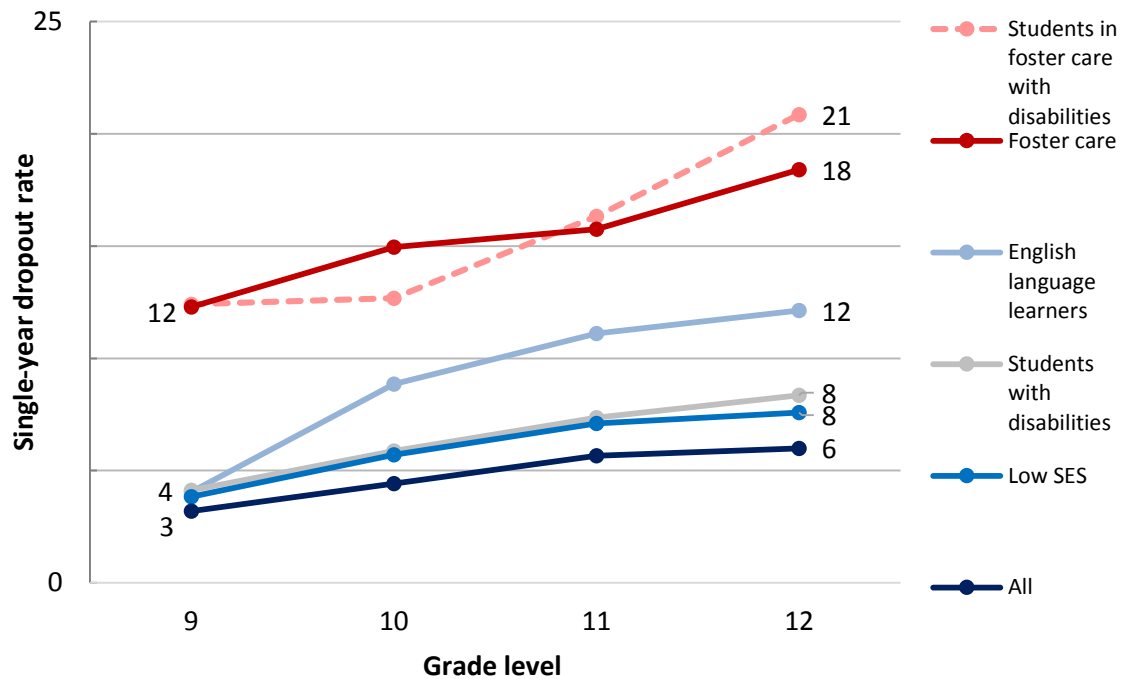
In grade 9, the percentage of students in foster care who dropped out (12 percent) was three times greater than the percentage for low-SES students (4 percent), English language learners (4 percent), or students with disabilities (4 percent), and four times the percentage of all students statewide (3 percent).

While the single-year dropout rate increased throughout high school for all groups of students, the dropout rate for students in foster care was consistently higher than all other comparison groups, peaking at 18 percent in grade 12, three times the rate for all students statewide and higher than the rates for low-SES students (8 percent), English language learners (12 percent), and students with disabilities (8 percent). Students in foster care also classified with disabilities had a dropout rate above the average dropout rate for grade-12 students in foster care, with 21 percent of those students dropping out of grade 12.

“Foster care was kind of rough. It was such a motivator for me to stick with school when a teacher was supportive, said ‘good job,’ helped me figure things out, took a special interest in me.”

— Arizona student in foster care

Figure 11. Single-year dropout rate by high school grade level, for students in foster care, other at-risk student subgroups, and all students in Arizona public schools, 2012/13



Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. Percentages are computed for 322,075 students age 17 or younger enrolled in grades 9–12; 3,202 students in foster care and 936 students with disabilities in foster care; 132,745 low-socioeconomic-status students; 4,987 English language learners; and 30,969 students with disabilities. Population size and numbers and percentages by grade level, are provided in appendix table B6.

SES = socioeconomic status.

Only about one third of students in foster care enrolled in grade 12 graduated at the end of the 2012/13 school year, one of the lowest graduation rates among the at-risk student subgroups.

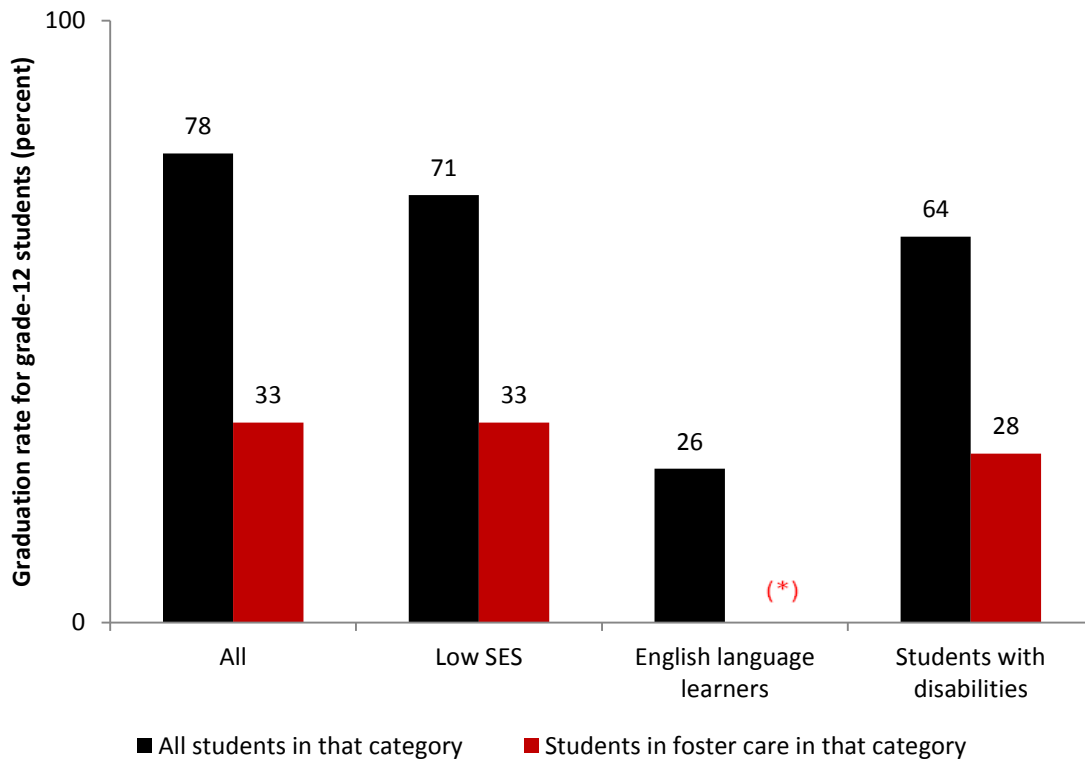
The statewide graduation rate for all grade-12 students in the study was 78 percent, but for students in foster care it was just 33 percent, one of the lowest rates among the at-risk student subgroups (figure 12). English language learners who had not been reclassified as English proficient by grade 12 also struggled to earn a diploma, with just 26 percent graduating.

“I plan to graduate but it’s taking me extra time. I have to make up credits. I lost them by changing schools and missing finals.”

— Arizona student in foster care

The graduation rate for grade-12 students in foster care was far below the rates for low-SES students (71 percent) and students with disabilities (64 percent). Students in foster care with disabilities had a graduation rate even lower than the rate for students in foster care, and far below the rate for all students with disabilities in the state.

Figure 12. Percentage of grade-12 students who graduated in 2013, for students in foster care, other at-risk student subgroups, and all students in Arizona public schools, 2012/13



Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. Percentages are computed for 66,794 students age 17 or younger enrolled in grade 12; 500 students in foster care; 26,243 low-socioeconomic-status students; 470 English language learners; and 5,147 students with disabilities, of which 139 were students in foster care. Numbers and percentages of grade-12 graduates, by student subgroups, are provided in appendix table B7.

(*)The number of students in foster care classified as English language learners in grade 12 was too low for reporting the graduation rate.

SES = socioeconomic status.

Conclusion

This report focuses much-needed attention on students in foster care. By identifying the distressing achievement gap experienced by this student group, it does more than just define this education crisis. It provides a base of evidence needed for policymakers to move forward in addressing this important issue. K–12 students in foster care are unquestionably at a disadvantage in their education and typically show poor academic achievement and education outcomes. However, these students can also be amazingly resilient, and when they receive adequate academic and social supports they can succeed in school and beyond.

During the 2012/13 school year, over 10,000 public school students in Arizona—or about 1 percent of students—spent some period of time in foster care. Many districts served only a small number of these students, but for 11 percent of districts, enrollment rosters included at least 100 students in foster care.

What the study showed

New information shows that, as a group, students in foster care have a different demographic profile than their K–12 classmates statewide or than their classmates who are classified as low socioeconomic status (SES). According to the data used for this study, students in foster care were more likely to be African American or White but less likely than low-SES students to be Hispanic or to be classified as English language learners. They were twice as likely to be classified with disabilities. The study shows that students in foster care experienced much higher rates of school mobility than other students and were roughly four times more likely to change schools at least once during the school year. Furthermore, nearly 1 in 7 students in foster care attended three or more schools during the school year, a level of school mobility experienced by only about 1 percent of the low-SES and statewide student populations. Like low-SES students, a much greater proportion of students in foster care attended the state’s low-performing schools compared to the statewide student population; compared to both the statewide student population and low-SES students, they were also more likely to attend nontraditional schools, especially in high school.

In terms of academics, students in foster care showed the lowest participation rate in Arizona’s statewide testing program. For those students in foster care who did participate in state testing, their levels of meeting or exceeding standards in mathematics and reading were far below low-SES students and all students statewide. Finally, students in foster care had the highest dropout rate, and one of the lowest graduation rates among the at-risk student subgroups. The largest achievement gaps were evident for students in foster care who were also classified as English language learners or as students with disabilities. Like other at-risk student subgroups, students in foster care need and deserve education supports and services to narrow this gap and succeed in school.

A critical first step in this effort is to ensure that Arizona’s educators and policymakers become aware of students in foster care as a distinct at-risk student population that is similar to, but different from, other at-risk student subgroups. For this to happen, these students must be counted. Then, educators and policymakers must be held accountable for supporting the success of this vulnerable student group. With backing from the state’s

new child welfare accountability reforms, the time to work toward closing this achievement gap is now.

A call for further research

There is much more we must understand about the education experiences and outcomes of students in foster care. While this report focuses on examining the achievement gap for students in foster care in the context of other at-risk student groups in the state, we need to learn about how students' different foster-care experiences are associated with their education outcomes. Specifically, we must further examine academic outcomes in the context of students' experiences in foster care—including types of allegation that caused students' removal from their families, number and type of students' foster care placements, and length of time students are in the foster care system—to better understand how the foster care experience can influence their education outcomes. There is also a need to follow students throughout their education experiences to better understand the association of the number of course credits students accumulate and their drop out or graduation outcomes.

The study restricts the population of analysis to students under age 18 as of September 1, 2012, since students in foster care have the option to exit the child welfare system at age 18. However, like other at-risk students, such as English language learners and students with disabilities, students in foster care might fall behind in course credits and therefore need additional time to graduate from high school. A longitudinal analysis following students beyond their senior year would allow a fuller description of the education outcomes of students who were over-age for their grade in high school and could document their final high school outcomes.

In addition, other pertinent education outcomes need to be investigated to get a more complete picture of the education experiences of students in foster care. For example, as new student data become available and data-sharing agreements and collaboration between education and child welfare agencies become stronger, we can examine the rates of absenteeism, suspension, and expulsion, as well as completion of college preparation courses and participation in extracurricular activities. With additional data outside of the K-12 system, we can also document the preschool and postsecondary outcomes of students in foster care relative to other at-risk student subgroups to better understand what contributes to risk and resilience across their school experiences.

Finally, there is also a great deal to learn from students in foster care who, despite the odds against them, thrive academically and have positive school experiences.

Meanwhile, the need for action and accountability remains urgent. The stakes are high for the more than 10,000 children and youth in foster care who attend Arizona's public schools. They cannot afford to wait any longer.

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Appendix A. Methodology

1. Populations of analysis

The data sources used in this study were extracts from administrative datasets from the Arizona Department of Education (ADE) and the Arizona Department of Child Safety (DCS) data systems.

ADE population of analysis

Student-level education data for all students ages 5 and over enrolled in an Arizona public school during school year 2012/13 were obtained from the ADE data system. These data contained information on student demographics, enrollment, statewide assessments, and school characteristics. The final population of analysis consisted of 1,108,795 students and was defined as follows:

- Students enrolled in an Arizona public school during school year 2012/13.
- Students ages 5 to 17 at the beginning of the school year (as of September 1, 2012).

DCS population of analysis

Individual records for children in foster care were obtained from the Arizona DCS. The population of children in child welfare in Arizona to be matched to the ADE population of analysis consisted of 12,064 children and was defined as follows:

- Children with an open out-of-home foster care placement at any point between August 1, 2012 and June 1, 2013.
- Students ages 5 to 17 at the beginning of the school year (as of September 1, 2012).

2. Linked analysis dataset

Although each system—ADE and DCS—has its own unique child identifier, there is no common identifier that links a child between both systems. Therefore, this study's researchers needed to develop a process to match the records for each individual child across both systems.

This study used a deterministic and fuzzy sequential matching process, in which the names of individuals, as well as date of birth, and city of school, were used to link across the two databases.

The methodology for constructing the linked analysis dataset is described below.

Preparation for making the match

Before starting the matching process, students' first name, last name, and date of birth were thoroughly examined to evaluate their discriminating power and the presence of compound/hyphenated names. Additional variables available in both datasets (i.e., gender, ethnicity, and city of school) were also examined and researchers set up a process for using that additional information to sort out duplicate matching.

Discriminating power of the matching fields: Because ADE data represent the population of students to be matched, the specificity of the planned matching variables on the ADE dataset were examined: out of 1,108,795 records in the ADE population, there are total number of 1,107,697 combinations of first names, last names, and dates of birth, and only 1,092 of those combinations appeared more than one time, representing a percentage of duplicate values among the matching variables of less than 0.1 percent. When the gender, city of school, school identification, and ethnicity were added to the combination for each individual student in an effort to sort out the duplicates, virtually all records that had this information available were unduplicated.

Compound/hyphenated names: The name fields were evaluated for the presence of compound/hyphenated names (names with two or more words separated by a blank or a special character in the same data field) since the presence of several names in a field can create difficulties in accurately matching individuals across datasets. The percentage of compound/hyphenated last names in the ADE and DCS datasets was 12 percent and 7 percent, respectively.

In cases of compound/hyphenated names, three versions of each name were kept in three separate fields: one corresponding to the name as it was provided with no blank or separator, one storing only the first part (as defined by the presence of a blank or special character) of the compound/hyphenated name, and a third one storing the second part. All fields were used sequentially in the matching process.

Control variables for duplicate matching: When a DCS client matched to more than one ADE student, the city of school and the city of placement were examined to unduplicate the data.

Process for making the match

The matching process was developed as six successive steps written in SAS software.* The process used a sequence of deterministic and fuzzy matches using the SAS software SOUNDEX function.

Step 1 of the process to match individuals in the two datasets used the exact text strings recorded for first names, last names, and dates of birth to match the two datasets.

Because of the prevalence of compound/hyphenated names, steps 2 and 3 were structured to capture different combinations for entering compound/hyphenated last names along with the birth date. Step 2 of the match used only the first word (as separated by a blank or special character) from the first name and the first word in the last name; step 3 used the first word in the first name field and the second word in the last name field.

Steps 4, 5, and 6 repeated the sequence of steps 1–3 but, instead of relying on the spelling of names, these steps used a SOUNDEX transformation on the first and last name fields. The SOUNDEX is an algorithm that codes a name as a short sequence of characters and numerals based on the way a name sounds.

* Version 9.3 of the SAS System for Windows. Copyright © 2002–2003 SAS Institute Inc.

From one step to the next, only the residual records—those not matched in a previous step—were kept in the pool to be matched in a subsequent step. At each step, the set of DCS children who matched exactly to only one student in the ADE dataset were kept as final matches, while the set of DCS children for whom there were duplicate matches in the ADE dataset were further studied to be unduplicated. When a DCS child matched to more than one ADE student, we looked at city of school and city of placement to pick the right match. If a one-to-one match could be achieved using the additional information, the record was identified as a final match. If confirming data (i.e., city of school and city of placement) were not available for any of the duplicate records, or if the data were available but the information was the same for all duplicates, then we did not unduplicate the data and the DCS child did not get matched.

The final total number of matches was 10,770 out of 12,064 DCS children (an 89 percent match rate). Furthermore, the match rate obtained for this study is likely an underestimation because DCS children with delayed entry in school (i.e., starting kindergarten after age 5), who dropped out of school, or who did not attend a public school, would not be expected to appear in the ADE data system.

3. Analysis variables

Variables of analysis are described below.

Student characteristics

For all students, the demographic variables of gender, race/ethnicity, and date of birth, and the status variables of English language learner, low socioeconomic status, and student with disabilities were taken from the ADE administrative records as of fall 2012 data. In addition:

- **Age** was computed as of September 1, 2012.
- **Low-socioeconomic-status (low-SES) students** are those whose family income qualifies for the school free or reduced-price lunch program. Children from families with incomes at or below 130 percent of the poverty level are eligible for free meals. Those with incomes between 130 percent and 185 percent of the poverty level are eligible for reduced-price meals. (For the school year 2012/13, 130 percent of the poverty level was \$29,965 for a family of four; 185 percent was \$42,643.)
- **English language learners** are students whose primary language is not English and who have a less than proficient overall proficiency level on the Arizona English Language Learner Assessment. Those students are considered to lack the level of English language skills that is necessary to succeed in the school's regular instructional program and are enrolled in special language services.
- **Students with disabilities** are students classified with a disability who are eligible for special education services. The disability type reported is the primary disability type of record in the ADE data system.

School characteristics

Using ADE student enrollment records for school year 2012/13, the full history of enrollment throughout the school year was defined, allowing the identification of the first school of enrollment of the school year as well as all subsequent schools attended throughout school year 2012/13. All reported school and district characteristics correspond to the first school of enrollment of the school year.

School type: Nontraditional schools were all schools evaluated through the alternative accountability system in Arizona as well as juvenile justice schools, non-public schools, and vocational training facilities. Schools evaluated through the alternative accountability system are schools that have adopted a mission statement that clearly identifies as its purpose an intent to serve students in one or more of the following categories:

- Students with behavioral issues.
- Students identified as dropouts.
- Students in poor academic standing who are either severely behind on academic credits or have demonstrated a pattern of failing grades.
- Pregnant and/or parenting students.
- Adjudicated youth.

Letter school grades: The A–F Letter Grade Accountability System was the state’s accountability system during the 2012/13 school year. It was first adopted for school year 2011/12. Through this accountability system, the state made annual accountability determinations for schools and local education agencies based on student academic outcomes and growth on standardized assessments. The A–F letter grades place equal value on achievement during the latest year and on longitudinal academic growth. Adjusting for student mobility by including only students who were enrolled during the full academic year, the A–F letter grade accountability system includes the following:

1. Percentage of students meeting academic standards.
2. Longitudinal indicators of relative student gain.
3. Longitudinal indicators of relative student gain for low-performing cohorts (i.e., the 25 percent of pupils with the lowest academic performance measurement enrolled at the school or local education agency).
4. Indicators of progress for English language learners.
5. Annual graduation rate and dropout rate for high schools only.

The Arizona State Board of Education created the following descriptions for the A–F letter grades:

- “A” schools demonstrate an excellent level of performance. For example, “A” schools earn points equal to a school that has 90 percent of students passing Arizona’s Instrument to Measure Standards (AIMS) or AIMS Alternate (AIMS A) and achieves greater academic growth with its population of students than most schools.
- “B” schools demonstrate an above average level of performance. For example, “B” schools earn points equal to a school that has 70 percent of students

passing AIMS/AIMS A and generally achieves typical or greater academic growth with its population of students than most schools.

- “C” schools demonstrate an average level of performance. For example, “C” schools earn points equal to a school that has 50 percent of students passing AIMS/AIMS A and generally achieves typical academic growth with its population of students than most schools.
- “D” schools demonstrate a below average level of performance. For example, “D” schools earn fewer points than a school that has 50 percent of students passing AIMS/AIMS A and does not achieve typical or greater academic growth with its population of students than most schools.
- “F” schools are those that score as a “D” school for three consecutive years. “F” schools are placed in school improvement by the Arizona Department of Education.

Number of schools attended during the school year

All enrollment records were taken into account to compute the number of schools attended during school year 2012/13 with the exception of:

- A change of enrollment within the same school: two successive enrollment records at the same school were not considered as a school change.
- Dual enrollment periods: if the dates of an entire enrollment period were totally overlapping with another entire enrollment period only one school was counted.

Academic outcomes

Arizona’s Instrument to Measure Standards (AIMS): At the time of the study, AIMS was a standardized test administered by the state of Arizona. The state has since replaced this test with the Arizona Measurement of Educational Readiness to Inform Teaching (AzMERIT). In 2010, the Arizona State Board of Education adopted new standards in mathematics and English language arts for all students in Arizona; AIMS tested the old standards whereas AzMERIT is based on the new standards. Spring 2014 was the last time AIMS was administered for mathematics, reading, and writing.

During school year 2012/13, students in grades 3–8 and 10 took the AIMS in mathematics, reading, and writing. For each assessment, students received one of four ratings: *falls far below standard*, *approaches the standard*, *meets the standard*, or *exceeds the standard*, with a goal of meeting or exceeding state standards for all students. Students did not need to pass (i.e., achieve scores at the meets or exceeds the standard levels) the AIMS to be promoted to the next grade, but passing the grade 10 AIMS test was a graduation requirement.

Arizona’s Instrument to Measure Standards Alternate (AIMS A) was administered to eligible students with significant cognitive disabilities. This assessment was administered in mathematics, reading, and science and was aligned with the Arizona Alternate Academic Standards. This study reports the percentage of students who met or exceeded standards in AIMS or AIMS A in mathematics and reading in grades 3–8 and 10.

Arizona English Language Learner Assessment (AZELLA) is a standards-based assessment that measures students' English language proficiency for both placement and reassessment purposes. Students with English as a second language on the state's Home Language Survey take the AZELLA placement test, and their scores determine placement for instruction.

Standardized testing participation: The percentage of students participating in the statewide assessments included the number of students in grades 3–8 and 10 who were tested in mathematics or reading with the AIMS or AIMS A, or took the AZELLA during the 2012/13 school year divided by the total number of students enrolled at any point during the school year in the corresponding grades. This rate is by construction different than the accountability participation rate that uses the number of students enrolled at the time the test is administered.

Percentage of students meeting or exceeding standards: The percentages of students who met or exceeded the standards were reported for students who took:

- The Reading AIMS or AIMS A in grades 3–8 and 10.
- The Mathematics AIMS or AIMS A in grades 3–8 and 10.

Only grade-10 students in the 2015 graduating cohort who were expected to be in grade 10 in 2012/13 and to graduate in 2015 were included in the percentages of students meeting or exceeding the standards.

Dropout and graduation outcomes

Dropout rate: An event rate methodology was used to calculate the single-year dropout rate for students in grades 9–12 in Arizona. It is a ratio of dropouts to the total enrollment of students enrolled during 2012/13. Dropout status was obtained from the year-end or exit codes included with the ADE enrollment records. Dropouts include students who formally dropped out, withdrew from school without an excuse, had a status of unknown, or were expelled.

Grade-12 graduation: For students who were enrolled in grade 12 at the beginning of school year 2012/13, the graduation status at the end of the school year was obtained from the year-end or exit codes included with the ADE enrollment records. In 2012/13, students were counted as graduates only if they completed a course of study for high school; passed all three high school AIMS assessments required for graduation (i.e., mathematics, reading, and writing) or completed an individualized education program (IEP); and fulfilled the AIMS requirement specified in their IEP. Other types of completers, such as students who completed the General Equivalency Degree (GED) or students who completed a course of study at a Joint Technical Education District (JTED) were not included among the graduates.

4. Study limitations

A limitation of this study is the restriction of the population of analysis to students under age 18 as of September 1, 2012. While students in the population could turn 18 during the period of study, the population was defined in a way that recognized students in foster

care having the option to exit the child welfare system at age 18, which a number of students in foster care did. Therefore, students in foster care can only be compared to other students who are in the same age range. By excluding students older than 17, this snapshot of students cannot be compared to similar reports on the K–12 statewide population in its entirety. This restriction especially affected the comparability of high school outcome rates—such as for graduation and dropping out—and is likely to underestimate the final graduation rate for at-risk students who may have fallen behind in course credits and therefore need more time to graduate, including students in foster care, English language learners, and students with disabilities.

Another limitation is that the number of students in foster care reported by district is based on students' first school of enrollment during school year 2012/13. Given the changing foster care status of these students, and their high rates of school mobility, the number of students reported by district is likely an undercount.

Additionally, the data were only for the school year 2012/13 and it was not possible for this study to compute cohort graduation and dropout rates, which is the recommended convention for reporting these outcomes. Instead single-year dropout rates and grade-12 graduation rates were reported. In particular, the single-year dropout rate provides information only on students who drop out and fail to return during 2012/13. Students who dropped out during the school year and returned in a subsequent year to complete their high school education were still counted as dropouts in the study. Similarly, grade-12 students in 2012/13 who did not graduate in 2012/13 but remained enrolled in 2013/14 and graduated were still counted as non-graduates in our study.

Lastly, despite the study achieving a high matching rate, it is likely that some children with a placement in foster care during the period of study were not identified as a student in foster care.

Appendix B. Frequency tables

Table B1. Number and percentage of students by demographic characteristics, for all students, low-socioeconomic-status students, and students in foster care in Arizona public schools, 2012/13

Demographic characteristic		All		Low SES		Foster care	
		Number	Percent	Number	Percent	Number	Percent
Gender	Female	540,921	48.8	260,953	48.7	5,109	47.4
	Male	567,874	51.2	274,728	51.3	5,661	52.6
Race/Ethnicity	Hispanic/Latino	478,330	43.1	312,962	58.4	4,696	43.6
	White	459,582	41.5	129,656	24.2	3,983	37.0
	Black/African American	60,099	5.4	35,365	6.6	1,282	11.9
	American Indian/Alaska Native	54,817	4.9	38,283	7.2	462	4.3
	Asian	30,976	2.8	8,608	1.6	43	0.4
	Multiracial not Hispanic	21,841	2.0	9,406	1.8	278	2.6
	Native Hawaiian/Other Pacific Islander	3,134	0.3	1,397	0.3	26	0.2
	Unknown	16	<0.1	-	-	-	-
English language learners	Yes	67,894	6.1	53,612	10.0	410	3.8
	No	1,040,901	93.9	482,069	90.0	10,360	96.2
Students with disabilities	Yes	117,746	10.6	64,647	12.1	2,473	23.0
	No	991,049	89.4	471,034	87.9	8,297	77.0

Demographic characteristic		All		Low SES		Foster care	
		Number	Percent	Number	Percent	Number	Percent
Disability category	Specific learning disability	48,925	43.8	28,839	46.9	662	30.6
	Speech or language impairment	21,235	19.0	11,128	18.1	187	8.7
	Other health impairment	8,835	7.9	4,016	6.5	195	9.0
	Autism	8,520	7.6	3,474	5.7	101	4.7
	Emotional disturbance	7,079	6.3	3,804	6.2	556	25.7
	Mental retardation/ Intellectual disability	6,414	5.7	4,071	6.6	215	9.9
	Developmental delay	5,785	5.2	3,712	6.0	-	-
	Multiple disabilities	1,885	1.7	991	1.6	56	2.6
	Deafness/ Hearing impairment	1,442	1.3	684	1.1	16	0.7
	Orthopedic impairment	647	0.6	302	0.5	12	0.6
	Visual impairment	483	0.4	219	0.4	-	-
	Traumatic brain injury	308	0.2	168	0.3	-	-
	Deaf-blindness	124	0.1	55	0.1	-	-

Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. Disability category information was missing for 6,064 students with disabilities (0.55 percent) including 3,184 low-socioeconomic-status students and 246 students with disabilities.

"-" masks low cell sizes.

SES = socioeconomic status.

Table B2. Number and percentage of all students, low-socioeconomic-status students, and students in foster care in Arizona public schools, by school characteristics, 2012/13

		All		Low SES		Foster care	
		Number	Percent	Number	Percent	Number	Percent
Number of schools attended during the school year	1 school	1,007,477	90.9	477,947	89.2	6,184	57.4
	2 schools	87,003	7.9	49,199	9.2	2,951	27.4
	3 schools	11,554	1.0	6,910	1.3	1,112	10.3
	4+ schools	2,761	0.3	1,625	0.3	523	4.9
Grade on Arizona's A–F Letter Grade Accountability System	A	331,305	30.0	87,494	16.4	1,809	17.4
	B	398,345	36.0	200,906	37.6	3,773	36.3
	C	294,453	26.6	195,274	36.5	3,484	33.5
	D	68,581	6.2	44,762	8.4	1,036	10.0
	F	4,820	0.4	2,417	0.5	45	0.4
	NR	7,755	0.7	4,154	0.8	262	2.5

Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. Statewide school academic performance letter grade was missing for 3,536 students, including 674 low-socioeconomic-status students and 361 students in foster care.

SES = socioeconomic status.

Table B3. Number and percentage of students enrolled in traditional and nontraditional schools, for all students, low-socioeconomic-status students, and students in foster care in Arizona public schools, by school levels, 2012/13

School level	School type	All		Low SES		Foster care	
		Number	Percent	Number	Percent	Number	Percent
All school levels	Traditional	1,073,479	96.8	514,889	96.1	9,547	88.6
	Nontraditional	35,316	3.2	20,792	3.9	1,223	11.4
Elementary school	Traditional	523,715	99.4	271,337	99.4	5,428	98.6
	Nontraditional	2,930	0.6	1,545	0.6	77	1.4
Middle school	Traditional	256,777	98.8	128,141	98.6	1,932	93.9
	Nontraditional	3,002	1.2	1,776	1.4	126	6.1
High school	Traditional	292,711	90.9	115,276	86.8	2,184	68.2
	Nontraditional	29,364	9.1	17,469	13.2	1,018	31.8

Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

SES = socioeconomic status.

Table B4. Number and percentage of students who participated in Arizona's statewide testing, for all students, students in foster care, and other at-risk student subgroups in Arizona public schools, grades 3–8 and 10, 2012/13

Student subgroup	Grade level	Number of students tested	Total enrolled in fall 2012	Percent tested
All	All grades (3–8,10)	579,984	604,895	95.9
	3	84,127	87,281	96.4
	4	84,121	87,106	96.6
	5	83,187	86,147	96.6
	6	83,545	86,588	96.5
	7	83,500	86,931	96.1
	8	82,400	86,260	95.5
	10	79,104	84,582	93.5
Foster care	All grades (3–8,10)	4,623	5,290	87.4
	3	786	835	94.1
	4	699	743	94.1
	5	647	705	91.8
	6	593	642	92.4
	7	592	700	84.6
	8	580	716	81.0
	10	726	949	76.5
Low SES	All grades (3–8,10)	289,213	301,986	95.8
	3	1,582	44,037	96.5
	4	1,526	43,598	96.6
	5	1,529	42,884	96.6
	6	1,573	42,546	96.4
	7	1,803	41,522	95.8
	8	2,081	40,392	95.1
	10	2,679	34,234	92.7

Student subgroup	Grade level	Number of students tested	Total enrolled in fall 2012	Percent tested
English language learners	All grades (3–8,10)	24,472	25,585	95.7
	3	6,328	6,515	97.1
	4	6,543	6,745	97.0
	5	4,613	4,785	96.4
	6	3,100	3,235	95.8
	7	1,586	1,712	92.6
	8	1,204	1,316	91.5
	10	1,098	1,277	86.0
Students with disabilities	All grades (3–8,10)	66,310	70,338	94.3
	3	9,458	9,951	95.1
	4	10,140	10,642	95.2
	5	10,199	10,698	95.3
	6	9,924	10,440	95.1
	7	9,599	10,183	94.3
	8	9,135	9,770	93.5
	10	7,855	8,654	90.8

Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. Students who participated in statewide testing included students who were tested in mathematics or reading with the AIMS or AIMS A, or took an AZELLA during the 2012/13 school year.

SES = socioeconomic status.

Table B5. Number and percentage of students who met or exceeded standards in mathematics and reading on the AIMS/AIMS A, for all students, students in foster care, and other at-risk student subgroups in Arizona public schools, grades 3–8 and 10, 2012/13

AIMS content area	Student subgroup	Number of students with AIMS/AIMS A scores	Number of students who met or exceeded standards on the AIMS/AIMS A	Percentage of students who met or exceeded standards on the AIMS/AIMS A
Mathematics	All	576,933	365,391	63.3
	Foster care	4,502	1,801	40.0
	Low SES	287,365	153,763	53.5
	English language learners	24,059	4,984	20.7
	English language learners in foster care	152	20	13.2
	Students with disabilities	65,852	18,069	27.4
	Students in foster care with disabilities	1107	249	22.5
Reading	All	577,677	454,583	78.7
	Foster care	4,544	2,761	60.8
	Low SES	287,868	204,230	71.0
	English language learners	24,060	5,992	24.9
	English language learners in foster care	152	30	19.7
	Students with disabilities	65,964	26,687	40.5
	Students in foster care with disabilities	1110	387	34.9

Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

Note. The AIMS/AIMS A results in grade 10 are for students in the 2015 graduating cohort in grade 10.

AIMS = Arizona Instrument to Measure Standards; SES = socioeconomic status.

Table B6. Single-year dropout rate by grades 9–12 for all students, students in foster care, and other at-risk student subgroups in Arizona public schools, 2012/13

Student subgroup	Grade level	Number of students	Number of students who dropped out	Percentage of students who dropped out
All	Grades 9–12	322,075	15,211	4.7
	9	88,434	2,818	3.2
	10	84,582	3,735	4.4
	11	82,265	4,660	5.7
	12	66,794	3,998	6.0
Foster care	Grades 9–12	3,202	479	15.0
	9	903	111	12.3
	10	949	142	15.0
	11	850	134	15.8
	12	500	92	18.4
Low SES	Grades 9–12	132,745	7,896	6.0
	9	35,155	1,351	3.8
	10	36,913	2,109	5.7
	11	34,434	2,444	7.1
	12	26,243	1,992	7.6
English language learners	Grades 9–12	4,987	364	7.3
	9	2,348	95	4.1
	10	1,277	113	8.9
	11	892	99	11.1
	12	470	57	12.1

Student subgroup	Grade level	Number of students	Number of students who dropped out	Percentage of students who dropped out
English language learners in foster care	Grades 9–12	39	<15	-
	9	<15	-	-
	10	<15	-	-
	11	<15	-	-
	12	<15	-	-
Students with disabilities	Grades 9–12	30,969	1,905	6.2
	9	9,193	379	4.1
	10	8,654	509	5.9
	11	7,975	587	7.4
	12	5,147	430	8.4
Students in foster care with disabilities	Grades 9–12	926	137	14.8
	9	266	33	12.4
	10	276	35	12.7
	11	245	40	16.3
	12	139	29	20.9

Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

"-" masks low cell sizes.

SES = socioeconomic status.

Table B7. Number and percentage of grade-12 students who graduated, for all students, students in foster care, and other at-risk student subgroups in Arizona public schools, 2012/13

Student subgroup	Number of students in grade 12	Number of grade-12 students who graduated at end of school year	Percentage of grade-12 students who graduated at end of school year
All	66,794	52,060	77.9
Foster care	500	166	33.2
Low SES	26,243	18,633	71.0
English language learners	470	120	25.5
English language learners in foster care	<15	-	-
Students with disabilities	5,147	3,300	64.1
Students in foster care with disabilities	139	39	28.1

Source. Authors' analysis of linked administrative data from the Arizona Department of Education and Arizona Department of Child Safety, 2012/13.

"-" masks low cell sizes.

SES = socioeconomic status.



Arizona's Invisible Achievement Gap

*Education Outcomes of Students in Foster Care in
the State's Public Schools*