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Achievement trends of schools and students in Arizona's Title I school improvement program

Prepared by

Eric W. Crane
WestEd

Vanessa X. Barrat
WestEd

Min Huang
WestEd

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July 2011

This REL West Technical Brief responds to an Arizona Department of Education request to study academic performance in schools receiving funding through the federal Title I compensatory education program.

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

Summary

This technical brief responds to an Arizona Department of Education request to study academic performance in schools receiving funding through the federal Title I compensatory education program, the section of the No Child Left Behind Act of 2001 governing resources for schools and districts serving disadvantaged populations. The brief describes for 2005/06–2008/09 the numbers and distribution of Arizona public schools and students across school levels (elementary, middle, high) for three school types: Title I Schools in Improvement (participating in the school improvement program, a public program to improve the academic performance of students in schools not meeting adequate yearly progress for at least two consecutive years); Title I Schools Not in Improvement; and non–Title I schools. It reports how Schools in Improvement are distributed across school improvement statuses, compares trends in reading and math proficiency for students attending each school type, and examines patterns of movement in and out of school improvement among Title I schools.

Monitoring school effectiveness and efforts to improve academic performance is a key function of the Arizona Department of Education. As the state revises its school support system, it looks to school achievement trends to help evaluate its efforts, particularly those for low-performing schools (K. Hrabluk, Associate Superintendent for School Effectiveness—personal communication, August 26, 2009).

Southwest Comprehensive Center, the federally funded technical assistance provider helping the Arizona Department of Education implement the No Child Left Behind Act, requested data on the achievement trends of Title I Schools in Improvement to inform how it advises on the development of the state's school support system. The Arizona Department of Education Office of Data Management provided statewide school-level data files from AZ LEARNS, the state's school and district accountability mechanism covering school type, school improvement status, and school level. It also provided grade-level achievement data derived from Arizona's Instrument to Measure Standards, the statewide criterion-referenced test used to track student proficiency in grades 3–8 and 10 for adequate yearly progress determinations.

This study addresses four research questions on Arizona public schools and students:

- How are schools and students distributed across school levels and school types, and how did this distribution change over 2005/06–2008/09?
- For each school level, how are Title I Schools in Improvement, and students in those schools, distributed by school improvement status?

- How do student proficiency rates in reading and math vary by school level and 2008/09 school type, and how did these rates change over 2005/06–2008/09 in schools defined by their 2008/09 school type?

- Among 2008/09 Title I schools, what was the pattern of movement in and out of school improvement?

Key findings include:

- The number and percentage of Arizona Schools in Improvement are growing. Of Arizona's 1,912 public schools in 2008/09, 1,181 (62 percent) received Title I funding. Of those 1,181, 306 (26 percent) were in Improvement; in 2005/06, 1,119 of 1,988 public schools (56 percent) received Title I funding, and 154 (14 percent) of those schools were in Improvement.

- In 2008/09, more Arizona Title I middle schools (52 percent) than Title I elementary schools (18 percent) and Title I high schools (39 percent) were in Improvement.

- Reading and math proficiency increased over the study period for students in all three school types, based on 2008/09 school type. In 2008/09, Arizona Title I Schools in Improvement had student proficiency rates of 43–61 percent, Title I Schools Not in Improvement had rates of 60–71 percent, and non–Title I schools had rates of 76–84 percent. But since 2005/06, the Schools in Improvement in 2008/09 had made proficiency gains of 5–9 percentage points, more than Title I Schools Not in Improvement (3–7 percentage points) and non–Title I schools (<1–4 percentage points).

- Among the 978 schools receiving Title I funding throughout the study period, more schools, both by number and percentage, entered the school improvement program than left it. Of the 132 Title I Schools in Improvement when the study period began, 27 (20 percent) improved enough to leave the program before it ended (1 reentered); of the 846 Title I Schools Not in Improvement when the study period began, 195 (23 percent) performed poorly enough to enter before it ended.

Many states are seeing more Title I schools consistently failing to reach adequate yearly progress (Center on Education Policy 2010). Arizona is no different. And though the state's reading and math proficiency grew steadily over the study period, its number of Schools in Improvement doubled, showing that adequate yearly progress targets are outpacing performance improvements.

July 2011

Technical brief

Why this brief?

Monitoring school effectiveness and efforts to improve academic performance is a key function of the Arizona Department of Education. As the state revises its school support system, it looks to school achievement trends to help evaluate its support efforts, particularly those for low-performing schools (K. Hrabluk, Associate Superintendent for School Effectiveness—personal communication, August 26, 2009).

This technical brief responds to an Arizona Department of Education request to study academic performance in schools receiving funding through the federal Title I compensatory education program, the section of the No Child Left Behind (NCLB) Act of 2001 governing resources for schools and districts serving disadvantaged populations. The brief describes for 2005/06–2008/09 the numbers and distribution of Arizona public schools and students across school levels (elementary, middle, high) for three school types: Title I Schools in Improvement (participating in the school improvement program, a public program to improve the academic performance of students in schools not meeting adequate yearly progress for at least two consecutive years); Title I Schools Not in Improvement; and non–Title I schools. It reports how Schools in Improvement are distributed across school improvement statuses, compares trends in reading and math proficiency for students attending each school type, and examines patterns of movement in and out of school improvement among Title I schools. See box 1 for definitions of key terms.

Regional Educational Laboratory West has supported the Arizona Department of Education by examining achievement trends for low-performing districts (Crane et al. 2008). Department staff have now asked it to do the same for low-performing schools—particularly those in Improvement—to better understand school performance and the factors that affect it.

Reviewing school accountability

In 2002, responding to calls to define school performance targets and to meet the requirements of the NCLB Act, Arizona legislators established AZ LEARNS, the state's school and district accountability mechanism. AZ LEARNS measures academic performance on Arizona's Instrument to Measure Standards (AIMS), the standards-based content assessment tracking student proficiency rates for adequate yearly progress determinations (Crane et al. 2008).

Under the NCLB Act, states must assess students annually in grades 3–8 and once in high school (grade 10 in Arizona) using math and reading/language arts tests aligned with state academic standards. To reach adequate yearly progress, schools and districts must meet participation and performance targets on these tests and perform adequately on a state-determined "additional indicator."[1]

To meet the participation requirement, at least 95 percent of students in each designated subgroup (for example, racial/ethnic minority students, students from low-income households, students with disabilities) must take the assessment (Arizona Department of Education 2010). To meet the performance requirement, schools must meet annual measurable achievement objectives, which spell out the percentage of students who must meet or exceed the AIMS proficiency standard.[2] These objectives rise steadily from a baseline in 2001/02–2003/04 or 2001/02–2004/05, depending on the grade level, and reach 100 percent proficiency in 2013/14.

Also under the NCLB Act, each Arizona school receives an annual determination of whether it has met adequate yearly progress. And all schools are subject to the applicable rewards and sanctions. For each Title I school,

BOX 1

Key terms

Adequate yearly progress. Under Title I, state-defined targets for the minimum level of improvement in academic performance (proficiency) schools and districts must achieve. The targets (annual measurable achievement objectives) rise from a baseline in 2001/02–2003/04 or 2001/02–2004/05, depending on the grade level, and reach 100 percent proficiency in 2013/14.

Arizona's Instrument to Measure Standards. Arizona's criterion-referenced test used to track student proficiency for adequate yearly progress determinations.

AZ LEARNS. Arizona's school and district accountability mechanism that produces the school type, school level, and school improvement status data used in this study.

School improvement program. The state program designed to improve the academic performance of students in schools not meeting adequate yearly progress at least two consecutive years. Title I schools in the program are "in Improvement"; Title I schools not in the program are "Not in Improvement"; non–Title I schools are ineligible for the program.

School improvement status. One of five levels of school improvement, each defined by its own intervention plan. The interventions intensify with each consecutive year a school fails to make adequate yearly progress.

Title I. The section of the No Child Left Behind Act of 2001 governing resources for schools and districts serving disadvantaged populations.

the Arizona Department of Education takes additional steps.

Title I governs resources for schools and districts serving disadvantaged student populations, including low-performing students and students from low-income households. It includes accountability provisions for the academic performance of all students and of designated student subgroups to improve reading and math achievement. Whether schools eligible for Title I funding receive it is decided by school district administrators. Arizona Department of Education staff look at adequate yearly progress results for each Title I school to determine whether the school should be designated for the school improvement program (Arizona Department of Education 2009; see box 1).

Title I schools enter the program if they fail to meet adequate yearly progress for two consecutive years. Intensifying interventions with the number of years a school has been in it, the program designates five school improvement statuses:

- Year 1 school improvement.
- Year 2 school improvement.
- Year 3 school improvement (corrective action).
- Year 4 school improvement (plan to restructure).
- Year 5 school improvement (implement restructuring plan).

Outside the program and preceding year 1 school improvement is *warning* or *warning year,* a status for schools that did not meet adequate yearly progress in the most recent year and that in the prior year either met it or were inactive. This brief counts schools in *warning* as not being in Improvement, though it is a first step in the intervention sequence.

Schools exit school improvement by meeting adequate yearly progress two consecutive years. Meeting it once freezes a School in Improvement status. Because Title I schools enter the program for not meeting adequate yearly progress two years running, a third consecutive year of not meeting it advances a school to year 2 school improvement (U.S. Department of Education 2003). Officials at schools in the first two years of school improvement develop a plan to turn the school around,

and the local education agency ensures that the school receives technical assistance. Students can opt to transfer to a public school not designated for the program. They are also eligible to receive supplemental educational services, such as tutoring or remedial classes.

If a school fails to meet adequate yearly progress four consecutive years, it advances to year 3 school improvement (corrective action). The local education agency must take such actions as replacing staff or implementing a new curriculum. If a school in year 3 does not meet adequate yearly progress a fifth consecutive year, it moves to year 4 school improvement (plan to restructure), and the local education agency must develop plans for restructuring the school. This may include reopening the school as a charter school, replacing all or most of its staff, or handing over its operation to a private company with a record of effectiveness. If the school again fails to meet adequate yearly progress, the school would be restructured the next school year, year 5 school improvement (implement restructuring plan).

Research questions

To help analyze the school improvement program's impact on student achievement, the Arizona Department of Education requested information on school and student distributions across school levels and school types, and on student proficiency trends in reading and math, over 2005/06–2008/09. Four research questions on Arizona public schools and students were addressed for this study:

- How are schools and students distributed across school levels and school types, and how did this distribution change over 2005/06–2008/09?
- For each school level, how are Title I Schools in Improvement, and students in those schools, distributed by school improvement status?
- How do student proficiency rates in reading and math vary by school level and 2008/09 school type, and how did these rates change over 2005/06–2008/09 in schools defined by their 2008/09 school type?
- Among 2008/09 Title I schools, what was the pattern of movement in and out of school improvement?

See box 2 and appendix A for a description of the data sources and methodology.

Findings

The findings in this brief provide a broad, statewide look at school performance, focusing on Schools in Improvement, so that the Arizona Department of Education, Southwest Comprehensive Center, and other stakeholders can better examine systems of school support and technical assistance.

How are Arizona public schools and students distributed across school levels and school types, and how did this distribution change over 2005/06–2008/09?

School distribution, 2008/09. Of the 1,912 Arizona public schools in 2008/09, 1,181 (62 percent) received Title I funding (table 1). Among elementary schools, 68 percent received Title I funding; among middle schools, the figure was 58 percent; and among high schools, 50 percent. Among the 255 remaining public schools, the percentages were 54 percent (K–12), 52 percent (alternative), and 44 percent (other).

Of the 1,181 Title I schools in 2008/09, 306 (26 percent) were in Improvement, and the percentages varied by school level: 18 percent of Title I elementary schools, 52 percent of Title I middle schools, and 39 percent of Title I high schools. These 306 schools, 16 percent of all 1,912 Arizona public schools, include 12 percent of all elementary schools, 30 percent of all middle schools, and 20 percent of all high schools.

BOX 2

Data sources and study methodology

Data sources. The Arizona Department of Education Office of Data Management provided statewide school-level data files from AZ LEARNS, Arizona's school and district accountability mechanism. The files included data on school type, school improvement status, and school level for 2005/06–2008/09. The department requested that the analysis begin with 2005/06 data, so that all data used in the study would be comparable (M. Cruz, Information Technology Specialist—personal communication, September 21, 2009). The Office of Data Management also provided student-level achievement data aggregated by grade, derived from Arizona's Instrument to Measure Standards (AIMS), the statewide criterion-referenced test used to track student proficiency in grades 3–8 and 10 for adequate yearly progress determinations. The department also provided official October 1 enrollment information for each school for each year of the study.

Data analysis. Data analysis consisted of five steps:

- *Classifying school level.* AZ LEARNS classifies schools as elementary, high, K–2, K–12, or alternative. Regional Educational Laboratory West collaborated with the Arizona Department of Education to add middle school as a school level, based on grade configuration. For this analysis, K–2 schools (n = 15 in 2008/09) were combined with schools missing data on school level (n = 12 in 2008/09) in the category "other." None of these 27 schools were in Improvement in 2008/09. For reading and math proficiency, the main report focuses on elementary, middle, and high schools. See tables B1–B6 in appendix B for complete results for all schools.

- *Determining reading and math proficiency.* Students' AIMS scores are reported as one of four performance levels: falls far below the standard, approaches the standard, meets the standard, and exceeds the standard. In this brief, students are considered proficient if they meet or exceed the standard.

- *Choosing a sample for trends in reading and math proficiency.* School type in 2008/09 and school level defined the groups for analyzing trends in reading and math proficiency. To maintain consistent sets of schools, analysis was restricted to schools open the entire study period (n = 1,705). Although data were available to include schools closed in one or more years of the study period, results from such an analysis would reflect an inconsistent sample size, making interpretation difficult.

- *Calculating percentages of students proficient in reading and math.* The percentages of students proficient in reading or math were computed by dividing the number of students in a school type who met or exceeded the standard by the number of students in the same school type who took the test the same year. As the basis for analyzing trends in proficiency, these percentages address collections of students pooled across schools; they yield no results on schools' rates of proficiency. See tables B1 and B2 in appendix B for school-level reading and math proficiency data for Schools in Improvement in 2008/09.

- *Tracking Title I school movement in and out of the school improvement program.* This analysis examined whether each school was in Improvement in each study year. It focused on schools receiving Title I funds in all four years (n = 978), ensuring that changes in patterns of school type were not caused by a fluctuating sample size. But because of the requirement that a school receive Title I funding each study year, it excludes some that were Title I in 2008/09.

The number of schools that had each pattern of school improvement program participation over the entire study period was calculated. To understand the patterns more fully, this analysis was replicated for the schools receiving Title I funding at any point in the study (n = 1,327; see appendix C).

TABLE 1

Number and percentage of Arizona schools by school level and school type, 2008/09

	Title I schools								
	In Improvement		Not in Improvement		Subtotal		Non–Title I schools		
School level	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Total
Elementary	139	12.3	626	55.4	765	67.7	365	32.3	1,130
Middle	74	29.8	69	27.8	143	57.7	105	42.3	248
High	55	19.7	85	30.5	140	50.2	139	49.8	279
K–12	15	14.2	42	39.6	57	53.8	49	46.2	106
Alternative	23	18.9	41	33.6	64	52.5	58	47.5	122
Other	0	0.0	12	44.4	12	44.4	15	55.6	27
Total	306	16.0	875	45.8	1,181	61.8	731	38.2	1,912

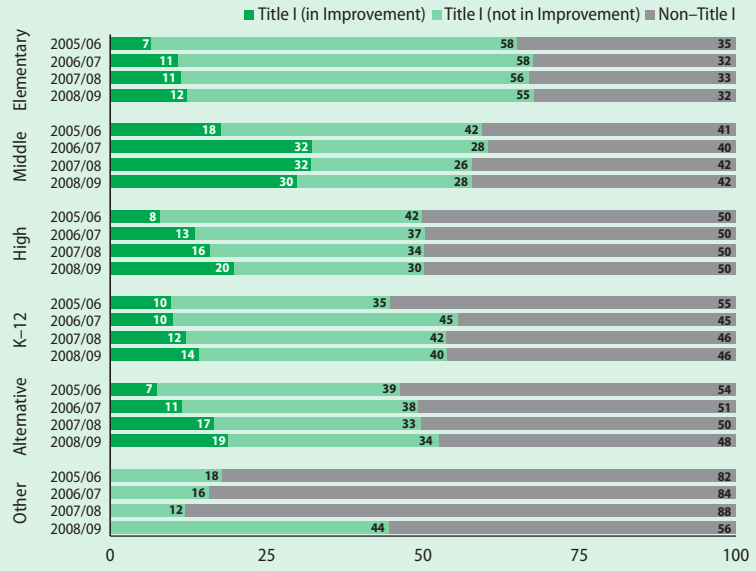
Source: Authors' analysis based on AZ LEARNS data from Arizona Department of Education (2010).

See tables B1 and B2 in appendix B for additional analyses of Schools in Improvement and their enrollments by school improvement status.

Change in school distribution, 2005/06–2008/09. The number and percentage of Title I Schools in Improvement rose over 2005/06–2008/09 for each school type, with the greatest increase from 2005/06 to 2006/07 (figure 1). The number of Schools in Improvement rose from 71 (7 percent of all elementary schools) in 2005/06 to 139 (12 percent) in 2008/09 for elementary schools, from 40 (18 percent) to 74 (30 percent) for middle schools, and from 22 (8 percent) to 55 (20 percent) for high schools. The number of K–12 Schools in Improvement grew from 11 (10 percent of all K–12 schools) to 15 (14 percent), the number of alternative Schools in Improvement from 10 (7 percent of all high schools) to 23 (19 percent). No "other" schools were in Improvement during the study period. See table B3 in appendix B for more school-level distribution data by school type.

FIGURE 1

Percentage of Arizona public schools by school level and school type, 2005/06–2008/09



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

Source: Authors' analysis based on AZ LEARNS data from Arizona Department of Education (2010).

Student distribution, 2008/09. School counts tell part of Arizona's school improvement story, but they do not reveal the student distributions. Of the 1,072,131 students enrolled in Arizona's public schools in 2008/09, 621,152 (58 percent) were in Title I schools (table 2). Two-thirds of elementary school students (66 percent) and more than half of middle school students (56 percent) were in a Title I school. For high school students, the figure was 44 percent. The percentages were 37 for students

TABLE 2

Number and percentage of Arizona students by school level and school type, 2008/09

	Title I schools								
	In Improvement		Not in Improvement		Subtotal		Non–Title I schools		
School level	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Total
Elementary	81,719	13.7	311,508	52.2	393,227	66.0	202,989	34.0	596,216
Middle	50,747	34.2	32,030	21.6	82,777	55.9	65,398	44.1	148,175
High	57,897	22.0	57,697	21.9	115,594	43.9	147,610	56.1	263,204
K–12	4,245	11.1	9,730	25.5	13,975	36.7	24,141	63.3	38,116
Alternative	4,688	23.6	6,246	31.5	10,934	55.1	8,906	44.9	19,840
Other	0	0.0	4,645	70.6	4,645	70.6	1,935	29.4	6,580
Total	199,296	18.6	421,856	39.3	621,152	57.9	450,979	42.1	1,072,131

Source: Authors' analysis based on AZ LEARNS and school enrollment data from Arizona Department of Education (2010).

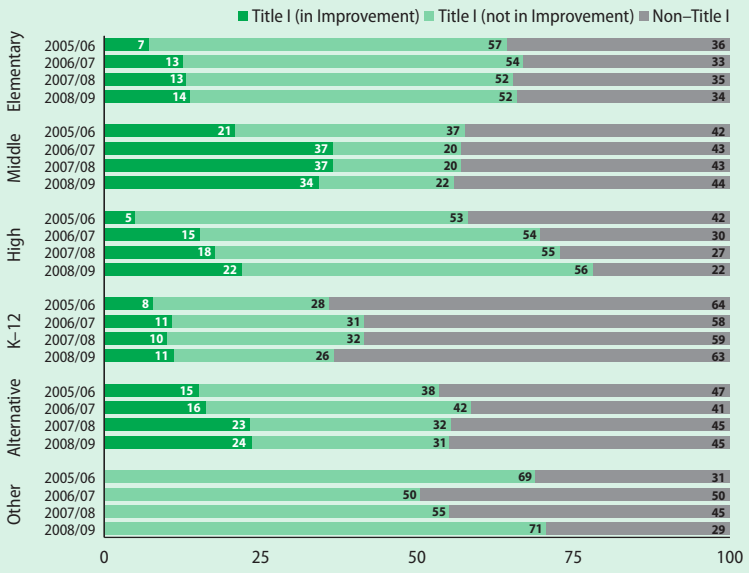
in K–12 schools, 55 for students in alternative schools, and 71 for students in other schools.

Of the 621,152 students in a Title I school, 199,296 (32 percent) were in a School in Improvement. In elementary school, 81,719 (21 percent) of the 393,227 students in a Title I school were in a School in Improvement. In middle school, 50,747 (61 percent) of the 82,777 students in a Title I school were in a School in Improvement. And in high school, 57,897 (50 percent) of the 115,594 students in a Title I school were in a School in Improvement.

The 199,296 students in a School in Improvement, 19 percent of all Arizona public school students, include 14 percent of all elementary school students, 34 percent of all middle school students, and 22 percent of all high school students.

FIGURE 2

Percentage of student enrollment in Arizona public schools by school level and school type, 2005/06–2008/09



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

Source: Authors' analysis based on AZ LEARNS data from Arizona Department of Education (2010).

Change in student distribution, 2005/06–2008/09. The number and percentage of students in Title I Schools in Improvement rose over 2005/06–2008/09 for each school level, with the greatest increase from 2005/06 to 2006/07 (figure 2). The number of students in Schools in Improvement rose from 40,712 (7 percent of all elementary school students) in 2005/06 to 81,719 (14 percent) in 2008/09 for elementary school students, from 32,224 (21 percent) to 50,747 (34 percent) for middle school students (it fell over 2006/07–2008/09), and from 12,242 (5 percent) to 57,897 (22 percent) for high school students. The percentage of K–12 students in Schools in Improvement grew from 8 percent to 11 percent; alternative schools, from 15 percent to 24 percent. No "other"

schools were in Improvement during the study period. See table B4 in appendix B for more student-level distribution data by school type.

For each school level, how are Title I Schools in Improvement, and students in those schools, distributed by school improvement status?

School distribution, 2008/09. In 2008/09, 42 percent of elementary Schools in Improvement were in year 3 school improvement (corrective action) or later, with 13 percent in year 5 school improvement (implement restructuring plan; figure 3). For middle Schools in Improvement, the figures were 68 percent in year 3 or later and 24 percent in year 5; for high Schools in Improvement, 31 percent in year 3 or later and 5 percent in year 5. (See table B1 in appendix B.)

Student distribution, 2008/09. Some 43 percent of the students in elementary Schools in Improvement were in a school in year 3 school improvement (corrective action) or later, with 13 percent in a school in year 5 school improvement (implement restructuring plan; figure 4). For students in middle Schools in Improvement, the figures were 67 percent and 21 percent; for students in high Schools in Improvement, 30 percent and 3 percent. (See table B2 in appendix B.)

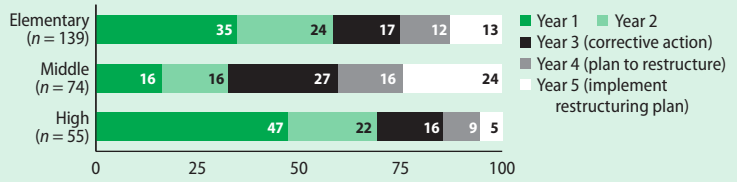
How do student proficiency rates in reading and math vary by school level and 2008/09 school type, and how did these rates change over 2005/06–2008/09 in schools defined by their 2008/09 school type?

Academic performance and school type are related. Proficiency, defined as a student scoring "meets the standard" or "exceeds the standard" on AIMS, is generally lower for Title I Schools in Improvement than for Title I Schools Not in Improvement. The association implies not that enrollment in the school improvement program causes lower rates of proficiency but that lower proficiency causes Title I schools to enter the program.

Student proficiency in reading and math and across school levels ranged from 76 percent (middle school reading and math) to 84 percent (elementary school reading and math) in non–Title I schools, 60 percent (middle school math) to 71 percent (high school reading) in Title I Schools Not in Improvement, and 43 percent (elementary school reading) to 61 percent (high school reading) in Title I Schools in Improvement. Proficiency also grew in both subjects for each school type, with growth of 5–10 percentage points in Title I Schools in Improvement, 3–7 percentage points in Title I Schools Not in

FIGURE 3

Distribution of Arizona Title I Schools in Improvement, by school improvement status and school level, 2008/09 (percent)

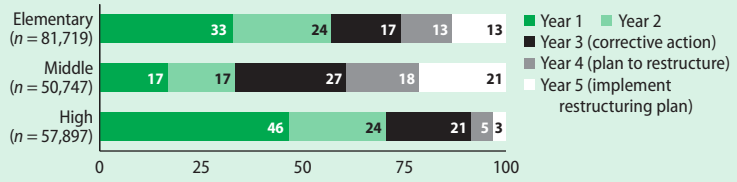


Note: Percentages may not sum to 100 because of rounding. K–12 and alternative schools not shown; see table B1 in appendix B.

Source: Authors' analysis based on AZ LEARNS data from Arizona Department of Education (2010).

FIGURE 4

Distribution of student enrollment in Arizona Title I Schools in Improvement, by school improvement status and school level, 2008/09 (percent)



Note: Percentages may not sum to 100 because of rounding. K–12 and alternative schools not shown; see table B2 in appendix B.

Source: Authors' analysis based on AZ LEARNS data from Arizona Department of Education (2010).

Improvement, and <1–4 percentage points in non–Title I schools.

But rising adequate yearly progress targets outpaced many of these gains. (See table C3 in appendix C.) For example, though proficiency rates improved, the number of Schools in Improvement doubled. Many Title I schools that once could meet adequate yearly progress targets began failing to do so as the targets became harder to reach.

Reading proficiency. In each year of the study, a greater proportion of students in non–Title I elementary schools were proficient in reading than were students in Title I elementary schools (figure 5). In Title I schools, a higher percentage of students in Schools Not in Improvement were proficient than were their in-improvement counterparts.[3]

The percentage of students in Title I elementary Schools in Improvement proficient in reading grew from 43 percent in 2005/06 to 53 percent in 2008/09. The percentage proficient rose from 64 to 70 in Title I elementary Schools Not in Improvement and from 82 to 84 in non–Title I elementary schools.

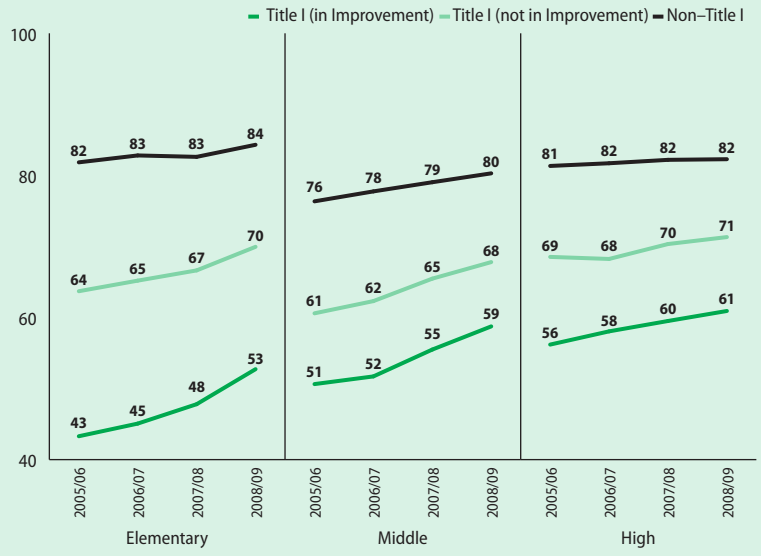
Student reading proficiency increased in middle schools for all school types as well: from 51 percent to 59 percent in Title I Schools in Improvement, from 61 percent to 68 percent in Title I Schools Not in Improvement, and from 76 percent to 80 percent in non–Title I schools.

The percentages of high school students proficient in reading increased for all school types too, but these gains were the smallest: from 56 to 61 in Title I Schools in Improvement, from 69 to 71 in Title I Schools Not in Improvement, and from 81 to 82 in non–Title I schools.

See table B5 in appendix B for additional school-level reading proficiency data.

FIGURE 5

Percentage of Arizona public school students proficient in reading, by school level and 2008/09 school type, 2005/06–2008/09



Note: K–12 and alternative schools not shown; see table B5 in appendix B for complete data.

Source: Authors' analysis based on AZ LEARNS and AIMS data from Arizona Department of Education (2010).

Math proficiency. Math proficiency in elementary schools followed the pattern for reading—students at non–Title I schools have higher proficiency rates but lower growth rates than students at Title I schools, with students in Schools in Improvement having the lowest proficiency rates but the highest growth rates (figure 6).

The percentage of students proficient in math rose over 2005/06–2008/09 in Title I elementary Schools in Improvement and Title I elementary Schools Not in Improvement: from 48 percent to 55 percent in Title I Schools in Improvement and from 67 percent to 70 percent in Title I Schools Not in Improvement. Rates for students in non–Title I schools were approximately stable at 83 percent.

In both middle and high schools, students in non–Title I schools had higher rates of math proficiency and lower rates of growth than their Title I counterparts, with students in Schools in Improvement having the lowest proficiency rates but the highest growth rates.

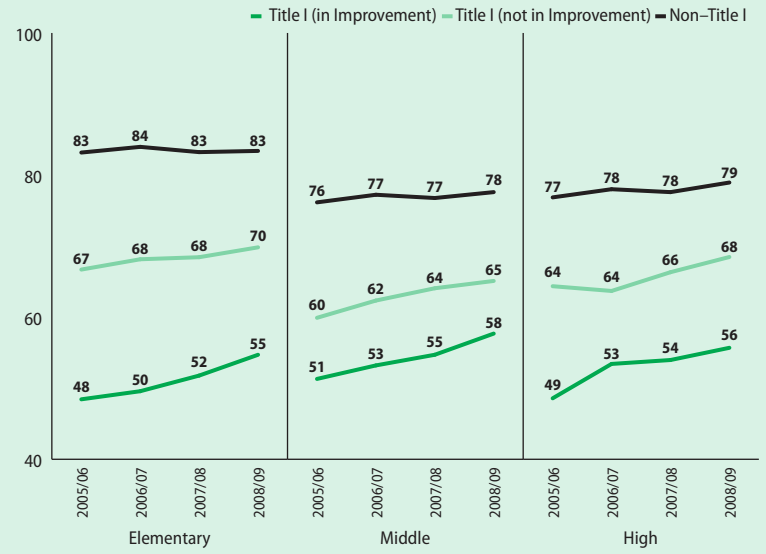
The percentage of middle school students proficient in math increased over 2005/06–2008/09 for each school type: from 51 percent to 58 percent in Title I Schools in Improvement, from 60 percent to 65 percent in Title I Schools Not in Improvement, and from 76 percent to 78 percent in non–Title I schools.

The percentage of high school students proficient in math increased over 2005/06–2008/09 for all school types too: from 49 percent to 56 percent in Title I Schools in Improvement, from 64 percent to 68 percent in Title I Schools Not in Improvement, and from 77 percent to 79 percent in non–Title I schools.

See table B6 in appendix B for additional school-level math proficiency data.

FIGURE 6

Percentage of Arizona public school students proficient in math, by school level and 2008/09 school type, 2005/06–2008/09



Note: K–12 and alternative schools not shown; see table B6 in appendix B for complete data.

Source: Authors' analysis based on AZ LEARNS and AIMS data from Arizona Department of Education (2010).

Among 2008/09 Title I schools, what was the pattern of movement in and out of school improvement?

Arizona Department of Education staff requested an analysis to document the flow of schools in and out of school improvement, including the number of schools that entered but did not exit school improvement during the study period and the number that entered and then exited.

Schools receiving Title I funding in all four study years were selected first, to avoid compositional changes in the set of schools and to complement previous Arizona Department of Education analyses of all Title I schools. To understand the patterns more fully, this analysis was replicated for the schools receiving Title I funding at any point in the study (n = 1,327; see appendix C).

Of the 978 schools in the study receiving Title I funding all four years, the number of Schools in Improvement more than doubled, from 132 (13 percent) in 2005/06 to 279 (29 percent) in 2008/09 (figure 7).[4] Of the 846 Schools Not in Improvement in 2005/06, 195 (23 percent) entered the program later in the study period.

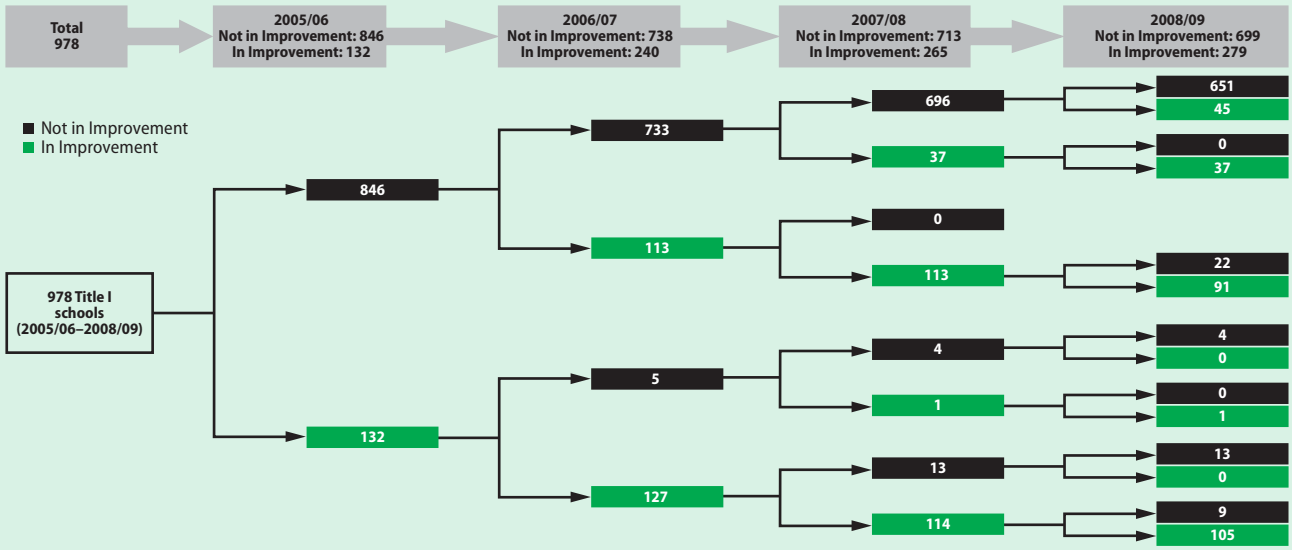
In all, 49 schools left school improvement during the study period. Of the 132 in Improvement in 2005/06, 27 (20 percent) left: 5 in 2006/07 (one re-entered the following year; the only school to change school type twice in the four years), 13 in 2007/08, and 9 in 2008/09. Of the 846 Not in Improvement in 2005/06, 22 both entered and left. These 22 were in Improvement in both 2006/07 and 2007/08 and left in 2008/09.

Finally, there were 756 schools (77 percent of those 978 schools) whose status never changed during the study period. Of these, 651 Title I schools (67 percent) avoided school improvement entirely and 105 (11 percent) were in Improvement all four years.

A companion analysis looked at schools receiving Title I funding in any study year (appendix D). It found that nine schools left school improvement by leaving Title I

FIGURE 7

Trends in school type for Arizona public schools receiving Title I funds each year over 2005/06–2008/09



Source: Authors' analysis based on AZ LEARNS data from Arizona Department of Education (2010).

entirely—by discontinuing receipt of Title I funding. Three Schools in Improvement one year closed the next.

Suggestions for further research

Since the data show a higher percentage of middle schools moving into school improvement—compared with elementary and high schools—more specific study of middle schools, examining factors that could explain their results and how to target additional support for middle school educators, might be informative.

A question not explored in this study but that may help understanding school improvement is whether some schools eligible for Title I funds decline them. Only Title I schools can be publicly designated as "needing improvement." Anecdotal evidence suggests that such decline has occurred, and a definitive answer might help inform policy discussions in 2011, as Arizona prepares to revisit its accountability rules and intervention approaches in response to the NCLB reauthorization.

Limitations

This study has several limitations. Aggregating schools based on current status and examining recent results is problematic; current status is a product of recent results. Title I schools required to participate in the school improvement program have that requirement for failing to meet adequate yearly progress two consecutive years. So their proficiency percentages are almost by definition lower than those of other Title I schools.[5]

Grouping schools by 2008/09 status is problematic for trend analysis as well. Title I Schools in Improvement have lower proficiency percentages in 2008/09 (the end point in the trend analysis) than do other Title I schools. Thus, when examining trends over 2005/06–2008/09, the proficiency in the final year is lower for Schools in Improvement, and it may be more difficult for them to show gains.

The trend analysis was limited to schools open all four years of the study, resulting in an analysis of fewer schools (n = 1,705 versus n = 1,912). It could be argued that this

produces an incomplete picture of school performance and does not reflect the academic performance of students enrolled in a newer school—or any school closed at least one study year. However, analyzing a set of schools whose composition changes each year would cloud the interpretation of results. Even among schools open all four years, one school in 2007/08 (an alternative school not receiving Title I funding) and five schools in 2008/09 (one alternative non–Title I school, one alternative Title I School Not in Improvement, one alternative School in Improvement, one non–Title I high school, and one high School in Improvement) had missing reading test results.

In addition, available data necessitate that student scores for each year be aggregated based on characteristics of the schools in which they are enrolled; however, student mobility between schools, including migration to charter schools, might affect trends in proficiency. This study is unable to detect and adjust for student mobility, which could result in students being included at some but not all points in time in the trend analysis. Students could also move between different school types over time.

Notes

1. The additional indicator differs by school level. For high schools, it is the cohort graduation rate; for elementary and middle schools, student attendance. The details of these indicators' calculations can be found in Arizona's Accountability Workbook (see http://www.ade.az.gov/azlearns/conappaypwb_10_07_06.pdf).
2. The four AIMS proficiency levels are *falls far below the standard, approaches the standard, meets the standard,* and *exceeds the standard*. Students are considered proficient if they meet or exceed the standard.
3. Schools in Improvement have not made adequate yearly progress for at least two years. Their proficiency is expected to be lower than that of other Title I schools.
4. The total of 279 schools indicated here differs from the 306 Schools in Improvement in 2008/09 overall due to the 27 that did not consistently receive Title I funding from 2005/06 to 2008/09.
5. There are scenarios where a school with a high percentage proficient might be classified as a School in Improvement. For example, a school could have a high percentage of students proficient but could repeatedly fail to make adequate yearly progress because of low participation in assessments or low status on the additional indicator. In addition, a school with a high percentage proficient overall could repeatedly fail to make adequate yearly progress because of low performance of a subgroup. Conversely, new schools cannot participate in the school improvement program without two years of data, so a new school, even one with a very low percentage of students proficient, cannot participate in the program.

Appendix A
Study methods

Southwest Comprehensive Center, the federally funded technical assistance provider helping the Arizona Department of Education implement the No Child Left Behind Act of 2001, requested data on the achievement trends of Title I Schools in Improvement to inform how it advises the development of its school support system.

Data sources

The Arizona Department of Education Office of Data Management provided statewide school-level data files from AZ LEARNS, Arizona's school and district accountability mechanism. The files included data on school type, school improvement status, and school level for 2005/06–2008/09. The department requested that the analysis begin with 2005/06 data, so that all data used in the study would be comparable (M. Cruz, Information Technology Specialist—personal communication, September 21, 2009). The Office of Data Management also provided student-level achievement data aggregated by grade, derived from Arizona's Instrument to Measure Standards (AIMS), the statewide criterion-referenced test used to track student proficiency in grades 3–8 and 10 for adequate yearly progress determinations. The department also provided official October 1 enrollment information for each school for each year of the study.

Data analysis

Classifying school level. AZ LEARNS classifies schools as elementary, high, K–2, K–12, or alternative. Regional Educational Laboratory West collaborated with the Arizona Department of Education to add middle schools as a school level, based on grade configuration. For this analysis, K–2 schools (n = 15 in 2008/09) were combined with schools missing data on school level (n = 12 in 2008/09) in the category "other." None of these 27 schools were in Improvement in 2008/09. For reading and math proficiency, the main report focuses on elementary, middle, and high schools. See tables B1–B6 in appendix B for complete results for all schools.

Determining reading and math proficiency. Students' AIMS scores are reported as one of four performance levels: falls far below the standard, approaches the standard, meets the standard, and exceeds the standard. In this brief, students are considered proficient if they meet or exceed the standard.

Choosing a sample for trends in reading and math proficiency. School type in 2008/09 and school level defined the groups for analyzing trends in reading and math proficiency. To maintain consistent sets of schools, analysis was restricted to schools open the entire study period (n = 1,705). Although data were available to include schools closed in one or more years of the study period, results from such an analysis would reflect an inconsistent sample size, making interpretation difficult.

Calculating percentages of students proficient in reading and math. The percentages of students proficient in reading or math were computed by dividing the number of students in a school type who met or exceeded the standard by the number of students in the same school type who took the test the same year. As the basis for analyzing trends in proficiency, these percentages address collections of students pooled across schools; they yield no results on schools' rates of proficiency.

Tracking Title I school movement in and out of the school improvement program. This analysis examined whether each school was in Improvement in each study year. It focused on

schools receiving Title I funds in all four years (n = 978), ensuring that changes in patterns of school type were not caused by a fluctuating sample size. But because of the requirement that a school receive Title I funding in each study year, it excludes some that were Title I in 2008/09.

The number of schools that had each pattern of school improvement program participation over the entire study period was calculated. To understand the patterns more fully, this analysis was replicated for the schools receiving Title I funding at any point in the study (n = 1,327; see appendix C).

Appendix B
Detailed school- and student-level data

This appendix provides detailed school- and student-level data.

TABLE B1

Arizona Title I Schools in Improvement by school level and school improvement status, 2008/09

	Year 1		Year 2		Year 3 (corrective action)		Year 4 (plan to restructure)		Year 5 (implement restructuring plan)		
School level	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Total
Elementary	48	34.5	33	23.7	23	16.5	17	12.2	18	12.9	139
Middle	12	16.2	12	16.2	20	27.0	12	16.2	18	24.3	74
High	26	47.3	12	21.8	9	16.4	5	9.1	3	5.5	55
K–12	6	40.0	5	33.3	1	6.7	2	13.3	1	6.7	15
Alternative	16	69.6	4	17.4	2	8.7	1	4.3	0	0.0	23
Total	108	35.3	66	21.6	55	18.0	37	12.1	40	13.1	306

Note: No "other" schools were in Improvement in 2008/09.

Source: Authors' analysis based on AZ LEARNS data from Arizona Department of Education (2010).

TABLE B2

Arizona Title I students in Schools in Improvement by school level and school improvement status, 2008/09

	Year 1		Year 2		Year 3 (corrective action)		Year 4 (plan to restructure)		Year 5 (implement restructuring plan)		
School level	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Total
Elementary	26,697	32.7	19,774	24.2	14,095	17.2	10,245	12.5	10,908	13.3	81,719
Middle	8,462	16.7	8,397	16.5	13,848	27.3	9,189	18.1	10,851	21.4	50,747
High	26,882	46.4	13,866	23.9	12,164	21.0	3,113	5.4	1,872	3.2	57,897
K–12	1,824	43.0	1,403	33.1	529	12.5	382	9.0	107	2.5	4,245
Alternative	3,762	80.2	585	12.5	289	6.2	52	1.1	0	0.0	4,688
Total	67,627	33.9	44,025	22.1	40,925	20.5	22,981	11.5	23,738	11.9	199,296

Note: No "other" schools were in Improvement in 2008/09.

Source: Authors' analysis based on AZ LEARNS and school enrollment data from Arizona Department of Education (2010).

TABLE B3

Arizona public schools by school level and 2008/09 school type, 2005/06–2008/09

School level and 2008/09 school type	2005/06		2006/07		2007/08		2008/09	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Elementary								
Title I (in Improvement)	71	6.5	118	10.8	126	11.3	139	12.3
Title I (Not in Improvement)	636	58.4	623	56.8	620	55.6	626	55.4
Non–Title I	382	35.1	355	32.4	369	33.1	365	32.3
Total	1,089	100.0	1,096	100.0	1,115	100.0	1,130	100.0
Middle								
Title I (in Improvement)	40	17.7	74	32.2	76	32.1	74	29.8
Title I (Not in Improvement)	94	41.6	65	28.3	61	25.7	69	27.8
Non–Title I	92	40.7	91	39.6	100	42.2	105	42.3
Total	226	100.0	230	100.0	237	100.0	248	100.0
High								
Title I (in Improvement)	22	7.9	38	13.5	44	15.9	55	19.7
Title I (Not in Improvement)	116	41.9	104	36.9	95	34.3	85	30.5
Non–Title I	139	50.2	140	49.6	138	49.8	139	49.8
Total	277	100.0	282	100.0	277	100.0	279	100.0
K–12								
Title I (in Improvement)	11	9.6	11	10.0	13	12.0	15	14.2
Title I (Not in Improvement)	40	35.1	50	45.5	45	41.7	42	39.6
Non–Title I	63	55.3	49	44.5	50	46.3	49	46.2
Total	114	100.0	110	100.0	108	100.0	106	100.0
Alternative								
Title I (in Improvement)	10	7.4	15	11.4	22	16.5	23	18.9
Title I (Not in Improvement)	53	39.0	50	37.9	44	33.1	41	33.6
Non–Title I	73	53.7	67	50.8	67	50.4	58	47.5
Total	136	100.0	132	100.0	133	100.0	122	100.0
Other								
Title I (in Improvement)	0	0.0	0	0.0	0	0.0	0	0.0
Title I (Not in Improvement)	26	17.8	21	15.7	17	11.9	12	44.4
Non–Title I	120	82.2	113	84.3	126	88.1	15	55.6
Total	146	100.0	134	100.0	143	100.0	27	100.0
Grand total	**1,988**		**1,984**		**2,013**		**1,912**	

Source: Authors' analysis based on AZ LEARNS data from Arizona Department of Education (2010).

TABLE B4

Arizona public school students by school level and 2008/09 school type, 2005/06–2008/09

School level and 2008/09 school type	2005/06		2006/07		2007/08		2008/09	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Elementary								
Title I (in Improvement)	40,712	7.1	73,867	12.6	78,044	13.1	81,719	13.7
Title I (Not in Improvement)	325,526	57.1	317,917	54.2	311,055	52.2	311,508	52.2
Non–Title I	203,513	35.7	194,827	33.2	206,604	34.7	202,989	34.0
Total	569,751	100.0	586,611	100.0	595,703	100.0	596,216	100.0
Middle								
Title I (in Improvement)	32,224	20.9	55,918	36.6	55,258	36.5	50,747	34.2
Title I (Not in Improvement)	56,432	36.7	31,251	20.4	30,898	20.4	32,030	21.6
Non–Title I	65,315	42.4	65,703	43.0	65,209	43.1	65,398	44.1
Total	153,971	100.0	152,872	100.0	151,365	100.0	148,175	100.0
High								
Title I (in Improvement)	12,242	4.9	39,333	15.3	45,941	17.6	57,897	22.0
Title I (Not in Improvement)	131,838	53.1	139,423	54.3	143,862	55.2	147,610	56.1
Non–Title I	104,340	42.0	78,196	30.4	70,744	27.2	57,697	21.9
Total	248,420	100.0	256,952	100.0	260,547	100.0	263,204	100.0
K–12								
Title I (in Improvement)	2,707	7.7	4,046	10.8	4,013	9.9	4,245	11.1
Title I (Not in Improvement)	9,845	28.1	11,600	30.8	12,779	31.6	9,730	25.5
Non–Title I	22,477	64.2	21,974	58.4	23,695	58.5	24,141	63.3
Total	35,029	100.0	37,620	100.0	40,487	100.0	38,116	100.0
Alternative								
Title I (in Improvement)	2,947	15.1	3,307	16.2	4,818	23.3	4,688	23.6
Title I (Not in Improvement)	7,453	38.3	8,638	42.4	6,610	32.0	6,246	31.5
Non–Title I	9,082	46.6	8,436	41.4	9,237	44.7	8,906	44.9
Total	19,482	100.0	20,381	100.0	20,665	100.0	19,840	100.0
Other								
Title I (in Improvement)	0	0.0	0	0.0	0	0.0	0	0.0
Title I (Not in Improvement)	7,900	68.7	5,765	50.5	6,429	55.1	4,645	70.6
Non–Title I	3,591	31.3	5,655	49.5	5,239	44.9	1,935	29.4
Total	11,491	100.0	11,420	100.0	11,668	100.0	6,580	100.0
Grand total	**1,038,144**		**1,065,856**		**1,080,435**		**1,072,131**	

Source: Authors' analysis based on AZ LEARNS and school enrollment data from Arizona Department of Education (2010).

TABLE B5

Arizona public school student reading proficiency rates, by school level and 2008/09 school type, 2005/06–2008/09

School level and 2008/09 school type	Number of schools	2005/06 Students tested	2005/06 Percent proficient	2006/07 Students tested	2006/07 Percent proficient	2007/08 Students tested	2007/08 Percent proficient	2008/09 Students tested	2008/09 Percent proficient
Elementary									
Title I (in Improvement)	135	48,057	43.3	49,117	45.1	48,294	47.8	46,422	52.7
Title I (Not in Improvement)	580	161,729	63.7	164,153	65.2	161,586	66.6	159,578	69.9
Non–Title I	320	101,954	81.8	102,641	82.8	101,799	82.6	101,192	84.3
Total	1,035	311,740	66.5	315,911	67.8	311,679	68.9	307,192	72.1
Middle									
Title I (in Improvement)	73	51,395	50.6	51,195	51.7	50,493	55.5	47,196	58.8
Title I (Not in Improvement)	61	29,559	60.6	29,895	62.3	29,240	65.5	28,171	67.8
Non–Title I	87	60,995	76.4	61,865	77.7	61,696	79.0	60,358	80.3
Total	221	141,949	63.8	142,955	65.2	141,429	67.8	135,725	70.2
High									
Title I (in Improvement)	53	14,014	56.2	14,009	58.0	13,960	59.5	13,471	60.9
Title I (Not in Improvement)	75	12,745	68.5	13,068	68.2	13,364	70.3	12,927	71.3
Non–Title I	116	35,922	81.3	36,646	81.7	35,837	82.2	35,443	82.3
Total	244	62,681	73.1	63,723	73.7	63,161	74.7	61,841	75.3
K–12									
Title I (in Improvement)	15	1,559	47.0	1,712	47.5	1,722	46.6	1,769	52.3
Title I (Not in Improvement)	37	4,494	60.3	5,767	64.4	6,800	68.0	7,309	68.8
Non–Title I	43	7,705	82.4	8,284	84.0	8,807	83.8	8,943	84.6
Total	95	13,758	71.2	15,763	72.8	17,329	73.9	18,021	75.0
Alternative									
Title I (in Improvement)	23	1,132	33.1	1,124	32.8	1,018	35.8	930	37.8
Title I (Not in Improvement)	37	1,594	36.5	1,413	39.8	1,354	42.7	1,449	40.8
Non–Title I	50	1,505	46.6	1,743	48.0	1,806	48.4	1,651	48.2
Total	110	4,231	39.2	4,280	41.3	4,178	43.5	4,030	43.1
All	**1,705**	**534,359**	**66.4**	**542,632**	**67.7**	**537,776**	**69.3**	**526,809**	**71.9**

Note: Schools were open all four years of the study. For one school in 2007/08 and five schools in 2008/09, reading test results were not available.

Source: Authors' analysis based on AZ LEARNS and AIMS data from Arizona Department of Education (2010).

TABLE B6

Arizona public school student math proficiency rates, by school level and 2008/09 school type, 2005/06–2008/09

School level and 2008/09 school type	Number of schools	2005/06 Students tested	2005/06 Percent proficient	2006/07 Students tested	2006/07 Percent proficient	2007/08 Students tested	2007/08 Percent proficient	2008/09 Students tested	2008/09 Percent proficient
Elementary									
Title I (in Improvement)	135	48,346	48.4	49,240	49.6	48,267	51.8	46,857	54.7
Title I (Not in Improvement)	580	162,364	66.7	164,474	68.2	161,587	68.4	160,888	69.8
Non–Title I	320	102,190	83.2	102,838	84.0	101,763	83.2	102,147	83.4
Total	1,035	312,900	69.3	316,552	70.4	311,617	70.7	309,892	72.0
Middle									
Title I (in Improvement)	73	51,031	51.3	51,041	53.2	50,467	54.7	47,767	57.7
Title I (Not in Improvement)	61	29,373	59.9	29,802	62.3	29,248	64.1	28,423	65.1
Non–Title I	87	60,377	76.2	61,559	77.2	61,680	76.8	60,942	77.6
Total	221	140,781	63.8	142,402	65.5	141,395	66.3	137,132	68.1
High									
Title I (in Improvement)	53	13,566	48.6	13,601	53.4	13,668	54.0	13,496	55.7
Title I (Not in Improvement)	75	12,291	64.4	12,705	63.7	13,135	66.3	12,975	68.5
Non–Title I	116	34,718	76.9	35,614	78.0	35,362	77.6	35,489	78.9
Total	244	60,575	68.0	61,920	69.7	62,165	70.0	61,960	71.7
K–12									
Title I (in Improvement)	15	1,546	43.3	1,713	43.0	1,714	43.1	1,806	48.5
Title I (Not in Improvement)	37	4,453	51.3	5,744	57.4	6,785	58.6	7,319	58.8
Non–Title I	43	7,603	75.9	8,248	79.9	8,799	79.6	8,983	80.5
Total	95	13,602	64.2	15,705	67.7	17,298	67.8	18,108	68.5
Alternative									
Title I (in Improvement)	23	1,109	21.1	1,170	19.7	1,045	24.9	995	24.5
Title I (Not in Improvement)	37	1,596	24.3	1,453	27.8	1,364	28.7	1,508	28.7
Non–Title I	50	1,567	26.6	1,696	30.6	1,825	28.8	1,715	29.2
Total	110	4,272	24.3	4,319	26.7	4,234	27.8	4,218	27.9
All	**1,705**	**532,130**	**67.2**	**540,898**	**68.6**	**536,709**	**69.0**	**531,310**	**70.5**

Note: Schools were open all four years of the study and had math test results available for each year.

Source: Authors' analysis based on AZ LEARNS and AIMS data from Arizona Department of Education (2010).

Appendix C. School-level reading and math proficiency trends, 2005/06–2008/09

The main report measured reading and math proficiency at the student level—by grouping all students in a given school type and providing the aggregate percentage proficient. Another way is at the school level—retaining the school as the unit of analysis, calculating the percentage proficient in each school, and reporting the distribution of the percentage of proficient students across schools. Schools were designated Title I in Improvement, Title I Not in Improvement, and non–Title I, based on school type in 2008/09. But school type is not fixed. Title I schools move in and out of improvement based on academic performance, and a school can begin or stop receiving Title I funds.

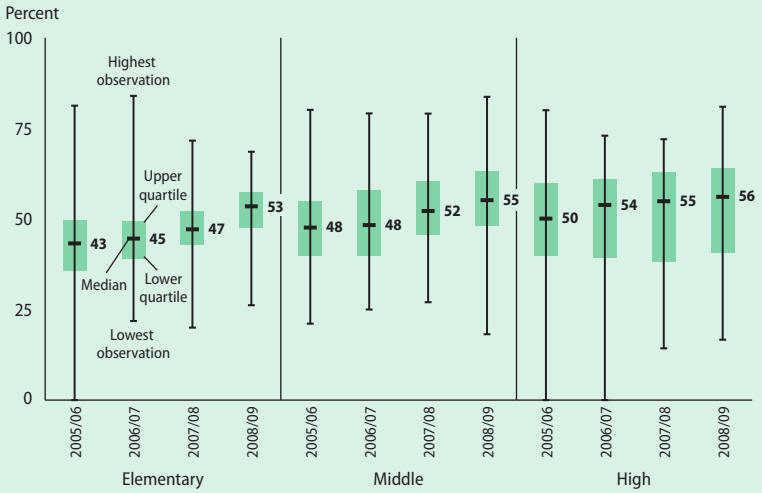
Academic performance and school type are related. Proficiency is generally lower for Title I Schools in Improvement than for Title I Schools Not in Improvement. The association implies not that enrollment in the school improvement program causes lower rates of proficiency but that lower proficiency causes Title I schools to enter the program.

This appendix, using box-and-whisker plots and looking at the data by quartile, examines school-level data and reports how the percentage of proficient students is distributed across schools. These plots show, for each school level and year, the distribution of school-level percentage proficient in reading and math. The results follow the student-level pattern: median proficiency rates grew 6–10 percentage points in reading and math at all school levels over 2005/06–2008/09, but rising adequate yearly progress targets (annual measurable achievement objectives) outpaced the proficiency gains.

This school-level analysis is of interest as a complement to the aggregate proficiency but not as a main focus (K. Hrabluk, Associate Superintendent for School Effectiveness—personal communication, August 26, 2009). The annual distribution of the school-level percentage proficient for each year is described across the set of elementary, middle, and high Schools in Improvement in 2008/09 by presenting the minimum, 25th percentile, median, 75th percentile, and maximum values for each year. The results are shown for reading (figure C1) and math (figure C2).

Just as in the main report, only 2008/09 Schools in Improvement open during all four study years were examined, to avoid a fluctuating sample size. Of these, 135 elementary, 73 middle, and 53 high schools had Arizona's Instrument to Measure Standards, the statewide criterion-referenced test used to track student proficiency, data available.

FIGURE C1
School-level distribution of student reading proficiency for Arizona Title I elementary, middle, and high Schools in Improvement in 2008/09, 2005/06–2008/09



Source: Authors' analysis based on AZ LEARNS and AIMS data from Arizona Department of Education (2010).

Reading

For all three school levels, the median reading proficiency rate rose over 2005/06–2008/09: from 43 percent to 53 percent in elementary schools, from 48 percent to 55 percent in

middle schools, and from 50 percent to 56 percent in high schools (see figure C1).

For elementary schools (12 percentage points) and middle schools (9 percentage points), the 25th percentile of the distribution also increased over the study period. But for high schools, it stayed approximately stable. The long whiskers at the high end of the distribution for some boxes (for example, elementary school in 2006/07) indicate that few Schools in Improvement in 2008/09 had a high percentage of students proficient in reading in a recent year (table C1).

Math

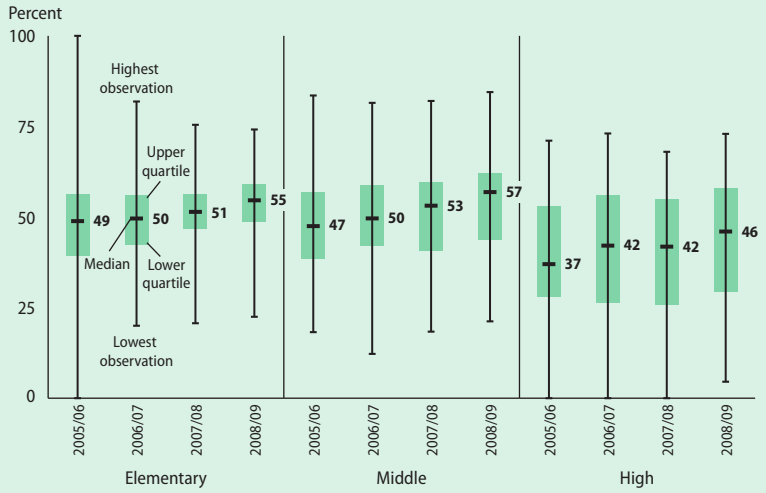
The median percentage of math proficiency increased 6–10 percentage points for each school level too: from 49 percent to 55 percent in elementary schools, from 47 percent to 57 percent in middle schools, and from 37 percent to 46 percent in high schools (see figure C2). But unlike for reading proficiency, the 25th percentile grew for each school level: 9 percentage points in elementary schools, 5 percentage points in middle schools, and 1 percentage point in high schools.

Adequate yearly progress targets are outpacing proficiency gains

To meet adequate yearly progress in Arizona, all Title I schools must meet or exceed state annual measurable achievement objectives in reading/English language arts and math in their tested grades. The objectives rise from a grade level–determined baseline in 2001/02–2003/04 or 2001/02–2004/05 to 100 percent proficiency in 2013/14. Tables C1–C3 illustrate how these objectives are outpacing proficiency gains. From 2005/06 to 2008/09, the objectives rose at least 10 percentage points. Only in elementary schools did the median proficiency rate match the rise in the target.

FIGURE C2

School-level distribution of student math proficiency for Arizona Title I elementary, middle, and high Schools in Improvement in 2008/09, 2005/06–2008/09



Source: Authors' analysis based on AZ LEARNS and AIMS data from Arizona Department of Education (2010).

TABLE C1

School-level distribution of student reading proficiency for Arizona Title I Schools in Improvement in 2008/09 by school level, 2005/06–2008/09 (percent)

School level and year	Mean	Minimum	25th percentile	Median	75th percentile	Maximum
Elementary (n = 135)						
2005/06	42.8	0.0	35.6	43.2	49.7	81.3
2006/07	44.7	21.8	39.1	44.6	49.4	84.0
2007/08	47.1	20.0	42.9	47.1	52.1	71.6
2008/09	52.1	26.2	47.5	53.5	57.3	68.5
Middle (n = 73)						
2005/06	48.7	21.1	39.8	47.6	54.9	80.1
2006/07	49.1	25.0	39.8	48.3	57.9	79.1
2007/08	53.0	27.0	45.7	52.2	60.5	79.1
2008/09	55.7	18.2	48.2	55.2	63.1	83.7
High (n = 53)[a]						
2005/06	48.3	0.0	40.0	50.1	59.9	80.0
2006/07	48.8	0.0	39.4	53.8	61.1	73.0
2007/08	50.6	14.3	38.3	54.9	63.0	72.0
2008/09	52.7	16.7	40.6	56.1	63.9	81.0
K–12 (n = 15)						
2005/06	45.5	16.3	36.4	42.9	55.6	82.7
2006/07	45.6	25.6	34.1	43.8	50.4	82.7
2007/08	45.7	15.8	27.3	43.3	70.6	77.4
2008/09	48.7	15.4	37.5	45.5	58.8	89.6
Alternative (n = 23)[b]						
2005/06	32.5	0.0	22.2	28.6	40.6	87.5
2006/07	30.3	3.8	21.7	31.0	37.7	63.6
2007/08	35.1	7.5	22.7	38.7	42.5	80.0
2008/09	37.5	0.0	28.6	39.6	46.4	75.0

Note: Schools were open all four years of the study. In each year of the study, no "other" schools were in Improvement.

a. n = 52 in 2008/09 because reading test results were not available for one school.

b. n = 22 in 2008/09 because reading test results were not available for one school.

Source: Authors' analysis based on AZ LEARNS and AIMS data from Arizona Department of Education (2010).

TABLE C2

School-level distribution of student math proficiency for Arizona Title I Schools in Improvement in 2008/09 by school level, 2005/06–2008/09 (percent)

School level and year	Mean	Minimum	25th percentile	Median	75th percentile	Maximum
Elementary (*n* = 135)						
2005/06	48.2	0.0	39.4	48.9	56.3	100.0
2006/07	49.1	20.0	42.3	49.6	56.0	81.9
2007/08	50.9	20.7	46.7	51.4	56.1	75.5
2008/09	53.8	22.5	48.7	54.6	59.1	74.2
Middle (*n* = 73)						
2005/06	48.2	18.2	38.6	47.5	56.8	83.5
2006/07	50.0	12.2	42.0	49.6	58.7	81.5
2007/08	51.5	18.4	40.7	53.1	59.7	82.0
2008/09	54.0	21.2	43.7	56.9	62.1	84.5
High (*n* = 53)						
2005/06	37.5	0.0	28.0	37.0	52.9	71.1
2006/07	40.6	0.0	26.3	42.1	56.0	73.1
2007/08	40.0	0.0	25.9	41.8	55.0	68.0
2008/09	42.7	4.5	29.4	46.0	58.0	72.9
K–12 (*n* = 15)						
2005/06	34.9	11.1	20.0	30.0	48.7	81.9
2006/07	37.0	9.7	29.2	32.7	50.0	75.0
2007/08	38.4	5.3	21.5	35.9	52.9	83.9
2008/09	40.4	5.0	20.0	45.0	53.7	87.9
Alternative (*n* = 23)						
2005/06	21.8	0.0	9.1	17.9	29.8	61.1
2006/07	17.1	0.0	10.3	16.7	22.8	42.9
2007/08	22.5	0.0	11.8	26.3	31.8	50.0
2008/09	20.4	0.0	9.1	20.4	30.1	52.0

Note: Schools were open all four years of the study and had math test results available each year. In each year of the study, no "other" schools were in Improvement.

Source: Authors' analysis based on AZ LEARNS and AIMS data from Arizona Department of Education (2010).

TABLE C3

Arizona's annual measurable achievement objectives in reading and math for grades 3–8 and 10, 2001/02–2013/14 (percent)

Grade and assessment	2001/02–2003/04	2004/05–2006/07	2007/08–2009/10	2010/11	2011/12	2012/13	2013/14
Grade 3							
Reading	44.0	53.3	62.6	71.9	81.2	90.5	100.0
Math	32.0	43.3	54.6	65.9	77.2	88.5	100.0
Grade 5							
Reading	32.0	43.3	54.6	65.9	77.2	88.5	100.0
Math	20.0	33.3	46.6	59.9	73.2	86.5	100.0
Grade 8							
Reading	31.0	42.5	54.0	65.5	77.0	88.5	100.0
Math	7.0	22.5	38.0	53.5	69.0	84.5	100.0
Grade 10							
Reading	23.0	35.8	48.6	61.4	74.2	87.0	100.0
Math	10.0	25.0	40.0	55.0	70.0	85.0	100.0
Grade 4							
Reading	—	45.0	56.0	67.0	78.0	89.0	100.0
Math	—	54.0	63.2	72.4	81.6	90.8	100.0
Grade 6							
Reading	—	45.0	56.0	67.0	78.0	89.0	100.0
Math	—	43.0	54.4	65.8	77.2	88.6	100.0
Grade 7							
Reading	—	49.0	59.2	69.4	79.6	89.8	100.0
Math	—	48.0	58.4	68.8	79.2	89.6	100.0

— is not tested.

Source: Arizona Department of Education 2009, 2010.

Appendix D
Movement in and out of Title I and the school improvement program among all Arizona schools receiving Title I funding any year over 2005/06–2008/09

The main report examines movement of Title I schools in and out of improvement by limiting the sample to schools receiving Title I in all four study years, ensuring that a consistent set of schools was present the entire study period and thus avoiding results that might be affected by a fluctuating sample size.

This appendix looks at schools receiving Title I funding in any study year. In the main report, Title I schools were either in Improvement or not, for the entire study period. Considering schools that received Title I funding at any point in the study entails adding two annual conditions: *did not receive Title I funding* and *closed*.

Note that 1,327 schools are reflected in this analysis, compared with 978 in the main report. Note also that nine schools left school improvement by leaving Title I (two in 2006/07, four in 2007/08, and three in 2008/09; table D1). By declining Title I funds following participation in the school improvement program, these schools had their accountability statuses frozen by the Arizona Department of Education, and so perhaps received a reprieve from the most public of accountability sanctions (K. Allen, former Arizona Deputy Associate Superintendent of School Improvement and Intervention—personal communication, June 5, 2007). In addition, three schools in the program one year closed the next, including one that reopened, retaking its place in the program. These data alone cannot conclude that such schools closed because of the school improvement program restructuring requirement, but they might spark additional questions on school responses to AZ LEARNS, the state's school and district accountability system.

TABLE D1

Number of schools following each pattern of Title I and school improvement program participation, among all Arizona schools receiving Title I funding in at least one school year over 2005/06–2008/09

Panel A. Schools that were closed in 2005/06

Four-year pattern of Title I and school improvement program participation				Number of schools
2005/06	2006/07	2007/08	2008/09	
Closed	Closed	Closed	Title I, Not in Improvement	28
Closed	Closed	Non–Title I	Title I, Not in Improvement	3
Closed	Closed	Title I, Not in Improvement	Non–Title I	2
Closed	Closed	Title I, Not in Improvement	Title I, Not in Improvement	19
Closed	Closed	Title I, Not in Improvement	Title I, in Improvement	1
Closed	Non–Title I	Non–Title I	Title I, Not in Improvement	1
Closed	Non–Title I	Title I, Not in Improvement	Non–Title I	1
Closed	Non–Title I	Title I, Not in Improvement	Title I, Not in Improvement	3
Closed	Non–Title I	Title I, Not in Improvement	Title I, in Improvement	1
Closed	Title I, Not in Improvement	Non–Title I	Non–Title I	4
Closed	Title I, Not in Improvement	Title I, Not in Improvement	Closed	1
Closed	Title I, Not in Improvement	Title I, Not in Improvement	Title I, Not in Improvement	13
Closed	Title I, Not in Improvement	Title I, Not in Improvement	Title I, in Improvement	2
Subtotal				**79**

Panel B. Schools that were Non–Title I in 2005/06

Four-year pattern of Title I and school improvement program participation				Number of schools
2005/06	2006/07	2007/08	2008/09	
Non–Title I	Non–Title I	Non–Title I	Title I, Not in Improvement	16
Non–Title I	Non–Title I	Title I, Not in Improvement	Closed	1
Non–Title I	Non–Title I	Title I, Not in Improvement	Non–Title I	6
Non–Title I	Non–Title I	Title I, Not in Improvement	Title I, Not in Improvement	15
Non–Title I	Non–Title I	Title I, Not in Improvement	Title I, in Improvement	2
Non–Title I	Title I, Not in Improvement	Closed	Closed	2
Non–Title I	Title I, Not in Improvement	Non–Title I	Closed	3
Non–Title I	Title I, Not in Improvement	Non–Title I	Non–Title I	7
Non–Title I	Title I, Not in Improvement	Non–Title I	Title I, Not in Improvement	4
Non–Title I	Title I, Not in Improvement	Title I, Not in Improvement	Closed	3
Non–Title I	Title I, Not in Improvement	Title I, Not in Improvement	Non–Title I	5
Non–Title I	Title I, Not in Improvement	Title I, Not in Improvement	Title I, Not in Improvement	47
Non–Title I	Title I, Not in Improvement	Title I, Not in Improvement	Title I, in Improvement	3
Non–Title I	Title I, Not in Improvement	Title I, in Improvement	Title I, in Improvement	5
Non–Title I	*Title I, in Improvement*	*Non–Title I*	*Title I, in Improvement*	*1*
Non–Title I	Title I, in Improvement	Title I, in Improvement	Title I, in Improvement	8
Subtotal				**128**

(CONTINUED)

TABLE D1 (CONTINUED)

Number of schools following each pattern of Title I and school improvement program participation, among all Arizona schools receiving Title I funding in at least one school year over 2005/06–2008/09

Panel C. Schools that were Title I but Not in Improvement in 2005/06

Four-year pattern of Title I and school improvement program participation				Number of schools
2005/06	2006/07	2007/08	2008/09	
Title I, Not in Improvement	Closed	Closed	Closed	16
Title I, Not in Improvement	Closed	Title I, Not in Improvement	Title I, Not in Improvement	1
Title I, Not in Improvement	Non–Title I	Closed	Closed	4
Title I, Not in Improvement	Non–Title I	Non–Title I	Closed	1
Title I, Not in Improvement	Non–Title I	Non–Title I	Non–Title I	15
Title I, Not in Improvement	Non–Title I	Non–Title I	Title I, Not in Improvement	4
Title I, Not in Improvement	Non–Title I	Title I, Not in Improvement	Closed	4
Title I, Not in Improvement	Non–Title I	Title I, Not in Improvement	Non–Title I	2
Title I, Not in Improvement	Non–Title I	Title I, Not in Improvement	Title I, Not in Improvement	7
Title I, Not in Improvement	Non–Title I	Title I, Not in Improvement	Title I, in Improvement	1
Title I, Not in Improvement	Title I, Not in Improvement	Closed	Closed	5
Title I, Not in Improvement	Title I, Not in Improvement	Non–Title I	Closed	3
Title I, Not in Improvement	Title I, Not in Improvement	Non–Title I	Non–Title I	18
Title I, Not in Improvement	Title I, Not in Improvement	Non–Title I	Title I, Not in Improvement	15
Title I, Not in Improvement	Title I, Not in Improvement	Title I, Not in Improvement	Closed	12
Title I, Not in Improvement	Title I, Not in Improvement	Title I, Not in Improvement	Non–Title I	9
Title I, Not in Improvement	Title I, Not in Improvement	Title I, Not in Improvement	Title I, Not in Improvement	651
Title I, Not in Improvement	Title I, Not in Improvement	Title I, Not in Improvement	Title I, in Improvement	45
Title I, Not in Improvement	Title I, Not in Improvement	Title I, in Improvement	Title I, in Improvement	37
Title I, Not in Improvement	*Title I, in Improvement*	*Non–Title I*	*Non–Title I*	*1*
Title I, Not in Improvement	*Title I, in Improvement*	*Title I, in Improvement*	*Non–Title I*	*2*
Title I, Not in Improvement	Title I, in Improvement	Title I, in Improvement	Title I, Not in Improvement	22
Title I, Not in Improvement	Title I, in Improvement	Title I, in Improvement	Title I, in Improvement	91
Subtotal				**966**

(CONTINUED)

TABLE D1 (CONTINUED)

Number of schools following each pattern of Title I and school improvement program participation, among all Arizona schools receiving Title I funding in at least one school year over 2005/06–2008/09

Panel D. Schools that were Title I and in Improvement in 2005/06

Four-year pattern of Title I and school improvement program participation				Number of schools
2005/06	2006/07	2007/08	2008/09	
Title I, in Improvement	**Closed**	**Closed**	**Closed**	**2**
Title I, in Improvement	*Non–Title I*	*Closed*	*Closed*	*1*
Title I, in Improvement	*Non–Title I*	*Non–Title I*	*Non–Title I*	*1*
Title I, in Improvement	Title I, Not in Improvement	Closed	Closed	6
Title I, in Improvement	Title I, Not in Improvement	Title I, Not in Improvement	Closed	8
Title I, in Improvement	Title I, Not in Improvement	Title I, Not in Improvement	Title I, Not in Improvement	4
Title I, in Improvement	Title I, Not in Improvement	Title I, in Improvement	Title I, in Improvement	1
Title I, in Improvement	**Title I, in Improvement**	**Closed**	**Title I, in Improvement**	**1**
Title I, in Improvement	*Title I, in Improvement*	*Non–Title I*	*Title I, in Improvement*	*2*
Title I, in Improvement	Title I, in Improvement	Title I, Not in Improvement	Title I, Not in Improvement	13
Title I, in Improvement	*Title I, in Improvement*	*Title I, in Improvement*	*Non–Title I*	*1*
Title I, in Improvement	Title I, in Improvement	Title I, in Improvement	Title I, Not in Improvement	9
Title I, in Improvement	Title I, in Improvement	Title I, in Improvement	Title I, in Improvement	105
Subtotal				**154**
Grand total				**1,327**

Note: Schools that exited school improvement by moving out of Title I are in italics. Schools that were in the school improvement program one year and closed the next are in bold.

Source: Authors' analysis based on AZ LEARNS data from Arizona Department of Education (2010).

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