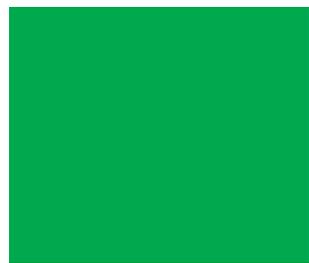




A descriptive analysis of enrollment and achievement among limited English proficient students in Maryland





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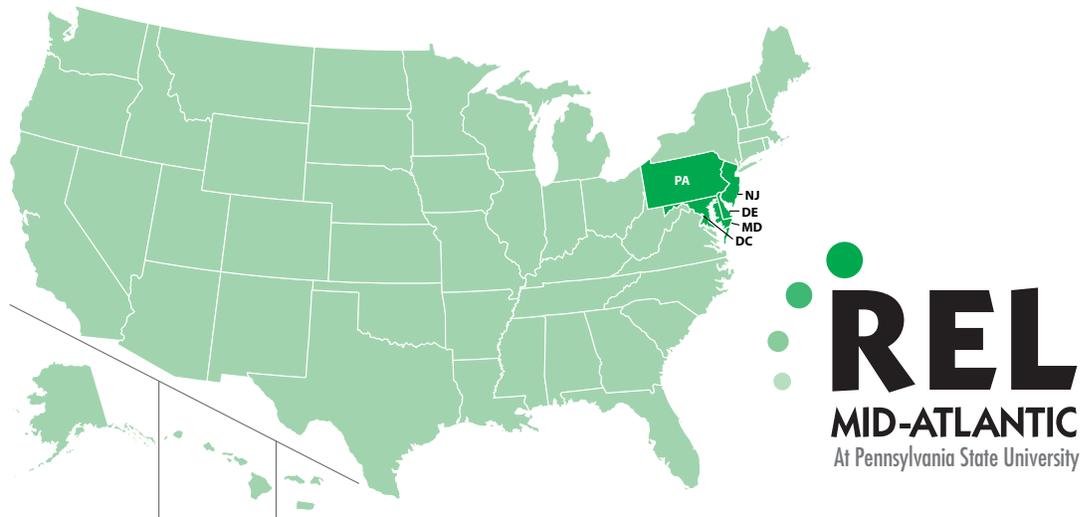
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April 2012

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A descriptive analysis of enrollment and achievement among limited English proficient students in Maryland

This study describes enrollment and achievement trends among limited English proficient (LEP) students in Maryland public schools between 2002/03 and 2008/09. It documents achievement gaps, ranging from 11 to 49 percentage points, between LEP and non-LEP students in reading and math in grades 3–8 and 10. The gaps in both subjects narrowed in all grades except in math in grades 7 and 8.

Limited English proficient (LEP) students are the fastest growing segment of the U.S. student population, including in Maryland.¹ According to the National Clearinghouse for English Language Acquisition and Language Instruction Educational Programs (2011), approximately 5.3 million LEP students were enrolled in preK–12 in 2008/09, accounting for about 10.8 percent of public school students in the United States. National enrollment of LEP students in public schools grew 57 percent between 1995 and 2009 (Flannery 2009)—almost six times the 10 percent growth rate in the general education population (students who are not enrolled in a language assistance program or a special education program).

In Maryland, the number of LEP students has also been growing, in conjunction with a rise in foreign-born residents in the state.

Between 2000 and 2009, the foreign-born population in Maryland rose from 518,315 to 730,400; in 2009, people born in other countries accounted for more than 12 percent of the state's population (Migration Policy Institute 2010a).

Nationally, an achievement gap exists between LEP and non-LEP students in all subject areas, particularly subjects with high language demands (Strickland and Alvermann 2004). On statewide assessments across the country, the percentage of students who achieve proficiency (as defined by each state) is 20–30 percentage points lower among LEP students than among non-LEP students (Abedi and Dietel 2004). The No Child Left Behind Act of 2001 requires states to implement accountability systems to assess the achievement of all students, including students from traditionally underserved populations such as LEP students. The goal is to have all students reach proficiency and to close the achievement gap by 2014 (No Child Left Behind Act of 2001).

This study describes LEP student enrollment and achievement trends in Maryland.² Two research questions guide this study:

- How did the enrollment of LEP students in Maryland public schools change between 2002/03 and 2008/09?

- How did performance (the percentage scoring at the proficient or advanced level) on state assessments in reading and math in grades 3–8 and 10 compare between LEP and non-LEP students in Maryland public schools from 2002/03 to 2008/09?

To report changes in LEP student enrollment and performance, the study uses enrollment and assessment data available through the Maryland State Department of Education website. The descriptive analyses of enrollment data track the number of LEP students, LEP enrollment by grade level, languages spoken by LEP students, and languages with the highest LEP enrollment statewide. The analyses of performance data present the percentage of LEP and non-LEP students who scored at the proficient or advanced level in reading and math on the Maryland School Assessment.³

The study's main findings include:

On enrollment trends:

- From 2002/03 to 2008/09, LEP student enrollment in Maryland public schools increased 73.0 percent, whereas total enrollment increased 2.1 percent. During that period, LEP student enrollment increased from 3.0 percent of total enrollment to 5.2 percent.
- From 2002/03 to 2008/09, LEP students accounted for a larger percentage of total enrollment in elementary school (grades K–5) than in middle school (grades 6–8) or in high school (grades 9–12). In 2008/09, LEP students accounted for 8.2 percent of the elementary school population, 2.7 percent of the middle school

population, and 2.5 percent of the high school population.

- From 2002/03 to 2008/09, Spanish speakers accounted for the largest percentage of LEP students, peaking at 59.9 percent in 2004/05. In 2008/09, Spanish (spoken by 56.8 percent of LEP students) had the most speakers, followed by French (3.3 percent), Chinese (3.2 percent), Vietnamese (2.3 percent), and Korean (2.2 percent). LEP students speaking “other” languages (languages other than the five most common in the state) accounted for 32.1 percent of LEP students in 2008/09.
- From 2002/03 to 2008/09, the number and percentage of LEP students speaking “other” languages increased, whereas the number and percentage of LEP students speaking Korean decreased. The number of LEP students speaking Spanish, Chinese, and Vietnamese increased, but the percentage of the LEP population speaking them decreased. The number of LEP students speaking French increased, but the percentage of the LEP population speaking it did not change.

On achievement trends:

- Between 2002/03 and 2008/09, LEP students' performance in reading increased 23.9–55.3 percentage points in all grades studied (grades 3–8 and 10).⁴ The increase was higher in grades 3, 4, 5, and 10 than in grades 6, 7, and 8.
- Between 2002/03 and 2008/09, LEP students' performance in math increased 16.4–39.8 percentage points in all grades

studied (grades 3–8 and 10).⁵ The increase was higher in grades 3, 4, and 5 than in grades 6, 7, 8, and 10.

- In every year studied, non-LEP students' performance was 12–49 percentage points higher in reading and 11–33 percentage points higher in math.
- Between 2002/03 and 2008/09, the achievement gap in reading and math between LEP and non-LEP students narrowed in grades 3–5 and grade 10; the achievement gap narrowed in reading in grades 6–8 but widened in math in grades 7 and 8.

April 2012

Notes

1. The Maryland State Department of Education defines an LEP student as “a student 3 years old through 21 years old enrolled in an elementary school or secondary school: (a) who (i) was not born in the United States or whose native language is a language other than English; (ii) is a Native American or Alaska Native, or a native resident of the outlying areas, and who comes from an environment where a language other than English has had a significant impact on the individual’s level of English language proficiency; or (iii) is migratory, whose native language is a language other than English, and who comes from an environment where a language other than English is dominant; and (b) whose difficulties in speaking, reading, writing, or understanding the English language may be sufficient to deny the student the: (i) ability to meet the State’s proficient level of achievement on State assessments described in Regulation .05C of this chapter; (ii) ability to successfully achieve in classrooms where the language of instruction is English; or (iii) opportunity to participate fully in society” (Code of Maryland Regulations 2011).
2. This report is one in a series of reports for jurisdictions in the Mid-Atlantic Region (which also includes Delaware, the District of Columbia, New Jersey, and Pennsylvania). The findings are presented in separate reports, as it may be inappropriate to compare LEP enrollment and achievement across jurisdictions because each jurisdiction has different LEP policies and definitions. The findings are also presented in separate reports because the available data varied by jurisdiction.
3. Maryland categorizes student achievement into “basic,” “proficient,” and “advanced.” Further details of the achievement categories are supplied in the main report and its appendices.
4. The reading assessment in grades 4, 6, and 7 was first administered in 2003/04. Beginning in 2004/05, the end-of-course English 2 exam served as the grade 10 Maryland School Assessment in reading.
5. The mathematics assessment in grades 4, 6, and 7 was first administered in 2003/04. Starting in 2005/06, the end-of-course algebra/data analysis exam served as the grade 10 Maryland School Assessment in mathematics.

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This study describes enrollment and achievement trends among limited English proficient (LEP) students in Maryland public schools between 2002/03 and 2008/09. It documents achievement gaps, ranging from 11 to 49 percentage points, between LEP and non-LEP students in reading and math in grades 3–8 and 10. The gaps in both subjects narrowed in all grades except in math in grades 7 and 8.

WHY THIS STUDY?

Limited English proficient (LEP) students¹ are the fastest growing segment of the student population enrolled in public schools in the United States, including in Maryland. This study describes enrollment and achievement trends among LEP students in Maryland public schools from 2002/03 to 2008/09. (Box 1 defines key terms.)

National increase in the number of LEP students

According to the National Clearinghouse for English Language Acquisition and Language Instruction Educational Programs (2011), approximately 5.3 million LEP students were enrolled in preK–12 in 2008/09, accounting for about 10.8 percent of public school students in the United States. National enrollment of LEP students in public schools grew 57 percent between 1995 and 2009 (Flannery 2009)—almost six times the 10 percent growth rate in the general education population.

In the 1990s, the majority of LEP students were concentrated in a few states, including California, Florida, and Texas. Since then, the number of LEP students across the country has risen, with increasing diversity in the languages they speak (Shin and Bruno 2003; Shin and Kominski 2010). The growth in the number of LEP students reflects the growth in the number of foreign-born residents in the United States (Migration Policy Institute 2010a). According to the Migration Policy Institute (2010a), about 39 million foreign-born residents lived in the United States in 2009, accounting for 12.5 percent of the population. The number of foreign-born residents who obtained permanent legal resident status rose from roughly 841,000 in 2000 to 1,131,000 in 2009, an increase of about 35 percent (U.S. Department of Homeland Security 2010).

The achievement gap between LEP and non-LEP students

Nationally, an achievement gap exists between LEP and non-LEP students (Strickland and Alvermann 2004). On state assessments, the percentage of

BOX 1

Key terms

Achievement gap. The difference between how well students from minority subgroups, including limited English proficient (LEP) students and students from low-income households, perform on standardized tests as compared with their peers (No Child Left Behind Glossary 2001). In this report, the achievement gap is calculated by subtracting the percentage of LEP students at a specific grade level who scored proficient or advanced on a state assessment from the percentage of non-LEP students at the same grade level who scored proficient or advanced on the same assessment.

Foreign born. Anyone residing in the United States who was not a U.S. citizen at birth, including naturalized citizens, lawful permanent residents, certain legal nonimmigrants (for example, people on student or work

visas), people admitted under refugee or asylee status, and people illegally residing in the United States (Migration Policy Institute 2010a).

Limited English proficient (LEP) students. According to the Maryland State Department of Education, “a student 3 years old through 21 years old enrolled in an elementary school or secondary school: (a) who: (i) was not born in the United States or whose native language is a language other than English; (ii) is a Native American or Alaska Native, or a native resident of the outlying areas, and who comes from an environment where a language other than English has had a significant impact on the individual’s level of English language proficiency; or (iii) is migratory, whose native language is a language other than English, and who comes from an environment where a language other than English is dominant; and (b) whose difficulties in speaking, reading, writing, or

understanding the English language may be sufficient to deny the student the: (i) ability to meet the State’s proficient level of achievement on State assessments described in Regulation .05C of this chapter; (ii) ability to successfully achieve in classrooms where the language of instruction is English; or (iii) opportunity to participate fully in society” (Code of Maryland Regulations 2011).

Non-limited English proficient (non-LEP) students. Native speakers of English, those who speak a language other than English at home but are identified as initially fluent speakers of English, and those who were LEP students but have been reclassified as fluent English proficient (Abedi 2004).

Performance. In this study, a term used as shorthand for the percentage of students scoring at the proficient or advanced level on the Maryland School Assessment.

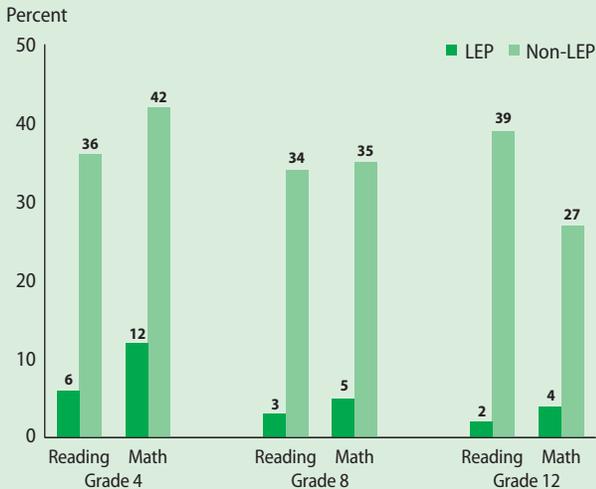
students who achieve proficiency (as defined by each state) is 20–30 percentage points lower among LEP students than among non-LEP students (Abedi and Dietel 2004). Studies using nationally representative assessment data clearly and consistently show a large achievement gap between LEP and non-LEP students in all subject areas (Abedi and Gándara 2006; Solano-Flores and Trumbull 2003; Wolf et al. 2008).

Recent scores on the National Assessment of Educational Progress (NAEP) illustrate the achievement gap between LEP and non-LEP students in reading and math at all grades tested (figure 1; U.S. Department of Education 2010). On the 2009 NAEP reading assessment, the achievement gap between LEP and non-LEP students was 30 percentage points in grade 4, 31 percentage points in grade 8, and 37 percentage points in grade 12. On

the 2009 NAEP math assessment, the achievement gap was 30 percentage points in grades 4 and 8, and 23 percentage points in grade 12.

Other studies have illustrated the widening achievement gap in reading/language arts and math between LEP and non-LEP students. National studies using 2005 NAEP math data (Fry 2007) and Stanford 9 reading data (Abedi 2002) found wider gaps between LEP and non-LEP students in middle school and high school than in elementary school. State data yielded similar results: 2001 Stanford 9 reading data for California (Gándara et al. 2003) and 2010 New England Common Assessment Program reading data for Rhode Island (Rhode Island KIDS COUNT 2011). A state-level cohort analysis of a group of California students from 1998 to 2001 found that LEP students’ assessment scores tended

FIGURE 1
Percentage of students scoring at or above the proficient level on the 2009 National Assessment of Educational Progress, by grade, subject, and English proficiency status



Source: Authors' analysis based on data from U.S. Department of Education (2010).

to be comparable to non-LEP students' scores in the early elementary school grades but fell below non-LEP students' scores by grade 5, and the gap continued to widen throughout the students' school careers (Gándara et al. 2003).

One possible explanation for the change in the achievement gap across grades outlined in the research literature is that the language demand of the assessments increases as grade levels rise. According to the Standards for Educational and Psychological Testing (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education 1999, p. 91), "for all test takers, any test that employs language is, in part, a measure of their language skills. This is of particular concern for test takers whose first language is not the language of the test." The language demands of national and state assessments may affect the academic performance of LEP students with low English proficiency. Thus, these assessments inadvertently become measures of English language proficiency in addition to being measures of content area knowledge and skills.

The achievement gap between LEP and non-LEP students reported in the literature is wider in reading/language arts, which has high language demand, than in subjects such as science and math, where language is not the target of measurement (Abedi 2002; Abedi and Herman 2010). In a study using data from several school districts in different states, Abedi, Leon, and Mirocha (2003) found that the achievement gap between LEP and non-LEP students is widest in reading, substantially narrower in science, and nonexistent in math items involving computations (but not in math items that involve the use of language, such as word problems).

Legislation affecting the assessment of LEP students

Closing the achievement gap between subgroups such as LEP and non-LEP students is a critical step toward achieving the No Child Left Behind (NCLB) Act of 2001 goal of having all students achieve proficiency in reading and math by 2014. The law requires states to implement accountability systems to assess the achievement of all students including traditionally underserved populations such as LEP students. Under Title I of the NCLB Act, all students, including LEP students, must be tested annually in grades 3–8 and once in high school, and states must provide LEP students with appropriate accommodations, including modifications of the assessment language and format, until the students achieve English language proficiency. Because LEP students are still developing English language skills, state assessments in a non-native language may introduce language that is too complex for a student to understand. In such cases, accommodations may be made during the assessment to minimize the impact of complex language without giving LEP students an unfair advantage over students who do not receive accommodations (Abedi 2001).

Regional need for this study

Policymakers in the Mid-Atlantic Region expressed an interest in knowing more about trends in LEP student enrollment and achievement. In

BOX 2

Data sources

This study draws from student enrollment and assessment data in Maryland. Both sets of data include all public school students in Maryland in grades K–12 (regular and charter schools); students from nonpublic private or parochial schools are not included.

Enrollment data are from Maryland State Department of Education (2009a,b). These data were used to track total enrollment and limited English proficient (LEP) student enrollment, to track LEP student enrollment by grade level, and to identify the languages spoken by the highest number of LEP students. The

2002/03 school year was selected as the base year because it is the first year that states were required to disaggregate and report data on traditionally underserved populations under the No Child Left Behind Act of 2001. The 2008/09 school year was the most recent year for which data were available.

State assessment data were used to track LEP and non-LEP students' achievement in reading and math assessments over time. These data— from the Maryland School Assessment (MSA)—show changes in achievement for both groups of students.

The MSA reading and math data for grades 3, 5, and 8 span 2002/03–2008/09; in 2003/04, the Maryland

Department of Education added reading and math assessments in grades 4, 6, and 7, so the MSA reading and math data for grades 4, 6, and 7 span 2003/04–2008/09. The MSA reading data for grade 10 span 2004/05–2008/09; data disaggregated by LEP status were unavailable for the grade 10 MSA in reading in 2002/03 and 2003/04. The MSA math data for grade 10 span 2005/06–2008/09; the grade 10 MSA in math changed in 2005/06: prior to 2005/06, the end-of-course geometry exam served as the grade 10 MSA in math, and starting in 2005/06, the end-of-course algebra/data analysis exam served as the grade 10 MSA in math, so grade 10 math results starting in 2005/06 are not comparable to results prior to 2005/06.

2009, the Pennsylvania Department of Education made a request to Regional Educational Laboratory (REL) Mid-Atlantic for a “comprehensive demographic analysis of the state’s LEP population,” including “typical growth trends for this group by language, etc.”² Also requested was “an analysis on various achievement indicators for LEP students.” REL Mid-Atlantic shared this request and its proposed data analysis with other state education agency representatives in the Mid-Atlantic Region (Delaware, the District of Columbia, Maryland, and New Jersey). The director of instructional programs in Maryland indicated that a similar analysis and report would be valuable to her state and offered to provide assistance (such as help in acquiring additional data) if needed.

Research questions

This study addresses two research questions:

- How did the enrollment of LEP students in Maryland public schools change between 2002/03 and 2008/09?

- How did performance (the percentage scoring at the proficient or advanced level) on state assessments in reading and math in grades 3–8 and 10 compare between LEP and non-LEP students in Maryland public schools from 2002/03 to 2008/09?

The study data are described in box 2 and in greater detail in appendix A.

TRENDS IN ENROLLMENT OF LEP STUDENTS

Between 2002/03 and 2008/09, the number of LEP students in Maryland increased 73.0 percent, whereas total public school enrollment increased 2.1 percent (table 1). LEP student enrollment increased every year but not by a consistent amount; the largest year-to-year increases were from 2004/05 to 2005/06 (16.1 percent) and from 2006/07 to 2007/08 (16.0 percent).³ The percentage of LEP students in the total student population increased from 3.0 percent in 2002/03 to 5.2 percent in 2008/09.

TABLE 1

Total and LEP student enrollment in Maryland public schools, 2002/03–2008/09

Year	Total enrollment		LEP student enrollment		
	Number	Percent change from the previous year	Number	Percent change from the previous year	Percent of total enrollment
2002/03	860,895	na	26,175	na	3.0
2003/04	861,416	0.1	28,993	10.8	3.4
2004/05	857,179	-0.5	29,425	1.5	3.4
2005/06	898,732	4.9	34,162	16.1	3.8
2006/07	890,018	-1.0	38,670	13.2	4.3
2007/08	883,812	-0.7	44,851	16.0	5.1
2008/09	878,781	-0.6	45,291	1.0	5.2

na is not applicable.

LEP is limited English proficient.

Source: Maryland State Department of Education 2009a.

From 2002/03 to 2008/09, LEP enrollment as a share of total enrollment was larger and grew faster in elementary school than in middle school and high school (table 2). LEP student enrollment as a share of total enrollment rose from 4.2 percent in 2002/03 to 8.2 percent in 2008/09 in elementary school, compared with increases from 1.9 percent to 2.7 percent in middle school and 2.0 percent to 2.5 percent in high school. More data on LEP enrollment by grade level is in appendix B.

From 2002/03 to 2008/09, Spanish speakers accounted for the largest percentage of LEP students, peaking at 59.9 percent in 2004/05 (table 3). In 2008/09, Spanish (spoken by 56.8 percent of LEP students in the state) had the most speakers, followed by French (3.3 percent), Chinese (3.2 percent), Vietnamese (2.3 percent), and Korean (2.2 percent). LEP students speaking “other”

languages (languages other than the five most common in the state) accounted for 32.1 percent of LEP students in 2008/09, but no language in that category was spoken by more than 2 percent of LEP students.

The number and percentage of LEP students speaking each language fluctuated over 2002/03–2008/09. The number of LEP students speaking Spanish, French, Chinese, and Vietnamese increased between 2002/03 and 2008/09, but the percentage of total LEP enrollment fell for LEP students speaking Spanish, Chinese, and Vietnamese and did not change for LEP students speaking French. The number of LEP students speaking Spanish steadily increased from 2002/03 to 2007/08, to 26,239 students, and slightly declined in 2008/09 by more than 500 students. From 2002/03 to 2007/08, the year-to-year increase in

TABLE 2

LEP student enrollment as a share of total enrollment in Maryland public schools, by grade level, 2002/03–2008/09 (percent)

Grade level	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Elementary (grades K–5)	4.2	4.8	4.9	5.6	6.7	7.9	8.2
Middle (grades 6–8)	1.9	2.1	2.1	2.3	2.6	2.8	2.7
High (grades 9–12)	2.0	2.2	2.2	2.3	2.3	2.6	2.5

Source: Maryland State Department of Education 2009a.

TABLE 3

Number and percentage of LEP students in Maryland public schools, by native language, 2002/03–2008/09

Native language	2002/03		2003/04		2004/05		2005/06		2006/07		2007/08		2008/09	
	Number of LEP students	Percent of the total number of LEP students	Number of LEP students	Percent of the total number of LEP students	Number of LEP students	Percent of the total number of LEP students	Number of LEP students	Percent of the total number of LEP students	Number of LEP students	Percent of the total number of LEP students	Number of LEP students	Percent of the total number of LEP students	Number of LEP students	Percent of the total number of LEP students
Spanish	15,439	59.0	16,207	55.9	17,625	59.9	19,360	56.7	21,932	56.7	26,239	58.5	25,734	56.8
French	—	—	—	—	979	3.3	—	—	1,475	3.8	1,655	3.7	1,493	3.3
Chinese	1,433	5.5	1,243	4.3	1,329	4.5	1,353	4.0	1,382	3.6	1,588	3.5	1,441	3.2
Vietnamese	732	2.8	731	2.5	703	2.4	898	2.6	958	2.5	1,119	2.5	1,056	2.3
Korean	1,603	6.1	1,362	4.7	1,256	4.3	1,159	3.4	1,082	2.8	1,287	2.9	1,018	2.2
Other	6,968	26.6	9,450	32.6	7,533	25.6	11,392	33.3	11,841	30.6	12,963	28.9	14,549	32.1
Total number of LEP students	26,175		28,993		29,425		34,162		38,670		44,851		45,291	

LEP is limited English proficient.

— is not available because French was not listed as a language with high enrollment in 2002/03, 2003/04, or 2005/06.

Source: Maryland State Department of Education 2009b.

the number of LEP students speaking Spanish ranged from 768 to 4,307 students.⁴ From 2002/03 to 2008/09, the number and percentage of LEP students speaking Korean decreased, but the changes were not consistent across time. From 2002/03 to 2006/07, the year-to-year change in the number of students speaking “other” languages ranged from a decrease of 1,917 students (2003/04 to 2004/05) to an increase of 3,859 students (2004/05 to 2005/06).⁵

TRENDS IN ACHIEVEMENT OF LEP STUDENTS

Under Title I of the NCLB Act, all students, including LEP students, are required to participate in their state’s annual standards-based assessment program in reading/language arts, math, and as of 2008, science.⁶

The following sections compare the performance (the percentage scoring at the proficient or advanced level) of LEP and non-LEP students on the Maryland School Assessment (MSA; the Maryland assessment program is described in box 3). The percentage of students who scored at the proficient

or advanced level on each assessment from 2004/05 to 2008/09 is listed in appendix E.

Reading

Grade 3. Overall performance on the grade 3 reading assessment increased from 2002/03 to 2008/09, with larger gains among LEP students than among non-LEP students (figure 2). From 2002/03 to 2008/09, LEP students’ performance increased 55.3 percentage points,⁷ whereas non-LEP students’ performance increased 26.0 percentage points. As a result, the achievement gap in grade 3 reading between LEP and non-LEP students narrowed 29.3 percentage points, from 42.0 percentage points to 12.7.

Grade 4. Overall performance on the grade 4 reading assessment increased from 2003/04 to 2008/09, with larger gains among LEP students than among non-LEP students (figure 3). LEP students’ performance increased 36.5 percentage points from 2003/04 to 2007/08 and decreased 4.6 percentage points from 2007/08 to 2008/09, for a net increase of 31.9 percentage points. Non-LEP students’ performance increased 13.0 percentage

BOX 3

Maryland assessment program*Academic achievement assessments.*

The Maryland School Assessment (MSA) measures academic achievement in reading and math in grades 3–8 and 10.¹ The end-of-course English 2 exam serves as the MSA for grade 10 reading, and the end-of-course algebra/data analysis exam serves as the MSA in grade 10 math. For each assessment, scores in each content area are reported as scale scores (raw scores converted to a common scale that allows numerical comparison of test results over time). The proficiency levels associated with score ranges are:

- *Basic*—indicates that a student is not passing standards and that more work is needed to meet grade-level expectations.
- *Proficient*—indicates that a student is passing standards. Proficient is considered a realistic and rigorous level of achievement.
- *Advanced*—indicates that a student is performing above standards. Advanced is considered a highly challenging and exemplary level of achievement (Maryland State Department of Education 2007).

Scores at the basic level are considered below the state minimum of proficiency and indicate a need for additional instructional support. Complete state definitions of the proficiency levels for each assessment are in appendix C, and the score ranges for each proficiency level are in appendix D.

All students in Maryland must take the MSA. The only exception is for limited English proficient (LEP) students who are in their first year in a U.S. school; they do not have to take the reading assessment and can instead substitute their results on the English language proficiency assessment, but they must take the math and science tests, with accommodations as appropriate.

Four types of accommodations are permitted for LEP student in all assessments: presentation accommodations (for example, a recording of a verbatim reading of the entire test), response accommodations (for example, scribe or bilingual dictionary), timing and scheduling accommodations (for example, extended time, multiple or frequent breaks, multiple test days), and setting accommodations (for example, testing in separate location).

English language proficiency assessments. A home language survey is given to all students. Those who

indicate a first language other than English are given the state English language placement test. Based on the results, students are classified as LEP students or non-LEP students.

The Maryland State Department of Education requires that an English language proficiency assessment be administered to all LEP students every year. The assessment is administered in the spring and measures LEP students' levels of English proficiency. Maryland uses the Language Assessment Scales Links[®] test (LAS Links) to assess English language proficiency. LAS Links measures LEP students' academic and social skills in speaking, listening, reading, and writing. Five levels are used to identify the progression of language skills on the path to English language proficiency: level 1—beginning, level 2—early intermediate, level 3—intermediate, level 4—proficient, and level 5—above proficient.

LEP students must score at level 5 overall on the LAS Links and score at level 4 or above in the four subtests (speaking, listening, reading, and writing) in order to exit a language assistance program.

Note

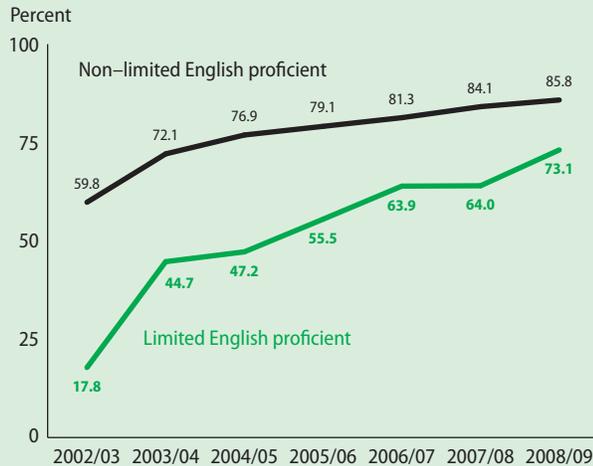
1. The Maryland State Department of Education added reading and mathematics assessments in grades 4, 6, and 7 to the required assessments in 2003/04.

points from 2003/04 to 2007/08 and decreased 1.7 percentage points from 2007/08 to 2008/09, for a net increase of 11.3 percentage points. As a result, the achievement gap in grade 4 reading between LEP and non-LEP students narrowed 20.6 percentage points, from 37.0 percentage points to 16.4.

Grade 5. Overall performance on the grade 5 reading assessment increased from 2002/03 to 2008/09, with larger gains among LEP students than among non-LEP students (figure 4). LEP students' performance increased 19.3 percentage points from 2002/03 to 2005/06, decreased 0.8 percentage

FIGURE 2

Percentage of students scoring at the proficient or advanced level on the grade 3 Maryland School Assessment in reading, by English proficiency status, 2002/03–2008/09

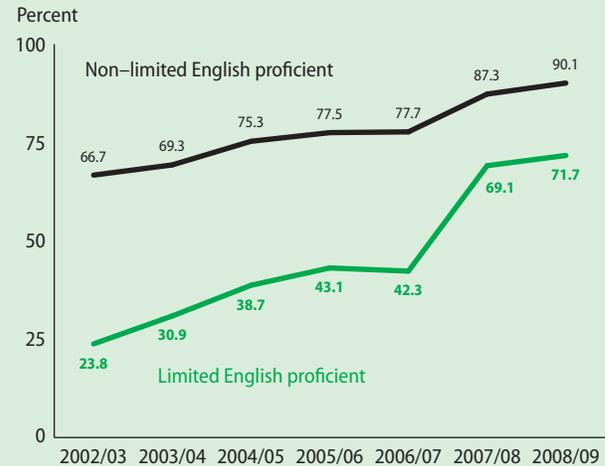


Note: For non-limited English proficient students, $n = 62,275$ in 2002/03, $n = 60,696$ in 2003/04, $n = 59,205$ in 2004/05, $n = 57,761$ in 2005/06, $n = 56,767$ in 2006/07, $n = 54,983$ in 2007/08, and $n = 55,850$ in 2008/09. For limited English proficient students, $n = 2,555$ in 2002/03, $n = 2,439$ in 2003/04, $n = 2,255$ in 2004/05, $n = 2,256$ in 2005/06, $n = 2,604$ in 2006/07, $n = 3,252$ in 2007/08, and $n = 4,040$ in 2008/09.

Source: Maryland State Department of Education 2009c.

FIGURE 4

Percentage of students scoring at the proficient or advanced level on the grade 5 Maryland School Assessment in reading, by English proficiency status, 2002/03–2008/09

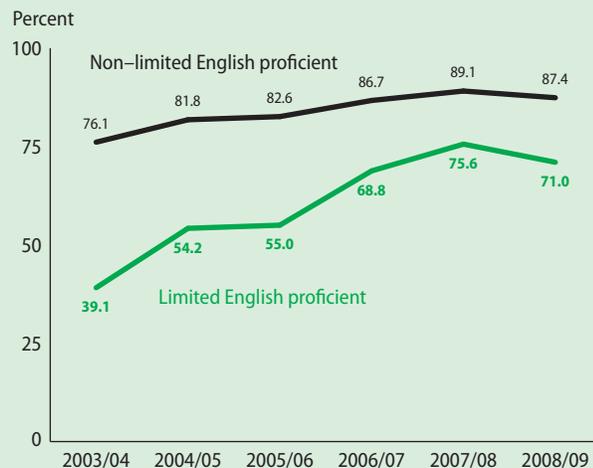


Note: For non-limited English proficient students, $n = 66,376$ in 2002/03, $n = 64,615$ in 2003/04, $n = 63,312$ in 2004/05, $n = 61,512$ in 2005/06, $n = 59,757$ in 2006/07, $n = 58,349$ in 2007/08, and $n = 58,375$ in 2008/09. For limited English proficient students, $n = 1,726$ in 2002/03, $n = 1,627$ in 2003/04, $n = 1,687$ in 2004/05, $n = 1,618$ in 2005/06, $n = 1,784$ in 2006/07, $n = 2,103$ in 2007/08, and $n = 2,005$ in 2008/09.

Source: Maryland State Department of Education 2009c.

FIGURE 3

Percentage of students scoring at the proficient or advanced level on the grade 4 Maryland School Assessment in reading, by English proficiency status, 2003/04–2008/09



Note: The grade 4 reading assessment was first administered in 2003/04. For non-limited English proficient students, $n = 63,116$ in 2003/04, $n = 61,335$ in 2004/05, $n = 59,723$ in 2005/06, $n = 57,859$ in 2006/07, $n = 57,169$ in 2007/08, and $n = 56,181$ in 2008/09. For limited English proficient students, $n = 1,867$ in 2003/04, $n = 1,865$ in 2004/05, $n = 1,712$ in 2005/06, $n = 2,244$ in 2006/07, $n = 2,499$ in 2007/08, and $n = 2,747$ in 2008/09.

Source: Maryland State Department of Education 2009c.

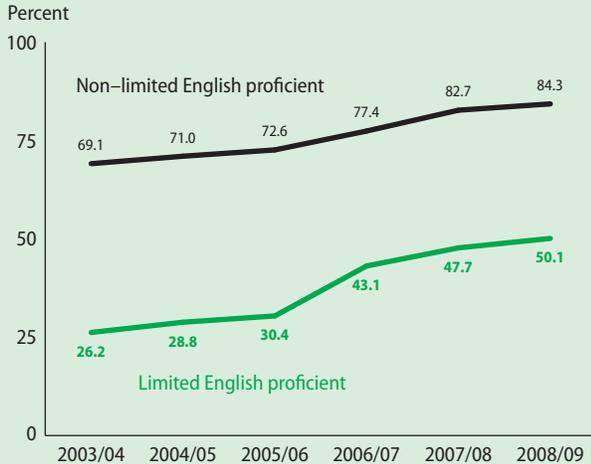
point from 2005/06 to 2006/07, and increased 29.4 percentage points from 2006/07 to 2008/09, for a net increase of 47.9 percentage points.⁸ Non-LEP students' performance increased 23.4 percentage points. As a result, the achievement gap in grade 5 reading between LEP and non-LEP students narrowed 24.5 percentage points, from 42.9 percentage points to 18.4.

Grade 6. Overall performance on the grade 6 reading assessment increased from 2003/04 to 2008/09, with non-LEP students' performance higher than that of LEP students every year (figure 5). LEP students' performance increased 23.9 percentage points, whereas non-LEP students' performance increased 15.2 percentage points. As a result, the achievement gap between LEP and non-LEP students in grade 6 reading narrowed 8.7 percentage points, from 42.9 percentage points to 34.2.

Grade 7. Overall performance on the grade 7 reading assessment increased from 2003/04 to 2008/09, with larger gains among LEP students than among non-LEP students (figure 6). LEP

FIGURE 5

Percentage of students scoring at the proficient or advanced level on the grade 6 Maryland School Assessment in reading, by English proficiency status, 2003/04–2008/09



Note: The grade 6 reading assessment was first administered in 2003/04. For non-limited English proficient students, $n = 67,438$ in 2003/04, $n = 64,711$ in 2004/05, $n = 63,117$ in 2005/06, $n = 60,998$ in 2006/07, $n = 59,454$ in 2007/08, and $n = 58,808$ in 2008/09. For limited English proficient students, $n = 1,199$ in 2003/04, $n = 1,175$ in 2004/05, $n = 1,159$ in 2005/06, $n = 1,447$ in 2006/07, $n = 1,558$ in 2007/08, and $n = 1,537$ in 2008/09.

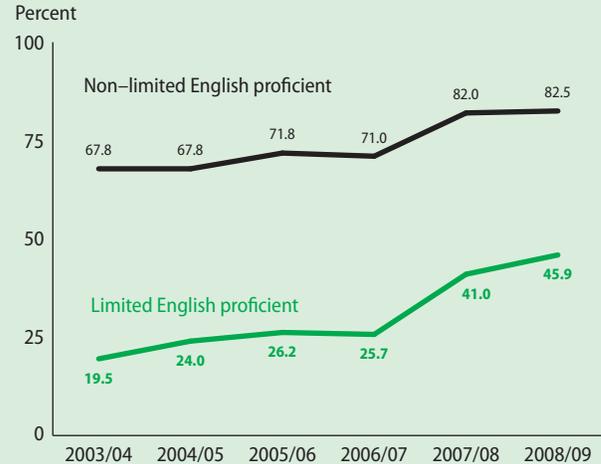
Source: Maryland State Department of Education 2009c.

students' performance increased 6.7 percentage points from 2003/04 to 2005/06, decreased 0.5 percentage point, and increased 20.2 percentage points, for a net increase of 26.4 percentage points. Non-LEP students' performance did not change from 2003/04 to 2004/05, increased 4.0 percentage points from 2004/05 to 2005/06, decreased 0.8 percentage point from 2005/06 to 2006/07, and increased 11.5 percentage points from 2006/07 to 2008/09, for a net increase of 14.7 percentage points.⁹ As a result, the achievement gap in grade 7 reading between LEP and non-LEP students narrowed 11.7 percentage points, from 48.3 percentage points to 36.6.

Grade 8. Overall performance on the grade 8 reading assessment increased between 2002/03 and 2008/09, with non-LEP students' performance higher than that of LEP students every year (figure 7). LEP students' performance increased 11.2 percentage points from 2002/03 to 2005/06, decreased 1.0 percentage point from 2005/06 to 2006/07, and increased 16.6 percentage points from 2006/07 to 2008/09, for a net increase of 26.8 percentage

FIGURE 6

Percentage of students scoring at the proficient or advanced levels on the grade 7 Maryland School Assessment in reading, by English proficiency status, 2003/04–2008/09

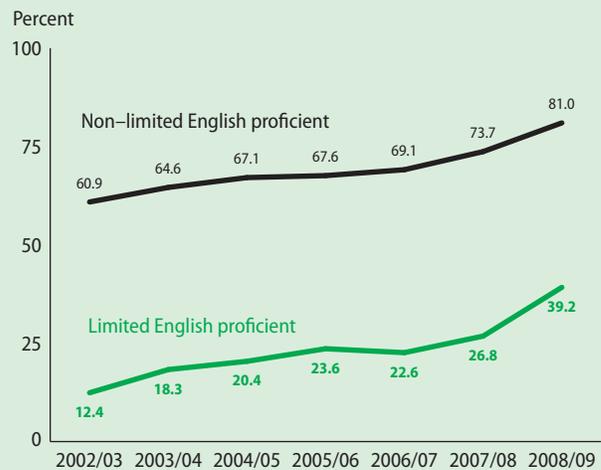


Note: The grade 7 reading assessment was first administered in 2003/04. For non-limited English proficient students, $n = 68,792$ in 2003/04, $n = 67,380$ in 2004/05, $n = 64,380$ in 2005/06, $n = 62,790$ in 2006/07, $n = 61,206$ in 2007/08, and $n = 60,244$ in 2008/09. For limited English proficient students, $n = 1,083$ in 2003/04, $n = 1,005$ in 2004/05, $n = 1,049$ in 2005/06, $n = 1,179$ in 2006/07, $n = 1,295$ in 2007/08, and $n = 1,257$ in 2008/09.

Source: Maryland State Department of Education 2009c.

FIGURE 7

Percentage of students scoring at the proficient or advanced level on the grade 8 Maryland School Assessment in reading, by English proficiency status, 2002/03–2008/09



Note: For non-limited English proficient students, $n = 67,395$ in 2002/03, $n = 67,959$ in 2003/04, $n = 68,134$ in 2004/05, $n = 66,366$ in 2005/06, $n = 63,925$ in 2006/07, $n = 62,670$ in 2007/08, and $n = 61,785$ in 2008/09. For limited English proficient students, $n = 1,310$ in 2002/03, $n = 1,160$ in 2003/04, $n = 1,038$ in 2004/05, $n = 973$ in 2005/06, $n = 1,150$ in 2006/07, $n = 1,174$ in 2007/08, and $n = 1,237$ in 2008/09.

Source: Maryland State Department of Education 2009c.

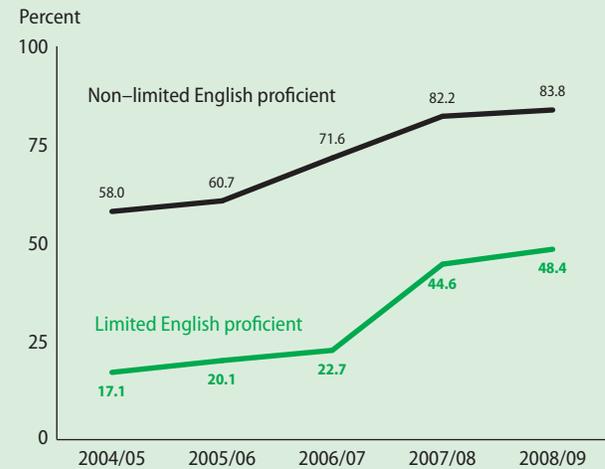
points. Non-LEP students' performance increased 20.1 percentage points. As a result, the achievement gap in grade 8 reading between LEP and non-LEP students narrowed 6.7 percentage points, from 48.5 percentage points to 41.8.

Grade 10. Overall performance on the grade 10 reading assessment increased from 2004/05 to 2008/09, with non-LEP students' performance higher than LEP students' performance every year (figure 8). From 2004/05 to 2008/09, LEP students' performance increased 31.3 percentage points, with the largest year-to-year increase from 2006/07 to 2007/08 (21.9 percentage points).¹⁰ Non-LEP students' performance increased 25.8 percentage points. As a result, the achievement gap in grade 10 reading between LEP and non-LEP students narrowed 5.5 percentage points, from 40.9 percentage points to 35.4.

Summary of achievement gaps in reading. Every year from 2002/03 to 2008/09 and in all grades studied, non-LEP students' performance in reading was higher than that of LEP students. During this period, the achievement gap in reading between LEP and non-LEP students narrowed. However, the pattern of changes over time varied across grades (table 4). In grade 3, the achievement

FIGURE 8

Percentage of students scoring at the proficient or advanced level on the grade 10 Maryland School Assessment in reading, by English proficiency status, 2004/05–2008/09



Note: The high school Maryland School Assessment in reading is represented by the end-of-course test in English 2. Data were not disaggregated by LEP status in 2002/03 and 2003/04. For non-limited English proficient students, $n = 56,905$ in 2004/05, $n = 65,314$ in 2005/06, $n = 64,583$ in 2006/07, $n = 54,533$ in 2007/08, and $n = 56,337$ in 2008/09. For limited English proficient students, $n = 982$ in 2004/05, $n = 931$ in 2005/06, $n = 971$ in 2006/07, $n = 325$ in 2007/08, and $n = 448$ in 2008/09.

Source: Maryland State Department of Education 2009c.

TABLE 4

Achievement gap on the Maryland School Assessment in reading between LEP and non-LEP students, by grade, 2002/03–2008/09 (percentage points)

Grade	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	Average across years studied
3	42.0	27.4	29.7	23.6	17.4	20.1	12.7	24.7
4	na	37.0	27.6	27.6	17.9	13.5	16.4	23.3
5	42.9	38.4	36.6	34.4	35.4	18.2	18.4	32.0
6	na	42.9	42.2	42.2	34.3	35.0	34.2	38.5
7	na	48.3	43.8	45.6	45.3	41.0	36.6	43.4
8	48.5	46.3	46.7	44.0	46.5	46.9	41.8	45.8
10	—	—	40.9	40.6	48.9	37.6	35.4	40.7

na is not applicable because the reading assessment was first administered in that grade in 2003/04.

— is not available because data disaggregated by LEP status are unavailable.

Note: The achievement gap was calculated by subtracting the percentage of LEP students scoring at the proficient or advanced level from that of non-LEP students.

Source: Maryland State Department of Education 2009c.

gap fluctuated from 2002/03 to 2008/09, with year-to-year changes ranging from a decrease of 14.6 percentage points (2002/03 to 2003/04) to an increase of 2.7 percentage points (2006/07 to 2007/08). In grade 4, the achievement gap narrowed from 2002/03 to 2007/08 and widened from 2007/08 to 2008/09. In grade 5, the achievement gap narrowed from 2002/03 to 2005/06, widened from 2005/06 to 2006/07, and narrowed from 2006/07 to 2008/09. In grade 6, the achievement gap changed less than 1 percentage point year to year, except from 2005/06 to 2006/07, when it narrowed 7.9 percentage points. In grade 7, the achievement gap narrowed from 2003/04 to 2004/05, widened from 2004/05 to 2005/06, and narrowed from 2005/06 to 2008/09. In grade 8, the year-to-year change in the achievement gap did not exceed 5.1 percentage points during the period studied. In grade 10, the achievement gap narrowed slightly from 2004/05 to 2005/06, widened from 2005/06 to 2006/07, and narrowed from 2006/07 to 2008/09. During the period studied, the achievement gap in reading between LEP and non-LEP students decreased 20 percentage points or more in grades 3, 4, and 5.

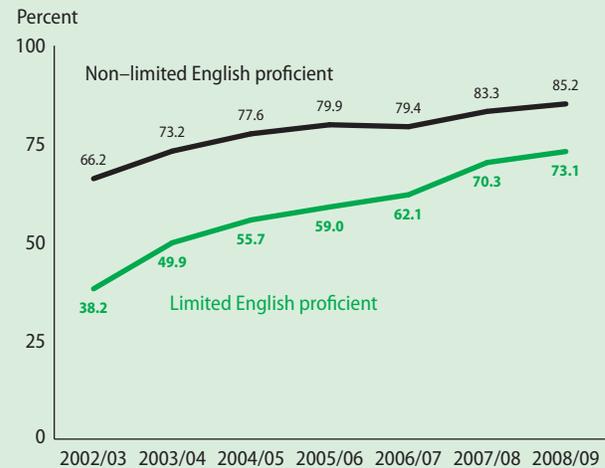
The achievement gap in reading between LEP and non-LEP students was wider in grades 6–8 and grade 10 than in grades 3–5 for all years studied. In 2008/09, the achievement gap was 13–18 percentage points in grades 3–5 and 34–42 percentage points in grades 6–8 and 10. The average annual achievement gap was narrowest in grade 4 (23.3 percentage points) and widest in grade 8 (45.8 percentage points).

Math

Grade 3. Overall performance on the grade 3 math assessment increased from 2002/03 to 2008/09, with larger gains among LEP students than among non-LEP students (figure 9). LEP students' performance increased 34.9 percentage points, whereas non-LEP students' performance increased 19.0 percentage points. As a result, the achievement gap in grade 3 math between LEP and non-LEP

FIGURE 9

Percentage of students scoring at the proficient or advanced level on the grade 3 Maryland School Assessment in math, by English proficiency status, 2002/03–2008/09



Note: For non-limited English proficient students, $n = 62,278$ in 2002/03, $n = 60,675$ in 2003/04, $n = 59,198$ in 2004/05, $n = 57,770$ in 2005/06, $n = 56,722$ in 2006/07, $n = 54,964$ in 2007/08, and $n = 55,831$ in 2008/09. For limited English proficient students, $n = 2,556$ in 2002/03, $n = 2,477$ in 2003/04, $n = 2,291$ in 2004/05, $n = 2,316$ in 2005/06, $n = 2,660$ in 2006/07, $n = 3,303$ in 2007/08, and $n = 4,089$ in 2008/09.

Source: Maryland State Department of Education 2009c.

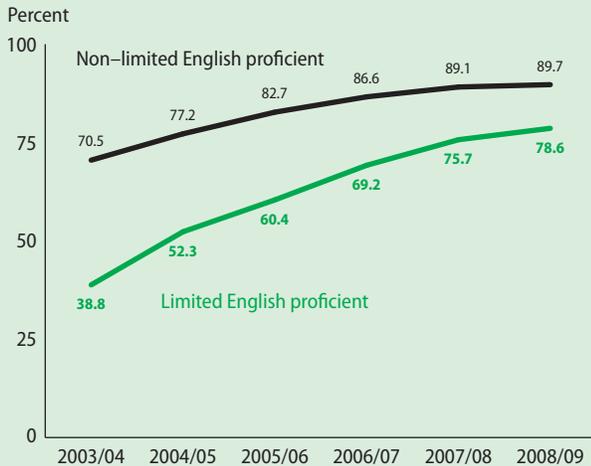
students narrowed 15.9 percentage points, from 28.0 percentage points to 12.1.

Grade 4. Overall performance on the grade 4 math assessment increased between 2003/04 and 2008/09, with larger gains among LEP students than among non-LEP students (figure 10). LEP students' performance increased 39.8 percentage points, whereas non-LEP students' performance increased 19.2 percentage points. As a result, the achievement gap in grade 4 math between LEP and non-LEP students narrowed 20.6 percentage points, from 31.7 percentage points to 11.1.

Grade 5. Overall performance on the grade 5 math assessment increased from 2002/03 to 2008/09, with non-LEP students' performance higher than that of LEP students every year (figure 11). LEP students' performance increased 33.3 percentage points, whereas non-LEP students' performance increased 26.2 percentage points. As a result, the

FIGURE 10

Percentage of students scoring at the proficient or advanced level on the grade 4 Maryland School Assessment in math, by English proficiency status, 2003/04–2008/09



Note: The grade 4 math assessment was first administered in 2003/04. For non-limited English proficient students, $n = 63,119$ in 2003/04, $n = 61,342$ in 2004/05, $n = 59,717$ in 2005/06, $n = 57,822$ in 2006/07, $n = 57,167$ in 2007/08, and $n = 56,168$ in 2008/09. For limited English proficient students, $n = 1,916$ in 2003/04, $n = 1,906$ in 2004/05, $n = 1,760$ in 2005/06, $n = 2,314$ in 2006/07, $n = 2,559$ in 2007/08, and $n = 2,806$ in 2008/09.

Source: Maryland State Department of Education 2009c.

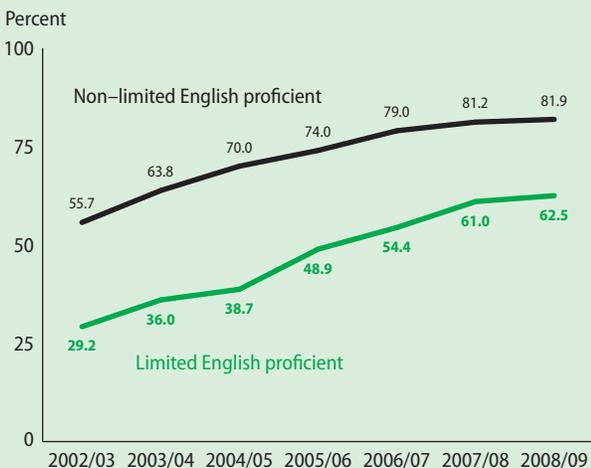
achievement gap in grade 5 math between LEP and non-LEP students narrowed 7.1 percentage points, from 26.5 percentage points to 19.4.

Grade 6. Overall performance on the grade 6 math assessment increased from 2003/04 to 2008/09, with non-LEP students' performance higher than that of LEP students every year studied (figure 12). LEP students' performance increased by 31.2 percentage points, whereas non-LEP students' performance increased 25.8 percentage points. As a result, the achievement gap in grade 6 math between LEP and non-LEP students narrowed 5.4 percentage points, from 27.4 percentage points to 22.0.

Grade 7. Overall performance on the grade 7 math assessment increased from 2003/04 to 2008/09, with non-LEP students' performance higher than that of LEP students every year (figure 13). LEP students' performance increased 20.6 percentage points, whereas non-LEP students' performance increased 22.3 percentage points. As a result, the achievement gap in grade 7 math between LEP

FIGURE 11

Percentage of students scoring at the proficient or advanced level on the grade 5 Maryland School Assessment in math, by English proficiency status, 2002/03–2008/09

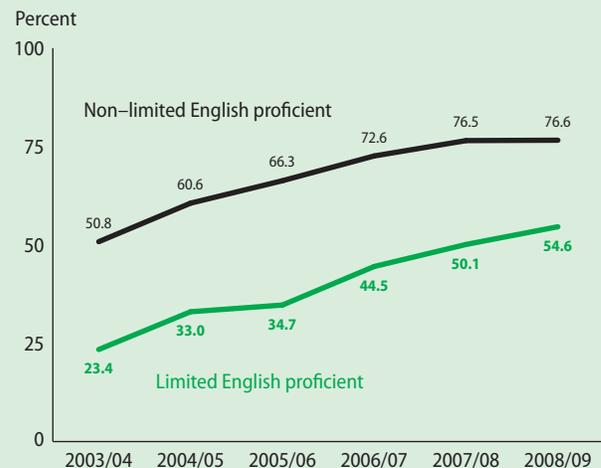


Note: For non-limited English proficient students, $n = 66,349$ in 2002/03, $n = 64,594$ in 2003/04, $n = 63,321$ in 2004/05, $n = 61,516$ in 2005/06, $n = 59,756$ in 2006/07, $n = 58,325$ in 2007/08, and $n = 58,351$ in 2008/09. For limited English proficient students, $n = 1,726$ in 2002/03, $n = 1,674$ in 2003/04, $n = 1,722$ in 2004/05, $n = 1,670$ in 2005/06, $n = 1,842$ in 2006/07, $n = 2,148$ in 2007/08, and $n = 2,069$ in 2008/09.

Source: Maryland State Department of Education 2009c.

FIGURE 12

Percentage of students scoring at the proficient or advanced level on the grade 6 Maryland School Assessment in math, by English proficiency status, 2003/04–2008/09

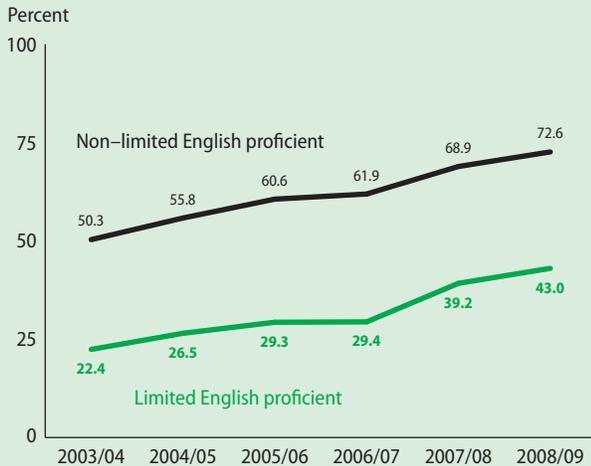


Note: The grade 6 math assessment was first administered in 2003/04. For non-limited English proficient students, $n = 67,443$ in 2003/04, $n = 64,738$ in 2004/05, $n = 63,193$ in 2005/06, $n = 60,985$ in 2006/07, $n = 59,425$ in 2007/08, and $n = 58,775$ in 2008/09. For limited English proficient students, $n = 1,225$ in 2003/04, $n = 1,220$ in 2004/05, $n = 1,198$ in 2005/06, $n = 1,524$ in 2006/07, $n = 1,610$ in 2007/08, and $n = 1,587$ in 2008/09.

Source: Maryland State Department of Education 2009c.

FIGURE 13

Percentage of students scoring at the proficient or advanced level on the grade 7 Maryland School Assessment in math, by English proficiency status, 2003/04–2008/09



Note: The grade 7 math assessment was first administered in 2003/04. For non-limited English proficient students, $n = 68,776$ in 2003/04, $n = 67,347$ in 2004/05, $n = 64,361$ in 2005/06, $n = 62,756$ in 2006/07, $n = 61,187$ in 2007/08, and $n = 60,201$ in 2008/09. For limited English proficient students, $n = 1,116$ in 2003/04, $n = 1,047$ in 2004/05, $n = 1,094$ in 2005/06, $n = 1,248$ in 2006/07, $n = 1,345$ in 2007/08, and $n = 1,305$ in 2008/09.

Source: Maryland State Department of Education 2009c.

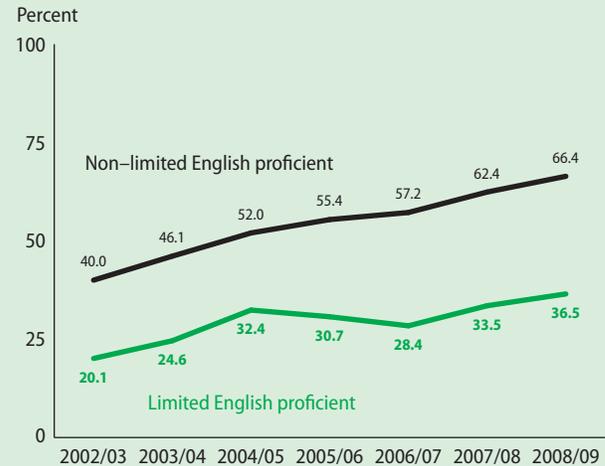
and non-LEP students widened 1.7 percentage points, from 27.9 percentage points to 29.6.

Grade 8. Overall performance on the grade 8 math assessment increased from 2002/03 to 2008/09, with non-LEP students' performance higher than that of LEP students every year (figure 14). LEP students' performance increased 12.3 percentage points from 2002/03 to 2004/05, decreased 4.0 percentage points from 2004/05 to 2006/07, and increased 8.1 percentage points from 2006/07 to 2008/09, for a net increase of 16.4 percentage points. Non-LEP students' performance increased 26.4 percentage points. As a result, the achievement gap in grade 8 math between LEP and non-LEP students increased 10.0 percentage points, from 19.9 percentage points to 29.9.

Grade 10. Overall performance on the grade 10 math assessment increased from 2005/06 to 2008/09, with non-LEP students' performance higher than that of LEP students every year

FIGURE 14

Percentage of students scoring at the proficient or advanced level on the grade 8 Maryland School Assessment in math, by English proficiency status, 2002/03–2008/09



Note: For non-limited English proficient students, $n = 67,337$ in 2002/03, $n = 67,983$ in 2003/04, $n = 68,112$ in 2004/05, $n = 66,397$ in 2005/06, $n = 63,874$ in 2006/07, $n = 62,599$ in 2007/08, and $n = 61,666$ in 2008/09. For limited English proficient students, $n = 1,310$ in 2002/03, $n = 1,201$ in 2003/04, $n = 1,073$ in 2004/05, $n = 1,009$ in 2005/06, $n = 1,211$ in 2006/07, $n = 1,212$ in 2007/08, and $n = 1,267$ in 2008/09.

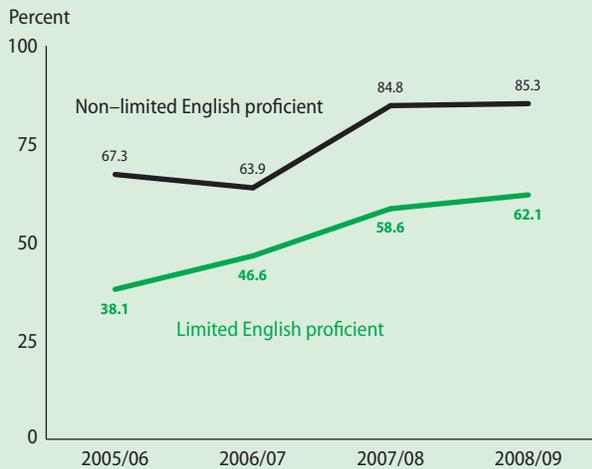
Source: Maryland State Department of Education 2009c.

(figure 15). LEP students' performance increased 24.0 percentage points from 2005/06 to 2008/09, whereas non-LEP students' performance decreased 3.4 percentage points from 2005/06 to 2006/07 and increased 21.4 percentage points from 2006/07 to 2008/09, for a net increase of 18.0 percentage points.¹¹ As a result, the achievement gap in grade 10 math between LEP and non-LEP students narrowed 6.0 percentage points, from 29.2 percentage points to 23.2.

Summary of achievement gaps in math. Every year from 2002/03 to 2008/09 and in all grades studied, non-LEP students' performance in math was higher than that of LEP students. During this period, the achievement gap in math between LEP and non-LEP students narrowed in grades 3–6 and 10 and widened in grades 7 and 8. However, the pattern of changes over time varied across grades (table 5). In grades 3 and 4, the achievement gap narrowed every year. In grades 5 and 6, the achievement gap widened during the first

FIGURE 15

Percentage of students scoring at the proficient or advanced level on the grade 10 Maryland School Assessment in math, by English proficiency status, 2005/06–2008/09



Note: The high school Maryland School Assessment in math has been represented by scores in end-of-course tests in algebra/data analysis since 2005/06; before 2005/06, the end-of-course geometry test was used. Data from 2005/06 onward are not comparable to data prior to 2005/06 and are thus not included here. For non-limited English proficient students, $n = 77,072$ in 2005/06, $n = 83,616$ in 2006/07, $n = 53,348$ in 2007/08, and $n = 55,049$ in 2008/09. For limited English proficient students, $n = 1,954$ in 2005/06, $n = 2,227$ in 2006/07, $n = 874$ in 2007/08, and $n = 404$ in 2008/09.

Source: Maryland State Department of Education 2009c.

three years and narrowed every subsequent year. In grade 7, the achievement gap widened from 2003/04 to 2006/07 and narrowed from 2006/07 to 2008/09. In grade 8, the achievement gap widened from 2002/03 to 2003/04, narrowed from 2003/04 to 2004/05, and widened from 2004/05 to 2008/09. In grade 10, the achievement gap narrowed from 2005/06 to 2006/07, widened from 2006/07 to 2007/08, and narrowed from 2007/08 to 2008/09. During the period studied, the achievement gap in math between LEP and non-LEP students narrowed 15 percentage points or more in grades 3 and 4, widened 10 percentage points in grade 8, and widened or narrowed 8 percentage points or less in grades 5–7 and 10.

The average achievement gap in math between LEP and non-LEP students was wider in grades 6 and 7 than in grades 3–5 and grades 8 and 10. In 2008/09, the achievement gap was less than 13 percentage points in grades 3 and 4, approximately 19 percentage points in grade 5, and 22–30 percentage points in grades 6–8 and 10. The average annual achievement gap was narrowest in grade 3 (19.5 percentage points) and widest in grade 7 (30.1 percentage points).

TABLE 5

Achievement gap on the Maryland School Assessment in math between LEP and non-LEP students, by grade, 2002/03–2008/09 (percentage points)

Grade	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	Average across years studied
3	28.0	23.3	21.9	20.9	17.3	13.0	12.1	19.5
4	na	31.7	24.9	22.3	17.4	13.4	11.1	20.1
5	26.5	27.8	31.3	25.1	24.6	20.2	19.4	25.0
6	na	27.4	27.6	31.6	28.1	26.4	22.0	27.2
7	na	27.9	29.3	31.3	32.5	29.7	29.6	30.1
8	19.9	21.5	19.6	24.7	28.8	28.9	29.9	24.8
10	—	—	—	29.2	17.3	26.2	23.2	24.0

na is not applicable because the math assessment was first administered in that grade in 2003/04.

— is not available because in 2005/06 the Maryland School Assessment math test for grade 10 changed from the end-of-course geometry test to the end-of-course algebra/data analysis test; data from 2005/06 onward are not comparable to data prior to 2005/06.

Note: The achievement gap was calculated by subtracting the percentage of LEP students scoring at the proficient or advanced level from that of non-LEP students.

Source: Maryland State Department of Education 2009c.

Summary of achievement gaps across content areas

In all grades studied, the average achievement gap between LEP and non-LEP students was narrower in math than in reading every year from 2002/03 to 2008/09 (table 6). The greatest difference in the average achievement gap between reading and math was in grade 8 (21.0 percentage points).

In every year studied and in all grades studied, non-LEP students' performance in reading and math was higher than that of LEP students. The achievement gap between LEP and non-LEP students narrowed over time in all grades and all subjects except in math in grades 7 and 8. The average achievement gap in reading between LEP and non-LEP students was wider in grades 6–8 and grade 10 than in grades 3–5. The average achievement gap in math between LEP and non-LEP students was wider in grades 6 and 7 than in all other grades and was narrower in grades 8 and 10 than in grade 5.

TABLE 6

Average achievement gap on the Maryland School Assessment between LEP and non-LEP Students, by subject and grade, 2002/03–2008/09

Grade	Reading ^a	Math ^b
3	24.7	19.5
4	23.3	20.1
5	32.0	25.0
6	38.5	27.2
7	43.4	30.1
8	45.8	24.8
10	40.7	24.0

Note: The achievement gap was calculated by subtracting the percentage of LEP students scoring at the proficient or advanced level from that of non-LEP students.

a. The reading assessment for grades 4, 6, and 7 was first administered in 2003/04; data disaggregated by LEP status were not available for grade 10 until 2004/05.

b. The math assessment for grades 4, 6, and 7 was first administered in 2005/06; in 2005/06 the Maryland School Assessment math test for grade 10 changed from the end-of-course geometry test to the end-of-course algebra/data analysis test; data from 2005/06 onward are not comparable to data prior to 2005/06.

Source: Maryland State Department of Education 2009c.

STUDY LIMITATIONS

This study has several limitations:

- This study is purely descriptive. It does not explain changes in proficiency rates or the achievement gap between LEP and non-LEP students.
- The study used cross-sectional state-level data, not longitudinal student-level data. Therefore, data trends represent different students across time as opposed to longitudinal trends of the same students.
- The achievement levels of redesignated LEP students (those who have exited a language assistance program) are unknown. The patterns of assessment scores observed over time and across grades are influenced by the reclassification of LEP students as redesignated LEP students. Redesignated LEP students have higher English language proficiency than LEP students do, which has a larger impact on LEP students than on non-LEP students due to their relative sizes. The remaining LEP students could be among the lower performing students on the state assessments, reflecting lower English language proficiency (Abedi 2004; Abedi, Courtney, and Leon 2003). Research indicates that English language proficiency is positively associated with academic achievement (Beal, Adams, and Cohen 2010; Garcia-Vazquez et al. 1997; Genesee et al. 2005).
- Data on LEP student achievement on the Maryland English language proficiency assessment were not available. Such data would have provided insight into LEP students' English proficiency levels. Research suggests that content assessment in English may not produce reliable and valid outcomes for LEP students at the lower level of English proficiency, particularly in content areas with high language demand (see, for example, Abedi and Herman 2010; Solano-Flores and

In all grades and years studied, non-LEP students' performance in reading and math was higher than that of LEP students. The overall achievement gap between LEP and non-LEP students narrowed across the years studied in all grades and both subjects except in math in grades 7 and 8

Trumbull 2003). In math, English language proficiency levels are associated with performance solving word problems (Abedi, Leon, and Mirocha 2003). The linguistic complexity of the math assessment increases with each subsequent grade, as more word problems are included as test items. The linguistic complexity of the MSA math test may have contributed to the achievement gap between LEP and non-LEP students, particularly for students with low levels of English language proficiency.

- Data on accommodations for LEP students were unavailable. Some of the accommodations used by Maryland, such as additional time to take the assessments, might have affected the comparability of assessment outcomes for LEP and non-LEP students (Durán 2008).

CONCLUSION

This study of statewide LEP enrollment illustrates the changing demographics of Maryland's student population from 2002/03 to 2008/09. Although total enrollment decreased across the state, LEP student enrollment increased. LEP students accounted for a larger percentage of total enrollment in grades K–5 than in grades 6–8 and grades 9–12. Across the period studied, Spanish speakers accounted for the largest percentage of LEP students.

The assessment data from the Maryland Department of Education indicate that, for student populations enrolled in public schools from 2002/03 to 2008/09, LEP students' performance in reading and math increased in grades 3–8 and 10. In all grades and years studied, non-LEP students' performance in reading and math was higher than that of LEP students. The overall achievement gap between LEP and non-LEP students narrowed

across the years studied in all grades and both subjects except in math in grades 7 and 8.

Across the period studied, the average achievement gap between LEP and non-LEP students was narrower in math than in reading. This is consistent with the literature showing that the achievement gap between LEP and non-LEP students is widest in reading/language arts, because those assessments have test items with a high level of language demand, and narrowest in content areas such as math, where language is not the target of measurement (Abedi 2002).

The average achievement gap in reading between LEP and non-LEP students was wider in grades 6–8 and 10 than in grades 3–5, a finding consistent with the literature (Abedi 2002; Fry 2007; Gándara et al. 2003; Rhode Island KIDS COUNT 2011). The gap was narrower in grade 10 than in grades 6–8, a finding not consistent with the literature (Gándara et al. 2003). The average achievement gap in math between LEP and non-LEP students was wider in grades 6 and 7 than in all other grades and was narrower in grades 8 and 10 than in grade 5, a finding also not consistent with the literature (Gándara et al. 2003). A possible explanation for the higher performance among grade 10 LEP students than among non-LEP students is the nature of the assessments as end-of-course exams. The end-of-course MSA in English 2 and algebra/data analysis satisfy the NCLB requirement to test students once in high school. The exams also serve as a high school graduation requirement. In contrast, students in elementary and middle schools are not required to pass the assessment in order to be promoted to the next grade level. Thus, it is possible that high school students have a greater incentive to pass the test than their younger peers do (Jacob 2005).

Another possible explanation for the narrower achievement gap among grade 8 and 10 students is the number and type of accommodations used during testing. As previously mentioned, LEP students are allowed to have presentation, response, timing and scheduling, and setting accommodations on all assessments (reading and math) based

on the individual student needs. However, accommodations in one grade may not be appropriate or used in another grade (Abedi et al. 2001). Some studies have found that the type of accommodation affects student test scores, and the effects vary based on grade, content area, and type of assessment (DC Office of the State Superintendent of

Education 2009; Francis et al. 2006). There may be differences in the use or effect of accommodations in these grades. Without data on accommodations for LEP students, it is unknown whether the number or type of accommodations used among grade 8 and 10 LEP students have contributed to this anomaly.

APPENDIX A

DATA AND METHODOLOGY

This appendix describes the data and methodology used in this study.

Data

This study uses both enrollment and assessment data.

Enrollment data. Enrollment data on limited English proficient (LEP) students in Maryland were accessed from the Maryland State Department of Education website (Maryland State Department of Education 2009a; total and LEP student enrollment for 2002/03–2008/09, total and LEP student enrollment by grade for 2002/03–2008/09) and from Maryland State Department of Education Excel files (languages spoken by the highest number of LEP students for 2002/03–2008/09).

The 2002/03 school year was selected as the base year because it was the first year that states were required to disaggregate and report traditionally underserved populations under the No Child Left Behind (NCLB) Act of 2001.

The enrollment data included information from all public elementary, middle, and high schools (regular and charter schools), vocational-technical schools, and alternative/special education schools. Enrollment data did not include information from nonpublic private or parochial schools.

Assessment data. Assessment data from the Maryland School Assessment (MSA) were accessed through the Maryland State Department of Education website (Maryland State Department of Education 2009c; MSA scores in reading and math for grade 3, 5, and 8 for 2002/03–2008-09; MSA scores in reading and math for grades 4, 6, and 7 for 2003/04 to 2008/09; MSA scores in reading for grade 10 for 2004/05–2008/09; and MSA scores in math for grade 10 for 2005/06–2008/09).

In 2003/04, reading and math assessments in grades 4, 6, and 7 were added to the existing sets of

assessments; thus, 2003/04 was selected as the base year for grades 4, 6, and 7. Beginning in 2004/05, the end-of-course English 2 exam served as the grade 10 MSA in reading, and beginning in 2005/06, the end-of-course algebra/data analysis exam served as the grade 10 MSA in math; thus 2004/05 was selected as the base year for grade 10 reading, and 2005/06 was selected as the base year for grade 10 math.

As with the enrollment data, the assessment data include information from all public elementary, middle, and high schools (regular and charter schools), vocational-technical schools, and alternative/special education schools. Assessment data do not include information from nonpublic private or parochial schools.

In Maryland, all LEP students must take the state-wide assessments. The only exception applies to LEP students who are in their first year of enrollment in a U.S. school. These students do not have to take the reading test; instead, they can substitute their test results on the English language proficiency test. All LEP students are required to take the math and science tests, with accommodations as appropriate.

Methodology

Descriptive analyses were conducted on the enrollment and assessment data. For the enrollment data, the growth of the LEP student population (as a percentage of total enrollment) was tracked across time. In addition, the percentage of LEP student enrollment in each grade and the languages spoken by the highest number of LEP students were presented.

Assessment data were used to present the academic achievement of LEP and non-LEP students on the reading and math tests across time. The percentage of LEP and non-LEP students who scored at the proficient or advanced level (referred to as “performance” in the analysis) was used to measure student achievement, because that is what Maryland uses to measure accountability for the NCLB Act. No tests of statistical significance were conducted between LEP and non-LEP students.

APPENDIX B

LEP STUDENT ENROLLMENT IN MARYLAND BY GRADE LEVEL

TABLE B1

LEP student enrollment and total enrollment, by grade level, 2002/03–2008/09

Year	Elementary school (grades K–5)			Middle school (grades 6–8)			High school (grades 9–12)		
	Number of LEP students	Total enrollment	Percent of total enrollment	Number of LEP students	Total enrollment	Percent of total enrollment	Number of LEP students	Total enrollment	Percent of total enrollment
2002/03	17,162	405,448	4.2	3,925	206,808	1.9	5,088	248,639	2.0
2003/04	19,041	399,690	4.8	4,278	206,696	2.1	5,674	255,030	2.2
2004/05	19,385	391,915	4.9	4,245	204,413	2.1	5,795	260,851	2.2
2005/06	22,919	407,903	5.6	4,752	209,540	2.3	6,491	281,289	2.3
2006/07	26,922	403,519	6.7	5,199	203,328	2.6	6,549	283,171	2.3
2007/08	31,894	405,499	7.9	5,564	198,111	2.8	7,393	280,202	2.6
2008/09	33,283	407,800	8.2	5,168	193,803	2.7	6,840	277,178	2.5

LEP is limited English proficient.

Source: Maryland State Department of Education 2009a.

APPENDIX C

PERFORMANCE-LEVEL DESCRIPTIONS OF THE MARYLAND SCHOOL ASSESSMENT

This appendix presents the Maryland State Department of Education's knowledge and skills required for each performance level on the state assessments.

TABLE C1

Performance-level descriptors for the Maryland School Assessment in reading, by grade

Grade	Basic	Proficient	Advanced
3	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> Use context clues to determine appropriate meanings of words and commonly used expressions. Identify information and details directly stated in a text. Draw simple inferences from grade-appropriate text. Identify basic characteristics of a literary genre. Use appropriate prior knowledge to make simple inferences about information in a text. <p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> Use sufficient textual evidence to support or explain an idea or inference about a text. Identify or state a main idea of an informational text. Identify or state a theme of a literary text. Use graphic aids to help construct meaning from a text. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> Identify a stated or implied main idea of an informational passage. Identify a theme or lesson learned in a literary text. Support simple inferences or ideas about a text with appropriate textual evidence. Use graphic aids to help construct meaning from a text. <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> Synthesize information to arrive at generalizations, conclusions, and complex inferences. Use textual evidence effectively to explain ideas. Analyze a text to uncover its complexities. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> Discriminate between details or information and the ideas they express. Synthesize information and details to arrive at generalizations, conclusions, and complex inferences. Analyze a text to uncover its complexities. Use evidence from a text effectively to explain conclusions and inferences.

(CONTINUED)

TABLE C1 (CONTINUED)

Performance-level descriptors for the Maryland School Assessment in reading, by grade

Grade	Basic	Proficient	Advanced
4	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> • Draw simple inferences from grade-appropriate text. • Identify information directly stated in a text. • Use context clues to determine appropriate meanings of words. • Identify the main idea of a text when that idea is obvious. • Make connections to the real world and the text by accessing prior knowledge. • Respond in writing to questions about a text with minimal textual evidence. <p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> • Support ideas about a text with adequate text-relevant information or evidence. • Infer a main idea from a text. • Use knowledge of literary elements to make meaning. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> • Use context clues to determine appropriate meanings of words. • Recognize the relationship between text features and ideas or information in a text. • Support a literal reading of a text with text-relevant information. • Support simple inferences or general ideas about a text with appropriate textual evidence. • Apply knowledge of literary elements (for example, character, main conflict) when making meaning from a text. <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Explain complexities of a text. • Clarify and extend ideas in a text with specific, effective text-relevant information. • Consistently make connections among ideas in a text. • Exhibit a reading of a text beyond the literal. <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Reason deductively when drawing conclusions or making inferences. • Read critically to evaluate text. • Demonstrate understanding of the complexities of a text. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Analyze a text to uncover its complexities. • Clarify and extend ideas in a text with specific, effective text-relevant information or evidence. • Use relationships among ideas in a text to draw conclusions and make generalizations. • Articulate conclusions about author’s craft.
5	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> • Understand basic literary elements (for example, character, simple plot, conflict). • Make low-level inferences from information in a text. • Use context clues to determine appropriate meanings of words. • Respond in writing to questions about a text with only minimal textual evidence. <p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> • Provide adequate textual evidence to support or develop ideas about a text. • Consistently apply basic word-level knowledge (for example, synonyms). • Demonstrate more than a minimal understanding of the text. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> • Pull appropriate details or information from across a text to summarize briefly or demonstrate a general understanding of the text. • Define words using contextual evidence. • Recognize synonyms of grade-appropriate words and use synonyms to draw a simple conclusion. • Demonstrate a general, often literal, understanding of a literary or informational text. <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Reason deductively when drawing conclusions or making inferences. • Read critically to evaluate text. • Demonstrate understanding of the complexities of a text. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Apply deductive reasoning to draw conclusions and make inferences. • Provide appropriate and sufficient textual evidence to clarify effectively ideas in a text. • Read critically to evaluate text. • Recognize synonyms of both grade-level and above-grade-level words. • Synthesize ideas and information to uncover the complexities of a text.

(CONTINUED)

TABLE C1 (CONTINUED)

Performance-level descriptors for the Maryland School Assessment in reading, by grade

Grade	Basic	Proficient	Advanced
6	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> • Demonstrate a minimal to literal understanding of a grade-appropriate informational or literary text. • Respond to questions about a text with only minimal supporting textual evidence. • Apply basic understanding of narrative elements in a literary text (for example, sequence, character relationships). • Determine meanings of words in context. • Make simple predictions and draw simple conclusions based on information in a text. • Recognize a main idea and identify information not related to a main idea. • Apply basic word-level knowledge to identify word meaning and use. <p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> • Recognize an organizational pattern in an informational text. • Apply understanding of author's choice of language to make meaning of text. • Provide adequate text-relevant information or evidence to support an idea or a conclusion about a text. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> • Demonstrate a general understanding of a literary or informational text. • Use textual evidence to draw conclusions about narrative elements in a literary text (for example, mood, characters). • Determine the meanings of words and expressions in context (for example, idioms, common expressions, synonyms). • Recognize an author's opinion in an informational text and determine the purpose of a text or portion of text. • Identify an organizational pattern of an informational text. • Provide some textual support for an idea or conclusion about a text. <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Explain an organizational pattern of an informational text. • Recognize the implications of an author's specific language choices. • Extend ideas or information in a text to discover the text's complexities. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Interpret effectively an author's choice of words and phrases. • Use effectively supporting evidence from a text to clarify or extend ideas. • Analyze and explain an organizational pattern of an informational text by using effective textual evidence.

(CONTINUED)

TABLE C1 (CONTINUED)

Performance-level descriptors for the Maryland School Assessment in reading, by grade

Grade	Basic	Proficient	Advanced
7	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> Identify information directly stated in an informational or literary text. Respond in writing to a question about a text with only minimal textual support. Identify a main idea of an informational text or a theme of a literary text when that idea or theme is apparent. Draw conclusions about characters in a literary text. Recognize the implications of text features (for example, bulleted list, illustration). <p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> Draw conclusions about characters in a literary text. Recognize tone in a text. Effectively use context clues to define words and phrases. Move beyond a minimal understanding of literary elements (for example, setting, characters). 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> Demonstrate a general understanding of an informational or literary text. Recognize an obvious tone in a text. Determine the meanings of words in context. Draw conclusions and make inferences about characters and character relationships in a literary text. Articulate an understanding of setting as related to time and place. <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> Articulate a sophisticated understanding of a literary setting. Analyze author’s craft. Clarify and extend ideas to explore the complexities of a text. Use textual support effectively to explain ideas about a text. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> Interpret effectively an author’s choice of words and phrases. Use effectively supporting evidence from a text to clarify or extend ideas. Analyze and explain an organizational pattern of an informational text by using effective textual evidence.
8	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> Identify information directly stated in the text. Draw simple conclusions and make simple inferences from information in the text. Apply basic summary and paraphrasing skills to grade-appropriate text. Respond in writing to questions about a text with only minimal textual support. <p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> Cite adequate textual evidence to support or explain ideas about a text. Identify a main idea. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> Draw conclusions about characters from their words and actions. Identify a main idea. Support ideas about text with appropriate textual evidence. Demonstrate a general understanding of a literary or informational text (for example, make inferences, draw conclusions). <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> Use textual information effectively to clarify ideas in and about a text. Analyze the implications of literary elements. Analyze an author’s use of language. Demonstrate an understanding of the text beyond literal reading. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> Choose appropriate text effectively to clarify ideas. Draw conclusions about multiple elements of both informational and literary texts (for example, word meanings, comparison, poetic devices, implications of text features). Analyze narrative elements (for example, relationships between characters, character traits, plot structure). Apply language skills (for example, recognize synonyms, define words in context, analyze poetic language, determine tone).

(CONTINUED)

TABLE C1 (CONTINUED)

Performance-level descriptors for the Maryland School Assessment in reading, by grade

Grade	Basic	Proficient	Advanced
10	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> • Read a writing prompt and respond by attempting an organizational strategy and supplying minimal support and elaboration. • Apply basic capitalization and punctuation rules. • Use sentence sense to combine two or three simple sentences logically. • Draw simple conclusions and inferences from grade-level text regarding main idea, plot, characterization, theme, and tone. • Provide evidence in writing that a minimal understanding of a text has been achieved. • Recognize structural features of a poem. • Read titles of online sources and predict usefulness of content for a given purpose. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> • Read and address a writing prompt by using an organizational strategy, supplying adequate support and elaboration, and minimizing errors in language use and conventions. • Apply a wide range of internalized language mechanics. • Use a resource to apply standard English language use and conventions. • Apply sentence sense to combine multiple sentences using effective subordination, coordination, and sequencing. • Make valid connections among ideas within a text and draw conclusions and inferences by synthesizing information. • Draw simple inferences from images and figurative language. • Interpret poetry. • Provide textual evidence in writing to verify that a literal understanding of a text has been achieved. • Use context clues to determine the meaning of unknown or above-grade-level words. • Recognize distinctions between the denotative and connotative meanings of words and phrases. • Recognize grammatical classifications of words by position, form, and function. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Fulfill the demands of a writing prompt by using an effective organizational structure, providing relevant and complete support, exhibiting clear or purposeful word choice, and applying correct English language use and conventions. • Use specificity in word choice, details, and syntax to expand sentences effectively. • Analyze the connection between stylistic elements and author's purpose in poetry and grade-appropriate text. • Provide in writing stated and implied evidence that clarifies and extends understanding of a text beyond the literal and affirms an understanding of the complexities of a text.

(CONTINUED)

TABLE C1 (CONTINUED)

Performance-level descriptors for the Maryland School Assessment in reading, by grade

Grade	Basic	Proficient	Advanced
10 (con- tinued)	<p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> • Read and address a writing prompt by using an organizational structure and supplying adequate support and elaboration. • Internalize and apply a wide range of language mechanics rules. • Apply sentence sense to combine multiple sentences, using effective subordination, coordination, and sequencing. • Make valid connections between ideas within or across texts. • Provide textual evidence in writing to verify a literal understanding of grade-appropriate text. • Draw simple inferences from images and figurative language. • Interpret poetry. • Use context clues to determine the meaning of unknown or above-grade-level words. • Recognizing grammatical classifications of words using position, form, and function. 	<p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Fulfill the demands of a writing prompt by using an effective organizational structure, providing relevant and complete support, exhibiting clear or purposeful word choice, and applying correct language use and convention. • Expand sentences by correctly placing modifying details. • Analyze the connection between stylistic elements and author's purpose in poetry and grade-appropriate text. • Clarify and extend understanding of a text beyond the literal. • Provide in writing stated and implied evidence that affirms an understanding of the complexities of a text. 	

Source: School Improvement in Maryland 2010b.

TABLE C2

Performance-level descriptors for the Maryland School Assessment in math, by grade

Grade	Basic	Proficient	Advanced
3	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> • Complete repeating patterns. • Identify congruent figures and lines of symmetry. • Read scales. • Interpret tables and bar graphs. • Apply place-value concepts. • Add and subtract whole numbers. • Represent multiplication basic facts. <p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> • Write simple equations and simple inequalities. • Analyze properties of solid figures. • Interpret pictographs. • Determine value of mixed currency. • Represent division basic facts. • Communicate a partially developed understanding of problem solving using a strategy with little or no support. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> • Write simple equations and simple inequalities. • Analyze properties of solid figures. • Interpret pictographs. • Determine value of mixed currency. • Represent division basic facts. • Communicate a partially developed understanding of problem solving using a strategy with little or no support. <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Analyze properties of plane geometric figures. • Analyze transformations. • Describe the probability of one simple event. • Communicate a comprehensive understanding of problem solving using a strategy with supporting connections. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Analyze properties of plane geometric figures. • Analyze transformations. • Describe the probability of one simple event. • Communicate a comprehensive understanding of problem solving using a strategy with supporting connections.

(CONTINUED)

TABLE C2 (CONTINUED)

Performance-level descriptors for the Maryland School Assessment in math, by grade

Grade	Basic	Proficient	Advanced
4	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> Find the unknown factor in an equation. Find perimeter. Write simple fractions and decimals. Multiply whole numbers. <p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> Generalize a non-numeric pattern rule. Write simple expressions using whole numbers. Describe probability as a fraction. Divide whole numbers. Subtract decimals. Estimate to find the sum. Communicate a partially developed understanding of problem solving using a strategy with little or no support. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> Generalize a non-numeric pattern rule. Write simple expressions using whole numbers. Describe probability as a fraction. Divide whole numbers. Subtract decimals. Estimate to find the sum. Communicate a partially developed understanding of problem solving using a strategy with little or no support. <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> Represent simple fractions on a number line. Measure to the nearest quarter inch. Convert inches to feet or yards. Make a line plot. Analyze data to find range and median. Communicate a comprehensive understanding of problem solving using a strategy with supporting connections. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> Represent simple fractions on a number line. Measure to the nearest quarter inch. Convert inches to feet or yards. Make a line plot. Analyze data to find range and median. Communicate a comprehensive understanding of problem solving using a strategy with supporting connections.

(CONTINUED)

TABLE C2 (CONTINUED)

Performance-level descriptors for the Maryland School Assessment in math, by grade

Grade	Basic	Proficient	Advanced
5	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> • Locate whole numbers on a number line. • Evaluate expressions. • Identify similar figures. • Organize data. • Determine the probability of one simple event. • Compare decimals. <p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> • Interpret the rule for a one operation function table. • Solve simple equations. • Determine equivalent units of measurement. • Analyze data to interpret stem-and-leaf plots and read circle graphs. • Identify members of a sample space. • Apply knowledge of fractions and decimals. • Apply number relationships to prime and composite numbers and greatest common factor. • Communicate a partially developed understanding of problem solving using a strategy with little or no support. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> • Interpret the rule for a one operation function table. • Solve simple equations. • Determine equivalent units of measurement. • Analyze data to interpret stem-and-leaf plots and read circle graphs. • Identify members of a sample space. • Apply knowledge of fractions and decimals. • Apply number relationships to prime and composite numbers and greatest common factor. • Communicate a partially developed understanding of problem solving using a strategy with little or no support. <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Analyze geometric relationships of plane geometric figures. • Estimate and apply formulas to determine perimeter and area. • Determine measures of central tendency. • Communicate a comprehensive understanding of problem solving using a strategy with supporting connections. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Analyze geometric relationships of plane geometric figures. • Estimate and apply formulas to determine perimeter and area. • Determine measures of central tendency. • Communicate a comprehensive understanding of problem solving using a strategy with supporting connections.

(CONTINUED)

TABLE C2 (CONTINUED)

Performance-level descriptors for the Maryland School Assessment in math, by grade

Grade	Basic	Proficient	Advanced
6	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> Identify a rule for a one operation function table. Identify plane geometric figures. Organize data to make frequency tables. Find percent of a number. Represent integers. <p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> Write a rule for a one operation function table. Evaluate expressions. Locate integers on a number line. Identify on a graph a linear relationship that shows increase, decrease, and no change. Classify triangles. Compare radii and diameters. Apply formulas to determine volume and area. Apply knowledge of rational numbers. Analyze number relationships. Communicate a partially developed understanding of problem solving using a strategy with little or no support. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> Write a rule for a one operation function table. Evaluate expressions. Locate integers on a number line. Identify on a graph a linear relationship that shows increase, decrease, and no change. Classify triangles. Compare radii and diameters. Apply formulas to determine volume and area. Apply knowledge of rational numbers. Analyze number relationships. Communicate a partially developed understanding of problem solving using a strategy with little or no support. <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> Analyze linear relationships to identify graph of a line. Identify perpendicular bisectors. Apply formulas to determine area of a rectangle and a triangle. Organize data to make a stem-and-leaf plot. Represent whole numbers using exponential form using powers of 10. Compare and order fractions. Communicate a comprehensive understanding of problem solving using a strategy with supporting connections. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> Analyze linear relationships to identify graph of a line. Identify perpendicular bisectors. Apply formulas to determine area of a rectangle and a triangle. Organize data to make a stem-and-leaf plot. Represent whole numbers using exponential form using powers of 10. Compare and order fractions. Communicate a comprehensive understanding of problem solving using a strategy with supporting connections.

(CONTINUED)

TABLE C2 (CONTINUED)

Performance-level descriptors for the Maryland School Assessment in math, by grade

Grade	Basic	Proficient	Advanced
7	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> Identify simple expressions in context. Apply the properties of congruent polygons. Apply mean, median, and mode. Identify a number written in exponential notation. <p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> Write and evaluate simple expressions, solve simple equations, and write simple inequalities. Locate points on a number line and a coordinate plane using rational numbers. Identify and apply properties of various angles. Determine best choice of a data display and organize data in a variety of displays. Determine probability and express it as a decimal. Compare and order decimals, fractions, percents, and integers and determine equivalent ratios. Determine percent of another number. Communicate a partially developed understanding of problem solving using a strategy with little or no support. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> Write and evaluate simple expressions, solve simple equations, and write simple inequalities. Locate points on a number line and a coordinate plane using rational numbers. Identify and apply properties of various angles. Determine best choice of a data display and organize data in a variety of displays. Determine probability and express it as a decimal. Compare and order decimals, fractions, percents, and integers and determine equivalent ratios. Determine percent of another number. Communicate a partially developed understanding of problem solving using a strategy with little or no support. <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> Evaluate algebraic expressions. Identify in a table linear relationships that show increase, decrease, and no change. Graph the solution to an inequality. Draw a transformation on a coordinate plane. Determine area of a trapezoid and surface area of a rectangular prism. Use percents as rates to solve a problem. Determine equivalent fractions, decimals, and numbers in exponential notation. Communicate a comprehensive understanding of problem solving using a strategy with supporting connections. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> Evaluate algebraic expressions. Identify in a table linear relationships that show increase, decrease, and no change. Graph the solution to an inequality. Draw a transformation on a coordinate plane. Determine area of a trapezoid and surface area of a rectangular prism. Use percents as rates to solve a problem. Determine equivalent fractions, decimals, and numbers in exponential notation. Communicate a comprehensive understanding of problem solving using a strategy with supporting connections.

(CONTINUED)

TABLE C2 (CONTINUED)

Performance-level descriptors for the Maryland School Assessment in math, by grade

Grade	Basic	Proficient	Advanced
8	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> • Determine the nth term in recursive arithmetic sequences. • Identify data organized in a variety of data displays. • Determine length using a scale drawing. <p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> • Identify linear functions given a graph. • Write and simplify expressions, write and solve equations, and solve inequalities. • Identify properties of parallel lines cut by a transversal. • Apply the Pythagorean theorem. • Determine square root of whole numbers. • Apply a variety of percents in context. • Communicate a partially developed understanding of problem solving using a strategy with little or no support. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> • Identify linear functions given a graph. • Write and simplify expressions, write and solve equations, and solve inequalities. • Identify properties of parallel lines cut by a transversal. • Apply the Pythagorean theorem. • Determine square root of whole numbers. • Apply a variety of percents in context. • Communicate a partially developed understanding of problem solving using a strategy with little or no support. <p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Determine the nth term in recursive geometric sequences. • Determine circumference of a circle. • Organize and display data in a variety of data displays. • Analyze results of simulations. • Represent rational numbers in scientific notation. • Use proportional reasoning to solve problems. • Communicate a comprehensive understanding of problem solving using a strategy with supporting connections. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Determine the nth term in recursive geometric sequences. • Determine circumference of a circle. • Organize and display data in a variety of data displays. • Analyze results of simulations. • Represent rational numbers in scientific notation. • Use proportional reasoning to solve problems. • Communicate a comprehensive understanding of problem solving using a strategy with supporting connections.

TABLE C2 (CONTINUED)

Performance-level descriptors for the Maryland School Assessment in math, by grade

Grade	Basic	Proficient	Advanced
10	<p>What basic students likely can do:</p> <ul style="list-style-type: none"> • Represent and extend a linear and geometric pattern. • Determine the sum of two matrices. • Write and solve an equation that models a real-world situation. • Determine the value of an equation or inequality for a given value of x. • Use the graph of a line of best fit to make a prediction. • Use a curve of best fit to describe the trend of the data. • Determine the experimental probability from a survey and a simulation. • Determine the value of a data point from the mean and the remaining data points. • Determine the mean of data in a stem-and-leaf plot and the median in a box and whisker plot. • Identify the maximum and minimum of the graph of a nonlinear function. • Compare rate of increase or decrease between intervals of the graph of a nonlinear function. 	<p>What proficient students likely can do that basic students likely cannot do:</p> <ul style="list-style-type: none"> • Use the results of a simulation to make a prediction. • Determine the theoretical probability of an event. • Determine the quartiles of a data set and create a box and whisker plot. • Identify representative sampling and simple random sampling. • Identify the graph of a system of equations. • Write and solve a system of equations that models a real-world situation. • Model a real-world situation with an algebraic expression that uses the sum or quotient. • Write the equation for a line of best fit. • Identify and use a curve of best fit and a line of best fit to describe data and make predictions. • Determine the difference between two matrices. • Recognize the misuse of data from a survey and a graph. • Determine the linear equation that models a function in a table. 	<p>What advanced students likely can do that proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Determine the range of a nonlinear graph. • Write an inequality that models a real-world situation. • Extrapolate the value of a graph beyond the grid provided. • Explain and justify a system of equations and its solution that models a real-world situation. • Explain and justify the extension of a linear pattern beyond immediate next terms. • Justify the appropriate use of a curve of best fit to make a prediction. • Model a real-world situation with an algebraic expression that uses sum and product. • Multiply a matrix by a scalar and interpret the result. • Analyze stem-and-leaf plots to determine measures of central tendency. • Justify a sampling method as providing a representative sample.

(CONTINUED)

TABLE C2 (CONTINUED)

Performance-level descriptors for the Maryland School Assessment in math, by grade

Grade	Basic	Proficient	Advanced
10 (con- tinued)	<p>What basic students likely cannot do:</p> <ul style="list-style-type: none"> • Use the results of a simulation to make a prediction. • Determine the theoretical probability of an event. • Determine the quartiles of a data set and create a box and whisker plot. • Identify representative sampling and simple random sampling. • Identify the graph of a system of equations. • Write and solve a system of equations that models a real-world situation. • Model a real-world situation with an algebraic expression that uses the sum or quotient. • Write the equation for a line of best fit. • Identify and use a curve of best fit and a line of best fit to describe data and make predictions. • Determine the difference between two matrices. • Recognize the misuse of data from a survey and a graph. • Determine the linear equation that models a function in a table. 	<p>What proficient students likely cannot do:</p> <ul style="list-style-type: none"> • Determine the range of a nonlinear graph. • Write an inequality that models a real-world situation. • Extrapolate the value of a graph beyond the grid provided. • Explain and justify a system of equations and its solution that models a real-world situation. • Explain and justify the extension of a linear pattern beyond immediate next terms. • Justify the appropriate use of a curve of best fit to make a prediction. • Model a real-world situation with an algebraic expression that uses sum and product. • Multiply a matrix by a scalar and interpret the result. • Analyze stem-and-leaf plots to determine measures of central tendency. • Justify a sampling method as providing a representative sample. 	

Source: School Improvement in Maryland 2010b.

APPENDIX D

SCORE RANGES OF THE MARYLAND SCHOOL ASSESSMENT

This appendix provides information on the score ranges used to categorize student performance into proficient and advanced levels on the Maryland School Assessment. All scores below the proficient score range are categorized as performing at the basic level.

TABLE D1

Maryland School Assessment reading score ranges, by grade

Grade	Proficient	Advanced
3	388	456
4	371	437
5	384	425
6	381	421
7	385	425
8	391	425
10	396	429

Source: School Improvement in Maryland 2010a.

TABLE D2

Maryland School Assessment math score ranges, by grade

Grade	Proficient	Advanced
3	379	441
4	374	433
5	392	453
6	396	447
7	396	451
8	407	444
10	412	450

Source: School Improvement in Maryland 2010a.

APPENDIX E PERCENTAGE OF STUDENTS SCORING AT THE PROFICIENT OR ADVANCED LEVEL IN MARYLAND'S ASSESSMENT PROGRAM

This appendix provides information on the percentage of students scoring at the proficient or advanced level on the Maryland School Assessment.

TABLE E1

Percentage of students scoring at the proficient or advanced level on the grade 3 Maryland School Assessment, by subject and English proficiency status, 2002/03–2008/09

Subject and English proficiency status	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Reading							
Non-LEP	59.8	72.1	76.9	79.1	81.3	84.1	85.8
LEP	17.8	44.7	47.2	55.5	63.9	64.0	73.1
Math							
Non-LEP	66.2	73.2	77.6	79.9	79.4	83.3	85.2
LEP	38.2	49.9	55.7	59.0	62.1	70.3	73.1

LEP is limited English proficient.

Source: Maryland State Department of Education 2009c.

TABLE E2

Percentage of students scoring at the proficient or advanced level on the grade 4 Maryland School Assessment, by subject and English proficiency status, 2003/04–2008/09

Subject and English proficiency status	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Reading						
Non-LEP	76.1	81.8	82.6	86.7	89.1	87.4
LEP	39.1	54.2	55.0	68.8	75.6	71.0
Math						
Non-LEP	70.5	77.2	82.7	86.6	89.1	89.7
LEP	38.8	52.3	60.4	69.2	75.7	78.6

LEP is limited English proficient.

Note: The grade 4 reading and math assessments were first administered in 2003/04.

Source: Maryland State Department of Education 2009c.

TABLE E3

Percentage of students scoring at the proficient or advanced levels on the grade 5 Maryland School Assessment, by subject and English proficiency status, 2002/03–2008/09

Subject and English proficiency status	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Reading							
Non-LEP	66.7	69.3	75.3	77.5	77.7	87.3	90.1
LEP	23.8	30.9	38.7	43.1	42.3	69.1	71.7
Math							
Non-LEP	55.7	63.8	70.0	74.0	79.0	81.2	81.9
LEP	29.2	36.0	38.7	48.9	54.4	61.0	62.5

LEP is limited English proficient.

Source: Maryland State Department of Education 2009c.

TABLE E4

Percentage of students scoring at the proficient or advanced level on the grade 6 Maryland School Assessment, by subject and English proficiency status, 2003/04–2008/09

Subject and English proficiency status	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Reading						
Non-LEP	69.1	71.0	72.6	77.4	82.7	84.3
LEP	26.2	28.8	30.4	43.1	47.7	50.1
Math						
Non-LEP	50.8	60.6	66.3	72.6	76.5	76.6
LEP	23.4	33.0	34.7	44.5	50.1	54.6

LEP is limited English proficient.

Note: The grade 6 reading and math assessments were first administered in 2003/04.

Source: Maryland State Department of Education 2009c.

TABLE E5

Percentage of students scoring at the proficient or advanced level on the grade 7 Maryland School Assessment, by subject and English proficiency status, 2003/04–2008/09

Subject and English proficiency status	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Reading						
Non-LEP	67.8	67.8	71.8	71.0	82.0	82.5
LEP	19.5	24.0	26.2	25.7	41.0	45.9
Math						
Non-LEP	50.3	55.8	60.6	61.9	68.9	72.6
LEP	22.4	26.5	29.3	29.4	39.2	43.0

LEP is limited English proficient.

Note: The grade 7 reading and math assessments were first administered in 2003/04.

Source: Maryland State Department of Education 2009c.

TABLE E6

Percentage of students scoring at the proficient or advanced level on the grade 8 Maryland School Assessment, by subject and English proficiency status, 2002/03–2008/09

Subject and English proficiency status	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Reading							
Non-LEP	60.9	64.6	67.1	67.6	69.1	73.7	81.0
LEP	12.4	18.3	20.4	23.6	22.6	26.8	39.2
Math							
Non-LEP	40.0	46.1	52.0	55.4	57.2	62.4	66.4
LEP	20.1	24.6	32.4	30.7	28.4	33.5	36.5

LEP is limited English proficient.

Source: Maryland State Department of Education 2009c.

TABLE E7

Percentage of students scoring at the proficient or advanced level on the grade 10 Maryland School Assessment, by subject and English proficiency status, 2004/05–2008/09

Subject and English proficiency status	2004/05	2005/06	2006/07	2007/08	2008/09
Reading					
Non-LEP	58.0	60.7	71.6	82.2	83.8
LEP	17.1	20.1	22.7	44.6	48.4
Math					
Non-LEP	—	67.3	63.9	84.8	85.3
LEP	—	38.1	46.6	58.6	62.1

LEP is limited English proficient.

— is not available because in 2005/06 the Maryland School Assessment math test for grade10 changed from the end-of-course geometry test to the end-of-course algebra/data analysis test; data from 2005/06 onward are not comparable to data prior to 2005/06.

Source: Maryland State Department of Education 2009c.

NOTES

1. Students whose first language is not English and who are in the process of learning English are referred to using different terms across the United States, such as English language learner (ELL) or limited English proficient (LEP) students. The authors refer to such students as LEP students in the present report to remain consistent with Maryland state terminology.
2. The request came to *Ask A REL*, which is a collaborative reference desk service of the 10 Regional Educational Laboratories that provides references, referrals, and brief responses in the form of citations on research-based education questions. More information can be found at <http://ies.ed.gov/ncee/edlabs/askarel/index.asp>.
3. The reason for the large increase in LEP student enrollment from 2004/05 to 2005/06 and from 2006/07 to 2007/08 is unknown to the study authors.
4. The reason for the large increase in the number of LEP students speaking Spanish from 2006/07 to 2007/08 is unknown to the study authors.
5. The reason for the large increase in the number of LEP students speaking “other” languages from 2004/05 to 2005/06 is unknown to the study authors.
6. Because Maryland did not administer science assessments until 2007/08, science results are not described in this report.
7. The reason for the large increase in grade 3 LEP students’ performance from 2002/03 to 2003/04 is unknown to the study authors.
8. The reason for the large increase in grade 5 LEP students’ performance from 2006/07 to 2007/08 is unknown to the study authors.
9. The reason for the large increase in grade 7 LEP students’ performance from 2006/07 to 2007/08 is unknown to the study authors.
10. The reason for the large increase in grade 10 LEP students’ performance from 2006/07 to 2007/08 is unknown to the study authors.
11. The reason for the large increase in grade 10 non-LEP students’ performance from 2006/07 to 2007/08 is unknown to the study authors.

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