IES Institute of Education Sciences

APPENDIXES
September 2022

Regional Educational Laboratory Southwest
At American Institutes for Research

Effects of Reclassifying English Learner Students on Student Achievement in New Mexico

Appendix A. Methods

Appendix B. Supporting tables

Appendix C. Supplemental analyses

See https://go.usa.gov/xSwn6 for the full report.

Appendix A. Methods

This appendix describes the data source, measures, sample (including attrition and missing data), and methodology used in the study.

Data source

The New Mexico Public Education Department provided student-level administrative data on student English language proficiency, student English language arts and math achievement, and demographic characteristics through a data-sharing agreement with the Regional Educational Laboratory Southwest. The New Mexico Public Education Department provided masked student identification numbers to enable the linking of student-level records across files and school years, while protecting student confidentiality. The files link students to their schools and districts for each school year. The study team created additional variables using data from the New Mexico Public Education Department.

Measures

To answer the research questions, the study team used the variables in table A1.

Table A1. Student- and school-level variables used in analyses

Variable	Description
Student characteristics	
English language arts and math achievement scores during the outcome year	Score on state summative standardized assessments, standardized using annual grade-level means and standard deviations: the Partnership for Assessment of Readiness for College and Careers for 2014/15–2017/18 and the New Mexico Standards-Based Transition Assessment in Math and English Language Arts for 2018/19
English language arts and math achievement scores during the baseline year	Scores on state summative standardized assessments, standardized using annual grade-level means and standard deviations: the Partnership for Assessment of Readiness for College and Careers for 2014/15–2017/18 and the Standards-Based Assessment in Math and English Language Arts for 2013/14 for students in grades 3–7, and the Dynamic Indicators of Basic Early Literacy Skills for 2013/14–2015/16 and iStation for 2016/17–2017/18 for students in grade 2
English language proficiency level scores	Proficiency level scores in the English language listening, speaking, reading, and writing domains and an overall score of these four skills on the ACCESS for ELLs (ACCESS) assessment (2013/14–2018/19)

Variable	Description
English language proficiency status	Status as an English learner student, coded as current English learner student if identified as English learner student and took the ACCESS in the current year and coded as reclassified if identified as English learner student in the previous year and identified as reclassified and did not take the ACCESS in the current year
Test language of state math assessments	The language of the state standardized math assessment, coded as English or Spanish
Hispanic ethnicity	Student self-report indicating whether a student is of Hispanic ethnicity
Race	Student self-report of racial background, coded as American Indian, Asian, Black, Hawaiian Native/Pacific Islander, or White
Gender	Student self-report of gender coded as female or male, or coded as missing if a student has more than one gender category
Eligibility for special education services	Whether a student is eligible for special education services, as reported in the English language arts and math assessment data
Eligibility for the National School Lunch Program	Whether a student is eligible for the National School Lunch Program, an indicator of economic disadvantage
Grade level	Grade level at the time students were assessed on the state standardized assessment
School characteristics	
School enrollment	The number of students enrolled in a school
Percentage of English learner students	Percentage of students in a school identified as English learner students
Percentage of newly reclassified students	Percentage of students in a school identified as reclassified fluent English proficient
Percentage of students of Hispanic ethnicity	Percentage of students in a school of Hispanic ethnicity
Percentage of students in each racial category	Percentage of students in a school in each of the following racial categories: American Indian, Asian, Black, Hawaiian Native/Pacific Islander, or White
Percentage of students who are eligible for special education services	Percentage of students in a school who are eligible for special education services, as reported in the English language arts and math assessment data
Percentage of students who are eligible for the National School Lunch Program	Percentage of students in a school who are eligible for the National School Lunch Program
Average English language arts and math achievement scores	Average standardized score on state standardized assessments in English language arts and math for students in grades 3–8
District	A unique identifier for each school district
Year	School year 2014/15–2018/19

Source: Authors' compilation.

Student-level variables

English language arts and math achievement scores during the outcome year. Students in New Mexico in grades 3–8 were assessed in English language arts and math using the Partnership for Assessment of Readiness for College and Careers (PARCC) assessment in 2014/15–2017/18. The assessment developer scaled the raw stores using item response theory analysis to provide a common scale by grade and subject (PARCC, 2019). In 2019 New Mexico adopted the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA) in place of PARCC. When announcing this change in a memo from the lieutenant governor in January 2019, the New Mexico Public Education Department stated that the test would be shorter than PARCC but would remain consistent with PARCC in terms of scaling and performance levels (Morales, personal communication, January 10, 2019; see https://webnew.ped.state.nm.us/wp-content/uploads/2019/01/Transition-from-PARCC-to-the-Spring-2019-Summative-Assessment_Memorandum....pdf).

To enable analyses across different assessments, the study team standardized student test scores based on the overall distribution of student scores on each assessment in each grade, subject, and year. This process allows a comparison of scores that are from different normal distributions. This approach to standardizing scores over different assessments is valid if a particular group of students has not systematically scored higher or lower on the assessment used. The study team compared the distribution of achievement scores of English learner students and focused on whether, compared with all students across the state, their relative achievement changed with the introduction of the TAMELA assessment. The study team found that the achievement of English learner students relative to other students was consistent for both assessments and therefore proceeded with using the standardized scores.

English language arts and math achievement scores during the baseline year. The study team used the available baseline (see key terms box in main report) English language arts or math achievement score information for students, which varied based on the academic year and student grade level. For students in grades 3–7, the study team used English language arts and math scores from the Standards-Based Assessment (SBA) for 2013/14 and PARCC scores for 2014/15–2017/18. For students in grade 2, the study team used English language arts scores from the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) for 2013/14–2015/16, and iStation English language arts scores for 2016/17–2017/18. The study team standardized student test scores on the PARCC, SBA, DIBELS, and iStation based on the overall distribution of student scores on each assessment in each grade, subject, and year.

English language proficiency level scores. The New Mexico Public Education Department administers ACCESS for ELLs (ACCESS) as the statewide English language proficiency assessment to all English learner students in kindergarten through grade 12. Students are assessed in January through March on four domains of English language proficiency: listening, speaking, reading, and writing. The status of a student whose overall proficiency level score meets or exceeds the 5.0 threshold in the baseline year will typically be updated as reclassified as fluent English proficient for the following, outcome school year.

Raw scores from the four domains are scaled by the assessment developer from 100 to 600 points. New Mexico uses the online ACCESS assessment. The test is adaptive; it asks students more basic or more advanced questions depending on their performance as they complete the assessment. The scaling process, which adjusts for differences in item difficulty based on the questions students answer, produces a single vertical scale within each of the four domains, which allows comparisons across years and across all grades from kindergarten to 12 (WIDA, 2019). Scale scores are not consistent across domains—a score in one domain is not directly comparable with the same score in another domain.

The scale scores are then converted into six proficiency level scores, which are calculated as a whole number with one decimal point: 1.0–1.9, Entering; 2.0–2.9, Emerging; 3.0–3.9, Developing; 4.0–4.9, Expanding; 5.0–5.9, Bridging; and 6.0, Reaching. The whole number represents the student's proficiency level based on the WIDA English Language Development Standards Framework, and "the number after the decimal reflects how far the student has progressed within that level" (WIDA, 2021, p. 3). Scale scores are converted to proficiency level scores based on grade-specific expectations, so that the same scale score will be converted to a higher proficiency level score for an earlier grade and a lower proficiency level score for a more advanced grade. The four domain scores are compiled into an overall proficiency level score using a weighted average, with listening and speaking weighted at 15 percent each and reading and writing weighted at 35 percent each. (For further details about the ACCESS, including its psychometric properties, see Center for Applied Linguistics, 2018.)

English language proficiency status. New Mexico Public Education Department data identify a student's status in a given year as an English learner student. Among the students in the study sample, possible statuses include *Current EL Student,* which indicates that a student was assessed and determined to need English learner services, or *Reclassified as Fluent English Proficient,* which indicates that a student was formerly an English learner student but has achieved proficiency.[1]

Test language of the state math assessments. The New Mexico Public Education Department's state math standardized assessment data identify the language of the assessment as either English or Spanish. English learner students who have attended a school in the United States for up to three years and whose first or heritage language is Spanish are eligible to take the math state standardized assessment in Spanish.[2]

Student characteristic variables. The study team constructed dichotomous variables for the following:

- Hispanic ethnicity.
- Five racial categories: American Indian, Asian, Black, Hawaiian Native/Pacific Islander, and White.
- Gender.
- Eligibility for special education services.
- Eligibility for the National School Lunch Program.
- Grade level.

School-level variables

The study team aggregated student-level data by school to construct the following school characteristic variables:

- School enrollment.
- Percentage of English learner students.
- Percentage of students newly reclassified as fluent English proficient.
- Percentage of students of Hispanic ethnicity.
- Percentage of students in each racial group.
- Percentage of students who are eligible for special education services.
- Percentage of students who are eligible for the National School Lunch Program.

[1] The analysis dataset included a small number of students who were identified as English learner students and who took the ACCESS one year and were identified as *Initially Fluent English Proficient*. This designation is used for students who were identified as having a non-English first or heritage language but who were assessed as proficient in English and so did not take the ACCESS the next year. The study team retained these students in the analysis and considered them "reclassified" in the second year.

[2] Analyses of the impact of reclassification on math achievement included math assessments that were taken in Spanish. The study team did not standardize baseline or outcome scores within the language of the assessment. The numbers of students who scored 4.7–5.2 on the ACCESS in the baseline year and were assessed in Spanish in the outcome year were small: 135 in 2014/15, 117 in 2015/16, 100 in 2016/17, 2 in 2017/18, and 8 in 2018/19. The study team did not control for the language of the outcome assessment due to concerns that the language of the outcome assessment might be endogenous to the treatment: the language of assessment might be based in part on student English proficiency, which could be affected by the treatment. Table C3 in appendix C presents results for research questions 2 and 3 that remove students from the sample who were assessed in math in Spanish. It shows that removing these students from the analysis does not meaningfully change the study's findings.

- Average standardized English language arts and math scores of students in grades 3–8.
- District.

Year-level variable

The study team constructed a year variable for each school year from 2014/15 to 2018/19.

Sample

To create the sample for research question 1, the study team included 123,461 students in grades 3–8 in 2014/15–2018/19 who met one of the following sets of criteria:

1. Were identified as newly reclassified fluent English proficient based on their ACCESS score from the prior, baseline year and did not take the ACCESS.
2. Were identified as English learner students and took the ACCESS.

An additional 7,722 students (5.9 percent of the total of 131,183 students) whose English proficiency status could not be determined due to inconsistencies in the administrative data were removed from the analysis for research question 1. These removals did not compositionally alter the sample, which remained representative of English learner students across the state during the study period. With some fluctuation across years, the characteristics were generally comparable for included students and removed students (see table A2). The slight differences in standardized test scores and in rates of eligibility for special education services and the National School Lunch Program do not affect the results of the analysis for research question 1, which focuses on overall reclassification rates in each year. In other words, removing these students from the sample cannot explain the 4,305 decrease in students who attained proficiency between 2016/17 and 2017/18, as only 1,513 were removed from the analysis for 2017/18, and only 886 were removed from the analysis for 2018/19.

For research questions 2–4, the study team first identified English learner students in grades 2–7 who received an ACCESS overall proficiency level score of 4.0–6.0 in a baseline year and who then were assessed the following year, in grades 3–8, in English language arts or math. Student-year combinations were dropped if the data elements pertaining to student English proficiency were contradictory: some students were identified as English proficient but took the ACCESS, while others were identified as English learner students but did not take the ACCESS. The study team limited the sample to students who, in the outcome year, were identified as an English learner student and took the ACCESS or who were identified as reclassified and did not take the ACCESS.[3] Next, the study team identified students whose ACCESS scores were close to the reclassification threshold. This required finding a balance between narrowing the range of ACCESS scores and retaining a large enough sample of students to enable analyses. The study used an established process (see below) that identified the appropriate balance between these considerations (Calonico et al., 2014). For most analyses, the optimal bandwidth included students who scored 4.7–5.2 on the ACCESS in the baseline year.

[3] The study team did not receive ACCESS data for students in grade 8. Therefore, the criterion to identify English learner students in grade 8 only included identification as an English learner student or a student who was reclassified.

Table A2. English learner students removed from or included in the analysis sample for research question 1, 2014/15–2016/17 and 2017/18–2018/19

Characteristic	2014/15		2015/16		2016/17		2017/18		2018/19	
	Removed from sample (*n* = 2,675)	Included in sample (*n* = 25,024)	Removed from sample (*n* = 1,915)	Included in sample (*n* = 25,324)	Removed from sample (*n* = 1,725)	Included in sample (*n* = 24,817)	Removed from sample (*n* = 1,305)	Included in sample (*n* = 24,620)	Removed from sample (*n* = 1,589)	Included in sample (*n* = 23,676)
Student characteristic (percent)										
Hispanic ethnicity (any race)	78.95	78.74	77.86	78.44	66.90	78.42	75.71	77.41	82.88	82.55
American Indian	15.74	17.04	15.98	17.35	25.62	17.18	17.55	17.96	12.27	11.94
Asian	1.76	1.60	1.72	1.60	1.97	1.79	1.84	1.82	2.08	2.29
White	80.26	80.31	79.74	79.82	69.45	79.61	76.63	78.57	82.57	83.68
Other	1.76	0.86	1.93	1.00	2.43	1.20	2.91	1.41	2.33	1.88
Eligible for the National School Lunch Program	90.65	94.37	89.45	94.76	89.33	92.79	86.90	94.07	88.99	93.13
Eligible for special education services	14.06	14.05	17.02	21.87	14.49	17.08	17.39	23.27	18.38	21.62
Female	48.37	46.55	46.74	46.13	45.68	45.85	46.21	45.20	44.37	45.48
ACCESS overall proficiency level score										
Overall	4.04 (0.87)	4.11 (0.94)	4.13 (0.87)	4.14 (0.94)	4.10 (1.03)	4.15 (0.98)	3.32 (0.88)	3.32 (0.78)	3.50 (0.81)	3.53 (0.84)
Listening	4.75 (0.92)	4.81 (0.96)	4.79 (0.89)	4.83 (0.95)	5.03 (1.04)	5.02 (1.05)	4.84 (1.44)	4.78 (1.40)	5.05 (1.35)	4.99 (1.34)
Reading	4.11 (1.16)	4.26 (1.20)	4.36 (1.11)	4.26 (1.20)	4.26 (1.36)	4.22 (1.33)	3.21 (1.32)	3.13 (1.29)	3.48 (1.41)	3.44 (1.40)
Speaking	4.48 (1.61)	4.41 (1.60)	4.88 (1.47)	4.52 (1.58)	4.13 (1.65)	4.29 (1.54)	2.79 (0.84)	2.88 (0.79)	2.88 (0.75)	2.96 (0.78)
Writing	3.68 (0.88)	3.68 (0.88)	3.59 (0.86)	3.70 (0.87)	3.59 (0.87)	3.66 (0.85)	3.22 (0.76)	3.31 (0.66)	3.39 (0.68)	3.46 (0.69)
Baseline standardized score										
Standardized PARCC English language arts scores	-0.35 (0.93)	-0.66 (0.97)	-0.37 (0.88)	-0.66 (0.84)	-0.47 (0.90)	-0.66 (0.85)	-0.30 (1.10)	-0.38 (1.30)	na	na
Standardized PARCC math scores	-0.40 (0.95)	-0.60 (0.95)	-0.36 (0.88)	-0.57 (0.85)	-0.45 (0.88)	-0.57 (0.85)	-0.48 (0.91)	-0.61 (0.84)	na	na
Standardized TAMELA English language arts scores	na	na	na	na	na	na	na	na	-0.38 (1.00)	-0.33 (1.28)
Standardized TAMELA math scores	na	na	na	na	na	na	na	na	-0.51 (0.88)	-0.51 (0.86)

ACCESS is ACCESS for ELLs. PARCC is Partnership for Assessment of Readiness for College and Careers. TAMELA is New Mexico Standards-Based Transition Assessment in Math and English Language Arts.

Note: Students were identified as English learner students in a given year if they met two criteria: their school district identified them as English learner students, and they took an English language proficiency assessment. Students were included in the statewide sample if they met the following criteria: were in grades 2–7 in the baseline year, were identified as English learner students and took the ACCESS in the baseline year, were in grades 3–8 in the outcome year, were assessed in English language arts or math in the outcome year, and were identified as an English learner student and took the ACCESS or identified as reclassified and did not take ACCESS.

Source: Authors' analysis based on data provided by the New Mexico Public Education Department.

Students in the sample for research questions 2 and 3 met the following criteria for both the baseline (2013/14–2017/18) and outcome (2014/15–2018/19) analysis years:

- Baseline-year criteria for the analysis sample for research questions 2 and 3:
  - Were in grades 2–7.
  - Were identified as an English learner student.
  - Had a baseline ACCESS score that fell within the optimal bandwidth. The optimal bandwidth balances the tradeoff between precision and bias (Jacob et al., 2012). Wider bandwidths include more observations and therefore typically yield more precise parameter estimates. But the bias of parameter estimates may increase as the bandwidth increases, as observations further and further from the cutpoint are included in the analysis. The mean squared-error optimal bandwidth, which balances the tradeoff between precision and bias, was selected using the Stata rdbwselect package (Calonico et al., 2014). For most analyses, the optimal bandwidth included students who scored 4.7–5.2 on the ACCESS in the baseline year.
- Outcome-year criteria for the analysis sample for research questions 2 and 3:
  - Were in grades 3–8.
  - Were assessed in English language arts or math.
  - Were identified as an English learner student and took the ACCESS, or were identified as fluent English proficient and reclassified and did not take the ACCESS.

The numbers of English learner students included in the analysis for research questions 1–3 are in table A3. The number of students who met the criteria for inclusion in the analysis sample for research question 2 (2017/18 and 2018/19, following the update to the ACCESS) was lower than the number of students who met the criteria for inclusion in the analysis sample for research question 3 (2014/15–2016/17, before the update to the ACCESS). The samples used to answer research question 4 included 1,202 students in grades 3–5, 694 students in grades 6–8, 1,549 students of Hispanic ethnicity, 165 American Indian students, 1,032 female students, and 864 male students with English language arts or math scores in 2017/18–2018/19 (see tables A7–A9). For the analyses by district, the sample included 11,339 students with English language arts or math scores in 2014/15–2018/19 in 20 districts where at least 300 students in a district met sample inclusion criteria.

Table A3. Number of English learner students in grades 3–8 in New Mexico, by outcome school year, research question, and ACCESS for ELLs overall proficiency level score range, 2014/15–2016/17 and 2017/18–2018/19

	Research question 1 ACCESS for ELLs overall proficiency level score of 1.0–6.0		Research questions 2 and 3 ACCESS for ELLs overall proficiency level score of 4.7–5.2	
Outcome school year	Number of English learner students	Number of newly reclassified students	Number of English learner students	Number of newly reclassified students
2014/15	20,670	4,354	2,262	1,390
2015/16	20,899	4,425	2,348	1,355
2016/17	19,902	4,915	2,316	1,474
2017/18	24,010	610	433	171
2018/19	22,468	1,208	860	432

Note: Students were identified as English learner students in a given year if they met two criteria: their school district identified them as English learner students, and they took an English language proficiency assessment. Students were included in the statewide sample if they met the following criteria: were in grades 2-7 in the baseline year, were identified as English learner students and took the ACCESS in the baseline year, were in grades 3-8 in the outcome year, were assessed in English language arts or math in the outcome year, and were identified as an English learner student and took the ACCESS or identified as reclassified and did not take ACCESS.

Source: Authors' analysis based on data provided by the New Mexico Public Education Department.

Attrition

As specified in the guidelines of the What Works Clearinghouse (WWC) for assessing attrition for a regression discontinuity study (What Works Clearinghouse, 2020), the study team calculated the overall and differential attrition of students in the analysis sample for research questions 2 and 3, which included students who scored 4.7–4.9 and 5.0–5.2 on the ACCESS. The highest level of observed attrition for any of the four analysis samples (English language arts and math, before and after the ACCESS standards setting) was 20 percent (figure A1). According to the *WWC Standards Handbook, Version 4.1* (WWC, 2020), an overall attrition level of 20 percent allows for differential attrition up to 5.4 percent under cautious assumptions and up to 10.0 percent under optimistic assumptions. All four samples met the cautious differential attrition assumptions (see figure A1).

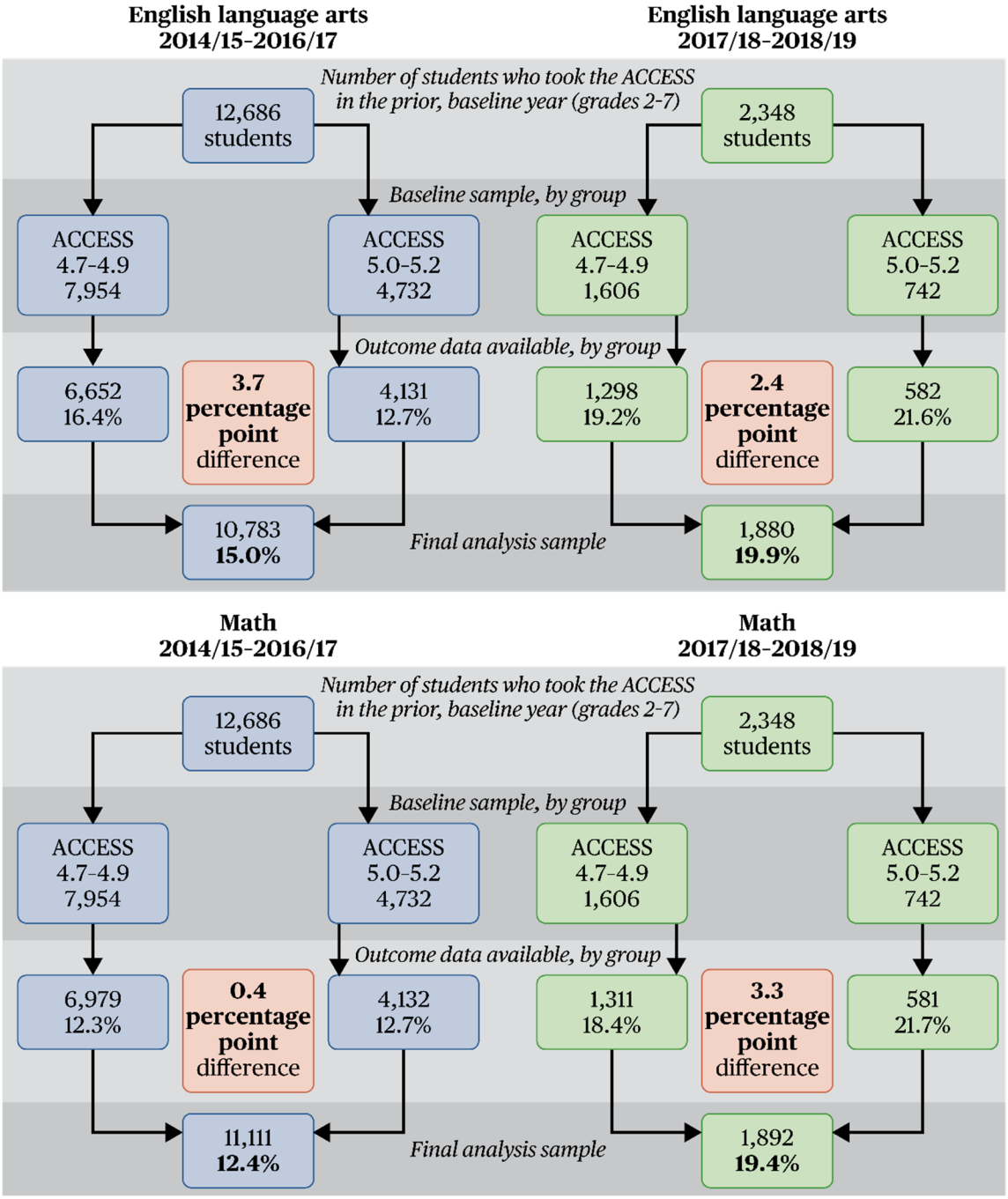
Missing data

Among students included in the analysis for 2014/15–2016/17 for research question 2, 8 percent were missing baseline English language arts scores, and 8 percent were missing baseline math scores (table A4). Among students included in the analysis for 2017/18–2018/19 for research question 3, 7 percent were missing baseline English language arts scores, and 9 percent were missing baseline math scores. Research question 4 was based on the combined samples for research questions 2 and 3. In response to the rates of missing baseline test score information, the study team tested the sensitivity of the findings by conducting an analysis including only students in grades 3–8 who were not missing baseline English language arts and math scores (see table C2 in appendix C). The results were comparable to analyses conducted with the full analysis sample.

Otherwise, the rates of missing data for the remaining variables in the analyses were low (0.2 percent or less; see table A4). The study team created missing indicators for each variable for which information was missing and included them in the analyses. The study team replaced missing values with zeros.

Figure A1. Overall attrition rates ranged from 12.4 percent to 19.9 percent among the four samples of students who took the ACCESS for ELLs assessment, thus meeting What Works Clearinghouse cautious differential attrition assumptions, 2014/15-2016/17 and 2017/18-2018/19

Attrition diagrams for the English language arts and math student samples, in 2014/15-2016/17 and in 2017/18-2018/19



ACCESS is ACCESS for ELLs.

Note: Students were identified as English learner students in a given year if they met two criteria: their school district identified them as English learner students, and they took an English language proficiency assessment. Students were included in the analysis samples for research questions 2 and 3 if they met the following criteria: (1) were in grades 2-7 in the baseline year, (2) were identified as English learner students and took the ACCESS in the baseline year, (3) were in grades 3-8 in the outcome year, (4) were assessed in English language arts or math in the outcome year, and (5) were identified as an English learner student and took the ACCESS or identified as reclassified and did not take ACCESS. If they met criteria 1-3 but not criteria 4-5, they contributed to attrition. Differential attritional compares the attrition rates among students who scored 4.7-4.9 and students who scored 5.0-5.2 on the ACCESS, calculated separately for the English language arts and the math samples.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department and What Works Clearinghouse (2020).

Table A4. Rates of student-year combinations with missing data in the analysis samples for student achievement regression analyses, by student and school characteristics, 2014/15–2016/17 and 2017/18–2018/19

Characteristic	2014/15–2016/17				2017/18–2018/19			
	English language arts (number of student-year combinations = 10,783)		Math (number of student-year combinations = 11,111)		English language arts (number of student-year combinations = 1,880)		Math (number of student-year combinations = 1,892)	
	Number of non-missing cases	Percent missing	Number of non-missing cases	Percent missing	Number of non-missing cases	Percent missing	Number of non-missing cases	Percent missing
Student characteristic								
English language arts and math assessments in the baseline year	9,929	7.9	10,175	8.4	1,756	6.6	1,719	9.1
Test language of math assessment in the outcome year	na	na	11,077	0.3	na	na	1,888	0.2
Hispanic ethnicity (any race)	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0
Race	10,760	0.2	11,088	0.2	1,877	0.2	1,889	0.2
Gender	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0
Eligible for special education services	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0
Eligible for the National School Lunch Program	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0
School characteristic								
School enrollment	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0
Percentage of English learner students	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0
Percentage of newly reclassified fluent English proficient students	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0
Percentage of students of Hispanic ethnicity	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0
Percentage of students in each racial category	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0
Percentage of students eligible for special education services	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0
Percentage of students eligible for the National School Lunch Program	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0
Average English language arts and math achievement scores in the baseline year	10,783	0.0	11,047	0.6	1,880	0.0	1,877	0.8
Average English language arts and math achievement scores in the outcome year	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0
District	10,783	0.0	11,111	0.0	1,880	0.0	1,892	0.0

na is not applicable.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Sample characteristics of students in the analysis samples

Descriptive information about New Mexico's English learner students' background characteristics and assessment performance is in tables A5–A9. Information based on the analysis sample for research question 1, which includes all English learner students and students newly reclassified as fluent English proficient in the state over the study period, is in table A5. Information about the analysis samples for research questions 2 and 3 is in table A6.

Information about the analysis samples for research question 4 based on students with different characteristics is in tables A7–A9. Differences of greater than 5 percentage points in student characteristics between English learner students and newly reclassified students are highlighted in blue in table A5, and differences of greater than 5 percentage points in student characteristics between the groups below and above the 5.0 reclassification threshold are highlighted in blue in tables A6–A9.

Although the results are not presented, the study team also tested whether the groups of students below and above the reclassification threshold differed in baseline achievement, using a procedure aligned with the WWC recommendations for regression discontinuity studies (What Works Clearinghouse, 2020). Specifically, the study team calculated the impact of reclassification on baseline standardized student English language arts and math scores near the 5.0 cutoff using a sharp regression discontinuity design. The model used the same bandwidth and functional form of the running variable as were used to estimate the impact on the outcome for research questions 2 and 3. The absolute values of the standardized effect sizes of the impact of reclassification on baseline student English language arts and math achievement were less than .10 and not statistically significant for research questions 2 and 3.

Table A5. Summary of selected characteristics of English learner students and students newly reclassified as fluent English proficient in grades 3–8 for research question 1, 2014/15–2016/17 and 2017/18–2018/19

Characteristic	2014/15		2015/16		2016/17		2017/18		2018/19	
	English learner students	Newly reclassified students	English learner students	Newly reclassified students	English learner students	Newly reclassified students	English learner students	Newly reclassified students	English learner students	Newly reclassified students
Sample size										
Number of student-year combinations	20,670	4,354	20,899	4,425	19,902	4,915	24,010	610	22,468	1,208
Student characteristic (percent)										
Hispanic ethnicity (any race)	79	79	78	81	79	75	77	75	83	79
American Indian	17	15	18	13	17	18	18	17	12	9
Asian	1	2	1	2	1	3	2	4	2	5
White	80	81	79	82	80	77	79	76	84	83
Other	1	1	1	1	1	1	1	1	2	2
Race data are missing	<0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	3	<0.5	1
Eligible for the National School Lunch Program	95	92	95	92	93	90	94	84	94	84
Eligible for special education services	16	6	25	8	20	7	24	12	22	9
Female	45	52	45	51	44	53	45	51	45	51
ACCESS for ELLs overall proficiency level score										
Overall	3.81	5.33	3.84	5.35	3.80	5.34	3.29	4.20	3.45	4.73
	(0.75)	(0.60)	(0.75)	(0.59)	(0.77)	(0.62)	(0.76)	(1.05)	(0.77)	(0.97)
Listening	4.62	5.63	4.62	5.64	4.81	5.74	4.76	5.49	4.95	5.73
	(0.93)	(0.60)	(0.91)	(0.60)	(1.07)	(0.55)	(1.41)	(1.01)	(1.35)	(0.79)
Reading	3.96	5.46	3.96	5.46	3.83	5.53	3.09	4.36	3.34	5.07
	(1.10)	(0.78)	(1.09)	(0.78)	(1.20)	(0.82)	(1.26)	(1.65)	(1.34)	(1.40)
Speaking	4.17	5.40	4.28	5.45	3.98	5.35	2.86	3.40	2.92	3.61
	(1.62)	(1.06)	(1.61)	(1.02)	(1.52)	(1.05)	(0.79)	(0.81)	(0.77)	(0.74)
Writing	3.48	4.54	3.48	4.55	3.46	4.36	3.29	3.82	3.42	4.16
	(0.81)	(0.63)	(0.79)	(0.60)	(0.80)	(0.62)	(0.65)	(0.73)	(0.67)	(0.72)

Characteristic	2014/15		2015/16		2016/17		2017/18		2018/19	
	English learner students	Newly reclassified students	English learner students	Newly reclassified students	English learner students	Newly reclassified students	English learner students	Newly reclassified students	English learner students	Newly reclassified students
Baseline standardized score and percent proficient										
Standardized English language arts scores	-0.83	-0.01	-0.80	-0.12	-0.84	-0.02	-0.39	-0.01	-0.36	0.23
	(0.95)	(0.76)	(0.80)	(0.78)	(0.78)	(0.77)	(1.30)	(1.15)	(1.29)	(0.94)
Standardized math scores	-0.76	-0.02	-0.72	-0.05	-0.75	0.03	-0.62	-0.01	-0.56	0.24
	(0.92)	(0.81)	(0.79)	(0.82)	(0.78)	(0.81)	(0.83)	(1.03)	(0.83)	(0.96)
Percent proficient in English language arts	1	3	1	11	1	12	3	19	5	35
Percent proficient in math	1	4	3	16	3	21	6	24	9	36
Outcome standardized score and percent proficient										
Standardized PARCC English language arts scores	-0.78	-0.09	-0.76	-0.05	-0.80	0.00	-0.65	-0.07	na	na
	(0.78)	(0.78)	(0.80)	(0.82)	(0.75)	(0.80)	(0.83)	(1.03)		
Standardized PARCC math scores	-0.57	-0.01	-0.58	0.00	-0.63	0.08	-0.52	-0.03	na	na
	(0.84)	(0.85)	(0.85)	(0.87)	(0.83)	(0.85)	(0.85)	(1.02)		
Standardized TAMELA English language arts scores	na	na	na	na	na	na	na	na	-0.61	0.24
									(0.86)	(0.94)
Standardized TAMELA math scores	na	na	na	na	na	na	na	na	-0.47	0.26
									(0.86)	(0.96)
Percent proficient in English language arts	4	14	4	17	3	20	8	29	9	40
Percent proficient in math	6	15	7	20	6	21	9	24	10	32

na is not applicable. PARCC is Partnership for Assessment of Readiness for College and Careers. TAMELA is New Mexico Standards-Based Transition Assessment in Math and English Language Arts.

Note: The numbers in parentheses are standard deviations. Students were identified as English learner students in a given year if they met two criteria: their school district identified them as English learner students, and they took an English language proficiency assessment. Students were included in the statewide sample if they met the following criteria: were in grades 2-7 in the baseline year, were identified as English learner students and took the ACCESS in the baseline year, were in grades 3-8 in the outcome year, were assessed in English language arts or math in the outcome year, and were identified as an English learner student and took the ACCESS or identified as reclassified and did not take ACCESS. The baseline assessment is PARCC for all grades, subjects, and years, with two exceptions. For baseline scores for 2013/14, the baseline assessment is the Standards-Based Assessment, and for students whose baseline score is from grade 2, the baseline assessment is the Dynamic Indicators of Basic Early Literacy Skills for 2013/14–2015/16 and iStation English language arts for 2016/17–2017/18. Differences of greater than 5 percentage points in student characteristics between English learner students and students newly reclassified as fluent English proficient are highlighted in blue.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table A6. Summary of selected characteristics of English learner students and students newly reclassified as fluent English proficient in the analysis sample for research questions 2 and 3, 2014/15–2016/17 and 2017/18–2018/19

Characteristic	2014/15		2015/16		2016/17		2017/18		2018/19	
	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2
Sample size										
Number of student-year combinations	2,309	1,343	2,373	1,330	2,324	1,466	442	162	872	420
Student characteristic (percent)										
Hispanic ethnicity (any race)	80	82	77	81	76	75	82	80	82	81
American Indian	16	15	19	14	19	20	10	9	8	7
Asian	1	2	1	2	2	3	3	9	4	5
White	81	83	79	83	78	76	85	82	86	85
Other	1	1	1	1	1	1	2	0	2	2
Race data are missing	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Eligible for the National School Lunch Program	94	94	95	94	93	93	88	90	89	85
Eligible for special education services	9	7	12	10	9	5	6	3	4	4
Female	49	50	49	53	49	52	55	56	53	57
Grade 3	4	4	7	6	14	15	12	14	8	6
Grade 4	29	35	30	40	26	35	21	20	17	15
Grade 5	26	26	23	23	25	22	32	25	38	42
Grade 6	19	17	21	16	16	15	22	27	26	30
Grade 7	11	8	9	7	11	7	6	6	6	3
Grade 8	11	10	10	8	8	5	6	9	5	3
ACCESS for ELLs overall proficiency level score										
Overall	4.81 (0.08)	5.11 (0.08)	4.81 (0.08)	5.10 (0.08)	4.81 (0.08)	5.11 (0.08)	4.79 (0.08)	5.07 (0.09)	4.79 (0.08)	5.09 (0.09)
Listening	5.23 (0.59)	5.47 (0.55)	5.22 (0.61)	5.47 (0.56)	5.51 (0.61)	5.69 (0.49)	5.98 (0.13)	6.00 (0.04)	5.98 (0.15)	6.00 (0.04)
Reading	4.86 (0.72)	5.21 (0.64)	4.85 (0.73)	5.20 (0.64)	5.01 (0.85)	5.41 (0.65)	5.58 (0.61)	5.84 (0.36)	5.54 (0.67)	5.77 (0.43)

Characteristic	2014/15		2015/16		2016/17		2017/18		2018/19	
	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2
Speaking	5.27	5.36	5.33	5.37	5.00	5.27	3.77	3.85	3.69	3.81
	(1.11)	(1.06)	(1.09)	(1.07)	(1.17)	(1.03)	(0.53)	(0.49)	(0.54)	(0.52)
Writing	4.30	4.50	4.27	4.50	4.15	4.29	4.19	4.36	4.23	4.42
	(0.41)	(0.44)	(0.41)	(0.43)	(0.49)	(0.51)	(0.32)	(0.40)	(0.36)	(0.40)
Baseline standardized score and percent proficient										
Standardized English language arts scores	-0.32	-0.13	-0.44	-0.25	-0.43	-0.20	0.25	0.61	0.26	0.43
	(0.07)	(0.73)	(0.70)	(0.71)	(0.67)	(0.69)	(0.83)	(1.03)	(0.79)	(0.68)
Standardized math scores	-0.03	-0.15	-0.36	-0.22	-0.36	-0.20	0.24	0.64	0.27	0.44
	(0.76)	(0.77)	(0.72)	(0.76)	(0.70)	(0.70)	(0.72)	(0.79)	(0.72)	(0.72)
Percent proficient in English language arts	1	2	3	7	2	4	20	32	27	39
Percent proficient in math	2	2	6	10	7	12	26	44	31	39
Outcome standardized score and percent proficient										
Standardized PARCC English language arts scores	-0.44	-0.26	-0.39	-0.22	-0.41	-0.22	0.28	0.60	na	na
	(0.70)	(0.72)	(0.74)	(0.77)	(0.69)	(0.67)	(0.72)	(0.73)		
Standardized PARCC math scores	-0.29	-0.19	-0.30	-0.17	-0.32	-0.10	0.29	0.64	na	na
	(0.76)	(0.81)	(0.78)	(0.81)	(0.75)	(0.76)	(0.81)	(0.83)		
Standardized TAMELA English language arts scores	na	na	na	na	na	na	na	na	0.32	0.45
									(0.75)	(0.69)
Standardized TAMELA math scores	na	na	na	na	na	na	na	na	0.29	0.46
									(0.79)	(0.79)
Percent proficient in English language arts	5	9	7	11	6	10	33	56	38	43
Percent proficient in math	6	9	9	13	8	15	30	48	30	36

na is not applicable. PARCC is Partnership for Assessment of Readiness for College and Careers. TAMELA is New Mexico Standards-Based Transition Assessment in Math and English Language Arts.

Note: Numbers in parentheses are standard deviations. Students were identified as English learner students in a given year if they met two criteria: their school district identified them as English learner students, and they took an English language proficiency assessment. Students were included in the analysis samples for research questions 2 and 3 if they met the following criteria: were in grades 2-7 in the baseline year, were identified as English learner students and took the ACCESS in the baseline year, were in grades 3-8 in the outcome year, were assessed in English language arts or math in the outcome year, and were identified as an English learner student and took the ACCESS or identified as reclassified and did not take ACCESS. The baseline assessment is PARCC for all grades, subjects, and years, with two exceptions. For baseline scores for 2013/14, the baseline assessment is the Standards-Based Assessment, and for students whose baseline score is from grade 2, the baseline assessment is the Dynamic Indicators of Basic Early Literacy Skills for 2013/14-2015/16 and iStation English language arts for 2016/17-2017/18. Differences of greater than 5 percentage points in student characteristics between the groups below and above the 5.0 reclassification threshold are highlighted in blue.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table A7. Summary of selected characteristics of English learner students in grades 3–5 and 6–8 in the analysis sample for research question 4, 2017/18–2018/19

Characteristic	Grades 3–5				Grades 6–8			
	2017/18		2018/19		2017/18		2018/19	
	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2
Sample size								
Number of student-year combinations	288	96	552	266	154	66	320	154
Student characteristic (percent)								
Hispanic ethnicity (any race)	82	80	82	81	82	79	84	81
American Indian	10	9	9	7	10	9	7	8
Asian	3	8	4	5	4	9	3	5
White	85	82	84	85	83	82	88	86
Other	1	0	2	2	3	<1	1	2
Race data are missing	<1	<1	<1	<1	<1	<1	<1	<1
Eligible for the National School Lunch Program	88	92	90	85	90	86	87	84
Eligible for special education services	7	3	3	2	4	3	6	6
Female	56	56	54	58	53	56	50	54
Grade 3	19	23	12	10	na	na	na	na
Grade 4	32	34	27	24	na	na	na	na
Grade 5	49	43	61	66	na	na	na	na
Grade 6	na	na	na	na	64	65	72	83
Grade 7	na	na	na	na	18	14	15	9
Grade 8	na	na	na	na	18	21	13	8
ACCESS for ELLs overall proficiency level score								
Overall	4.78	5.08	4.79	5.09	4.79	5.07	4.79	5.08
	(0.08)	(0.09)	(0.08)	(0.09)	(0.08)	(0.09)	(0.08)	(0.09)
Listening	5.98	5.99	5.98	6.00	5.99	6.00	5.99	6.00
	(0.12)	(0.05)	(0.19)	(0.05)	(0.16)	(0.00)	(0.05)	(0.03)
Reading	5.62	5.89	5.58	5.84	5.50	5.76	5.46	5.65
	(0.58)	(0.27)	(0.64)	(0.31)	(0.66)	(0.46)	(0.72)	(0.57)

Characteristic	Grades 3–5				Grades 6–8			
	2017/18		2018/19		2017/18		2018/19	
	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2
Speaking	3.78	3.77	3.66	3.80	3.76	3.96	3.75	3.84
	(0.54)	(0.51)	(0.55)	(0.54)	(0.50)	(0.45)	(0.52)	(0.49)
Writing	4.15	4.31	4.21	4.36	4.26	4.44	4.27	4.52
	(0.32)	(0.44)	(0.35)	(0.37)	(0.31)	(0.32)	(0.38)	(0.42)
Baseline standardized score								
Standardized English language arts scores	0.33	0.82	0.38	0.54	0.12	0.32	0.07	0.26
	(0.90)	(1.20)	(0.86)	(0.69)	(0.68)	(0.61)	(0.60)	(0.61)
Standardized math scores	0.29	0.69	0.36	0.57	0.18	0.58	0.15	0.25
	(0.72)	(0.68)	(0.69)	(0.67)	(0.72)	(0.91)	(0.74)	(0.75)
Outcome standardized score								
Standardized PARCC English language arts scores	0.35	0.75	na	na	0.16	0.38	na	na
	(0.72)	(0.70)			(0.71)	(0.73)		
Standardized PARCC math scores	0.37	0.79	na	na	0.12	0.42	na	na
	(0.80)	(0.71)			(0.79)	(0.95)		
Standardized TAMELA English language arts scores	na	na	0.44	0.59	na	na	0.12	0.22
			(0.74)	(0.69)			(0.73)	(0.63)
Standardized TAMELA math scores	na	na	0.41	0.60	na	na	0.09	0.21
			(0.78)	(0.75)			(0.78)	(0.80)

na is not applicable. PARCC is Partnership for Assessment of Readiness for College and Careers. TAMELA is New Mexico Standards-Based Transition Assessment in Math and English Language Arts.

Note: Numbers in parentheses are standard deviations. Students were identified as English learner students in a given year if they met two criteria: their school district identified them as English learner students, and they took an English language proficiency assessment. Students were included in the analysis samples for research questions 2 and 3 if they met the following criteria: were in grades 2-7 in the baseline year, were identified as English learner students and took the ACCESS in the baseline year, were in grades 3-8 in the outcome year, were assessed in English language arts or math in the outcome year, and were identified as an English learner student and took the ACCESS or identified as reclassified and did not take ACCESS. The baseline assessment is PARCC for all grades, subjects, and years, with two exceptions. For baseline scores for 2013/14, the baseline assessment is the Standards-Based Assessment, and for students whose baseline score is from grade 2, the baseline assessment is the Dynamic Indicators of Basic Early Literacy Skills for 2013/14-2015/16 and iStation English language arts for 2016/17-2017/18. Differences of greater than 5 percentage points in student characteristics between the groups below and above the 5.0 reclassification threshold are highlighted in blue.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table A8. Summary of selected characteristics of English learner American Indian students and Hispanic students in the analysis sample for research question 4, 2017/18–2018/19

Characteristic	American Indian				Hispanic ethnicity			
	2017/18		2018/19		2017/18		2018/19	
	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2
Sample size								
Number of student-year combinations	44	12	69	25	362	129	718	340
Student characteristic (percent)								
Hispanic ethnicity (any race)	na	na	na	na	100	100	100	100
American Indian	100	100	100	100	<1	2	1	2
Asian	na	na	na	na	<1	<1	<1	1
White	na	na	na	na	98	98	98	96
Other	na	na	na	na	2	<1	1	1
Race data are missing	na	na	na	na	<1	<1	<1	<1
Eligible for the National School Lunch Program	91	100	94	92	91	95	91	89
Eligible for special education services	2	17	6	<1	6	2	4	4
Female	50	67	51	60	57	60	54	56
Grade 3	11	<1	3	4	11	14	8	6
Grade 4	27	17	14	16	20	19	17	15
Grade 5	25	33	52	44	34	26	38	43
Grade 6	25	42	22	32	22	27	28	32
Grade 7	2	<1	4	4	6	5	5	2
Grade 8	9	8	4	<1	6	9	5	2
ACCESS for ELLs overall proficiency level score								
Overall	4.78	5.10	4.80	5.10	4.79	5.07	4.79	5.08
	(0.08)	(0.10)	(0.09)	(0.09)	(0.08)	(0.09)	(0.08)	(0.09)
Listening	6.00	6.00	5.97	6.00	5.98	6.00	5.98	6.00
	(0.02)	(0.00)	(0.26)	(0.00)	(0.15)	(0.04)	(0.14)	(0.05)
Reading	5.61	5.85	5.32	5.74	5.54	5.82	5.53	5.75
	(0.59)	(0.46)	(0.80)	(0.56)	(0.63)	(0.37)	(0.66)	(0.45)

Characteristic	American Indian				Hispanic ethnicity			
	2017/18		2018/19		2017/18		2018/19	
	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2
Speaking	3.82	3.81	3.76	3.90	3.77	3.83	3.69	3.82
	(0.42)	(0.32)	(0.54)	(0.48)	(0.54)	(0.51)	(0.53)	(0.52)
Writing	4.18	4.36	4.29	4.30	4.21	4.39	4.23	4.44
	(0.31)	(0.33)	(0.40)	(0.41)	(0.32)	(0.41)	(0.36)	(0.40)
Baseline standardized score								
Standardized English language arts scores	0.18	0.58	0.09	0.35	0.26	0.66	0.27	0.41
	(0.64)	(0.84)	(0.55)	(0.57)	(0.88)	(1.09)	(0.82)	(0.70)
Standardized math scores	0.23	0.35	0.18	0.37	0.22	0.61	0.25	0.40
	(0.83)	(0.78)	(0.75)	(0.62)	(0.71)	(0.80)	(0.71)	(0.72)
Outcome standardized score								
Standardized PARCC English language arts scores	0.36	0.84	na	na	0.23	0.52	na	na
	(0.56)	(0.61)			(0.73)	(0.73)		
Standardized PARCC math scores	0.25	0.27	na	na	0.27	0.59	na	na
	(0.84)	(0.70)			(0.81)	(0.83)		
Standardized TAMELA English language arts scores	na	na	0.05	0.19	na	na	0.32	0.40
			(0.76)	(0.61)			(0.74)	(0.68)
Standardized TAMELA math scores	na	na	0.13	0.22	na	na	0.28	0.41
			(0.81)	(0.82)			(0.78)	(0.76)

na is not applicable. PARCC is Partnership for Assessment of Readiness for College and Careers. TAMELA is New Mexico Standards-Based Transition Assessment in Math and English Language Arts.

Note: Numbers in parentheses are standard deviations. Students were identified as English learner students in a given year if they met two criteria: their school district identified them as English learner students, and they took an English language proficiency assessment. Students were included in the analysis samples for research questions 2 and 3 if they met the following criteria: were in grades 2-7 in the baseline year, were identified as English learner students and took the ACCESS in the baseline year, were in grades 3-8 in the outcome year, were assessed in English language arts or math in the outcome year, and were identified as an English learner student and took the ACCESS or identified as reclassified and did not take ACCESS. The baseline assessment is PARCC for all grades, subjects, and years, with two exceptions. For baseline scores for 2013/14, the baseline assessment is the Standards-Based Assessment, and for students whose baseline score is from grade 2, the baseline assessment is the Dynamic Indicators of Basic Early Literacy Skills for 2013/14-2015/16 and iStation English language arts for 2016/17-2017/18. Differences of greater than 5 percentage points in student characteristics between the groups below and above the 5.0 reclassification threshold are highlighted in blue.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table A9. Summary of selected characteristics of English learner female and male students in the analysis sample for research question 4, 2017/18–2018/19

Characteristic	Female students				Male students			
	2017/18		2018/19		2017/18		2018/19	
	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2
Sample size								
Number of student-year combinations	242	91	461	238	200	71	411	182
Student characteristic (percent)								
Hispanic ethnicity (any race)	86	85	84	80	77	73	81	82
American Indian	9	12	8	7	12	6	9	8
Asian	2	3	3	4	5	15	4	6
White	86	85	87	87	82	79	84	84
Other	2	<1	1	2	1	<1	2	2
Race data are missing	<1	<1	<1	<1	<1	<1	<1	<1
Eligible for the National School Lunch Program	87	95	89	85	90	83	88	84
Eligible for special education services	4	3	2	4	8	3	6	4
Female	100	100	100	100	0	0	0	0
Grade 3	12	15	7	9	13	11	9	3
Grade 4	21	24	19	15	20	15	15	15
Grade 5	33	20	40	41	31	32	37	42
Grade 6	22	27	24	29	22	25	28	33
Grade 7	7	3	6	4	5	8	5	3
Grade 8	5	10	5	3	8	7	5	3
ACCESS for ELLs overall proficiency level score								
Overall	4.79 (0.08)	5.07 (0.09)	4.79 (0.08)	5.09 (0.09)	4.79 (0.08)	5.08 (0.09)	4.80 (0.08)	5.08 (0.08)
Listening	5.98 (0.16)	6.00 (0.02)	5.97 (0.20)	5.99 (0.06)	5.99 (0.09)	5.99 (0.05)	5.99 (0.07)	6.00 (0.01)
Reading	5.52 (0.62)	5.80 (0.43)	5.52 (0.68)	5.75 (0.43)	5.64 (0.60)	5.89 (0.25)	5.55 (0.66)	5.79 (0.43)

Characteristic	Female students				Male students			
	2017/18		2018/19		2017/18		2018/19	
	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2	ACCESS 4.7–4.9	ACCESS 5.0–5.2
Speaking	3.78 (0.55)	3.79 (0.53)	3.69 (0.52)	3.82 (0.50)	3.76 (0.51)	3.93 (0.44)	3.69 (0.56)	3.80 (0.55)
Writing	4.24 (0.32)	4.47 (0.38)	4.25 (0.35)	4.46 (0.40)	4.14 (0.31)	4.22 (0.38)	4.20 (0.36)	4.35 (0.38)
Baseline standardized score								
Standardized English language arts scores	0.31 (0.87)	0.66 (1.00)	0.33 (0.78)	0.49 (0.75)	0.18 (0.78)	0.55 (1.06)	0.18 (0.79)	0.36 (0.56)
Standardized math scores	0.18 (0.66)	0.58 (0.86)	0.20 (0.69)	0.39 (0.69)	0.33 (0.79)	0.71 (0.70)	0.36 (0.74)	0.51 (0.75)
Outcome standardized score								
Standardized PARCC English language arts scores	0.33 (0.73)	0.64 (0.74)	na	na	0.22 (0.70)	0.54 (0.72)	na	na
Standardized PARCC math scores	0.16 (0.80)	0.53 (0.82)	na	na	0.45 (0.79)	0.78 (0.84)	na	na
Standardized TAMELA English language arts scores	na	na	0.39 (0.74)	0.51 (0.71)	na	na	0.25 (0.75)	0.37 (0.66)
Standardized TAMELA math scores	na	na	0.22 (0.77)	0.43 (0.76)	na	na	0.38 (0.81)	0.49 (0.83)

na is not applicable. PARCC is Partnership for Assessment of Readiness for College and Careers. TAMELA is New Mexico Standards-Based Transition Assessment in Math and English Language Arts.

Note: Numbers in parentheses are standard deviations. Students were identified as English learner students in a given year if they met two criteria: their school district identified them as English learner students, and they took an English language proficiency assessment. Students were included in the analysis samples for research questions 2 and 3 if they met the following criteria: were in grades 2-7 in the baseline year, were identified as English learner students and took the ACCESS in the baseline year, were in grades 3–8 in the outcome year, were assessed in English language arts or math in the outcome year, and were identified as an English learner student and took the ACCESS or identified as reclassified and did not take ACCESS. The baseline assessment is PARCC for all grades, subjects, and years, with two exceptions. For baseline scores from 2013/14, the baseline assessment is the Standards-Based Assessment, and for students whose baseline score is from grade 2, the baseline assessment is the Dynamic Indicators of Basic Early Literacy Skills for 2013/14–2015/16 and iStation English language arts for 2016/17–2017/18. Differences of greater than 5 percentage points in student characteristics between the groups below and above the 5.0 reclassification threshold are highlighted in blue.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Methodology

Research question 1

For research question 1, the study team calculated the percentage of English learner students who were newly reclassified as fluent English proficient in each study year.

Research question 2

For research question 2, the study team used a regression discontinuity design to estimate the effect of reclassification as fluent English proficient on student achievement during the outcome years (2017/18–2018/19) after the ACCESS standards setting. Prior research has successfully used this approach to estimate the effect of reclassification on student achievement (Cimpian et al., 2017; Robinson, 2011; Robinson-Cimpian & Thompson, 2016). The study team found that the 5.0 threshold was not uniformly used to determine reclassification among students in the analysis sample.[4] For this reason, the study team used a variation on the regression discontinuity design, called a fuzzy regression discontinuity design, that estimates the effect of reclassification on next-year student achievement for "compliers." In the context of this study, compliers are students who scored below 5.0 and were not reclassified and students who scored at or above 5.0 and were reclassified. "Noncompliers" are students who scored below 5.0 and were reclassified and students who scored at or above 5.0 and were not reclassified.

The first-stage (equation A1) estimates the probability that student i in school j was reclassified (r_{ij}) based on whether the student scored at or above the 5.0 reclassification threshold on the ACCESS in the prior, baseline year (d_{ij}); student ($\boldsymbol{x1_{ij}}$) and school ($\boldsymbol{x2_j}$) characteristics; and the student's baseline ACCESS score (a_{ij}).

$$r_{ij} = \gamma_0 + \gamma_1 d_{ij} + \mathbf{x1'_{ij}}\gamma_2 + \mathbf{x2'_j}\gamma_3 + d_{ij} f(a_{ij}) + (1 - d_{ij}) g(a_{ij}) + u_{ij} \quad \text{(A1)}$$

The terms in equation A1 are defined as follows:

- r_{ij} = a binary variable indicating that student i in school j was reclassified as fluent English proficient between the baseline year and the outcome year.
- d_{ij} = a binary variable indicating that student i scored at or above the 5.0 threshold for reclassification. The parameter γ_1 provides an estimate of the change in the probability of being reclassified associated with scoring above the 5.0 reclassification threshold.
- $\mathbf{x1_{ij}}$ = a vector of baseline characteristics of student i, including cohort (with 2017/18 or 2018/19 as the excluded category), gender, Hispanic ethnicity, race, eligibility for the National School Lunch Program, eligibility for special education services, baseline English language arts achievement, baseline math achievement, grade (indicator variables for grades 3–7, with grade 8 as the excluded category), and language of the baseline math assessment.
- $\mathbf{x2_j}$ = a vector of baseline characteristics of school j, including the percentage of students of Hispanic ethnicity, the percentage of students in each racial group, the percentage of students eligible for the National School Lunch Program, the percentage of students eligible for special education services, the percentage of students who are English learner students, average standardized baseline achievement in the same subject as the second-stage outcome (y_{ij}) among students in the school, and total school enrollment.

[4] According to state administrative data, 96 percent of students who score 5.0–5.2 on the ACCESS are reclassified, and 97 percent of students who score 4.7–4.9 are not reclassified. The New Mexico Public Education Department shared with the study team that all students scoring a 5.0 or higher should be reclassified, so these discrepancies may reflect some small inaccuracies in the data.

- $f(a_{ij})$ = a function of the student *i*'s baseline ACCESS overall score after the ACCESS standards setting among students who scored above the 5.0 threshold, denoted by its interaction with d_{ij}. The baseline case estimated a linear relationship between ACCESS overall scores and the likelihood that the student is reclassified before the ACCESS standards setting.
- $(1 - d_{ij})$ = a binary variable indicating that student *i* scored below the 5.0 threshold for reclassification and remained identified as an English learner student.
- $g(a_{ij})$ = a function of the student *i*'s baseline ACCESS overall score after the ACCESS standards setting among students who scored below the 5.0 threshold, denoted by the interaction with $(1 - d_{ij})$. The baseline case estimated a linear relationship between ACCESS overall scores and the likelihood that the student is reclassified after the ACCESS standards setting.
- u_{ij} = a random error term for student *i* in school *j*.

The second-stage (equation A2) estimates, separately for English language arts and math, the relationship between student English language arts or math achievement (y_{ij}) and the estimated probability a student was reclassified ($\hat{r}_{ij}$ from equation A1), vectors of student ($\mathbf{x1_{ij}}$) and school ($\mathbf{x2_j}$) characteristics, and the student's baseline ACCESS score (a_{ij}).

$$y_{ij} = \beta_0 + \beta_1 \hat{r}_{ij} + \boldsymbol{x1'_{ij}}\beta_2 + \boldsymbol{x2'_j}\beta_3 + d_{ij}m(a_{ij}) + (1 - d_{ij})n(a_{ij}) + \varepsilon_{ij} \quad \text{(A2)}$$

The terms in equation A2 are defined as follows:

- y_{ij} = the standardized English language arts or math scale score for student *i* in school *j* one year after the student scored near the threshold for reclassification on the ACCESS after the standards setting. To make achievement scores comparable across grades (3–8) and years (2017/18–2018/19), student test scores were standardized relative to achievement of all New Mexico students in that grade, subject, and year.
- $m(a_{ij})$ = a function of the student *i*'s baseline ACCESS overall score after the ACCESS standards setting among students who scored above the 5.0 threshold, denoted by its interaction with d_{ij}. The baseline case estimated a linear relationship between ACCESS overall scores after the ACCESS standards setting and student achievement.
- $n(a_{ij})$ = a function of student *i*'s baseline ACCESS overall score after the ACCESS standards setting among students who scored below the 5.0 threshold, denoted by the interaction with $(1 - d_{ij})$. The baseline case estimated a linear relationship between ACCESS overall scores after the standards setting and student achievement.
- ε_{ij} = a random error term for student *i* in school *j*.

The remaining terms in equation A2 are defined as in equation A1. The parameter β_1 provides an estimate of the effect of reclassification on student achievement for students scoring near the 5.0 threshold.

To account for heteroskedasticity among the error terms, analyses used Eicker-Huber-White robust standard errors (White, 1980), which do not depend on a formal model of the structure of the heteroskedasticity.

Research question 3

For research question 3, the study team applied the same methods used to answer research question 2 to the outcome years (2014/15–2016/17) before the ACCESS standards setting.

Research question 4

Research question 4 estimated the effect of reclassification for the following student groups for students with outcome scores for 2017/18–2018/19:[5]

- Students in grades 3–5.
- Students in grades 6–8.
- Students of Hispanic ethnicity.
- American Indian students.
- Female students.
- Male students.
- Students in each of 20 school districts in New Mexico. Districts were included in the district-level analysis of the impact of reclassification on student English language arts and math achievement if the district had at least 300 students who took the ACCESS from 2013/14 to 2017/18, who attained an overall proficiency level score of 4.0–6.0, and who had a grade 3–8 PARCC or TAMELA English language arts or math score the following year.[6]

The methods used to estimate the effect of reclassification among these student groups are the same as those used to answer research question 2, applied to each student group.

References

Calonico, S., Cattaneo, M. D., & Titiunik, R. (2014). Robust data-driven inference in the regression-discontinuity design. *The Stata Journal, 14*(4), 909–946. https://journals.sagepub.com/doi/pdf/10.1177/1536867X1401400413

Center for Applied Linguistics. (2018). *Annual Technical Report for ACCESS for ELLs 2.0 Online English language proficiency test, series 401, 2016-17 administration*. Annual Technical Report No. 13A. http://www.cde.state.co.us/assessment/accessforellsonlinetechreport

Cimpian, J. R., Thompson, K. D., & Makowski, M. B. (2017). Evaluating English learner reclassification policy effects across districts. *American Educational Research Journal, 54*(1S), 255S–278S. https://eric.ed.gov/?id=EJ1155333

Jacob, Z., Zhu, P., Somers, M., & Bloom, H. (2012). *A practical guide to regression discontinuity*. MDRC. https://www.mdrc.org/sites/default/files/regression_discontinuity_full.pdf

PARCC. (2019). *Final technical report for 2018 administration*. https://eric.ed.gov/?id=ED599198

Robinson, J. P. (2011). Evaluating criteria for English learner reclassification: A causal-effects approach using a binding-score regression discontinuity design with instrumental variables. *Education Evaluation and Policy Analysis, 33*(3), 267–292. https://eric.ed.gov/?id=EJ935250

[5] Students eligible for special education services were not included in the analyses because the sample was too small. Students eligible for the National School Lunch Program were not included in the analyses because the number of eligible students was so high that the sample did not meaningfully differ from the analysis sample for research questions 2 and 3.

[6] The study team used these criteria to ensure a sufficient sample size to support the analyses after further restricting a district sample based on bandwidth.

Robinson-Cimpian, J. P., & Thompson, K. D. (2016). The effects of changing test-based policies for reclassifying English Learners. *Journal of Policy Analysis and Management, 35*(2), 279–305. https://eric.ed.gov/?id=EJ1093297

What Works Clearinghouse. (2020). *What Works Clearinghouse: Standards handbook* (Version 4.1). U.S. Department of Education, Institute of Education Sciences. National Center for Education Evaluation and Regional Assistance. Retrieved June 23, 2022, from https://ies.ed.gov/ncee/wwc/handbooks.

White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica, 48*(4), 817–838.

WIDA. (2019). *Interactive guide for score reports: Kindergarten–grade 12*. Board of Regents of the University of Wisconsin System.

WIDA. (2021). *ACCESS for ELLs interpretive guide for score reports, grades K–12, spring 2021: Understanding student scores*.

Appendix B. Supporting tables

This appendix provides the results of the full analyses that support the findings in the main report, including the first- and second-stage results based on the instrumental variables approach for the fuzzy regression discontinuity design used for research questions 2–4.

Table B1 presents the estimated impact of reclassification, in scale score points, on English language arts and math achievement in 2017/18–2018/19 (research question 2) and 2014/15–2016/17 (research question 3), as well as the estimated impact of reclassification in 2014/15–2018/19. Table B1 also reports the standard error estimate for each impact estimate and the number of student-year combinations included in each analysis. Tables B2 (English language arts) and B3 (math) present the analogous estimates and sample sizes for the following student groups: students in grades 3–5, students in grades 6–8, students of Hispanic ethnicity, American Indian students, female students, and male students.

Table B1. Effect of reclassification of students as fluent English proficient on standardized English language arts and math scale score points among students in grades 3–8, 2014/15–2016/17 and 2017/18–2018/19

	English language arts			Math		
Outcome years	Estimated effect	Standard error	Number of student-year combinations	Estimated effect	Standard error	Number of student-year combinations
2017/18–2018/19	-0.39	2.14	1,880	-1.74	1.80	1,892
2014/15–2016/17	-0.22	0.78	10,783	0.23	0.75	11,111
2014/15–2018/19	-0.38	0.74	12,663	-0.22	0.69	13,003

Note: The state standardized assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC) in 2014/15–2017/18 and the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA) in 2018/19. No results were statistically significant at $p < .05$. Analyses include English learner students who attained an ACCESS for ELLs overall proficiency level score of 4.7–5.2 and took the PARCC or TAMELA English language arts or math assessments the following year.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table B2. Effect of reclassification of students as fluent English proficient on standardized English language arts scale score points among students with different characteristics, 2014/15–2016/17 and 2017/18–2018/19

	2017/18–2018/19			2014/15–2016/17		
Student group	Estimated effect	Standard error	Number of student-year combinations	Estimated effect	Standard error	Number of student-year combinations
Grades 3–5	-1.59	2.35	1,667	-1.27	0.97	6,822
Grades 6–8	1.30	3.18	694	2.04	1.10	5,233
Hispanic ethnicity	-0.83	2.41	1,534	0.02	0.89	8,371
American Indian	-2.35	8.31	165	-0.23	1.74	1,958
Female	1.48	3.05	1,024	-0.61	1.07	5,368
Male	-3.17	2.94	856	0.00	1.14	5,415

Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). No results were statistically significant at $p < .05$. Analyses include English learner students who attained an ACCESS for ELLs overall proficiency level score of 4.7–5.2 and took the PARCC or TAMELA English language arts assessment the following year.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table B3. Effect of reclassification of students as fluent English proficient on standardized math scale score points among students with different characteristics, 2014/15–2016/17 and 2017/18–2018/19

	2017/18–2018/19			2014/15–2016/17		
Student group	Estimated effect	Standard error	Number of student-year combinations	Estimated effect	Standard error	Number of student-year combinations
Grades 3–5	-2.17	1.91	1,693	0.74	0.91	7,158
Grades 6–8	-0.07	2.99	690	-0.69	1.31	3,953
Hispanic ethnicity	-1.16	2.01	1,548	0.34	0.86	8,697
American Indian	-15.66**	7.12	165	0.39	1.63	1,956
Female	-0.04	2.53	1,031	0.34	1.01	5,541
Male	-3.37	2.54	861	-0.02	1.10	5,570

** Significant at $p < .01$.

Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). Analyses include English learner students who attained an ACCESS for ELLs overall proficiency level score of 4.7–5.2 and took the PARCC or TAMELA math assessment the following year.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table B4 presents the full set of first-stage regression coefficient and standard error estimates for equation A1 in appendix A for the analysis of the effects of reclassification on achievement in English language arts (columns 1 and 2) and math (columns 3 and 4) in 2014/15–2016/17 (columns 1 and 3) and in 2017/18–2018/19 (columns 2 and 4).

Table B4. Regression coefficient and robust standard error estimates for first-stage regression analyses of the effect of reclassification of students as fluent English proficient on standardized English language arts and math scale scores, 2014/15–2016/17 and 2017/18–2018/19

	English language arts		Math	
Predictor/covariate	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Student scored at or above the 5.0 threshold	0.93**	0.90**	0.93**	0.90**
	(0.01)	(0.02)	(0.01)	(0.02)
	t = 127.02	t = 47.32	t = 130.34	t = 47.58
Baseline ACCESS score	0.02	0.08	0.02	0.08
	(0.03)	(0.06)	(0.03)	(0.06)
Baseline ACCESS score x Student scored at or above the 5.0 threshold	-0.06	0.04	-0.06	0.04
	(0.05)	(0.11)	(0.05)	(0.11)
Baseline standardized English language arts score	0.00	-0.00	0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Baseline English language arts score is missing	0.00	-0.01	0.00	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Baseline standardized math score	0.00	-0.00	0.00	0.00
	(0.00)	(0.01)	(0.00)	(0.01)
Baseline math score is missing	-0.00	-0.00	-0.00	0.06*
	(0.01)	(0.05)	(0.01)	(0.03)
Baseline math assessment was in Spanish	-0.02**	-0.06	-0.02**	-0.02
	(0.01)	(0.04)	(0.00)	(0.01)
Female	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.01)	(0.00)	(0.01)

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Not eligible for the National School Lunch Program	0.02*	0.01	0.02*	0.01
	(0.01)	(0.02)	(0.01)	(0.02)
Eligible for special education services	-0.01	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Not Hispanic ethnicity	0.03**	0.01	0.03**	0.00
	(0.01)	(0.02)	(0.01)	(0.02)
American Indian	-0.00	-0.03	-0.00	-0.02
	(0.01)	(0.03)	(0.01)	(0.03)
Asian	-0.05**	0.00	-0.05**	0.01
	(0.02)	(0.02)	(0.02)	(0.02)
Black or African American	-0.00	-0.03**	-0.00	-0.03**
	(0.02)	(0.01)	(0.02)	(0.01)
Native Hawaiian/Other Pacific Islander	-0.02	-0.03*	-0.02	-0.02
	(0.01)	(0.01)	(0.01)	(0.01)
Race data are missing	0.36**	0.91**	0.36**	0.91**
	(0.11)	(0.06)	(0.11)	(0.06)
Outcome year is 2015	0.01	na	na	na
	(0.00)	na	na	na
Outcome year is 2016	na	na	-0.01	na
	na	na	(0.00)	na
Outcome year is 2017	-0.00	na	-0.01*	na
	(0.00)	na	(0.00)	na
Outcome year is 2018	na	-0.00	na	-0.00
	na	(0.01)	na	(0.01)
Grade 3	0.01	-0.02	0.01	-0.08*
	(0.01)	(0.05)	(0.01)	(0.04)
Grade 4	0.01	-0.02	0.01	-0.02
	(0.01)	(0.03)	(0.01)	(0.03)
Grade 5	0.01	-0.01	0.01	-0.01
	(0.01)	(0.03)	(0.01)	(0.03)
Grade 6	0.01	-0.02	0.01	-0.02
	(0.01)	(0.03)	(0.01)	(0.03)
Grade 7	-0.01	0.03	-0.01	0.03
	(0.01)	(0.04)	(0.01)	(0.04)
Average schoolwide baseline standardized same-subject score	-0.02	-0.05*	-0.02*	-0.04*
	(0.01)	(0.02)	(0.01)	(0.02)
Average schoolwide baseline standardized same-subject score is missing	0.01	-0.03*	0.01	-0.03*
	(0.01)	(0.01)	(0.01)	(0.01)
Total enrollment	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Percentage of students eligible for the National School Lunch Program	0.04*	-0.08*	0.04*	-0.08*
	(0.02)	(0.04)	(0.02)	(0.03)
Percentage of students eligible for special education services	-0.06	-0.03	-0.06	-0.02
	(0.04)	(0.12)	(0.04)	(0.12)
Percentage of students who are English learner students	-0.12**	0.00	-0.11**	0.01
	(0.02)	(0.03)	(0.02)	(0.03)
Percentage of students of Hispanic ethnicity	0.03	-0.09	0.03	-0.09
	(0.03)	(0.07)	(0.03)	(0.07)
Percentage of students who are American Indian	0.01	-0.07	0.01	-0.06
	(0.03)	(0.07)	(0.03)	(0.07)
Percentage of students who are Asian	0.07	-0.49*	0.08	-0.49*
	(0.16)	(0.21)	(0.15)	(0.21)
Percentage of students who are Black or African American	-0.02	-0.22	-0.03	-0.18
	(0.10)	(0.17)	(0.09)	(0.17)
Percentage of students who are Native Hawaiians or other Pacific Islander	0.02	-0.66	-0.05	-0.64
	(0.34)	(0.45)	(0.32)	(0.45)
Percentage of students whose race data are missing	0.04	2.42	0.02	2.62*
	(0.66)	(1.36)	(0.65)	(1.32)
Constant	-0.01	0.22**	-0.00	0.20**
	(0.03)	(0.07)	(0.03)	(0.07)
Number of student-year combinations	10,783	1,880	11,111	1,892
R^2	0.86	0.86	0.86	0.86
First-stage *F* statistic	*F*(36, 10746) = 2417.55	*F*(35, 1844) = 540.35	*F*(36, 11074) = 3787.95	*F*(35, 1856) = 5911.39

* Significant at $p < .05$; ** significant at $p < .01$.

na is not applicable. ACCESS is ACCESS for ELLs.

Note: Numbers in parentheses are robust standard errors. In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). Analyses include English learner students who attained an ACCESS overall proficiency level score of 4.7–5.2 and took the PARCC or TAMELA English language arts or math assessments the following year.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table B5 presents the full set of second-stage regression coefficient and standard error estimates for equation A2 in appendix A for the main analysis of the effects of reclassification on achievement in English language arts (columns 1 and 2) and math (columns 3 and 4) in 2014/15–2016/17 (columns 1 and 3) and in 2017/18–2018/19 (columns 2 and 4).

Table B5. Regression coefficient and standard error estimates for second-stage regression analyses of the effect of reclassification of students as fluent English proficient on standardized English language arts and math scale scores, 2014/15–2016/17 and 2017/18–2018/19

	English language arts		Math	
Predictor/covariate	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Reclassified	-0.01	-0.01	0.01	-0.06
	(0.02)	(0.06)	(0.03)	(0.06)
Baseline ACCESS score	0.30**	0.37	0.09	0.50*
	(0.09)	(0.21)	(0.09)	(0.20)
Baseline ACCESS score x Student scored at or above the 5.0 threshold	-0.18	-0.17	0.12	-0.35
	(0.14)	(0.34)	(0.15)	(0.33)
Baseline standardized English language arts score	0.40**	0.24**	0.12**	0.07**
	(0.01)	(0.03)	(0.01)	(0.02)
Baseline English language arts score is missing	-0.20**	0.02	0.03	0.06
	(0.03)	(0.07)	(0.02)	(0.06)
Baseline standardized math score	0.19**	0.19**	0.56**	0.64**
	(0.01)	(0.02)	(0.01)	(0.02)
Baseline math score is missing	-0.19**	-0.47**	-0.26**	-0.38**
	(0.07)	(0.13)	(0.08)	(0.09)
Baseline math assessment was in Spanish	-0.23*	0.05	0.02	-0.26
	(0.09)	(0.47)	(0.04)	(0.17)
Female	0.12**	0.13**	-0.02	-0.10**
	(0.01)	(0.03)	(0.01)	(0.03)
Not eligible for the National School Lunch Program	0.05*	0.11*	0.02	0.16**
	(0.03)	(0.05)	(0.03)	(0.05)
Eligible for special education services	-0.18**	-0.12	-0.11**	-0.20**
	(0.02)	(0.08)	(0.02)	(0.07)
Hispanic ethnicity	0.07*	0.06	0.00	-0.01
	(0.03)	(0.06)	(0.03)	(0.05)
American Indian	-0.12**	-0.09	-0.02	-0.00
	(0.04)	(0.09)	(0.04)	(0.08)
Asian	0.14**	0.15	0.20**	0.11
	(0.05)	(0.08)	(0.06)	(0.08)
Black or African American	-0.04	-0.01	-0.14	-0.12
	(0.07)	(0.12)	(0.08)	(0.16)
Native Hawaiian or other Pacific Islander	0.07	-0.06	0.15	-0.10
	(0.11)	(0.12)	(0.11)	(0.10)
Race data are missing	-0.03	-0.26	0.02	-0.13
	(0.14)	(0.27)	(0.15)	(0.20)
Outcome year is 2015	-0.06**	na	-0.00	na
	(0.01)	na	(0.01)	na
Outcome year is 2016	0.05**	na	0.03*	na
	(0.01)	na	(0.01)	na

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Outcome year is 2018	na	-0.05	na	-0.01
	na	(0.03)	na	(0.03)
Grade 3	0.33**	1.04**	0.46**	1.19**
	(0.07)	(0.15)	(0.08)	(0.12)
Grade 4	-0.06**	0.19**	-0.11**	0.08
	(0.02)	(0.06)	(0.03)	(0.08)
Grade 5	-0.15**	-0.02	-0.10**	-0.05
	(0.02)	(0.05)	(0.03)	(0.08)
Grade 6	-0.14**	-0.14*	-0.19**	-0.12
	(0.02)	(0.06)	(0.03)	(0.08)
Grade 7	-0.00	0.29**	-0.07*	0.11
	(0.02)	(0.07)	(0.03)	(0.09)
Average schoolwide baseline standardized English language arts score	0.12**	0.27**	na	na
	(0.02)	(0.06)	na	na
Average schoolwide baseline standardized English language arts score is missing	0.02	0.20	na	na
	(0.09)	(0.22)	na	na
Average schoolwide baseline standardized math score	na	na	0.13**	0.07
	na	na	(0.02)	(0.05)
Average schoolwide baseline standardized math score is missing	na	na	-0.06	-0.01
	na	na	(0.09)	(0.17)
Total enrollment	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Percentage of students eligible for the National School Lunch Program	-0.00	0.09	0.02	-0.04
	(0.05)	(0.11)	(0.05)	(0.10)
Percentage of students eligible for special education services	-0.08	-0.04	-0.20	-0.37
	(0.13)	(0.35)	(0.13)	(0.34)
Percentage of students who are English learner students	0.17**	0.18	0.18**	0.25*
	(0.05)	(0.12)	(0.05)	(0.11)
Percentage of students who are of Hispanic ethnicity	-0.29**	-0.16	-0.21**	-0.20
	(0.07)	(0.18)	(0.08)	(0.18)
Percentage of students who are American Indian	-0.15*	-0.08	-0.24**	-0.32
	(0.08)	(0.19)	(0.08)	(0.19)
Percentage of students who are Asian	-1.07*	-0.14	0.19	0.39
	(0.42)	(0.70)	(0.43)	(0.78)
Percentage of students who are Black or African American	-0.19	-1.05	-0.21	-1.04*
	(0.28)	(0.55)	(0.30)	(0.50)
Percentage of students who are Native Hawaiians or other Pacific Islander	-3.91**	-1.93	-3.48**	-2.88
	(0.94)	(2.11)	(1.06)	(1.71)
Percentage of students whose race data are missing	2.01	-2.66	6.08**	-0.79
	(1.53)	(2.58)	(1.43)	(2.97)

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Constant	0.15*	0.25	0.20**	0.52**
	(0.06)	(0.15)	(0.07)	(0.16)
Number of student-year combinations	10,783	1,880	11,111	1,892
R^2	0.38	0.35	0.41	0.52

* Significant at $p < .05$; ** significant at $p < .01$.

na is not applicable. ACCESS is ACCESS for ELLs.

Note: Numbers in parentheses are robust standard errors. In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). Analyses include English learner students who attained an ACCESS overall proficiency level score of 4.7–5.2 and took the PARCC or TAMELA English language arts or math assessments the following year.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Tables B6–B11 present the estimates analogous to those in table B5 for the analyses of the effect of reclassification for each of the following student groups: students in grades 3–5, students in grades 6–8, students of Hispanic ethnicity, American Indian students, female students, and male students. Although these tables do not report full results of first-stage estimates for these analyses, the tables do report the *t* statistic from the first-stage results for the dichotomous variable indicating that the student scored at or above the threshold. The *t* statistic for this term from the first-stage estimates is reported at the bottom of each table to provide evidence that the forcing variable is a strong predictor of reclassification.

The outcomes for the model estimates presented in tables B5–B11 are standardized English language arts and math scale scores. To convert the impact and standard error estimates to scale scores, the team first multiplied each estimate by the standard deviation of the outcome score in each grade, subject, and year for each student. The study team then summed this product across all students in the analysis sample to obtain the estimated effect and standard error estimates measured in scale score points, as presented in tables B1, B2, and B3.

Table B6. Regression coefficient and standard error estimates for second-stage regression analyses of the impact of reclassification of students as fluent English proficient on standardized English language arts and math scale scores, grades 3–5, 2014/15–2016/17 and 2017/18–2018/19

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Reclassified	-0.04	-0.05	0.02	-0.07
	(0.03)	(0.07)	(0.03)	(0.06)
Baseline ACCESS score	0.33**	0.62**	-0.00	0.37*
	(0.11)	(0.16)	(0.11)	(0.14)
Baseline ACCESS score x Student scored at or above the 5.0 threshold	-0.06	-0.36	0.31	0.23
	(0.18)	(0.31)	(0.18)	(0.27)
Baseline standardized English language arts score	0.39**	0.19**	0.12**	0.06**
	(0.01)	(0.03)	(0.01)	(0.02)
Baseline English language arts score is missing	-0.14**	-0.01	0.06*	0.02
	(0.03)	(0.07)	(0.03)	(0.05)
Baseline standardized math score	0.20**	0.23**	0.57**	0.65**
	(0.01)	(0.03)	(0.01)	(0.02)
Baseline math score is missing	-0.15*	-0.09	-0.17	-0.36**
	(0.07)	(0.12)	(0.09)	(0.09)

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Baseline math assessment was in Spanish	-0.08	-0.83**	0.04	-0.33*
	(0.11)	(0.21)	(0.04)	(0.14)
Female	0.08**	0.12**	-0.04**	-0.08**
	(0.01)	(0.03)	(0.01)	(0.03)
Not eligible for the National School Lunch Program	0.07*	0.07	0.06	0.16**
	(0.03)	(0.06)	(0.03)	(0.05)
Eligible for special education services	-0.19**	-0.20*	-0.16**	-0.16*
	(0.03)	(0.08)	(0.03)	(0.08)
Hispanic ethnicity	0.04	0.00	-0.03	-0.03
	(0.04)	(0.06)	(0.04)	(0.06)
American Indian	-0.11*	-0.06	-0.03	0.12
	(0.04)	(0.09)	(0.04)	(0.08)
Asian	0.15**	0.20*	0.19**	0.26**
	(0.06)	(0.08)	(0.06)	(0.08)
Black or African American	-0.01	-0.01	-0.13	0.01
	(0.09)	(0.13)	(0.09)	(0.13)
Native Hawaiian or other Pacific Islander	0.32*	0.03	0.34**	0.00
	(0.13)	(0.21)	(0.13)	(0.12)
Race data are missing	0.07	-0.28	-0.12	0.03
	(0.22)	(0.23)	(0.21)	(0.28)
Outcome year is 2015	-0.05**	na	-0.02	na
	(0.02)	na	(0.02)	na
Outcome year is 2016	0.06**	na	0.02	na
	(0.02)	na	(0.02)	na
Outcome year is 2018	na	-0.07*	na	-0.02
	na	(0.03)	na	(0.03)
Grade 3	0.46**	0.74**	0.47**	1.13**
	(0.07)	(0.13)	(0.09)	(0.10)
Grade 4	0.09**	0.21**	-0.01	0.11**
	(0.02)	(0.04)	(0.02)	(0.03)
Grade 5	na	na	na	na
	na	na	na	na
Grade 6	na	na	na	na
	na	na	na	na
Grade 7	na	na	na	na
	na	na	na	na
Average schoolwide baseline standardized English language arts score	0.10**	0.29**	na	na
	(0.03)	(0.06)	na	na
Average schoolwide baseline standardized English language arts score is missing	0.04	0.13	na	na
	(0.09)	(0.17)	na	na

Predictor/covariate	English language arts		Math	
	2014/15-2016/17	2017/18-2018/19	2014/15-2016/17	2017/18-2018/19
Average schoolwide baseline standardized math score	na	na	0.07*	0.06
	na	na	(0.03)	(0.05)
Average schoolwide baseline standardized math score is missing	na	na	-0.08	0.09
	na	na	(0.09)	(0.14)
Total enrollment	-0.00	0.00*	-0.00**	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Percentage of students eligible for the National School Lunch Program	0.06	0.20	-0.11	0.12
	(0.07)	(0.11)	(0.06)	(0.11)
Percentage of students eligible for special education services	0.19	0.06	0.35	-0.39
	(0.19)	(0.37)	(0.19)	(0.36)
Percentage of students who are English learner students	0.07	0.12	0.17**	0.35**
	(0.06)	(0.13)	(0.06)	(0.11)
Percentage of students who are of Hispanic ethnicity	-0.30**	-0.16	-0.15	-0.39*
	(0.09)	(0.19)	(0.09)	(0.19)
Percentage of students who are American Indian	-0.12	-0.02	-0.10	-0.62**
	(0.10)	(0.19)	(0.10)	(0.19)
Percentage of students who are Asian	-0.45	-1.00	0.56	-0.24
	(0.50)	(0.69)	(0.49)	(0.66)
Percentage of students who are Black or African American	0.12	-0.28	0.62	-1.10*
	(0.34)	(0.51)	(0.35)	(0.45)
Percentage of students who are Native Hawaiians or other Pacific Islander	-2.16	-2.90	-2.38	-1.29
	(1.28)	(2.17)	(1.40)	(1.81)
Percentage of students whose race data are missing	1.32	-4.06	-0.86	-3.52
	(2.16)	(2.81)	(2.11)	(3.27)
Constant	-0.06	0.10	0.12	0.36*
	(0.08)	(0.16)	(0.08)	(0.14)
Number of student-year combinations	6,822	1,667	7,158	1,693
R^2	0.37	0.32	0.43	0.50
First-stage *t* statistic for the dichotomous variable indicating the student scored at or above the reclassification threshold.	$t = 114.53$	$t = 58.07$	$t = 120.39$	$t = 58.50$

* Significant at $p < .05$; ** significant at $p < .01$.

na is not applicable. ACCESS is ACCESS for ELLs.

Note: Numbers in parentheses are robust standard errors. In 2014/15-2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). Analyses include English learner students who attained an ACCESS overall proficiency level score of 4.7-5.2 and took the PARCC or TAMELA English language arts or math assessments the following year.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table B7. Regression coefficient and standard error estimates for second-stage regression analyses of the impact of reclassification of students as fluent English proficient on standardized English language arts and math scale scores, grades 6–8, 2014/15–2016/17 and 2017/18–2018/19

	English language arts		Math	
Predictor/covariate	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Reclassified	0.07	0.04	-0.02	-0.00
	(0.04)	(0.10)	(0.05)	(0.10)
Baseline ACCESS score	0.23**	-0.13	0.26	0.71*
	(0.08)	(0.33)	(0.15)	(0.34)
Baseline ACCESS score x Student scored at or above the 5.0 threshold	-0.33*	0.50	-0.25	-2.12**
	(0.16)	(0.50)	(0.27)	(0.56)
Baseline standardized English language arts score	0.40**	0.43**	0.11**	0.05
	(0.01)	(0.04)	(0.02)	(0.04)
Baseline English language arts score is missing	-0.28**	0.23	-0.09	0.06
	(0.05)	(0.18)	(0.05)	(0.18)
Baseline standardized math score	0.17**	0.10**	0.53**	0.62**
	(0.01)	(0.03)	(0.02)	(0.03)
Baseline math score is missing	-0.17	-0.56**	-0.50**	na
	(0.12)	(0.14)	(0.16)	na
Baseline math assessment was in Spanish	-0.47**	0.80**	-0.20	-0.29**
	(0.14)	(0.10)	(0.16)	(0.09)
Female	0.19**	0.16**	0.02	-0.14**
	(0.02)	(0.04)	(0.02)	(0.04)
Not eligible for the National School Lunch Program	0.06	0.13	-0.04	0.11
	(0.04)	(0.07)	(0.04)	(0.09)
Eligible for special education services	-0.15**	-0.00	-0.06	-0.17
	(0.03)	(0.12)	(0.03)	(0.10)
Hispanic ethnicity	0.08	0.06	0.05	-0.06
	(0.04)	(0.09)	(0.05)	(0.09)
American Indian	-0.04	-0.16	0.01	-0.11
	(0.05)	(0.14)	(0.06)	(0.13)
Asian	0.15	0.11	0.22*	-0.12
	(0.08)	(0.12)	(0.10)	(0.13)
Black or African American	-0.08	0.21	-0.18	-0.34
	(0.10)	(0.21)	(0.13)	(0.30)
Native Hawaiian or other Pacific Islander	0.06	0.07	0.08	-0.30*
	(0.11)	(0.20)	(0.16)	(0.13)
Race data are missing	-0.01	-0.16	0.11	-0.21
	(0.18)	(0.19)	(0.20)	(0.22)
Outcome year is 2015	-0.08**	na	0.01	na
	(0.02)	na	(0.03)	na
Outcome year is 2016	0.05*	na	0.05*	na
	(0.02)	na	(0.02)	na

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Outcome year is 2018	na	0.02	na	0.00
	na	(0.05)	na	(0.05)
Grade 3	na	na	na	na
	na	na	na	na
Grade 4	na	na	na	na
	na	na	na	na
Grade 5	na	na	na	na
	na	na	na	na
Grade 6	-0.16**	-0.08	-0.18**	-0.11
	(0.02)	(0.06)	(0.03)	(0.08)
Grade 7	-0.02	0.27**	-0.07*	0.12
	(0.02)	(0.07)	(0.03)	(0.09)
Average schoolwide baseline standardized English language arts score	0.09**	0.19*	na	na
	(0.03)	(0.08)	na	na
Average schoolwide baseline standardized English language arts score is missing	na	na	na	na
	na	na	na	na
Average schoolwide baseline standardized math score	na	na	0.19**	0.14
	na	na	(0.03)	(0.08)
Average schoolwide baseline standardized math score is missing	na	na	na	na
	na	na	na	na
Total enrollment	-0.00**	-0.00	0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Percentage of students eligible for the National School Lunch Program	-0.10	-0.07	0.11	-0.06
	(0.07)	(0.18)	(0.08)	(0.17)
Percentage of students eligible for special education services	-0.42**	-0.42	-0.59**	-0.59
	(0.16)	(0.58)	(0.20)	(0.56)
Percentage of students who are English learner students	0.54**	0.52*	0.27*	0.19
	(0.09)	(0.21)	(0.12)	(0.19)
Percentage of students of Hispanic ethnicity	-0.35**	-0.33	-0.33*	-0.23
	(0.11)	(0.30)	(0.13)	(0.32)
Percentage of students who are American Indian	-0.35**	-0.15	-0.50**	-0.06
	(0.11)	(0.31)	(0.14)	(0.33)
Percentage of students who are Asian	-1.75*	1.37	-0.42	2.14
	(0.71)	(1.49)	(0.87)	(1.97)
Percentage of students who are Black or African American	-0.80	-2.63*	-1.81**	-1.56
	(0.44)	(1.07)	(0.52)	(1.22)
Percentage of students who are Native Hawaiians or other Pacific Islander	-6.06**	-1.40	-4.79**	-4.61
	(1.22)	(3.02)	(1.66)	(2.98)
Percentage of students whose race data are missing	2.66	2.00	10.19**	4.56
	(1.66)	(3.47)	(1.60)	(4.71)

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Constant	0.25**	0.37	0.25*	0.72**
	(0.08)	(0.24)	(0.10)	(0.24)
Number of student-year combinations	5,233	694	3,953	690
R^2	0.38	0.42	0.38	0.54
First-stage *t* statistic for the dichotomous variable indicating the student scored at or above the reclassification threshold.	*t* = 71.80	*t* = 21.89	*t* = 60.70	*t* = 21.55

* Significant at $p < .05$; ** significant at $p < .01$.

na is not applicable. ACCESS is ACCESS for ELLs.

Note: Numbers in parentheses are robust standard errors. In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). Analyses include English learner students who attained an ACCESS overall proficiency level score of 4.7–5.2 and took the PARCC or TAMELA English language arts or math assessments the following year.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table B8. Regression coefficient and standard error estimates for second-stage regression analyses of the impact of reclassification of students as fluent English proficient on standardized English language arts and math scale scores, students of Hispanic ethnicity, 2014/15–2016/17 and 2017/18–2018/19

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Reclassified	0.00	-0.02	0.01	-0.04
	(0.03)	(0.07)	(0.03)	(0.07)
Baseline ACCESS score	0.26**	0.39	0.12	0.43
	(0.10)	(0.24)	(0.10)	(0.22)
Baseline ACCESS score x Student scored at or above the 5.0 threshold	-0.09	-0.35	0.08	-0.42
	(0.16)	(0.39)	(0.17)	(0.37)
Baseline standardized English language arts score	0.40**	0.22**	0.11**	0.07**
	(0.01)	(0.03)	(0.01)	(0.02)
Baseline English language arts score is missing	-0.21**	0.00	0.03	0.04
	(0.03)	(0.07)	(0.02)	(0.06)
Baseline standardized math score	0.18**	0.18**	0.55**	0.63**
	(0.01)	(0.03)	(0.01)	(0.02)
Baseline math score is missing	-0.22**	-0.20	-0.22*	-0.38**
	(0.08)	(0.13)	(0.09)	(0.10)
Baseline math assessment was in Spanish	-0.22*	0.05	0.04	-0.26
	(0.09)	(0.47)	(0.04)	(0.17)
Female	0.11**	0.13**	-0.03*	-0.12**
	(0.01)	(0.03)	(0.01)	(0.03)
Not eligible for the National School Lunch Program	0.05	0.10	-0.00	0.15*
	(0.03)	(0.06)	(0.03)	(0.06)
Eligible for special education services	-0.18**	-0.08	-0.12**	-0.16*
	(0.02)	(0.08)	(0.02)	(0.07)
Hispanic ethnicity	-0.00	-0.07	-0.09	0.50**
	(0.10)	(0.28)	(0.11)	(0.10)

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
American Indian	-0.17*	0.28	-0.02	0.00
	(0.07)	(0.19)	(0.07)	(0.13)
Asian	-0.18	0.20	-0.25*	-0.07
	(0.13)	(0.21)	(0.12)	(0.19)
Black or African American	-0.02	0.05	-0.14	-0.13
	(0.10)	(0.15)	(0.11)	(0.15)
Native Hawaiian or other Pacific Islander	-0.08	-0.01	0.06	-0.29
	(0.14)	(0.19)	(0.15)	(0.17)
Race data are missing	0.07	-0.37	0.05	-0.62**
	(0.16)	(0.30)	(0.19)	(0.14)
Outcome year is 2015	-0.11**	na	-0.03	na
	(0.02)	na	(0.02)	na
Outcome year is 2016	0.03	na	0.03	na
	(0.02)	na	(0.02)	na
Outcome year is 2018	na	-0.10**	na	-0.02
	na	(0.03)	na	(0.03)
Grade 3	0.38**	0.77**	0.44**	1.23**
	(0.08)	(0.15)	(0.09)	(0.13)
Grade 4	-0.05*	0.23**	-0.12**	0.14
	(0.02)	(0.07)	(0.03)	(0.09)
Grade 5	-0.15**	-0.01	-0.11**	0.01
	(0.02)	(0.06)	(0.03)	(0.09)
Grade 6	-0.12**	-0.14*	-0.18**	-0.06
	(0.02)	(0.06)	(0.03)	(0.09)
Grade 7	-0.01	0.34**	-0.07*	0.21*
	(0.03)	(0.08)	(0.03)	(0.10)
Average schoolwide baseline standardized English language arts score	0.13**	0.29**	na	na
	(0.03)	(0.07)	na	na
Average schoolwide baseline standardized English language arts score is missing	0.05	0.25	na	na
	(0.10)	(0.24)	na	na
Average schoolwide baseline standardized math score	na	na	0.14**	0.05
	na	na	(0.02)	(0.06)
Average schoolwide baseline standardized math score is missing	na	na	0.01	-0.00
	na	na	(0.10)	(0.18)
Total enrollment	-0.00	-0.00	-0.00*	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Percentage of students eligible for the National School Lunch Program	-0.03	0.11	-0.04	0.00
	(0.06)	(0.12)	(0.06)	(0.12)
Percentage of students eligible for special education services	-0.26	-0.07	-0.28	-0.30
	(0.14)	(0.39)	(0.15)	(0.37)

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Percentage of students who are English learner students	0.17*	0.23	0.23**	0.28*
	(0.07)	(0.14)	(0.06)	(0.12)
Percentage of students of Hispanic ethnicity	-0.23**	-0.16	-0.16	-0.35
	(0.08)	(0.21)	(0.09)	(0.22)
Percentage of students who are American Indian	0.01	0.12	-0.11	-0.60*
	(0.10)	(0.28)	(0.11)	(0.26)
Percentage of students who are Asian	-1.34**	-0.57	-0.11	0.94
	(0.51)	(1.04)	(0.52)	(1.08)
Percentage of students who are Black or African American	-0.26	-1.00	-0.21	-1.53**
	(0.30)	(0.61)	(0.31)	(0.54)
Percentage of students who are Native Hawaiians or other Pacific Islander	-4.26**	-2.38	-3.23**	-2.82
	(0.99)	(2.25)	(1.12)	(1.83)
Percentage of students whose race data are missing	2.25	-1.88	6.28**	-2.55
	(1.71)	(3.32)	(1.59)	(3.83)
Constant	0.17*	0.26	0.24**	0.56**
	(0.07)	(0.17)	(0.08)	(0.18)
Number of student-year combinations	8,371	1,534	8,697	1,548
R^2	0.36	0.33	0.40	0.51
First-stage t statistic for the dichotomous variable indicating the student scored at or above the reclassification threshold.	t = 110.82	t = 43.77	t = 114.10	t = 44.05

* Significant at $p < .05$; ** significant at $p < .01$.

na is not applicable. ACCESS is ACCESS for ELLs.

Note: Numbers in parentheses are robust standard errors. In 2014/15-2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). Analyses include English learner students who attained an ACCESS overall proficiency level score of 4.7-5.2 and took the PARCC or TAMELA English language arts or math assessments the following year.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table B9. Regression coefficient and standard error estimates for second-stage regression analyses of the impact of reclassification of students as fluent English proficient on standardized English language arts and math scale scores, American Indian students, 2014/15–2016/17 and 2017/18–2018/19

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Reclassified	-0.01	-0.07	0.01	-0.51*
	(0.06)	(0.25)	(0.06)	(0.23)
Baseline ACCESS score	0.26	0.43	-0.10	1.26
	(0.19)	(0.67)	(0.20)	(0.65)
Baseline ACCESS score x Student scored at or above the 5.0 threshold	-0.14	-0.03	0.31	-0.54
	(0.33)	(0.94)	(0.34)	(1.17)
Baseline standardized English language arts score	0.40**	0.34**	0.12**	0.23*
	(0.02)	(0.09)	(0.02)	(0.09)
Baseline English language arts score is missing	-0.85**	na	-0.44**	na
	(0.06)	na	(0.06)	na

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Baseline standardized math score	0.23**	0.22**	0.57**	0.59**
	(0.02)	(0.07)	(0.02)	(0.08)
Baseline math score is missing	0.07	0.37	−0.39	0.22
	(0.12)	(0.35)	(0.20)	(0.31)
Female	0.17**	0.11	0.03	−0.04
	(0.03)	(0.09)	(0.03)	(0.10)
Not eligible for the National School Lunch Program	0.10	0.16	0.08	0.11
	(0.07)	(0.20)	(0.07)	(0.15)
Eligible for special education services	−0.14**	−0.26	−0.09	−0.06
	(0.05)	(0.29)	(0.05)	(0.24)
Hispanic ethnicity	0.07	−0.35	−0.07	0.06
	(0.08)	(0.20)	(0.07)	(0.14)
Outcome year is 2015	0.09**	na	0.11**	na
	(0.03)	na	(0.04)	na
Outcome year is 2016	0.14**	na	0.07*	na
	(0.03)	na	(0.03)	na
Outcome year is 2018	na	0.22*	na	0.03
	na	(0.10)	na	(0.09)
Grade 3	0.03	na	0.53*	na
	(0.12)	na	(0.21)	na
Grade 4	−0.11*	−0.11	−0.07	−0.44*
	(0.05)	(0.16)	(0.07)	(0.21)
Grade 5	−0.17**	−0.25	−0.08	−0.42*
	(0.05)	(0.13)	(0.07)	(0.21)
Grade 6	−0.23**	−0.31*	−0.22**	−0.55**
	(0.05)	(0.16)	(0.07)	(0.21)
Grade 7	0.00	0.01	−0.12	−0.58*
	(0.06)	(0.24)	(0.08)	(0.26)
Average schoolwide baseline standardized English language arts score	0.04	0.09	na	na
	(0.06)	(0.19)	na	na
Average schoolwide baseline standardized English language arts score is missing	−0.04	na	na	na
	(0.20)	na	na	na
Average schoolwide baseline standardized math score	na	na	0.08	0.12
	na	na	(0.06)	(0.15)
Average schoolwide baseline standardized math score is missing	na	na	−0.35**	na
	na	na	(0.14)	na
Total enrollment	−0.00	−0.00	−0.00	−0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Percentage of students eligible for the National School Lunch Program	−0.03	−0.21	0.12	−0.53
	(0.14)	(0.34)	(0.15)	(0.34)

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Percentage of students eligible for special education services	0.96*	-1.41	0.39	-2.57
	(0.41)	(1.37)	(0.41)	(1.39)
Percentage of students who are English learner students	0.10	0.47	-0.12	0.05
	(0.11)	(0.40)	(0.11)	(0.38)
Percentage of students of Hispanic ethnicity	-0.38	0.63	-0.24	1.32
	(0.20)	(0.73)	(0.21)	(0.68)
Percentage of students who are American Indian	-0.28	0.18	-0.34	1.04
	(0.19)	(0.69)	(0.20)	(0.65)
Percentage of students who are Asian	-0.24	2.16	-0.81	5.72
	(1.80)	(3.95)	(1.78)	(3.37)
Percentage of students who are Black or African American	-1.63	-3.05	-2.31*	2.75
	(1.22)	(2.40)	(1.13)	(2.40)
Percentage of students who are Native Hawaiians or other Pacific Islander	6.54	1.13	-0.51	-16.14
	(4.34)	(15.50)	(5.52)	(13.83)
Percentage of students whose race data are missing	2.40	-18.67	3.00	-6.57
	(3.61)	(12.69)	(3.52)	(9.03)
Constant	-0.01	0.64	0.16	0.45
	(0.18)	(0.58)	(0.19)	(0.55)
Number of student-year combinations	1,958	165	1,956	165
R^2	0.39	0.44	0.40	0.58
First-stage *t* statistic for the dichotomous variable indicating the student scored at or above the reclassification threshold	*t* = 57.93	*t* = 8.09	*t* = 58.25	*t* = 8.33

* Significant at $p < .05$; ** significant at $p < .01$.

na is not applicable. ACCESS is ACCESS for ELLs.

Note: Numbers in parentheses are robust standard errors. In 2014/15-2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). Analyses include English learner students who attained an ACCESS overall proficiency level score of 4.7-5.2 and took the PARCC or TAMELA English language arts or math assessments the following year.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table B10. Regression coefficient and standard error estimates for second-stage regression analyses of the impact of reclassification of students as fluent English proficient on standardized English language arts and math scale scores, female students, 2014/15–2016/17 and 2017/18–2018/19

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Reclassified	-0.02	0.04	0.01	-0.00
	(0.03)	(0.09)	(0.03)	(0.08)
Baseline ACCESS score	0.34**	0.18	0.01	0.57*
	(0.12)	(0.29)	(0.12)	(0.27)
Baseline ACCESS score x Student scored at or above the 5.0 threshold	-0.17	-0.35	0.11	-0.83
	(0.20)	(0.46)	(0.20)	(0.44)
Baseline standardized English language arts score	0.39**	0.23**	0.11**	0.07**
	(0.01)	(0.03)	(0.01)	(0.02)

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Baseline English language arts score is missing	-0.23**	-0.00	0.06	0.11
	(0.04)	(0.10)	(0.03)	(0.07)
Baseline standardized math score	0.20**	0.24**	0.53**	0.61**
	(0.01)	(0.03)	(0.01)	(0.03)
Baseline math score is missing	-0.17	0.48**	-0.28*	0.74**
	(0.09)	(0.10)	(0.12)	(0.13)
Baseline math assessment was in Spanish	-0.17	na	0.05	-0.24
	(0.13)	na	(0.05)	(0.25)
Not eligible for the National School Lunch Program	0.07	0.09	-0.00	0.25**
	(0.04)	(0.07)	(0.04)	(0.07)
Eligible for special education services	-0.21**	-0.01	-0.10**	-0.13
	(0.03)	(0.14)	(0.03)	(0.10)
Hispanic ethnicity	0.09*	0.09	-0.01	0.03
	(0.04)	(0.08)	(0.04)	(0.07)
American Indian	-0.12*	-0.10	-0.03	0.10
	(0.05)	(0.11)	(0.05)	(0.10)
Asian	0.14*	0.13	0.20**	0.05
	(0.06)	(0.12)	(0.07)	(0.12)
Black or African American	-0.10	0.03	-0.14	-0.29
	(0.10)	(0.16)	(0.10)	(0.23)
Native Hawaiian or other Pacific Islander	0.01	-0.26*	0.03	-0.18
	(0.12)	(0.13)	(0.15)	(0.16)
Race data are missing	0.07	-0.61**	0.03	-0.44*
	(0.20)	(0.14)	(0.22)	(0.20)
Outcome year is 2015	-0.06**	na	0.05*	na
	(0.02)	na	(0.02)	na
Outcome year is 2016	0.07**	na	0.07**	na
	(0.02)	na	(0.02)	na
Outcome year is 2018	na	-0.07	na	-0.07
	na	(0.04)	na	(0.04)
Grade 3	0.26**	na	0.39**	na
	(0.09)	na	(0.12)	na
Grade 4	-0.09**	0.11	-0.16**	0.11
	(0.03)	(0.08)	(0.04)	(0.12)
Grade 5	-0.19**	-0.09	-0.14**	-0.03
	(0.03)	(0.08)	(0.04)	(0.12)
Grade 6	-0.09**	-0.20*	-0.20**	-0.15
	(0.03)	(0.08)	(0.04)	(0.12)
Grade 7	0.01	0.24*	-0.09*	0.07
	(0.03)	(0.10)	(0.04)	(0.13)

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Average schoolwide baseline standardized English language arts score	0.13**	0.13	na	na
	(0.03)	(0.08)	na	na
Average schoolwide baseline standardized English language arts score is missing	0.04	0.77*	na	na
	(0.12)	(0.38)	na	na
Average schoolwide baseline standardized math score	na	na	0.14**	0.16*
	na	na	(0.03)	(0.07)
Average schoolwide baseline standardized math score is missing	na	na	0.03	-0.03
	na	na	(0.11)	(0.24)
Total enrollment	-0.00	0.00	-0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Percentage of students eligible for the National School Lunch Program	-0.08	0.03	0.02	0.13
	(0.07)	(0.15)	(0.07)	(0.14)
Percentage of students eligible for special education services	-0.30	0.30	-0.46*	0.13
	(0.18)	(0.48)	(0.19)	(0.46)
Percentage of students who are English learner students	0.17*	0.09	0.31**	0.39*
	(0.08)	(0.17)	(0.07)	(0.15)
Percentage of students of Hispanic ethnicity	-0.17	-0.13	-0.30**	-0.46
	(0.10)	(0.24)	(0.10)	(0.25)
Percentage of students who are American Indian	-0.02	-0.07	-0.25*	-0.59*
	(0.10)	(0.26)	(0.11)	(0.26)
Percentage of students who are Asian	-1.19*	0.12	0.46	0.03
	(0.56)	(0.91)	(0.60)	(1.03)
Percentage of students who are Black or African American	-0.02	-1.75*	-0.45	-0.25
	(0.40)	(0.74)	(0.41)	(0.70)
Percentage of students who are Native Hawaiians or other Pacific Islander	-4.03**	-1.98	-6.84**	-0.99
	(1.30)	(2.88)	(1.50)	(2.26)
Percentage of students whose race data are missing	3.15	-2.72	6.95**	-2.02
	(1.93)	(2.98)	(1.72)	(3.57)
Constant	0.26**	0.39	0.25**	0.31
	(0.09)	(0.22)	(0.09)	(0.22)
Number of student-year combinations	5,368	1,024	5,541	1,031
R^2	0.37	0.33	0.40	0.50
First-stage t statistic for the dichotomous variable indicating the student scored at or above the reclassification threshold	$t = 93.07$	$t = 30.32$	$t = 95.71$	$t = 30.63$

* Significant at $p < .05$; ** significant at $p < .01$.

na is not applicable. ACCESS is ACCESS for ELLs.

Note: Numbers in parentheses are robust standard errors. In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). Analyses include English learner students who attained an ACCESS overall proficiency level score of 4.7–5.2 and took the PARCC or TAMELA English language arts or math assessments the following year.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table B11. Regression coefficient and standard error estimates for second-stage regression analyses of the impact of reclassification of students as fluent English proficient on standardized English language arts and math scale scores, male students, 2014/15–2016/17 and 2017/18–2018/19

	English language arts		Math	
Predictor/covariate	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Reclassified	0.00	-0.09	-0.00	-0.11
	(0.04)	(0.09)	(0.04)	(0.08)
Baseline ACCESS score	0.29*	0.65*	0.15	0.40
	(0.13)	(0.30)	(0.13)	(0.29)
Baseline ACCESS score x Student scored at or above the 5.0 threshold	-0.21	0.08	0.18	0.28
	(0.21)	(0.50)	(0.22)	(0.49)
Baseline standardized English language arts score	0.40**	0.25**	0.11**	0.06*
	(0.02)	(0.04)	(0.02)	(0.03)
Baseline English language arts score is missing	-0.17**	0.05	0.01	0.01
	(0.04)	(0.11)	(0.03)	(0.09)
Baseline standardized math score	0.19**	0.15**	0.58**	0.69**
	(0.01)	(0.03)	(0.01)	(0.03)
Baseline math score is missing	-0.21*	-0.50**	-0.24*	-0.42**
	(0.11)	(0.12)	(0.11)	(0.13)
Baseline math assessment was in Spanish	-0.26*	0.00	-0.00	-0.33
	(0.13)	(0.53)	(0.05)	(0.18)
Not eligible for the National School Lunch Program	0.05	0.12	0.04	0.10
	(0.04)	(0.07)	(0.03)	(0.08)
Eligible for special education services	-0.16**	-0.19*	-0.12**	-0.27**
	(0.03)	(0.09)	(0.03)	(0.09)
Hispanic ethnicity	0.05	0.02	0.02	-0.06
	(0.05)	(0.09)	(0.05)	(0.08)
American Indian	-0.12*	-0.07	-0.00	-0.11
	(0.05)	(0.15)	(0.06)	(0.11)
Asian	0.13	0.19	0.20*	0.15
	(0.08)	(0.11)	(0.08)	(0.10)
Black or African American	0.04	-0.07	-0.14	0.07
	(0.10)	(0.20)	(0.11)	(0.20)
Native Hawaiian or other Pacific Islander	0.16	0.08	0.28	-0.00
	(0.17)	(0.17)	(0.16)	(0.13)
Race data are missing	-0.06	0.59*	-0.00	0.18
	(0.18)	(0.26)	(0.20)	(0.25)
Outcome year is 2015	-0.06**	na	-0.05*	na
	(0.02)	na	(0.02)	na
Outcome year is 2016	0.04	na	-0.00	na
	(0.02)	na	(0.02)	na
Outcome year is 2018	na	-0.05	na	0.05
	na	(0.04)	na	(0.04)

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Grade 3	0.42**	1.19**	0.55**	1.33**
	(0.11)	(0.15)	(0.11)	(0.17)
Grade 4	-0.03	0.29**	-0.05	0.03
	(0.03)	(0.08)	(0.04)	(0.11)
Grade 5	-0.11**	0.05	-0.08	-0.08
	(0.03)	(0.07)	(0.04)	(0.11)
Grade 6	-0.18**	-0.10	-0.17**	-0.10
	(0.03)	(0.07)	(0.04)	(0.11)
Grade 7	-0.01	0.32**	-0.06	0.18
	(0.04)	(0.10)	(0.04)	(0.12)
Average schoolwide baseline standardized English language arts score	0.10**	0.40**	na	na
	(0.03)	(0.07)	na	na
Average schoolwide baseline standardized English language arts score is missing	-0.01	-0.15	na	na
	(0.13)	(0.24)	na	na
Average schoolwide baseline standardized math score	na	na	0.12**	-0.01
	na	na	(0.03)	(0.07)
Average schoolwide baseline standardized math score is missing	na	na	-0.17	-0.03
	na	na	(0.14)	(0.22)
Total enrollment	-0.00	-0.00	-0.00	-0.00**
	(0.00)	(0.00)	(0.00)	(0.00)
Percentage of students eligible for the National School Lunch Program	0.08	0.17	0.02	-0.23
	(0.07)	(0.16)	(0.08)	(0.15)
Percentage of students eligible for special education services	0.11	-0.42	0.07	-0.94*
	(0.18)	(0.47)	(0.19)	(0.46)
Percentage of students who are English learner students	0.15*	0.26	0.04	0.08
	(0.08)	(0.17)	(0.08)	(0.15)
Percentage of students of Hispanic ethnicity	-0.41**	-0.24	-0.10	0.11
	(0.11)	(0.26)	(0.12)	(0.26)
Percentage of students who are American Indian	-0.29**	-0.16	-0.23	0.01
	(0.11)	(0.28)	(0.12)	(0.27)
Percentage of students who are Asian	-0.91	-0.54	-0.00	0.47
	(0.62)	(1.08)	(0.62)	(1.22)
Percentage of students who are Black or African American	-0.31	-0.54	-0.08	-1.88**
	(0.38)	(0.76)	(0.42)	(0.66)
Percentage of students who are Native Hawaiians or other Pacific Islander	-3.90**	-1.68	0.26	-4.03
	(1.35)	(3.01)	(1.46)	(2.67)
Percentage of students whose race data are missing	-0.40	-4.57	4.54*	-0.57
	(1.93)	(4.78)	(2.19)	(4.94)

Predictor/covariate	English language arts		Math	
	2014/15–2016/17	2017/18–2018/19	2014/15–2016/17	2017/18–2018/19
Constant	0.16	0.32	0.11	0.63**
	(0.09)	(0.22)	(0.10)	(0.22)
Number of student-year combinations	5,415	856	5,570	861
R^2	0.37	0.38	0.43	0.55
First-stage *t* statistic for the dichotomous variable indicating the student scored at or above the reclassification threshold	$t = 85.75$	$t = 40.13$	$t = 87.86$	$t = 40.61$

* Significant at $p < .05$; ** significant at $p < .01$.

na is not applicable. ACCESS is ACCESS for ELLs.

Note: Numbers in parentheses are robust standard errors. In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). Analyses include English learner students who attained an ACCESS overall proficiency level score of 4.7–5.2 and took the PARCC or TAMELA English language arts or math assessments the following year.

Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

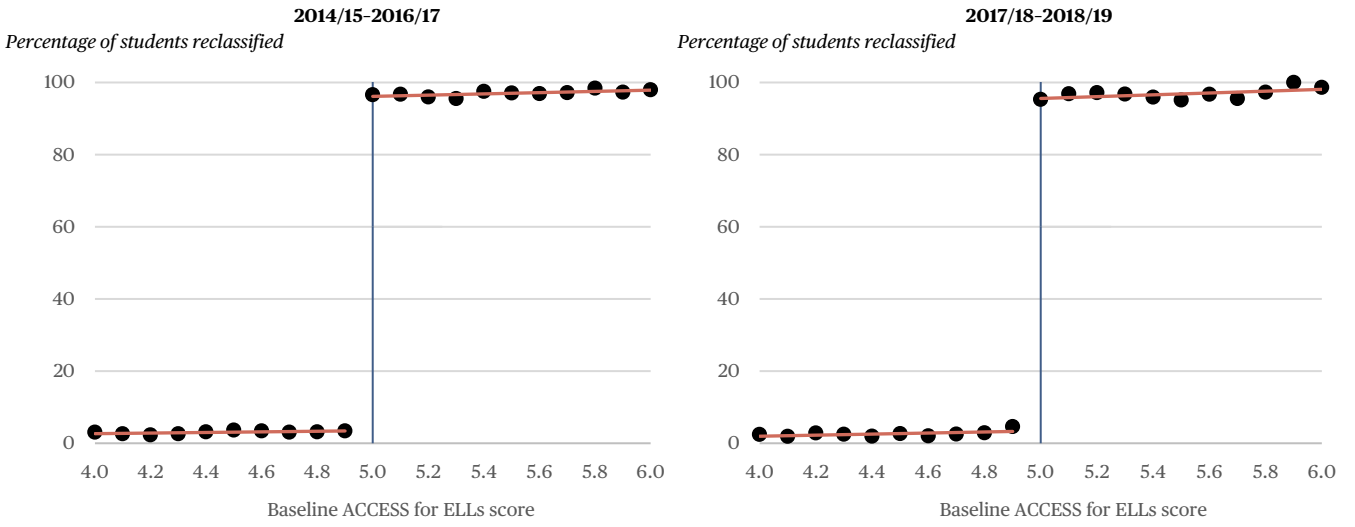
Appendix C. Supplemental analyses

This appendix presents the results of validity checks and sensitivity analyses. To establish the validity of the regression discontinuity approach for this study, the study team conducted a series of validity tests recommended by the What Works Clearinghouse (2020). In addition, the study team explored the robustness of the results through tests of the sensitivity of the findings to alternative specifications or to potential differences in level of difficulty of the Partnership for Assessment of Readiness for College and Careers (PARCC) from spring 2018 and the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA) from spring 2019.

Validity checks

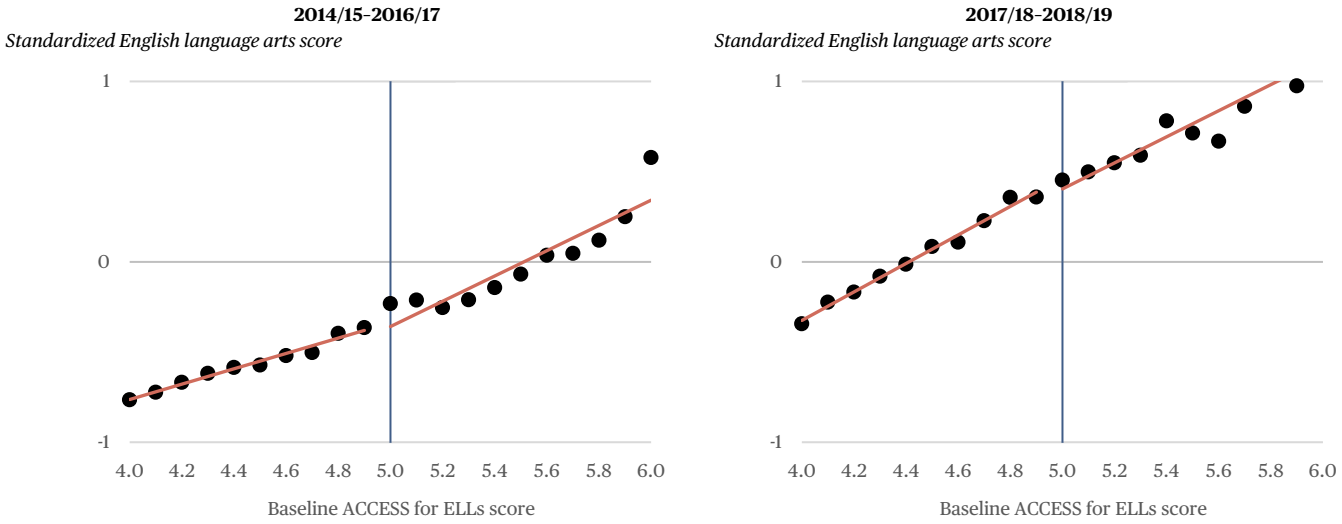
Visual inspection for evidence of a discontinuity. As a first step, the study team examined the percentage of students who were reclassified across ACCESS for ELLs (ACCESS) overall scores of 4.0–6.0. Figure C1 presents the percentage of students reclassified, by baseline overall proficiency level score, in 2014/15–2016/17 (before ACCESS standards setting in July and August 2016) and 2017/18–2018/19 (after ACCESS standards setting). Although some students who scored below 5.0 were reclassified and some who scored at or above 5.0 were not reclassified, the study team observed a large jump in the percentage of students who were reclassified at the 5.0 threshold. Additionally, the study team looked for visual evidence of a discontinuity or jump in outcome achievement scores that corresponded with the reclassification threshold. Figures C2 and C3 present the mean outcome-year English language arts and math scores of students in 2014/15–2016/17 and 2017/18–2018/19. Consistent with the formal analyses that tested the *t* statistic of the forcing variable (see appendix B), the team observed little indication of a change in test scores around the reclassification threshold.

Figure C1. Percentage of students reclassified as fluent English proficient, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



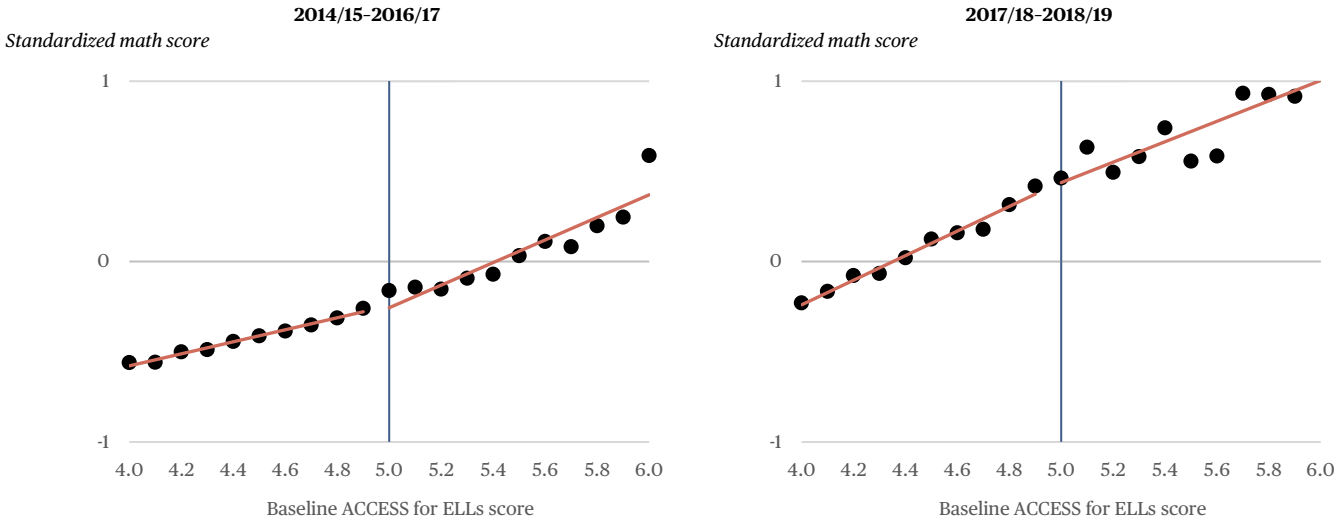
Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C2. Mean standardized outcome English language arts score, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers, and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts. The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0,which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source**:** Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C3. Mean standardized outcome math score, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



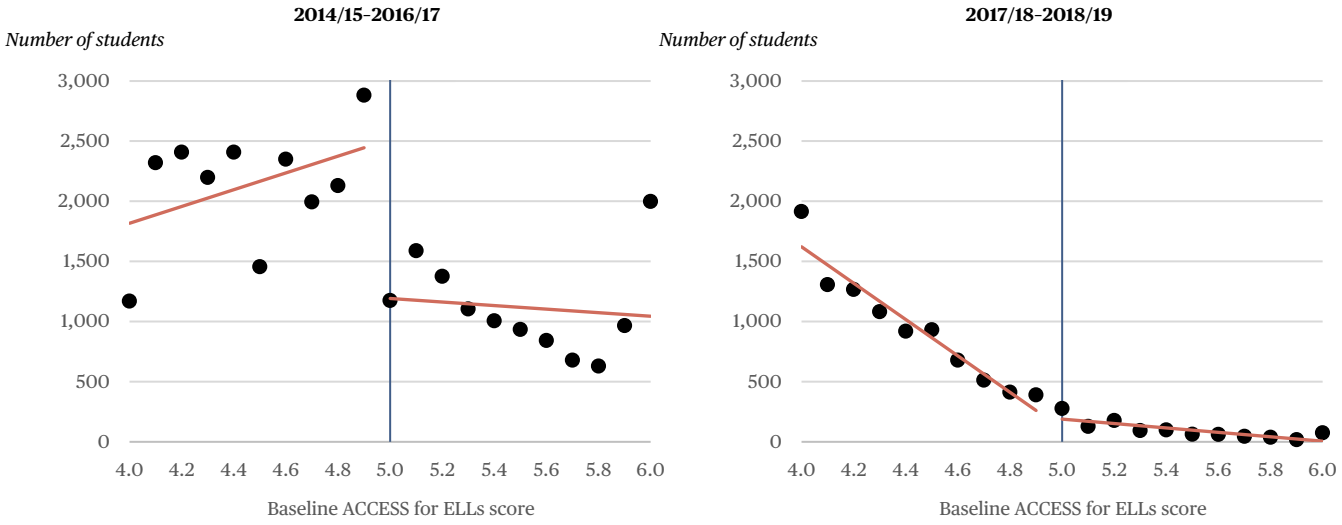
Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers, and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts. The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source**:** Authors' analyses based on data provided by the New Mexico Public Education Department.

Integrity of the forcing variable (the ACCESS overall proficiency level score). The validity of the design would be threatened if students' scores were artificially raised or lowered by schools, either to ensure or to prevent reclassification, resulting in "bunching" around the threshold. It is unlikely that ACCESS scores of students in the analysis were changed from their true values or manipulated to influence student reclassification. Each ACCESS overall scale score is a weighted average of the student's scale scores in four domains: reading, writing, speaking, and listening. The listening and reading components of the test are machine-scored, and the writing and listening components are scored by trained raters (WIDA, 2021). Each student's overall scale score is then

mapped to an overall proficiency level score based on grade-specific expectations, so that the same scale score will be converted to a higher proficiency level score for an earlier grade level and a lower proficiency level score for a more advanced grade level.

Figure C4 presents the number of students, by baseline overall proficiency level score, in the analysis of 2014/15–2016/17 outcomes (before the ACCESS standards setting) and 2017/18–2018/19 outcomes (after the ACCESS standards setting). There was no evidence of bunching in the number of students at each overall proficiency level score in the 2017/18–2018/19 analysis, but there was evidence of bunching in the 2014/15–2016/17 analysis. Relative to trend, a higher-than-expected number of students attained an overall proficiency level score of 4.9, and a lower-than-expected number attained an overall proficiency level score of 5.0. However, this bunching appears to be an artifact of the way the underlying scale scores are mapped onto proficiency level scores. When the study team analyzed the number of students attaining each scale score, it observed no bunching around the reclassification threshold.

Figure C4. Number of students in the analysis sample, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

The study team also used a statistical test to determine the smoothness of the density of the forcing variable around the cutpoint. McCrary (2008) proposed a test of manipulation related to continuity of the running variable density function that involves these steps (Jacob et al., 2012):

- Sort the values of the running variable into "bins" of equal width, with no bins spanning the cutpoint.
- Using the number of observations in each bin as the outcome variable and the midpoints of the bins as the regressors, run two linear regressions, one above and one below the cutpoint.
- Test whether the log difference in the heights of the curves just to the left and just to the right of the cutpoint is statistically different from zero.

Because the forcing variable is discrete rather than continuous, the study team could not implement the McCrary test, which assumes a continuous forcing variable. However, the data were already sorted into bins (ACCESS overall proficiency level scores range of 4.0–6.0). The study team calculated the number of students within each bin and then modeled the number of students y at each ACCESS overall score as a second-degree polynomial

function of the centered ACCESS score. The shape of the polynomial was allowed to differ on each side of the cutpoint, and the term $\pi_1 * (\text{ACCESS} \geq 0)$ was included to estimate the difference in heights of the curves at the cutpoint. The study team then tested the null hypothesis that $\pi_1 = 0$ (that is, that there is no difference in the heights of the curves at the cutpoint).

$$y = \pi_0 + \pi_1 * (\text{ACCESS} \geq 0) + \pi_2 * (\text{ACCESS}) + \pi_3 * (\text{ACCESS})^2 + \pi_5 * (\text{ACCESS}) * (\text{ACCESS} \geq 0) + \pi_6 * (\text{ACCESS})^2 * (\text{ACCESS} \geq 0) + u$$

Among students who took the ACCESS in 2013/14–2015/16, the study team could not reject the null hypothesis that the heights of the curves were the same at the cutpoint. The 95 percent confidence interval of the estimate of π_1 ranged from 2,151 fewer students to 400 more students than expected to the right of the cutpoint. The R-squared for this model based on 20 observations was 0.70.

Similarly, among students who took the ACCESS in 2016/17 or 2017/18, the team could not reject the null hypothesis that the heights of the curves were the same at the cutpoint. The 95 percent confidence interval for the estimate of π_1 ranged from 352 fewer students to 150 more students than expected to the right of the cutpoint. The R-squared for this model based on 20 observations was 0.98.

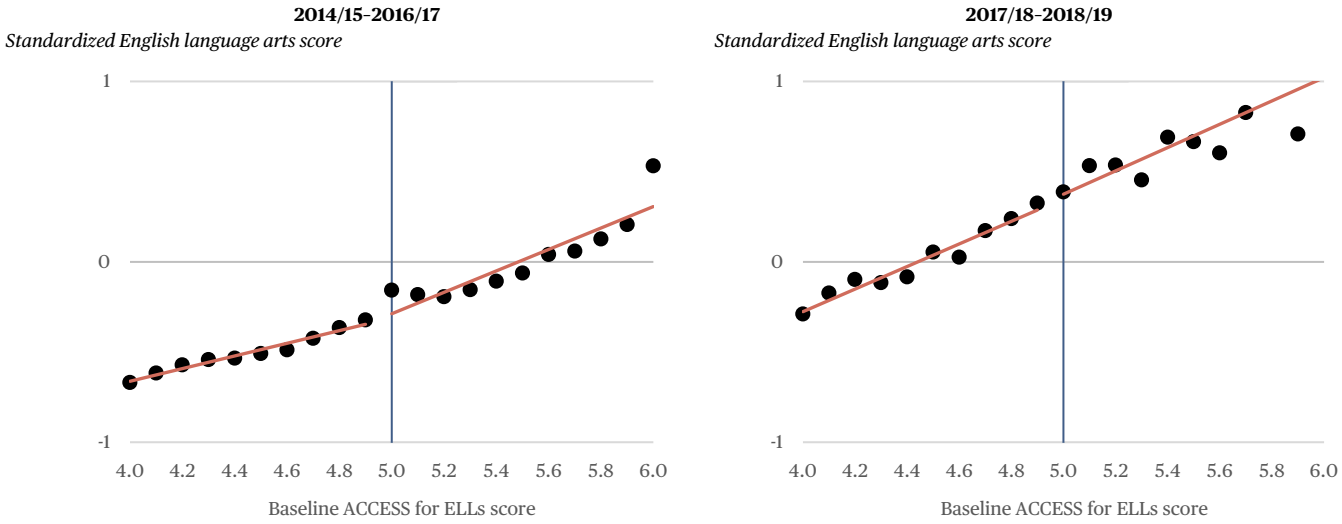
Smoothness of student characteristics around the reclassification threshold. A key premise of the analysis method is that the composition of the two samples of students—those who were reclassified and those who were not—was comparable. Of concern is whether there were differences in the characteristics of students in the immediate area around the reclassification threshold. A difference would suggest that the groups of students are not comparable, and the estimated effects of reclassification could be confounded with another factor.

Reclassification as fluent English proficient should have no effect on baseline student achievement and other key student demographic and background characteristics that existed before students were reclassified. A jump near the reclassification threshold, representing an effect of reclassification on student baseline characteristics, would indicate that students are not equivalent at baseline. If the standardized effect of reclassification on key baseline characteristics is greater than 0.25 in absolute value, a regression discontinuity design does not meet What Works Clearinghouse Standards (What Works Clearinghouse, 2020). The absolute values of the standardized effect sizes of the impact of reclassification on baseline student English language arts and math achievement were less than 0.10 for research questions 2 and 3.

Figures C5–C18 present the relationship between student overall proficiency level scores and student baseline measures and demographic and background characteristics. The background characteristics include mean baseline English language arts and math achievement, percentage of students who are eligible for special education services, percentage of students who are eligible for the National School Lunch Program, percentage of students who are female, percentage of students of Hispanic ethnicity, percentage of students in each racial group, and percentage of students in each grade. Figures C5–C18 are presented as additional, visual evidence to demonstrate that student baseline measures and demographic and background characteristics varied smoothly across the distribution of ACCESS overall proficiency level scores and did not "jump" near the reclassification threshold.

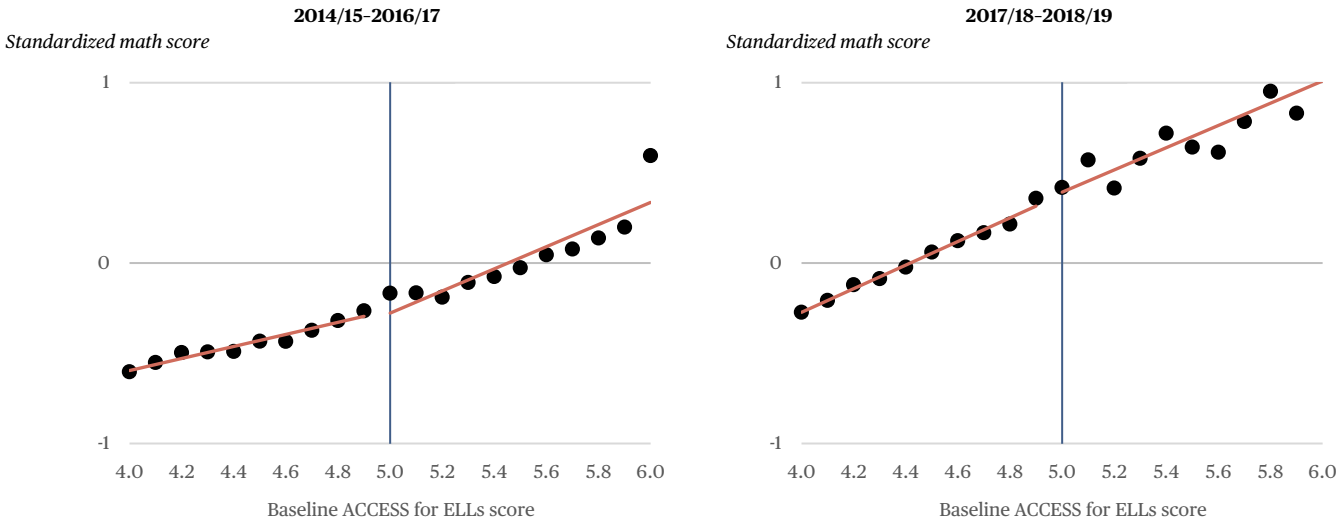
The study team examined the data to explain the relatively high percentage of students in grade 4 with a baseline ACCESS overall proficiency level score of 5.0 (see figure C14) and the relatively low percentage of students in grade 5 with a baseline overall proficiency level score of 5.0 in 2014/15–2016/17 (see figure C15). The study team did not identify irregularities in the students removed from the analysis due to inconsistencies between students' enrolled grade and tested grade or students with multiple grades or achievement scores in one year. In addition, almost all students included in the analysis experienced typical grade-level changes across school years.

Figure C5. Mean standardized baseline English language arts score, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



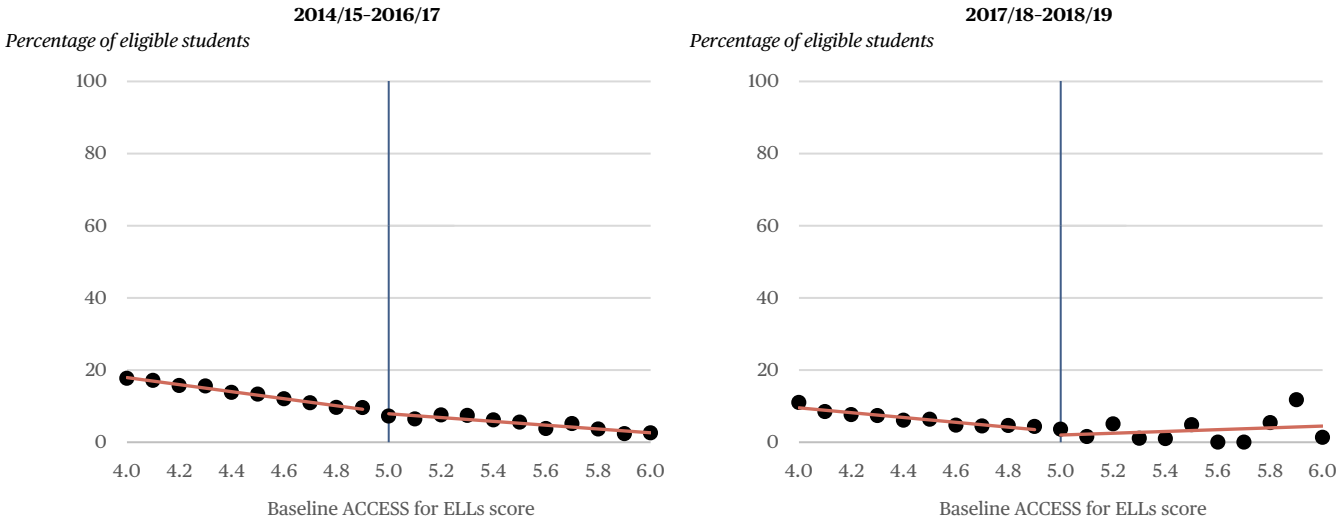
Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers, and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts. The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C6. Mean standardized baseline math score, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



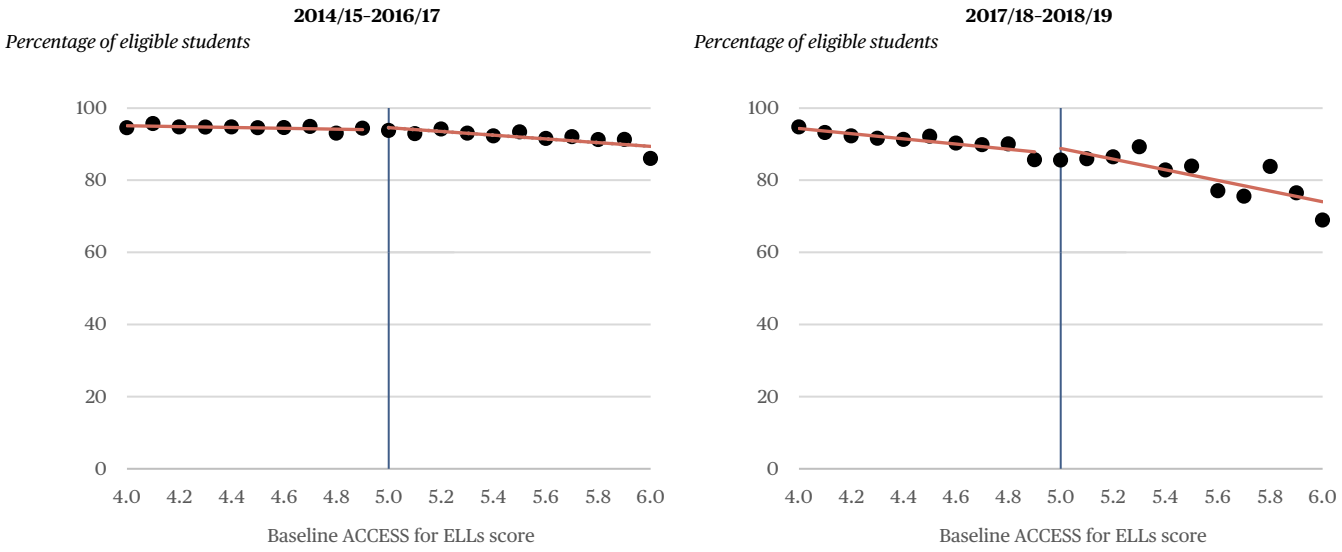
Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers, and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts. The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C7. Percentage of students with who are eligible for special education services, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



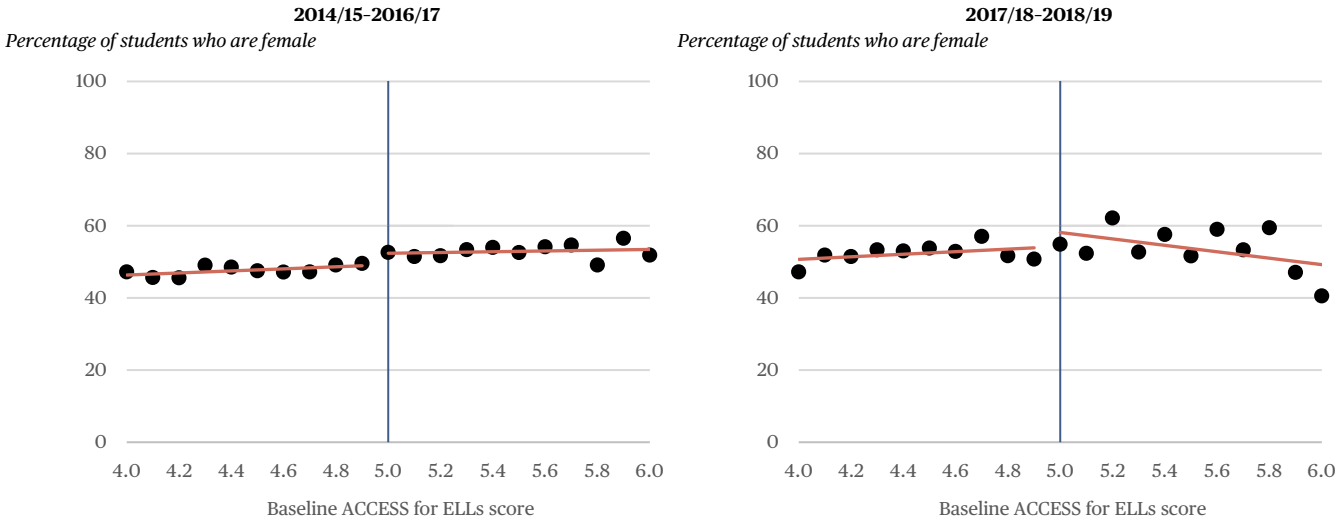
Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C8. Percentage of students who are eligible for the National School Lunch Program, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



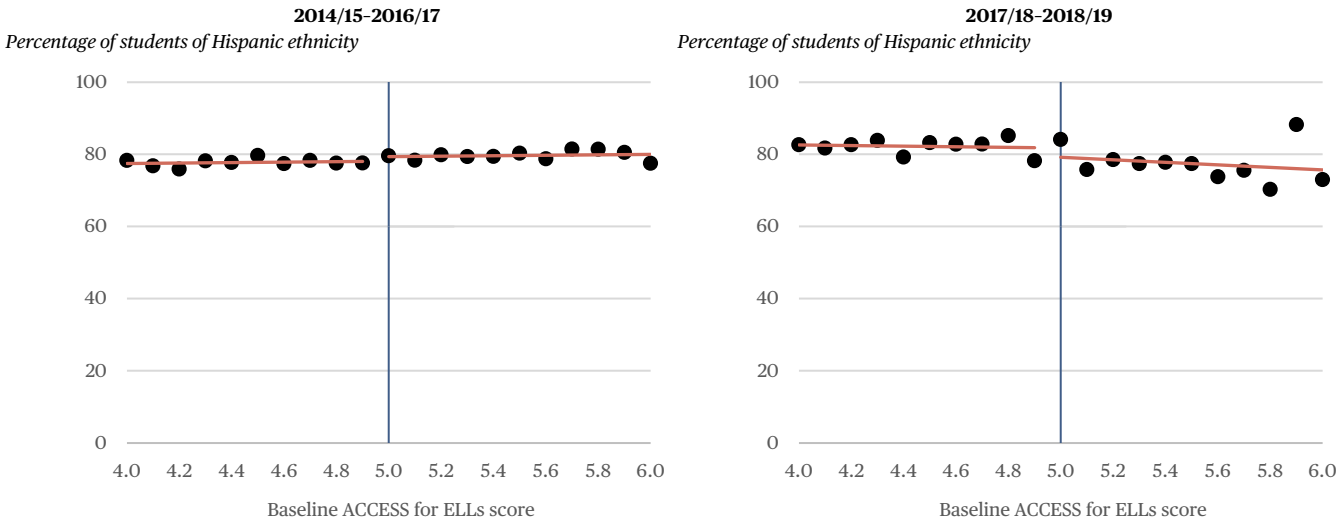
Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C9. Percentage of students who are female, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



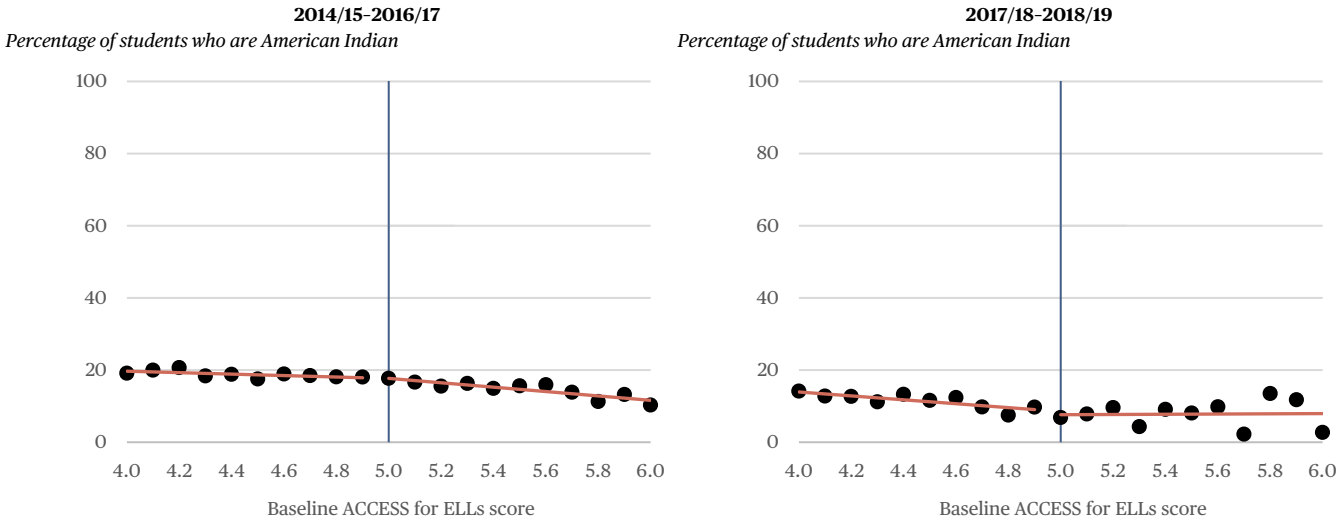
Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C10. Percentage of students who are of Hispanic ethnicity, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



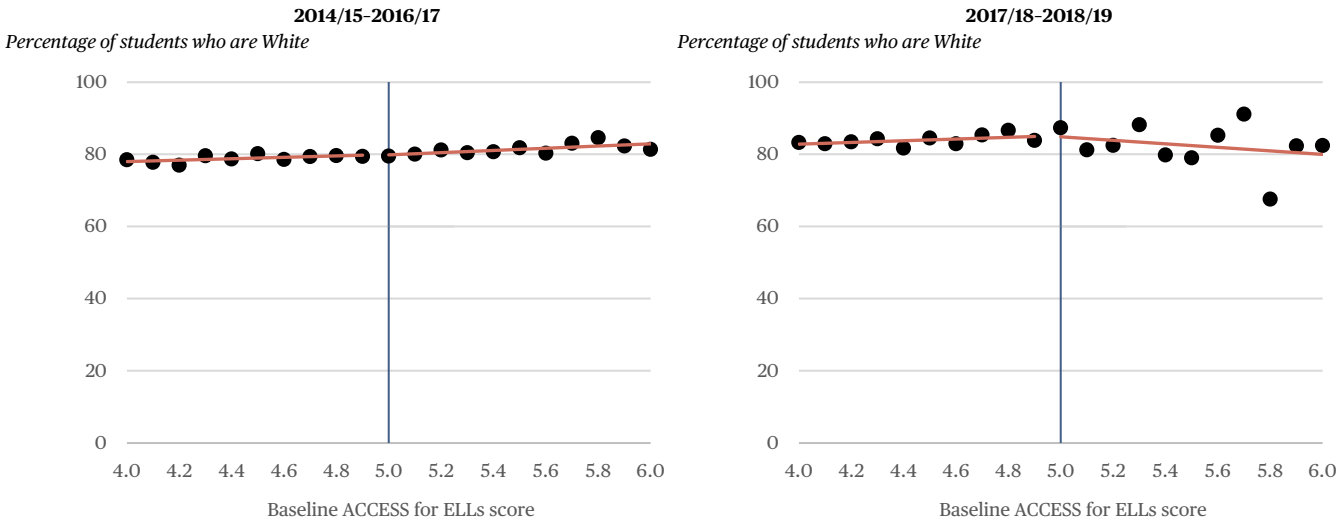
Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C11. Percentage of students who are American Indian, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



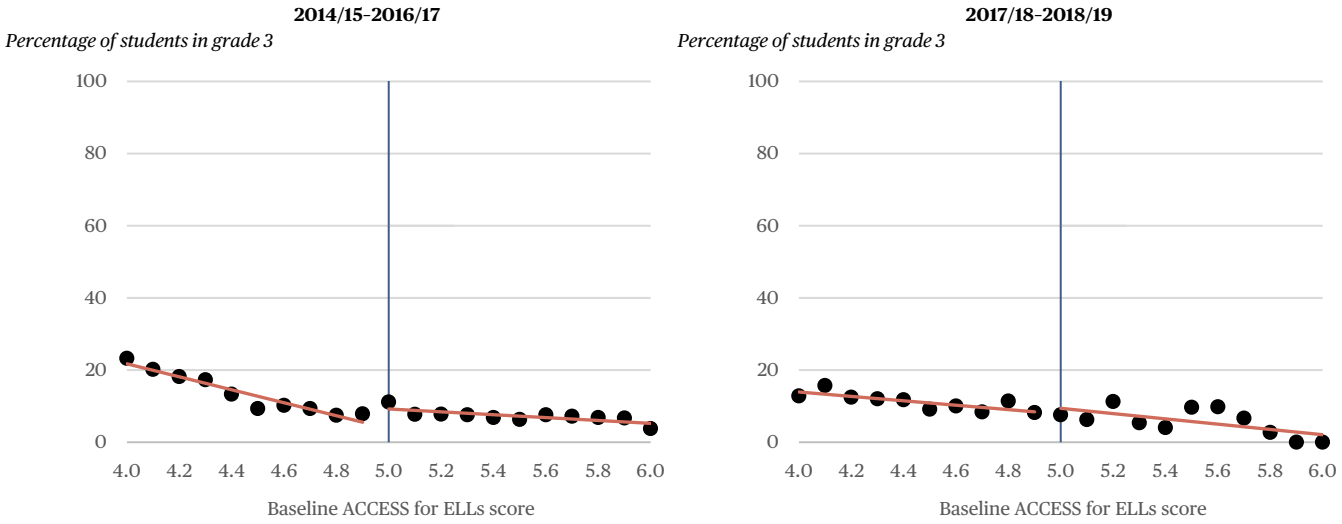
Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C12. Percentage of students who are White, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



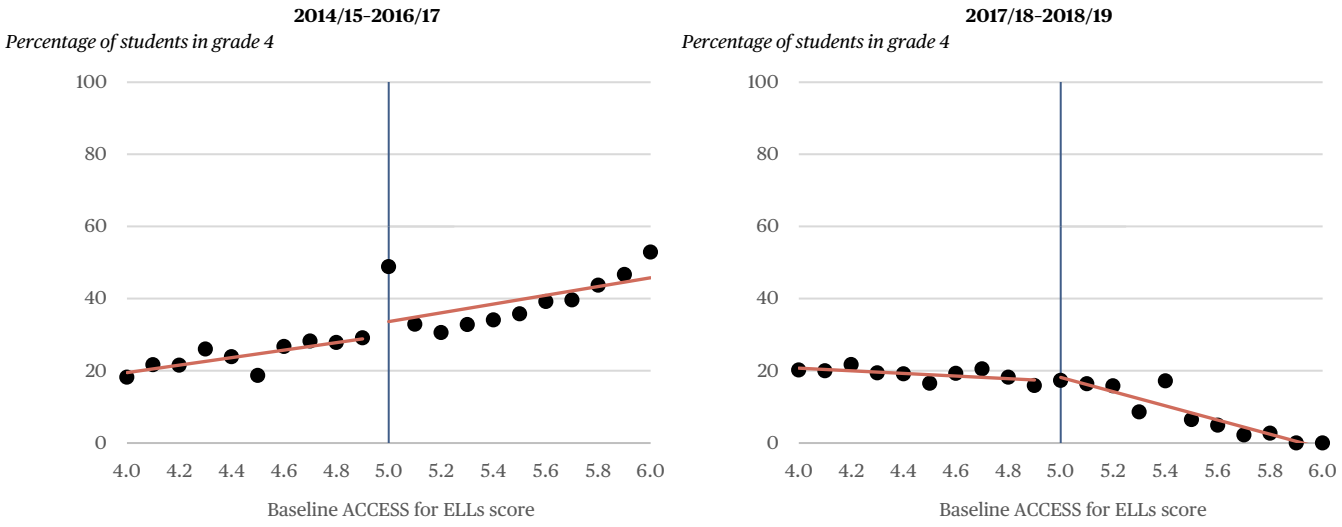
Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C13. Percentage of students in grade 3, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



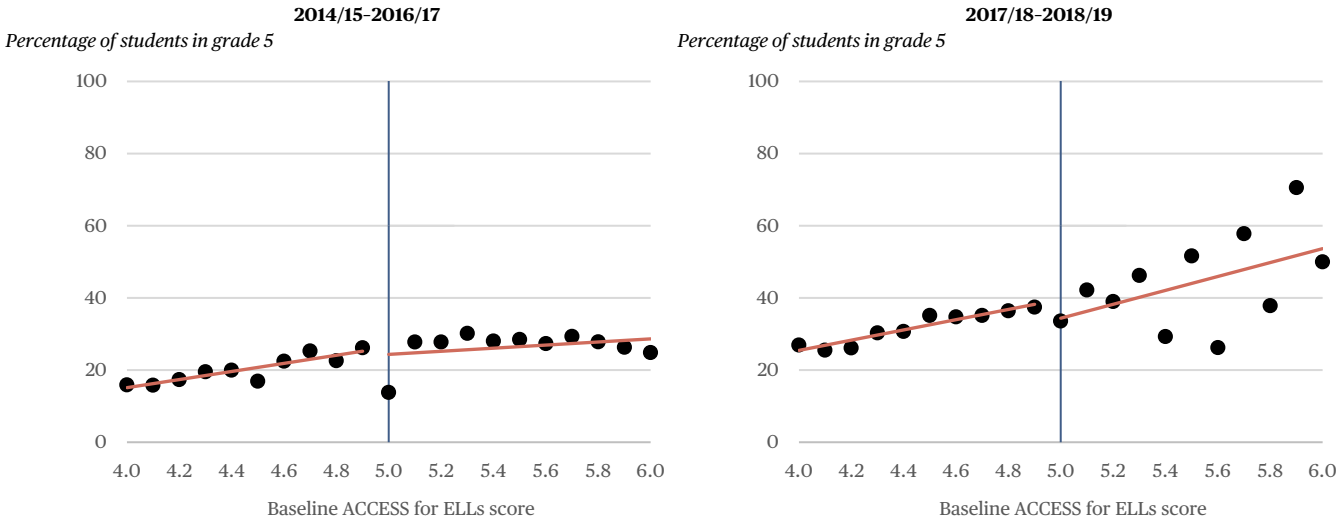
Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C14. Percentage of students in grade 4, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



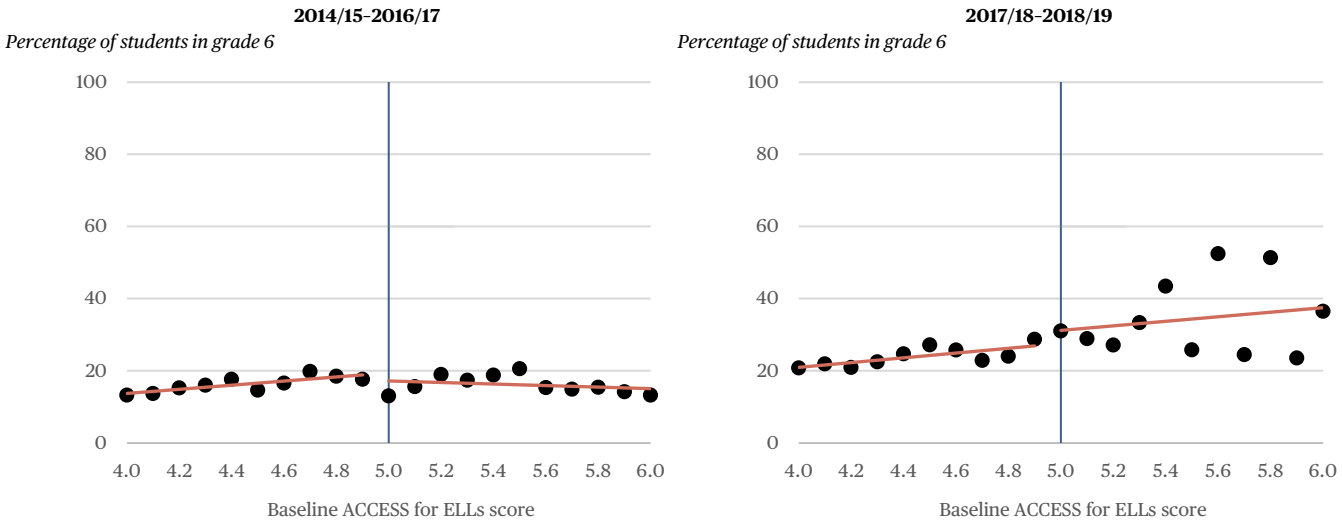
Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C15. Percentage of students in grade 5, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



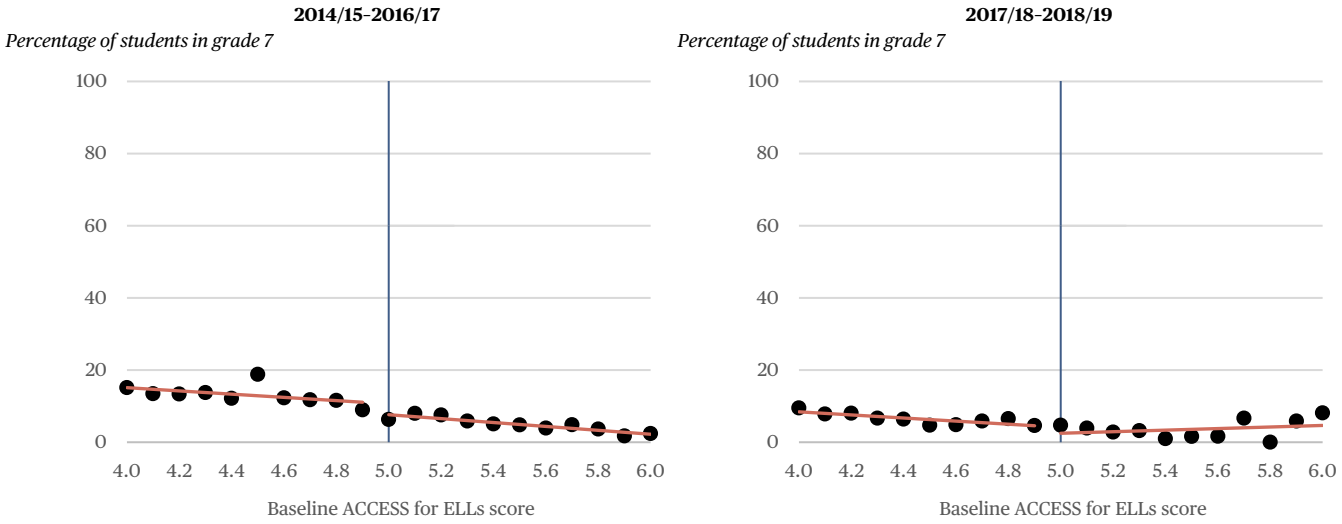
Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C16. Percentage of students in grade 6, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



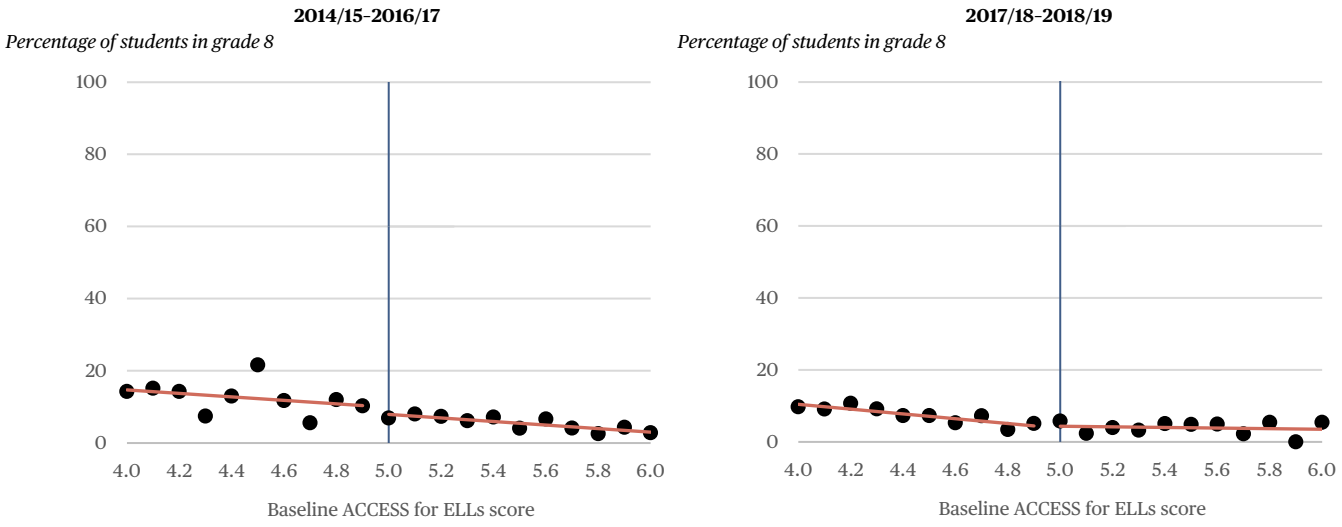
Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C17. Percentage of students in grade 7, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Figure C18. Percentage of students in grade 8, by baseline ACCESS for ELLs overall proficiency level score, 2014/15–2016/17 and 2017/18–2018/19



Note: The orange lines represent the fitted values based on a linear regression of all ACCESS for ELLs overall proficiency level scores of 4.0–6.0, which includes scores beyond the optimal bandwidth of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Sensitivity tests

Sensitivity of findings to alternative specifications. Tables C1–C7 present estimates of the impact of reclassification on English language arts and math achievement based on supplementary analyses. Each sensitivity analysis is applied to research question 2 (the effect of reclassification after the ACCESS standards setting) and to research question 3 (the effect of reclassification before the ACCESS standards setting). None of the findings from the sensitivity analyses was significant, in alignment with the analyses for research questions 2 and 3 discussed in the report.

- Table C1 presents estimates of the impact of reclassification among students in grades 4–8 (excluding students in grade 3 from the analysis).
- Table C2 presents estimates of the impact of reclassification among students in grades 3–8 who are not missing baseline English language arts and math scores.
- Table C3 presents estimates of the impact of reclassification on math achievement among students in grades 3–8 who did not take the math assessment in Spanish.
- Table C4 presents estimates of the impact of reclassification among students in grades 3–8, including only one observation per subject, chosen at random, for students who appear in the analysis file more than once (for example, in grade 6 in 2017/18 and in grade 7 in 2018/19).
- Table C5 presents estimates of the impact of reclassification among students in grades 3–8 with a baseline overall proficiency level score of 4.4–5.5.
- Table C6 presents estimates of the impact of reclassification among students in grades 3–8 with a baseline overall proficiency level score of 4.0–5.9.
- Table C7 presents estimates of the impact of reclassification among students in grades 3–8 with a baseline overall proficiency level score of 4.7–5.2. For these estimates, the relationship between student achievement and baseline overall proficiency level scores was modeled as a quadratic function of baseline overall proficiency level scores.

For all results presented in the following tables, the first-stage *t* statistic for the dichotomous variable indicating that the student scored at or above the reclassification threshold is greater than 4. None of these specification checks produced a statistically significant estimate of the impact of reclassification on student achievement.

Table C1. Effect of reclassification of students as fluent English proficient on standardized English language arts and math scale score points among students in grades 4–8 who attained an ACCESS for ELLs overall proficiency level score of 4.7–5.2, 2014/15–2016/17 and 2017/18–2018/19

	English language arts			Math		
Outcome years	Estimated effect	Standard error	Number of student-year combinations	Estimated effect	Standard error	Number of student-year combinations
2017/18–2018/19	-1.35	1.77	2,401	-1.60	1.79	1,721
2014/15–2016/17	-0.15	0.80	9,869	0.02	0.76	10,180

Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). No results were statistically significant at $p < .05$. Analyses include English learner students who took the PARCC or TAMELA English language arts or math assessments the year after attaining an ACCESS for ELLs overall proficiency level score of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table C2. Effect of reclassification of students as fluent English proficient on standardized English language arts and math scale score points among students in grades 3–8 who attained an ACCESS for ELLs overall proficiency level score of 4.7–5.2, excluding students with missing baseline English language arts or math achievement scores, 2014/15–2016/17 and 2017/18–2018/19

	English language arts			Math		
Outcome years	Estimated effect	Standard error	Number of student-year combinations	Estimated effect	Standard error	Number of student-year combinations
2017/18–2018/19	0.50	2.11	1,596	-1.47	1.88	1,597
2014/15–2016/17	-0.18	0.83	9,199	-0.01	0.80	9,327

Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). No results were statistically significant at $p < .05$. Analyses include English learner students who took the PARCC or TAMELA English language arts or math assessments the year after attaining an ACCESS for ELLs overall proficiency level score of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table C3. Effect of reclassification of students as fluent English proficient on standardized math scale score points among students in grades 3–8 who attained an ACCESS for ELLs overall proficiency level score of 4.7–5.2, excluding students assessed in math in Spanish, 2014/15–2016/17 and 2017/18–2018/19

	Math		
Outcome years	Estimated effect	Standard error	Number of student-year combinations
2017/18–2018/19	-1.52	1.81	1,882
2014/15–2016/17	0.13	0.76	10,759

Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). No results were statistically significant at $p < .05$. Analyses include English learner students who took the PARCC or TAMELA English language arts or math assessments the year after attaining an ACCESS for ELLs overall proficiency level score of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table C4. Effect of reclassification of students as fluent English proficient on standardized English language arts and math scale score points among students in grades 3–8 who attained an ACCESS for ELLs overall proficiency level score of 4.7–5.2, including at most one record per student per subject, 2014/15–2016/17 and 2017/18–2018/19

	English language arts			Math		
Outcome years	Estimated effect	Standard error	Number of student-year combinations	Estimated effect	Standard error	Number of student-year combinations
2017/18–2018/19	-1.95	2.44	1,436	-1.99	2.15	1,439
2014/15–2016/17	-0.21	0.97	7,570	1.05	0.91	7,779

Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). No results were statistically significant at $p < .05$. Analyses include English learner students who took the PARCC or TAMELA English language arts or math assessments the year after attaining an ACCESS for ELLs overall proficiency level score of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table C5. Effect of reclassification of students as fluent English proficient on standardized English language arts and math scale score points among students in grades 3–8 who attained an ACCESS for ELLs overall proficiency level score of 4.4–5.5, bandwidth = 0.6, 2014/15–2016/17 and 2017/18–2018/19

	English language arts			Math		
Outcome years	Estimated effect	Standard error	Number of student-year combinations	Estimated effect	Standard error	Number of student-year combinations
2017/18-2018/19	-1.18	1.43	4,611	0.47	1.23	4,670
2014/15-2016/17	-0.11	0.54	19,717	0.16	0.52	20,327

Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). No results were statistically significant at $p < .05$. Analyses include English learner students who took the PARCC or TAMELA English language arts or math assessments the year after attaining an ACCESS for ELLs overall proficiency level score of 4.4–5.5.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table C6. Effect of reclassification of students as fluent English proficient on standardized English language arts and math scale score points among students in grades 3–8 who attained an ACCESS for ELLs overall proficiency level score of 4.0–5.9, bandwidth = 1.0, 2014/15–2016/17 and 2017/18–2018/19

	English language arts			Math		
Outcome years	Estimated effect	Standard error	Number of student-year combinations	Estimated effect	Standard error	Number of student-year combinations
2017/18-2018/19	-2.12	1.14	10,114	-0.19	1.00	10,391
2014/15-2016/17	-0.74	0.43	30,423	-0.25	0.42	31,497

Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). No results were statistically significant at $p < .05$. Analyses include English learner students who took the PARCC or TAMELA English language arts or math assessments the year after attaining an ACCESS for ELLs overall proficiency level score of 4.0–5.9.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Table C7. Effect of reclassification of students as fluent English proficient on standardized English language arts and math scale score points among students in grades 3–8 who attained an ACCESS for ELLs overall proficiency level score of 4.7–5.2, outcome specified as a quadratic function of ACCESS for ELLs overall proficiency level scores, 2014/15–2016/17 and 2017/18–2018/19

	English language arts			Math		
Outcome years	Estimated effect	Standard error	Number of student-year combinations	Estimated effect	Standard error	Number of student-year combinations
2017/18-2018/19	6.71	5.31	1,880	0.35	4.37	1,892
2014/15-2016/17	2.12	1.83	10,783	-0.80	1.76	11,111

Note: In 2014/15–2017/18 the New Mexico state assessment was the Partnership for Assessment of Readiness for College and Careers (PARCC), and in 2018/19 it was the New Mexico Standards-Based Transition Assessment in Math and English Language Arts (TAMELA). No results were statistically significant at $p < .05$. Analyses include English learner students who took the PARCC or TAMELA English language arts or math assessments the year after attaining an ACCESS for ELLs overall proficiency level score of 4.7–5.2.
Source: Authors' analyses based on data provided by the New Mexico Public Education Department.

Sensitivity of findings to potential differences in difficulty or academic content of the 2017/18 Partnership for Assessment of Readiness for College and Careers and the 2018/19 New Mexico Standards-Based Transition Assessment in Math and English Language Arts. To analyze the impact of reclassification as fluent English proficient on student English language arts and math achievement, the study team analyzed student scores on the Partnership for Assessment of Readiness for College and Careers (PARCC) in spring 2018 together with student scores on the New Mexico Standards-Based Transition Assessment in Math and English Language Arts

(TAMELA) in spring 2019. Student outcomes in the two years were pooled to increase the precision of the estimates of the impact of reclassification on student achievement.

To account for the possibility that PARCC and TAMELA have different levels of difficulty, the study team standardized student outcome test scores on PARCC and TAMELA based on the overall distribution of student scores on each assessment in each grade, subject, and year. Standardization of test scores accounts for any change in difficulty between the two assessments. Standardization also accounts for any statewide changes in the level or distribution of student achievement that are unrelated to English learner proficiency and reclassification policies.

To gauge the extent to which PARCC and TAMELA measure similar academic content, the study team analyzed the correlations between students' outcome and baseline scores in 2017/18 and 2018/19 among all students with nonmissing baseline scores. If the two assessments cover different content, one would expect the correlations between 2017 PARCC and 2018 PARCC scores to be noticeably larger than the correlations between 2018 PARCC scores and 2019 TAMELA scores. The correlations were nearly identical, suggesting that PARCC and TAMELA are well aligned.

Finally, the study team estimated the impact of reclassification separately by year. Estimates of the impact of reclassification on student English language arts and math achievement were not statistically different from zero when the analyses were run separately for 2017/18 and 2018/19.

References

Jacob, Z., Zhu, P., Somers, M., & Bloom, H. (2012). *A practical guide to regression discontinuity*. MDRC. https://www.mdrc.org/sites/default/files/regression_discontinuity_full.pdf

McCrary, J. (2008). Manipulation of the running variable in the regression discontinuity design: A density test. *Journal of Econometrics, 142*(2), 698–714. https://doi.org/10.1016/j.jeconom.2007.05.005

What Works Clearinghouse. (2020). *What Works Clearinghouse: Standards handbook* (Version 4.1). U.S. Department of Education, Institute of Education Sciences. National Center for Education Evaluation and Regional Assistance. Retrieved June 23, 2022, from https://ies.ed.gov/ncee/wwc/handbooks.

WIDA. (2021). *ACCESS for ELLs interpretive guide for score reports, grades K–12, spring 2021: Understanding student scores*.