Lexia ENGLISH™
LANGUAGE DEVELOPMENT

Impact of Lexia English on WIDA ACCESS Growth and Achievement

Key Findings

- Educators used data displays to keep track of usage requirements, celebrate student progress, and model academic conversations.

- Emergent Bilinguals who used Lexia English made significantly greater growth on the WIDA ACCESS English language proficiency assessment compared to students who did not use the program.

- Students from all subgroups benefited from using Lexia English and showed greater WIDA ACCESS growth than non-users.

- Lexia English users scored significantly higher on the WIDA ACCESS than their peers, particularly for students at lower levels, suggesting that program impact differs based on students' existing English proficiency.

Introduction

In the 2022-23 school year, Lexia partnered with 1 school district in the state of Massachusetts to conduct a study examining the impact of using Lexia® English Language Development™ (Lexia English) on English language proficiency outcomes for Emergent Bilingual students (EBs) in grades 1-5. Lexia English is a blended learning program designed to improve the academic English language skills of EBs by emphasizing explicit language instruction and oral language practice. Students in the United States are required to take an English language proficiency assessment as part of the reclassification process (NASEM, 2017). The current study examines student outcomes from the WIDA ACCESS English language proficiency assessment (ACCESS), which is used by 36 states in the USA.

12 Schools

1,558 Students

Grades 1-5

Previous research with EBs in California showed that use of Lexia English was associated with higher English language proficiency scores compared to students not using the program (Feroce et al., 2022; Lexia Learning, 2023). Additionally, in a previous study in Arizona, EBs using Lexia English made greater growth than their peers who did not use the program. We expand on this research by looking at how students using Lexia English score on WIDA ACCESS. Additionally, we incorporate qualitative data based on classroom observations to understand implementation contexts. This study provides Moderate evidence of effectiveness, according to the federal guidelines provided under ESSA.

Study Design

We examined English language proficiency outcomes based on scores from the 2023 ACCESS. ACCESS scores consist of an overall score (35% reading, 35% writing, 15% speaking, 15% listening) as well as composite scores for oral language (50% listening, 50% speaking), literacy (50% reading, 50% writing), and comprehension (70% reading, 30% listening). Data come from 1558 students in grades 1-5 (grade 1: 20%, grade 2: 23%, grade 3: 20%, grade 4: 19%, grade 5: 18%) across 12 schools in 1 Massachusetts school district. Students were considered Lexia English users if they had completed at least 1 unit in the online program (n = 1234). Student demographic data is provided in the table below.

Student Characteristics

	Full Sample (n=1558)			Matched Sample (n=436)		
	LE	Non-LE	Total	LE	Non-LE	Total
Avg. ACCESS Sp. 2023 Score	301	322	306	321	319	320
Avg. ACCESS Sp. 2022 Score	252	287	259	279	286	282
Avg. Weeks of Program Use	8	-	8	7	-	7
Avg. Minutes/Week	35	-	35	32	-	32
Avg. Program Units Completed	43	-	43	34	-	34
% Economic. Disadvantaged	85%	85%	85%	87%	86%	86%
% Female	48%	45%	47%	45%	41%	43%
% Special Education	16%	19%	17%	21%	18%	20%
% Black	61%	73%	63%	60%	73%	67%
% L1 Portuguese Creole	43%	49%	45%	48%	54%	51%
% Grades 1-2	46%	32%	43%	36%	28%	32%
% Grades 3-5	54%	68%	57%	64%	72%	68%
% Dual Language Enrollment	9%	31%	14%	10%	9%	10%
n	1234	324	1558	225	211	436

In a first set of analyses, we examined all Lexia English users and non-users. Lexia English users had significantly lower prior year scores on the overall ACCESS (β = -0.688, SE = 0.065, p < 0.001) compared to the non-users. Thus, we also conducted sensitivity analyses by closely matching Lexia English users and non-users on prior year ACCESS scores (2022 oral ACCESS, 2022 literacy ACCESS) and program enrollment based on the type of district-provided English language support students were receiving at the start of the 2022-23 school year (n = 436 total students).[1] In addition to Lexia English, all schools were using various literacy programs with EBs, including Lexia Core5® Reading (Core5). Approximately 98% of students in the full sample and 99% of students in the matched samples were also users of Core5 (based on completion of 1 or more program units). Students who used Lexia English had similar usage of Core5 (total program minutes) as students who did not use Lexia English (β = -4.446, SE = 35.025, p = 0.899). Thus, any potential group differences in learning outcomes are not likely due to differences in student use of Core5.

We analyzed students' 2023 ACCESS scores using linear mixed effects models, controlling for prior year (2022) ACCESS achievement, race/ethnicity,[2] home language,[3] gender, economic disadvantaged status, special education status,[4] language program enrollment,[5] and a random intercept for school.[6] We also conducted 13 classroom observations of grades 1-5 classrooms across 2 schools to better understand implementation of Lexia English (School A: n = 5 classes; School B: n = 8 classes). We specifically aimed to gather insights related to classroom environment, implementation settings, use of teacher-led Lexia Lessons, and engagement with myLexia student data. We intentionally selected schools of different sizes (School A: 791 students; School B: 431 students), but which had similar EL enrollments (School A: 34.9%, School B: 35%).

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[1] We used coarsened exact matching (Stuart, 2010; Iacus et al., 2012) and incorporated student's grade-standardized scores for the 2022 ACCESS oral and literacy composites as well as student language program enrollment at the start of the 2022-23 school year. We incorporated program enrollment to account for potential differences of program impact based on setting-specific implementation differences.

[2] We represented race/ethnicity as five dummy-coded variables for Hispanic, Asian, White, and Other (including Hawaiian Pacific Islander, Multiple Races), with Black being the reference group.

[3] Students spoke a total of 24 different languages, but due to sample size we represented this as 5 categories for analyses: Portuguese-Based Creole, Spanish, Haitian French Creole, Portuguese, and Other.

[4] We excluded students with severe disabilities and who took the Alternate ACCESS.

[5] Language programs included three different dual language programs, sheltered English instruction, structured English immersion, and opting out of English language services.

[6] Analyses of student scores were based on grade-standardized scores and not the raw scale scores.

Results

Educators used data displays to keep track of usage requirements, celebrate student progress, and model academic conversations.
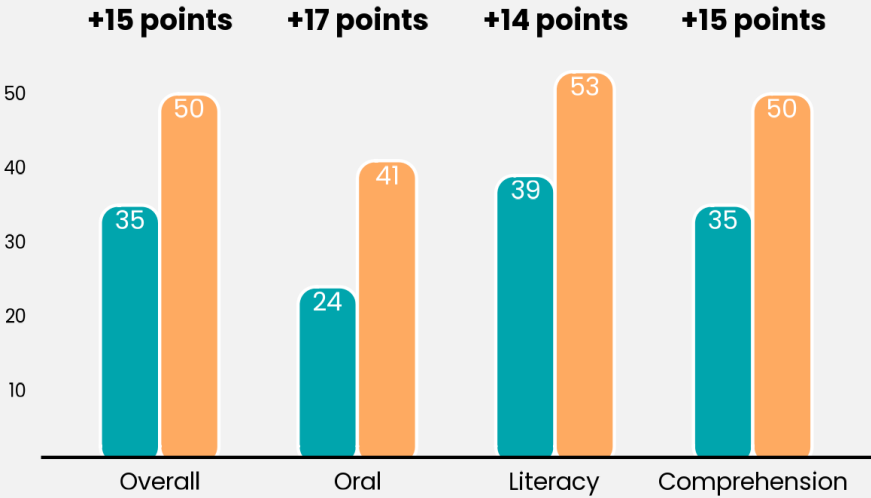
Data from classroom observations revealed variability in how Lexia English was being used by students and educators. Students in School A were primarily using the program in small-group settings (80%, or n = 4 classes), while students in School B were using it equally between small-group and whole-class settings (50%, or n = 4 classes). Additionally, most classes in School A were using the offline teacher-led Lexia lessons with some students while other students independently used the student-facing computer program (80%, n = 4 classes). At School B, however, none of the classes observed were using the teacher-led lessons and students primarily worked on either Lexia English or Core5. One educator at School B had students engage in conversation with each other, which is also the goal of Lexia English lessons, but in the context of also reading aloud passages from the school's English Language Arts curriculum. Interestingly, the average number of students per class for the sessions observed was similar across sessions for School A (mean: 13, range: 8-20) and School B (mean: 13, range: 6-20). Thus, differences in program implementation may be due to specific school-level approaches, rather than school size alone.

Both schools used various strategies to promote student engagement in both English language learning and use of Lexia English specifically. There were 2 sessions at School A and 6 sessions at School B in which there were classroom displays of student progress in Lexia English. In School A, educators had a "Lexia Leader Board" for students who completed their usage requirements for Lexia English as well as a clip chart for students to keep track of their program usage goals as either "working on" or "finished." In School B, educators made use of tracking and achievement charts, as well as displaying students' program progress via a myLexia chart. Additionally, educator use of myLexia data to track student progress was evident in School A (80%, n = 4 sessions) and to a lesser extent in School B (50%, n = 4 sessions). Finally, classroom displays of language frames to help model conversation were displayed in all 5 sessions in School A, but only in 1 session in School B. These observations show that educators made use of different tools to help engage students with keeping track of their usage in Lexia English, but also differed in their approach to engaging students in academic English conversations.

EBs who used Lexia English made significantly greater growth on the WIDA ACCESS English language proficiency assessment compared to students who did not use the program.

EBs who used Lexia English grew, on average, 15 more points than non-Lexia English users on the overall ACCESS (β = 0.178, SE = 0.053, p = 0.001). In the sensitivity analyses, when matching Lexia English users and non-users based on prior year scores, the same pattern held, with Lexia English users growing by 11 more points than non-users (β = 0.199, SE = 0.069, p = 0.008). Compared to non-Lexia English users, EBs who used Lexia English grew, on average, 17 more points on the oral ACCESS (β = 0.172, SE = 0.056, p = 0.002), 14 more points on the literacy ACCESS (β = 0.132, SE = 0.059, p = 0.026), and by 15 more points on the comprehension ACCESS (β = 0.153, SE = 0.062, p = 0.014). In the sensitivity analyses, the same patterns held. Compared to non-users, Lexia English users grew by 9 more points on the oral ACCESS (β = 0.149, SE = 0.073, p = 0.061), although this was marginal, by 11 more points on the literacy ACCESS (β = 0.172, SE = 0.073, p = 0.019), and by 9 more points on the comprehension ACCESS although this was not significant (β = 0.111, SE = 0.087, p = 0.207).[7]

Comparison of WIDA ACCESS Score Growth for Lexia English Users and Non-Users

	+15 points	+17 points	+14 points	+15 points
Overall	35 / 50			
Oral		24 / 41		
Literacy			39 / 53	
Comprehension				35 / 50

[7] One possibility for the non-significant growth effects in the matched analyses for oral and comprehension scores is that students may differ in their language production and comprehension strengths. This remains open to further investigation with a larger sample size.

Students from all subgroups benefited from using Lexia English and showed greater WIDA ACCESS growth than non-users.

As seen below, Lexia English users consistently showed greater growth than non-users when disaggregating by different characteristics. Compared to non-users, Lexia English users had greater growth, regardless of gender, economic disadvantaged status, special education status, race/ethnicity, home language, or enrollment in a dual language program.

Student Subgroup Results

	Average Overall WIDA ACCESS Growth		Difference
	Lexia English	Non-Lexia English	
Gender			
Male (n=824)	48	31	+17
Female (n=734)	52	39	+13
Economic Disadvantaged Status			
Economic Disadvantaged (n=1325)	49	34	+15
Non-Economic Disadvantaged (n=233)	56	40	+16
Special Education Status			
Special Education (n=262)	44	29	+15
Non-Special Education (n=1296)	51	36	+15
Race			
Black (n=989)	44	34	+10
Hispanic (n=451)	61	34	+27
White (n=76)	53	46	+7
Asian (n=26)	41	37	+4
Other (n=16)	39	17	+22
Home Language			
Portuguese Creole (n=694)	41	33	+8
Spanish (n=410)	60	31	+29
Haitian French Creole (n=265)	47	40	+7
Portuguese (n=130)	63	43	+20
Other (n=59)	42	30	+12
Dual Language Enrollment			
Dual Language (n=214)	78	41	+37
Non-Dual Language (n=1344)	47	32	+15

Lexia English users scored significantly higher on the WIDA ACCESS than their peers, particularly for students at lower levels, suggesting that program impact differs based on students' existing English proficiency.

EBs who used Lexia English were predicted to score higher than their peers on the overall ACCESS, but this was moderated by students' prior year English language proficiency scores. Specifically, a significant interaction with students' prior year scores ($\chi^2(1) = 4.025$, $p = 0.045$) revealed that the effect of using Lexia English was stronger for students with relatively lower English language proficiency compared to other peers in their grade. Specifically, the effect size for students 1 standard deviation below their grade mean was 0.214 ($SE = 0.087$, $p = .014$), while the predicted effect for students at their grade-specific mean was 0.106 ($SE = 0.053$, $p = 0.044$). This aligns with research demonstrating that students with lower English language proficiency tend to show greater growth than students at higher proficiency levels (Mancilla-Martinez & Lesaux, 2011; Rojas & Iglesias, 2013; Sahakyan & Cook, 2014). The sensitivity analyses from the matched datasets confirmed these patterns (interaction effect: $\chi^2(1) = 6.597$, $p = 0.010$), and showed the effect was larger than the non-matched dataset, both for students at their grade-specific mean ($\beta = 0.306$, $SE = 0.081$, $p < 0.001$), and for students who were 1 standard deviation below their grade-specific mean ($\beta = 0.506$, $SE = 0.131$, $p < 0.001$).

Want to Learn More?

For more information and updates on research related to Lexia English, please contact research@lexialearning.com.

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