**Product Evidence Base**

# Lexia® English Language Development™ Efficacy Research

July 2023

# Introduction

Lexia® has a long history of building digital programs to help students become proficient readers. Included in our portfolio is Lexia® English Language Development™ (Lexia English), an adaptive blended learning program developed to support the English language proficiency of Emergent Bilingual students, also known as English Learners, in grades K-6. The program frames English language learning as an opportunity for students to become bilingual or multilingual and to achieve success in their academic life. Lexia conducts rigorous scientific research to demonstrate the efficacy of its programs. This document summarizes the efficacy research studies that constitute the emerging evidence base for Lexia English.

Lexia English contains various program features grounded in theory and research on second language acquisition and culturally relevant pedagogy. The online program incorporates personalized learning features (e.g., branched learning design), scaffolded language frames, and opportunities for speaking and listening practice powered by Lexia's embedded Speech Recognition Engine. As students work independently in the online program, teachers are provided with real-time data related to students' program usage, progress, and areas of improvement, as well as recommendations for student-specific resources for teacher-led instruction. This results in an individualized learning experience designed to increase students' English language proficiency.

# Key Findings

Across multiple studies, we found:

- **Strong positive relationships between performance in Lexia English and scores on established measures of English language proficiency.** Performance in Lexia English and scores on language proficiency measures had positive correlations, ranging from 0.53 to 0.69.

- **Significantly higher language outcomes for Lexia English users compared to non-users.** Emergent bilingual students who used Lexia English outgained or outscored non-users on state assessments of language skills. Effect sizes ranged from 0.19 to 0.40.

- **Effects of Lexia English were robust in oral language.** Outcomes on state assessments show large group differences favoring Lexia English users in oral language skills.

- **Students who used Lexia English and Core5 outperformed students who used Core5 only.** Emergent bilingual students who used Lexia English and Core5 scored higher than students who used Core5 only and a comparison group of non-Lexia students. Effect sizes ranged from 0.17 to 0.34.

- **Lexia English was found to be effective for a wide range of Emergent Bilingual students.** Benefits of Lexia English were found across grades K-6 and for students with a diverse set of home languages.

The studies summarized in the tables below provide an evidence base establishing the efficacy of Lexia English. These include a peer-reviewed publication, three research briefs, and two validity reports. Of these studies, four meet the second highest tier of evidence for an educational intervention described by the *Every Student Succeeds Act (ESSA)*.

# Peer-Reviewed Publications

Lexia regularly submits its studies for peer-review. The peer-review process subjects Lexia's research studies and findings to the scrutiny of other experts in the same field (peers). This process is considered necessary to ensure scientific quality. As of July 2023, there is one peer-reviewed scientific study of Lexia English, as listed below.

| # | Year | ESSA Tier | Effect Size | Grades | # Students | Targeted Demographics |
|---|------|-----------|-------------|--------|------------|----------------------|
| **1** | 2022 | Moderate | 0.19 | K-5 | 2,034 | Emergent Bilinguals |

# Internal Research and Reports

Lexia regularly publishes the results from internal studies to communicate the impact of Lexia English to the public. Research briefs are short, accessible reports that provide relevant details about the research studies, focusing on key findings. These briefs are often released before full-length manuscripts are published with results from the research study. "Validity reports" present correlations between students' progress in Lexia English and scores on established external assessments. This evidence, known as test-criterion validity, demonstrates that progress in Lexia English can appropriately serve as a measure of progress towards important criterion goals such as achieving proficiency on English language assessments.

## Research Briefs

| # | Year | ESSA Tier | Effect Size | Grades | # Students | Targeted Demographics |
|---|------|-----------|-------------|--------|------------|----------------------|
| **2** | 2023 | Moderate | 0.34 | 3-5 | 3,314 | Emergent Bilinguals |
| **3** | 2023 | Moderate | 0.21, 0.22 | 1-5 | 1,570 | Emergent Bilinguals |
| **4** | 2022 | Moderate | 0.40 | 1-6 | 603 | Emergent Bilinguals |

## Validity Reports

| # | Year | ESSA Tier | Correlation | Grades | # Students | Test |
|---|------|-----------|-------------|--------|------------|------|
| **5** | 2023 | Rationale | 0.53–0.62 | K–4 | 101 | WIDA ACCESS |
| **6** | 2023 | Rationale | 0.61–0.69 | K–6 | 1,672 | ELPAC |

The 6 research studies summarized in the above tables constitute the evidence base for Lexia English, providing robust and diverse evidence that Lexia English is effective at improving literacy outcomes for Emergent Bilinguals. The remainder of this document provides detailed information about each study, including links to the original publications where appropriate. As additional evidence about the effectiveness of Lexia English becomes available, this document will be updated.

| | |
|---:|:---|
| # Schools | 21 |
| # Students | 2,034 |
| Assessment | English Language Proficiency Assessment of California (ELPAC) |
| Duration | School Year |
| Effect Size | 0.19 |
| ESSA Tier | Tier 2 (Moderate) – Quasi-Experimental |
| Evaluators | Lexia Research |
| Grades | K-5 |
| Program | Lexia English |
| State | California |
| Targeted Demographics | Emergent Bilinguals |
| Year | 2022 |

This large-scale study examined benefits of using Lexia English as part of hybrid or remote instruction for Emergent Bilinguals. Test scores on the English Language Proficiency Assessment for California (ELPAC) were compared for students who used Lexia English with Emergent Bilinguals in the same school district who did not use the program. *Lexia English users scored 15 points higher on the ELPAC than non-users.* This difference is equivalent to a statistically significant effect size of 0.19. Positive effects occurred in each grade K-5. In addition, *Lexia English users consistently scored higher than non-users when data were disaggregated by demographic characteristics.* The ELPAC score is based on a combination of oral and written language domains. A larger group difference favoring Lexia English users occurred in the oral domain (+18 points). This result is consistent with Lexia English's emphasis on speaking and supporting English Language development through academic conversations.

| | |
|---|---|
| # Districts | 5 |
| # Students | 3,314 |
| Assessment | English Language Proficiency Assessment of California Smarter Balance English Language Arts |
| Duration | School Year |
| Effect Size | 0.34 |
| ESSA Tier | Tier 2 (Moderate) – Quasi-Experimental |
| Evaluators | Lexia Research |
| Grades | 3 – 5 |
| Program | Lexia English, Lexia Core5 Reading |
| State | California |
| Targeted Demographics | Emergent Bilinguals |
| Year | 2022 |

This large-scale study examined the impact of using Lexia English and Core5 for Emergent Bilinguals. Five California school districts participated in this study. Each district used Core5 in prior school years, using both Lexia English and Core5 in 2021-22. Analyses included students who met average weekly minutes of Lexia English use for at least 8 weeks and students who met Core5 usage targets for at least 8 weeks. *Students who used both Lexia English and Core5 scored 22 points higher on the Smarter Balanced English Language Arts (SBAC) test than students who used Core5 only*. The effect size for this difference is 0.17. Further, 23% of students who used both products achieved proficiency on SBAC compared to 14% who used Core5 only. These outcomes show additive benefits of Lexia English and Core5 over just Core5. When examining effects of Lexia English and Core5 on the English Language Proficiency Assessment of California (ELPAC), a comparison group of Emergent Bilinguals who did not use Lexia programs was included. *Lexia users scored significantly higher on the ELPAC than comparison students*. Effect size is 0.34 for students who used both Lexia English and Core5 and 0.23 for those who used Core5 only. Overall, these findings show a positive impact of using Lexia English and Core5 together.

| | |
|---:|:---|
| # Schools | 3 |
| # Students | 1,570 |
| Assessment | English Language Proficiency Assessment for California |
| | Smarter Balance English Language Arts |
| Duration | School Year |
| Effect Size | 0.21, 0.22 |
| ESSA Tier | Tier 2 (Moderate) – Quasi-Experimental |
| Evaluators | Lexia Research |
| Grades | 1 - 5 |
| Program | Lexia English |
| State | California |
| Targeted Demographics | Emergent Bilinguals |
| Year | 2023 |

This large-scale, quasi-experimental study was designed to evaluate the extent to which Emergent Bilinguals can benefit from using Lexia English. Emergent Bilinguals who used Lexia English were compared to Emergent Bilinguals who did not use the program. The two groups were matched in terms of previous-year scores on the English Language Proficiency Assessment for California (ELPAC), gender, race/ethnicity and home-language. Results showed that *Lexia English users scored – on average -- 25 points higher than non-users on the ELPAC. This difference is associated with an effect size of 0.21.* Further, Lexia English users scored 18 points higher than non-users on the Smarter Balance English Language Arts (SBAC ELA) assessment. This difference is associated with an effect size of 0.22. Finally, Lexia English users were more likely than their peers to increase Proficiency levels as well as reach Proficiency on the Overall ELPAC and Oral ELPAC. In sum, outcomes from this study indicate that *Emergent Bilinguals who use Lexia English outperformed non-users on two popular assessments of English Language skills – ELPAC and SBAC* – and that Lexia English users were more likely than non-users to increase Proficiency levels on the ELPAC.

| | |
|---:|:---|
| # Schools | 16 |
| # Students | 603 |
| Assessment | Arizona English Language Learner Assessment (AZELLA) |
| Duration | Half-Year |
| Effect Size | 0.40 |
| ESSA Tier | Tier 2 (Moderate) – Quasi-Experimental |
| Evaluators | Lexia Research |
| Grades | 1-6 |
| Program | Lexia English |
| State | Arizona |
| Targeted Demographics | Emergent Bilinguals |
| Year | 2021 |

This study addressed the benefits of using Lexia English as part of hybrid or remote instruction for Emergent Bilinguals. Students who used Lexia English were compared to Emergent Bilinguals in the same school district who did not use the program. Analyses were based on examining changes in English language proficiency scores on the Arizona English-Language Learner Assessment (AZELLA) from Spring of the year prior to using Lexia English to Spring of the year following use of the program. Findings demonstrated that *students who used Lexia English showed significantly greater overall English language proficiency growth on the AZELLA (41 points) compared to students who did not use the program (17 points)*. This difference is equivalent to an effect size of 0.40. In addition, it was found that Lexia English users had the greatest growth within the speaking and reading subdomains on the AZELLA.

| | |
|---:|:---|
| # Schools | – |
| # Students | 101 |
| Assessment | WIDA ACCESS Summative English Language Proficiency Assessment |
| Correlation | 0.53-0.62 |
| Duration | Half-Year |
| ESSA Tier | Tier 4 (Demonstrates a Rationale) |
| Evaluators | Lexia Research |
| Grades | K-4 |
| Program | Lexia English |
| State | – |
| Targeted Demographics | Emergent Bilinguals |
| Year | 2023 |

Lexia partnered with one charter school network to analyze relationships among students' WIDA ACCESS scores and their ending level in Lexia English. The sample consisted of 101 Emergent Bilinguals in grades K-4. All students in the sample used Lexia English for at least 4 weeks prior to ACCESS testing and met recommended weekly minutes of usage in the online program. All students also used Lexia Core5 Reading, meeting Core5 usage targets, on average, for 16 weeks. There was a strong positive correlation of 0.62 between Emergent Bilinguals' Lexia English ending levels and overall WIDA ACCESS scores, providing evidence that *students who worked on higher levels in Lexia English tended to score higher on WIDA*. Positive relationships were also found between Lexia English ending levels and all WIDA language domain scores, with a correlation of 0.53 for the oral domain and correlations of 0.58 for both the literacy and comprehension domains. All correlations were statistically significant ($p < 0.05$).

| | |
|---:|:---|
| # Schools | - |
| # Students | 1,672 |
| Assessment | English Language Proficiency Assessment of California (ELPAC) |
| Correlation | 0.61-0.69 |
| Duration | School Year |
| ESSA Tier | Tier 4 (Demonstrates a Rationale) |
| Evaluators | Lexia Research |
| Grades | K-6 |
| Program | Lexia English |
| State | California |
| Targeted Demographics | Emergent Bilinguals |
| Year | 2023 |

Lexia partnered with five districts in California to analyze relationships among students' end-of-year scores on the English Language Proficiency Assessments for California (ELPAC) test and their ending level in Lexia English. The sample consisted of 1,672 Emergent Bilingual students in grades K to 6. All students in the sample used Lexia English for at least 10 weeks prior to ELPAC testing and met recommended weekly minutes of usage in the online program. There was a strong positive correlation of 0.69 between Emergent Bilingual students' Lexia English ending levels and their overall ELPAC scores, *providing evidence that students who worked on higher levels in Lexia English tended to score higher on the ELPAC*. Positive relationships were also found between Lexia English ending levels and scores on the ELPAC's oral and written domains. Correlations were 0.61 and 0.68, respectively. All correlations were statistically significant ($p < 0.05$).

# References

Feroce, N., Liu, J., & Chattergoon, R. (2022). Evaluating a novel CALL tool for the development of oracy and academic language in young English language learners. In B. Arnbjörnsdóttir, B. Bédi, L. Bradley, K. Friôriksdóttir, H. Garôarsdóttir, S. Thouësny, & M. J. Whelpton (Eds.), *Intelligent CALL, granular systems, and learner data: Short papers from EUROCALL 2022* (pp. 113-118). https://doi.org/10.14705/rpnet.2022.61.1444

# Lexia®

a **cambium** company

Lexia®, a Cambium Learning Group company, is the Structured Literacy expert. For more than 30 years, the company has focused solely on literacy, and today provides science of reading-based solutions for both students and educators. With robust offerings for differentiated instruction, personalized learning, assessment, and professional learning, Lexia helps more learners read, write, and speak with confidence.

lexialearning.com