RESEARCH BRIEF

Impact of Amplify Reading on K–5 Student Growth

Amplify.

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Background

Amplify Reading is a digital reading program for grades K–8 that leverages the power of compelling storytelling to engage students in reading instruction and practice. Whether students are just learning to read or mastering close reading, Amplify Reading takes students on a personalized journey that presents the skills that they need at a pace that supports their individual development. The program provides the targeted and engaging instruction and practice in the key skills and standards that K–8 students need to become successful readers: Phonological Awareness, Phonics, Decoding, Fluency, Vocabulary, Comprehension, and Close Reading.

The present study explores the effectiveness of the program for students in kindergarten through fifth grade. We compared students who used Amplify Reading during the 2019 fall semester to students from the same district who did not use Amplify Reading, using Dynamic Indicators of Basic Early Literacy Skills, 8th Edition (DIBELS® 8th Edition) Composite Scores and Zones of Growth. **We found K–5 students who used Amplify Reading showed better growth on DIBELS 8th Edition Zones of Growth than those who did not use the product. Additionally, we found that the program was particularly effective for English Language Learners (ELLs).** (DIBELS 8th Edition; University of Oregon, 2018)
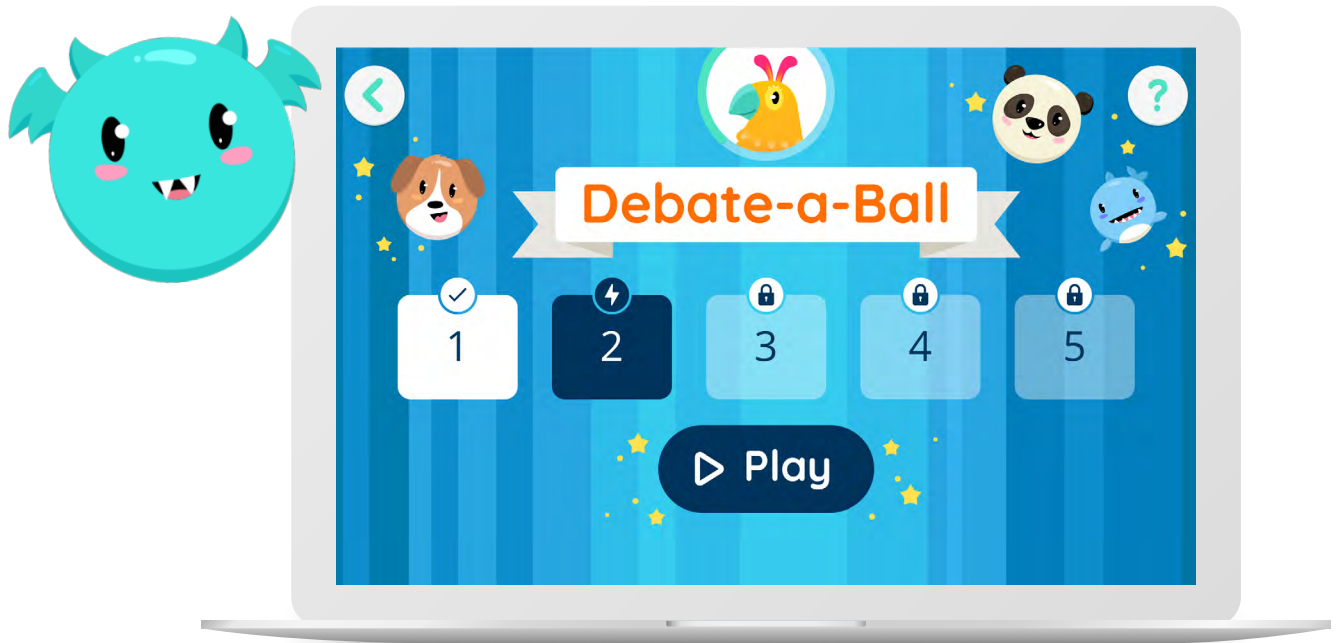
The study

This study was conducted in February of the 2019–2020 school year.

Participants

Participants were students from Title 1 schools in a racially, ethnically, and linguistically diverse large urban school district. To be included in the treatment group, students had to have used Amplify Reading for a minimum of four hours across the semester; they specifically needed to engage in a minimum of four hours of instructional content. The resulting treatment group included 11,201 students, between approximately 1,200 to 2,500 students per grade in grades K through 5. Across grades, students' median total hours spent on the program ranged from 6 to 7 hours of use.

We used propensity score analysis to identify a comparison group of students who came from similar schools in the district and who had demographics and achievement similar to those who used Amplify Reading. We estimated propensity scores for each individual using student level variables (i.e., beginning of year DIBELS 8th Edition Composite Score, gender, race, special education status, English Language Learner status, and number of days between the beginning and middle of year assessments) and school level characteristics (i.e., charter school status, magnet school status, number of students, teacher-to-student ratio and critically, the proportion of treatment students to comparison students in the school). We then assigned each comparison student an inverse probability weight; comparison students who were similar to treatment students on the above characteristics received large weights, while students who were very different from the treatment population received small weights.

Measures

The Dynamic Indicators of Basic Early Literacy Skills, 8th Edition (DIBELS 8th Edition) is a universal screening and progress monitoring assessment that measures early literacy skills from kindergarten through eighth grade. In kindergarten through fifth grade, the assessment includes six measures that serve as indicators of reading skills including alphabet knowledge, phonemic awareness, alphabetic principle/phonics, fluency, and reading comprehension. The measures of earlier skills are administered one-on-one with students by qualified professionals; the comprehension assessment is group administered starting in second grade. DIBELS 8th Edition also includes a Composite Score with a corresponding benchmark status. This Composite Score is computed using all of the measure scores and is the best indicator of students' overall risk for reading difficulty.

The present study uses the DIBELS Zones of Growth designations, which indicate whether students' growth on the beginning of the year Composite Score to the middle of the year Composite Score is below, at, or above average progress when compared to a national sample of students who started with the same initial skill level as determined by the DIBELS 8th Edition Composite Score.

Results

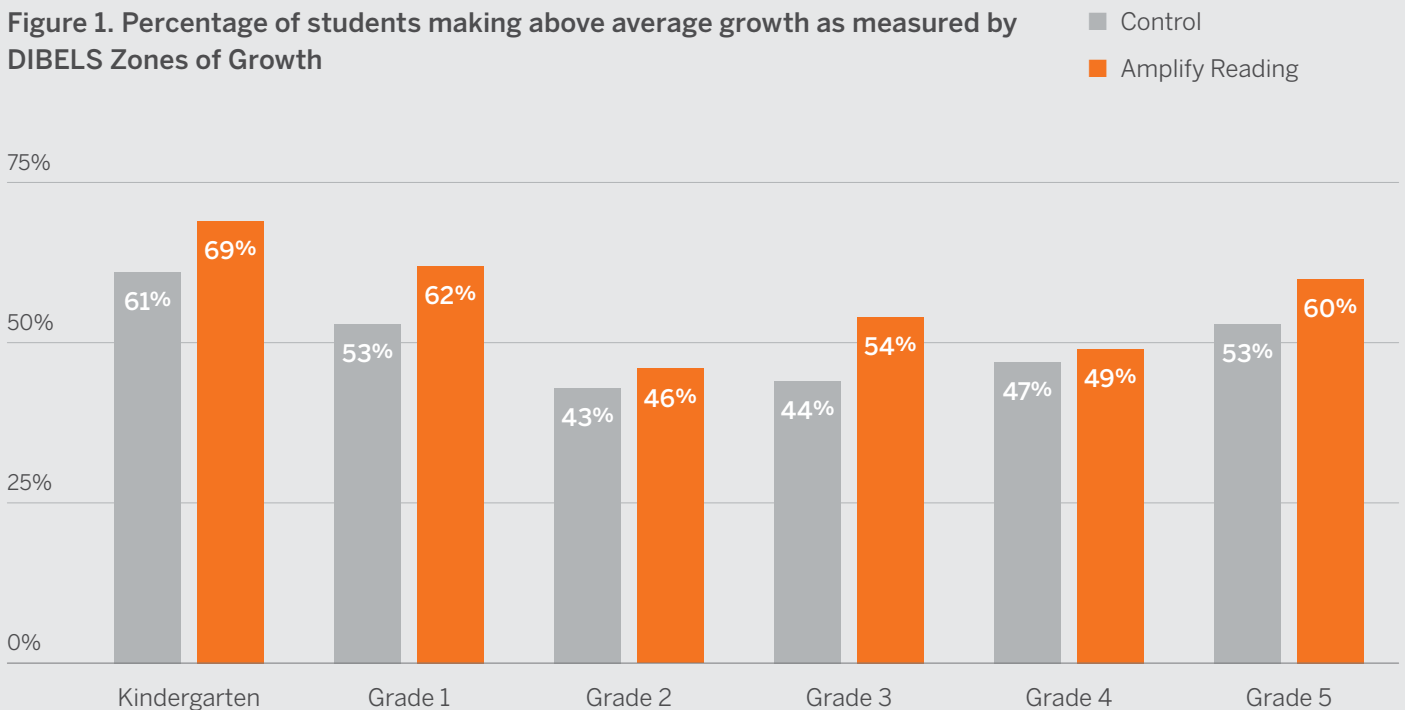## Amplify Reading students make better-than-expected growth

Students who used Amplify Reading demonstrated better growth from the beginning to the middle of the year compared to those who did not use the program, as measured by DIBELS 8th Edition Zones of Growth. Figure 1 shows the percentages of students who made growth that is above average, or growth that is greater than what students who start with similar skills make on average in the national sample. Greater percentages of students made above average progress for the group of students who used Amplify Reading compared to students who did not. For example, in first grade, 62% of students in Amplify Reading made above average progress, whereas only 53% of students in the comparison group made above average progress.

62%
of first-graders made above average progress from the beginning of the year to the middle of the year, compared with only 53% in the control group.

Figure 1. Percentage of students making above average growth as measured by DIBELS Zones of Growth

■ Control
■ Amplify Reading

Amplify Reading improves growth for English Language Learners

English Language Learners (ELLs) who used Amplify Reading demonstrated better growth from the beginning to the middle of the year compared to ELLs who did not use the program, as measured by DIBELS 8th Edition Zones of Growth. Figure 2 shows the percentages of students who made above average growth or growth that is greater than what students who start with similar skills make on average in the national sample. Greater percentages of ELLs made above average progress for the group of students who used Amplify Reading compared to students who did not. For example, in third grade, 54% of ELLs using Amplify Reading made above average growth, whereas only 45% of ELLs in the comparison group made above average growth.

54%

of Amplify Reading ELL students in third grade made above average growth,

compared with 45% of the control group.

Figure 2. Percentage of ELLs making above average growth as measured by DIBELS Zones of Growth

■ Control
■ Amplify Reading
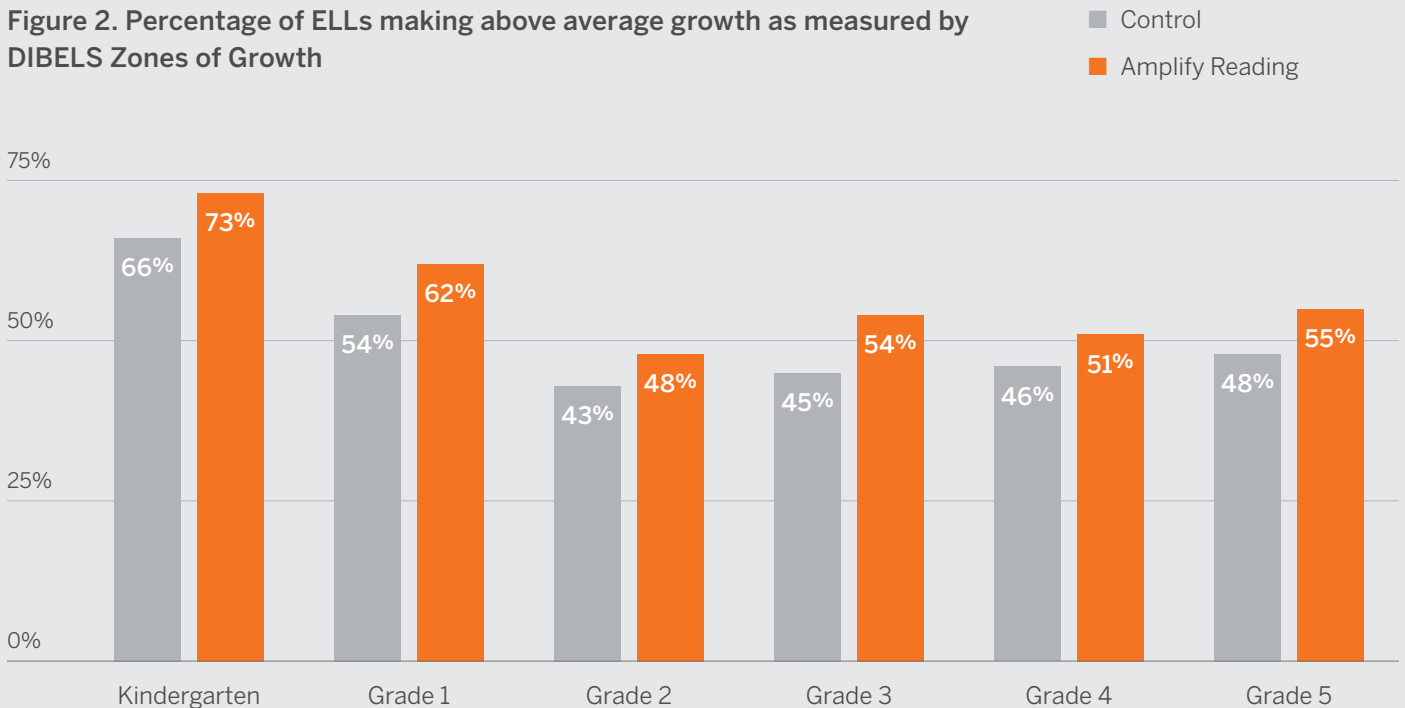
A case study

The following case study of an individual student's experience with Amplify Reading illustrates the power of Amplify Reading for improving literacy skills.

Eva is a kindergarten student in the district who participated in the current study. She is an English Language Learner and is at risk for reading difficulty based on her Composite Score on the mCLASS® DIBELS 8th Edition assessment. Her score was equivalent to the beginning of the year risk cut point. Her specific scores and the corresponding cut points for the DIBELS 8th Edition Composite and sub measures are in the table below.

Table 1. Eva's Beginning of the Year mCLASS DIBELS 8th Edition Scores

Measure	Beginning of Year Score	At Risk Cut Score
Composite Score	279 AT RISK	279
LNF (Letter Naming Fluency)	13 AT RISK	15
PSF (Phonemic Segmentation Fluency)	9 SOME RISK	6
NWF-CLS (Nonsense Word Fluency - Correct Letter Sounds)	5 SOME RISK	3
NWF-WRC (Nonsense Word Fluency - Words Recoded Correctly)	0 AT RISK	1
WRF (Word Reading Fluency)	0 AT RISK	1

Based on the mCLASS DIBELS 8th Edition data, Eva has some knowledge of letter names (letter naming is an indicator of overall risk), is starting to be able to segment words by phonemes (score in the some risk zone), knows a few letter sounds (score in the some risk zone) and does not yet blend sounds in words (score in the at-risk zone). mCLASS DIBELS 8th Edition provides the information Amplify Reading needs to target instruction.

Based on her overall performance on the assessment, Eva was placed in the Amplify Reading program. She received targeted instruction and practice in skills that are critical for her future success and aligned to her data-identified needs. Figure 3 below illustrates where Eva spent her time in instruction within the context of the skills targeted throughout the program. It also provides an overview of the overarching narrative experience that Eva encounters in the program. As a kindergarten student, Eva is in the portion of the Amplify Reading program that emphasizes imagination. Students in this portion of the program befriend a curious creature who welcomes them into a community of readers; students help the community solve problems throughout the experience.

Figure 3. Eva's overall experience in the Amplify Reading Program

K–1 | Imagination
Befriend a curious creature who welcomes you into a community of readers.

Sample games

Zoom Boom
Rhyming words

Picky Goblins
Sound Spelling Correspondences

Curioso Crossing
Reading words

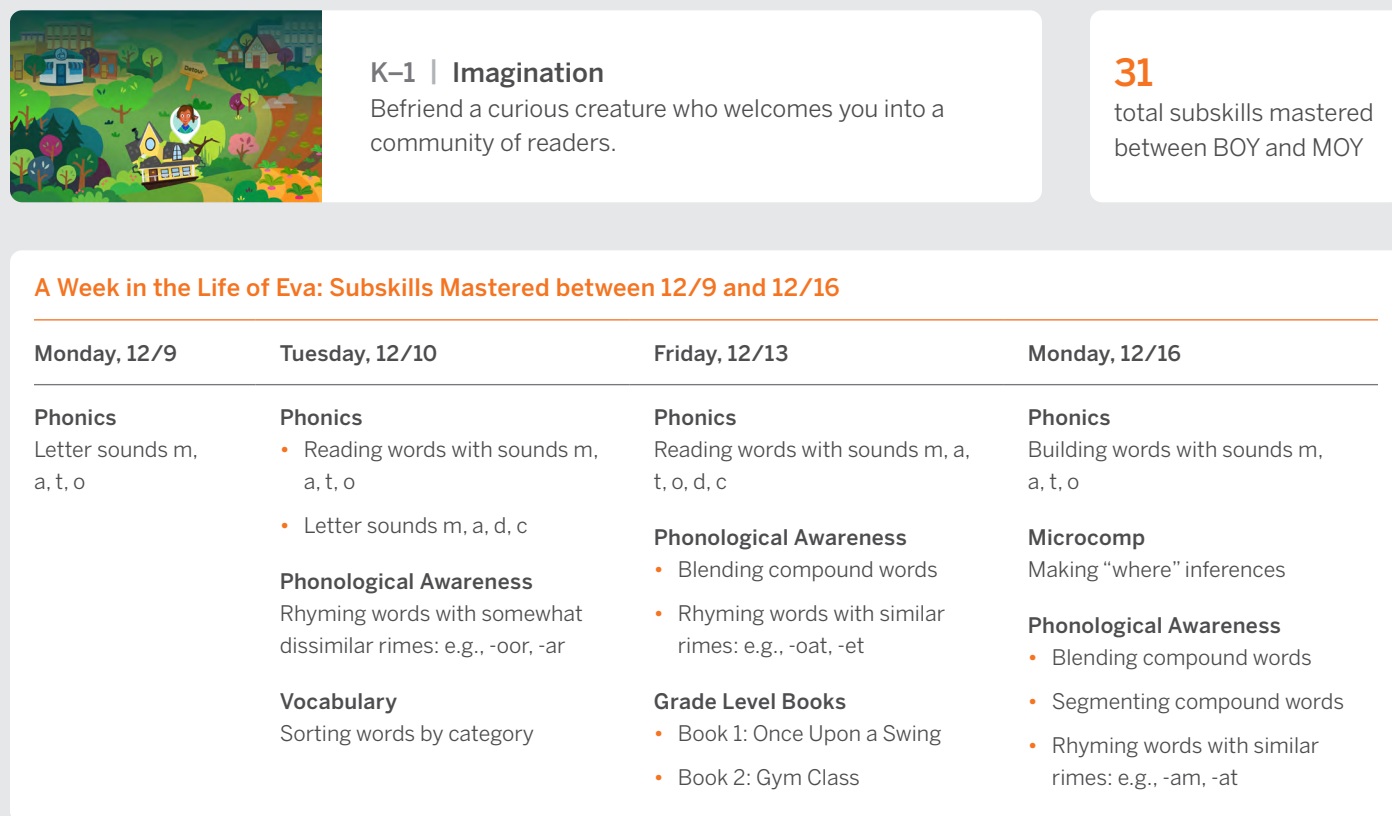| Focus	K–1	2–3	4–5	6–8
47%	Phonological Awareness			
43%	Letter-Sound Correspondence			
	Letter Combinations			
	Early Decoding	Advance Decoding		
2%	Comprehension Processes			
5%	Key Ideas & Details			
	Integration of Knowledge & Ideas			
	Craft & Structure			
4%	Vocabulary			
	Grade Level Books			
		Close Reading		

In alignment with her needs as determined by the mCLASS DIBELS 8th Edition assessment, Eva spent 47% of time from the beginning of the year to the middle of the year in phonological awareness skills practice, 43% of time in phonics skills practice, covering letter-sound correspondence and early decoding, 7% of her time in comprehension practice, covering both comprehension processes and skills related to the key ideas and details standards (e.g., identifying main idea), and 4% of her time in vocabulary practice. So while Eva needed to focus on her foundational reading skills, she was also provided an opportunity to learn and practice comprehension and vocabulary skills which are critical for all students to become successful readers.

The figure also illustrates some of the specific games Eva played. She played Zoom Boom where she practiced rhyming by listening to a word and identifying the picture of a word that rhymes with it. She also played Picky Goblins, where she had to feed a goblin a piece of toast with the letter that matches the sound he requested. While learning new letter-sound correspondences, she was able to view animations of a mouth to help her practice producing the sounds herself. Eva also played Curioso Crossing, where she practiced blending the sounds she was learning into words and building her automaticity in reading words.

Figure 4 provides an even deeper dive into Eva's experience in the program, presenting a full week's view of the specific skills Eva learned and practiced in the program.

Figure 4. A week in the Amplify Reading program for Eva

K–1 | Imagination
Befriend a curious creature who welcomes you into a community of readers.

31
total subskills mastered between BOY and MOY

A Week in the Life of Eva: Subskills Mastered between 12/9 and 12/16

Monday, 12/9	Tuesday, 12/10	Friday, 12/13	Monday, 12/16
Phonics Letter sounds m, a, t, o	**Phonics** • Reading words with sounds m, a, t, o • Letter sounds m, a, d, c	**Phonics** Reading words with sounds m, a, t, o, d, c	**Phonics** Building words with sounds m, a, t, o
	Phonological Awareness Rhyming words with somewhat dissimilar rimes: e.g., -oor, -ar	**Phonological Awareness** • Blending compound words • Rhyming words with similar rimes: e.g., -oat, -et	**Microcomp** Making "where" inferences
	Vocabulary Sorting words by category	**Grade Level Books** • Book 1: Once Upon a Swing • Book 2: Gym Class	**Phonological Awareness** • Blending compound words • Segmenting compound words • Rhyming words with similar rimes: e.g., -am, -at

Over the course of the entire first semester of kindergarten, Eva mastered 31 new subskills. Examples of some of the subskills are listed within Figure 4. She not only learned new skills but she also practiced applying them within the context of grade level books.

By the middle of the year benchmark assessment with mCLASS DIBELS 8th Edition, Eva made extraordinary growth. Her middle of the year Composite Score placed her performance in the minimal risk zone. Across all of the sub-measures, Eva demonstrated mainly minimal or negligible risk (green or blue zone) with her letter name knowledge and letter-sound correspondences still in the some risk zone (yellow zone). Further, she demonstrated either above average or ambitious growth when compared to a national sample of peers with similar starting skills based on the mCLASS DIBELS 8th Edition Zones of Growth score classification. Table 2 includes a comparison of Eva's beginning and middle of year scores and her growth classification.

Table 2. Eva's beginning and middle of year mCLASS DIBELS 8th Edition scores

Measure	Beginning of Year Score	Middle of Year Score	Zone of Growth
Composite Score	279 `AT RISK`	378 `MINIMAL RISK`	**Ambitious**
LNF (Letter Naming Fluency)	13 `AT RISK`	36 `SOME RISK`	Above Average
PSF (Phonemic Segmentation Fluency)	9 `SOME RISK`	48 `MINIMAL RISK`	Ambitious
NWF-CLS (Nonsense Word Fluency - Correct Letter Sounds)	5 `SOME RISK`	24 `SOME RISK`	Above Average
NWF-WRC (Nonsense Word Fluency - Words Recoded Correctly)	0 `AT RISK`	7 `MINIMAL RISK`	Ambitious
WRF (Word Reading Fluency)	0 `AT RISK`	10 `NEGLIGIBLE RISK`	Ambitious

Discussion and next steps

These results indicate that Amplify Reading has important effects on students' overall reading skills in grades K through 5 after only a semester of use. Students in Amplify Reading outgrew a comparison sample of students from their district. Meaningful effects were obtained with an average of fewer than seven hours of use of the program. This is less than the expected use over the course of a school year, suggesting the potential of stronger impact when the program is used over a longer period of time.

Additionally, our results suggest that the program is accelerating progress for ELLs. This finding is vitally important in today's educational landscape; roughly 9.5% or 5 million public school students are ELLs (U.S. Department of Education), and differences in skills between ELLs and non-ELLs has remained wide and stable over the past 20 years (U.S. Department of Education). Amplify Reading, with its highly adaptive platform and focus on early literacy skills, is a program that has great potential to meet the needs of the rising percentage of English Language Learners.

In the coming school years, we aim to explore the impact of the program across all grades with additional samples. The impact of varying levels of usage and impact on specific skills using multiple outcome measures will also be explored. In conclusion, this study demonstrated that Amplify Reading is an effective literacy program for a diverse set of students in kindergarten through fifth grade.

References

University of Oregon (2018). 8th Edition of Dynamic Indicators of Basic Early Literacy Skills (DIBELS®). Eugene, OR: University of Oregon. Available: http://dibels.uoregon.edu/

Kraft, M.A. (2018). *Interpreting Effect Sizes of Education Interventions*. Brown University Working Paper.

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics.

For more insights and observations from Amplify's experts, visit **amplify.com**.

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