

Improved Reading Achievement by Students in the St. Mary Parish Public School System who used Fast ForWord® Products: the 2006 – 2007 and 2007 – 2008 School Years

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ABSTRACT

Purpose: This study investigated the effects of the Fast ForWord products on the reading skills of students who used the products within the curriculum in a school setting. **Study Design:** The design of this study was a multiple school study using the state's high-stakes test and nationally normed tests. **Participants:** Study participants were 869 students in 2nd through 5th grade and attending schools in the St. Mary Parish Public School System in Centerville, Louisiana. **Materials & Implementation:** Before and after participation on the Fast ForWord products, students were evaluated with the Louisiana Educational Assessment Program (LEAP) or the Integrated Louisiana Educational Assessment Program (iLEAP). **Results:** Students who used the Fast ForWord products, including students who were African American, achieved significant improvements on the LEAP/iLEAP. The LEAP performance of students who were retained in 4th grade and used the Fast ForWord products were compared to the performance of students at the same schools the year before the district used the Fast ForWord products. The group that used the Fast ForWord products improved their LEAP scores significantly more (49 points versus 18 points) with more students increasing one or more proficiency levels (76% versus 46%).

Keywords: Louisiana, elementary school, rural, observational study, African-American students, Fast ForWord Language, Fast ForWord Language to Reading, Fast ForWord Reading Level 1, Fast ForWord Reading Level 2, Fast ForWord Reading Level 3, Fast ForWord Reading Level 4, Fast ForWord Reading Level 5, Louisiana Educational Assessment Program (LEAP), Integrated Louisiana Educational Assessment Program (iLEAP), Reading Progress Indicator (RPI).

INTRODUCTION

Numerous research studies have shown that cognitive and oral language skills are under-developed in struggling readers, limiting their academic progress (Lyon, 1996). University-based research studies reported the development of a computer software product that focused on learning and cognitive skills, and provided an optimal learning environment for building the memory, attention, processing and sequencing skills critical for reading success (Merzenich et al., 1996; Tallal et al., 1996). This prototype of the Fast ForWord Language software showed that an optimal learning environment and focus on early reading and cognitive skills resulted in dramatic improvements in the auditory processing and language skills of school children who had specific language impairments (Merzenich et al, 1996; Tallal et al., 1996) or were experiencing academic reading failure (Miller et al., 1999).

The St. Mary Parish Public School System was interested in continuing to evaluate the effectiveness of an optimal learning environment with a focus on early reading and cognitive skills as a way to improve reading skills of students in a school setting. In this

study, commercially available computer-based products (Fast ForWord Language Basics, Fast ForWord Language, Fast ForWord Language to Reading, Fast ForWord Literacy, Fast ForWord Literacy Advanced, Fast ForWord Reading Level 1, Fast ForWord Reading Level 2, Fast ForWord Reading Level, Fast ForWord Reading Level 4, and Fast ForWord Reading Level 5) were used to evaluate the effectiveness of this approach for improving the reading skills of students.

METHODS

Participants

The St. Mary Parish Public School System is located in Centerville, Louisiana, in the south-central portion of the state. The district is made up of 27 schools serving more than 10,000 students in Kindergarten through twelfth grade. The student population is 48% Caucasian and 47% African-American. Sixty-seven percent of the students are eligible for free or reduced-price lunches.

St. Mary Parish School System started using Fast ForWord products during the 2006 – 2007 school year with seven schools that were in Academic Assistance.

The schools' goal was for 3rd – 5th graders to use the products. This report focuses on 280 students in third through fifth grade who used Fast ForWord products during the 2006 – 2007 and 653 students who used the products during the 2007 – 2008 school year – a total of 869 different students.

Before and after Fast ForWord participation, students had their reading skills assessed with the Reading Progress Indicator Assessment (RPI) and/or the Louisiana state test: Louisiana Educational Assessment Program (LEAP) or the Integrated Louisiana Educational Assessment Program (iLEAP). School personnel administered the assessments and reported scores for analysis.

Implementation

Educators were trained in current and established neuroscience findings on how phonemic awareness and the acoustic properties of speech impact rapid development of language and reading skills; the scientific background validating the efficacy of the products; methods for assessment of potential candidates for participation; the selection of appropriate measures for testing and evaluation; effective implementation techniques; approaches for using Progress Tracker reports to monitor student performance; and techniques for measuring the gains students have achieved after they have finished using Fast ForWord products.

Materials

The Fast ForWord products are computer-based products that combine an optimal learning environment with a focus on early reading and cognitive skills. The products used in this study (Fast ForWord Language, Fast ForWord Language to Reading, Fast ForWord Reading Level 1, Fast ForWord Reading Level 2, Fast ForWord Reading Level 3, Fast ForWord Reading Level 4, Fast ForWord Reading Level 5) include five to seven exercises designed to build skills critical for reading and learning, such as auditory processing, memory, attention, and language comprehension. Descriptions for products used by less than 5% of the participants are not listed. While there are differences between the products, all help develop skills critical to learning and reading as detailed in the following exercise descriptions.

*Circus Sequence*¹ and *Trog Walkers*²: Students hear a series of short, non-verbal tones. Each tone represents

¹ Exercise from the Fast ForWord Language product.

² Exercise from the Fast ForWord Language to Reading product.

a different fragment of the frequency spectrum used in spoken language. Students are asked to differentiate between these tones. The exercises improve working memory, sound processing speed, and sequencing skills.

*Old MacDonald's Flying Farm*¹: Students hear a single syllable that is repeated several times, and then interrupted by a different syllable. Students must respond when they hear a change in the syllable. This exercise improves auditory processing, develops phoneme discrimination, and increases sustained and focused attention.

*Phoneme Identification*¹, *Polar Cop*², and *Treasure in the Tomb*²: Students hear a target phoneme, and then must identify the identical phoneme when it is presented later. These exercises improve auditory discrimination skills, increase sound processing speed, improve working memory, and help students identify a specific phoneme. *Polar Cop* also develops sound-letter correspondence skills. *Treasure in the Tomb* also develops grapheme recognition.

*Phonic Match*¹ and *Bug Out*²: Students choose a square on a grid and hear a sound or word. Each sound or word has a match somewhere within the grid. The goal is to find each square's match and clear the grid. The *Phonic Match* exercise develops auditory word recognition and phoneme discrimination, improves working memory, and increases sound processing speed. The *Bug Out!* exercise develops skill with sound-letter correspondences as well as working memory.

*Phonic Words*¹: Students see two pictures representing words that differ only by the initial or final consonant (e.g., "face" versus "vase", or "tack" versus "tag"). When students hear one of the words, they must click the picture that matches the word. This exercise increases sound processing speed, improves auditory recognition of phonemes and words, and helps students gain an understanding of word meaning.

*Language Comprehension Builder*¹: Students listen to a sentence that depicts action and complex relational themes. Students must match a picture representation with the sentence they just heard. This exercise develops oral language and listening comprehension, improves understanding of syntax and morphology, and improves rate of auditory processing.

*Block Commander*¹: In Block Commander, a three-dimensional board is filled with familiar shapes that students select and manipulate. The students are asked to follow increasingly complex commands. This exercise increases listening comprehension, improves

syntax, develops working memory, improves sound processing speed, and increases the ability to follow directions.

*Start-Up Stories*²: Students follow increasingly complex commands, match pictures to sentences, and answer multiple-choice questions about stories that are presented aurally.

*Bear Bags*³ and *Bear Bags: More Lunch*⁴: In these exercises, the participant is asked to help Mama Bear sort words (on pieces of toast) into phoneme-based categories (in lunch bags). They develop phonemic awareness and decoding of single-syllable words. *Bear Bags* also develops understanding of alphabetic principles (phonics) and *Bear Bags: More Lunch* also develops grapheme/phoneme associations.

*Magic Rabbit*³ and *Magic Bird*⁴: These exercises combine spelling and word-building practice with spelling patterns and word families commonly studied in 1st grade for *Magic Rabbit* and in 2nd grade for *Magic Bird*. The task is designed to emphasize the relationships between words by showing how one word can be turned into another by simply changing a single letter in any position. Using a click and drag interface, the participant must either select the missing letter to complete a partially spelled word or rearrange scrambled letter tiles to spell a word. These exercises develop spelling and sensitivity to letter-sound correspondences.

*Flying Fish*³ and *Fish Frenzy*⁴: In these exercises, a fishing pelican pronounces a word. Then a series of spoken and/or written words (on fish) fly across the pond and the participant clicks on the word when it matches the pronounced word. These exercises develop decoding skills, identification of sight words, and auditory memory.

*Quail Mail*³: In Quail Mail, a squirrel mail carrier pulls words out of a mailbag and the participant sorts them into different categories by clicking on the appropriate mailbox. This exercise encourages flexibility during reading and automatic access to the various dimensions of vocabulary.

*Bedtime Beasties*³ and *Leaping Lizards*⁴: These exercises use the “cloze task,” in which a written and aurally presented sentence has a word missing. The participant must select the correct word to complete the sentence from four choices. Vocabulary skills and sentence comprehension are developed in these exercises.

*Buzz Fly*³ and *Dog Bone*⁴: In these exercises, the participant listens to a passage and answers comprehension questions relating to each passage. The questions are aurally presented and written, and the response choices are presented as pictures. Responses are presented as words or short phrases in *Dog Bone*. These exercises develop listening comprehension and working memory skills as measured by performance on multiple choice questions.

*Ant Antics*⁴: The participant will be presented with a picture and then asked to pick one of the four alternatives that best describes an aspect of that picture. This exercise improves vocabulary skills and sentence comprehension.

*Scrap Cat*⁵: In Scrap Cat, a series of words is visually presented and participants are asked to sort each word into the correct semantic, phonological, syntactic, or morphological category. For this exercise only, the participant can click a button to hear any word and see it defined. This exercise develops decoding, vocabulary, and word recognition skills.

*Canine Crew*⁵: In Canine Crew multiple words are presented together in a grid and participants are asked to find pairs that match on the basis of the current criterion. This criterion shifts from words that rhyme, to synonyms, to antonyms, to homophones, as the participant progresses. This exercise develops vocabulary, decoding, and automatic word recognition.

*Chicken Dog*⁵: Participants hear a word and see it partially spelled. They must complete the word by filling in the missing letter or letter group. Five options are always provided, including options that represent common visual and phonological errors. This exercise develops basic spelling patterns, letter-sound correspondences, and decoding.

*Twisted Pictures*⁵: Participants are presented with a variety of pictures and asked to select the sentence that most accurately describes each picture from among four alternatives. The descriptive sentences incorporate a wide range of syntactic structures. As the participant progresses, the sentences get longer and more difficult vocabulary is included. This exercise builds sentence comprehension by developing syntax, working memory, logical reasoning, and vocabulary.

*Book Monkeys*⁵: Participants read narrative and expository passages and answer comprehension questions about each passage. The multiple-choice

³ Exercise from the Fast ForWord to Reading 1 product.

⁴ Exercise from the Fast ForWord to Reading 2 product.

⁵ Exercise from the Fast ForWord to Reading 3 product.

questions demand that the participant use memory for literal detail, generation of inferences, or grasp of among four alternatives. This task develops paragraph comprehension, inferential and cause-and-effect reasoning, working memory, flexible reading, and vocabulary.

*Hog Hat Zone*⁵: In Hog Hat Zone, short passages from classic children’s literature are presented, with occasional gaps in the text where words are missing. Participants are asked to fill in each gap with the correct word from among four alternatives. The missing words are morphologically important items such as pronouns, auxiliary verbs, and words with suffixes and prefixes. This task develops paragraph comprehension, complex morphology, flexible reading, and vocabulary.

*Hoof Beat*⁶: The participant is presented with a question and four possible answers. The participant must choose the most appropriate answer. The questions relate to semantics, phonology, morphology, orthography, and syntax. The exercise encourages flexibility during reading and automatic access to the various dimensions of vocabulary and is designed to build vocabulary by showing the participant how words function.

*Jitterbug Jukebox*⁶: The participant hears a word spoken aloud and letters appear on the keys of a jukebox. The participant must spell the word by clicking on the jukebox keys. Jitterbug Jukebox helps participants improve spelling and sensitivity to letter-sound correspondences. This exercise includes many of the 500 most commonly used words in written English including most word families found in 3rd and 4th grade content standards.

*Goat Quotes*⁶: In Goat Quotes four newspapers paraphrase a headline at the top of a news kiosk. The participant must select the correct paraphrase. The exercise is designed to sample the basic syntactic (i.e., grammatical) structures of spoken English generally mastered in the early elementary grades. The exercise develops logical thinking and working memory skills as well careful reading.

*Book Monkeys: Book Two*⁶: Participant reads a passage, chart, or schedule and then answers questions related to the material. This exercise develops a participants’ ability to read for literal meaning, cause-and-effect relationships, and inferential comprehension. It also develops a participant’s

working memory as well as vocabulary skills, which are crucial for flexible, fluent reading.

*Stinky Bill’s Billboard*⁶: Participants must select the word that accurately completes a sentence. In this exercise, participants improve sentence comprehension while practicing the decoding of words in realistic contexts. This exercise also helps build vocabulary and awareness of word structure.

*Lulu’s Laundry Line*⁶: Short passages are presented with occasional gaps where punctuation is missing. The participant must read the words and understand the passage in order to determine the correct punctuation. The exercise develops punctuation skills as well as automaticity for decoding and sentence comprehension.

*Lana’s Lanes*⁷: In Lana’s Lanes participants build skills in accurate text comprehension and the use of comprehension strategies by reading fiction or nonfiction passages, completing a graphic organizer or summary of each passage, and answering comprehension questions with and without the aid of the graphic organizers/summaries.

*Wood Works*⁷: In Wood Works, the participant sorts written words into sound bins labeled with phonetic (dictionary) symbols. Later the participant sorts spoken words into spelling bins labeled with spelling patterns. In this way, participants build accuracy and fluency in spelling, decoding, and phonemic analysis.

*Quack Splash*⁷: In Quack Splash participants build multiple-paragraph passages and demonstrate comprehension of the passages by correctly identifying missing words, phrases, or sentences; by correctly sequencing sentences and paragraphs; and by answering comprehension questions about the completed passages.

*Gator Jam*⁷: In Gator Jam, participants complete analogies where one of the 4 terms of the analogy is missing. Later, participants reread the completed analogies, and sort them based on the type of analogical relationship illustrated. In this way, Gator Jam helps participants to build skills in critical thinking and abstract reasoning while improving vocabulary.

*Toad Loader*⁷: In Toad Loader, participants select sentence segments to correctly build a sentence that describes an illustration. The sentence structures vary

⁶ Exercise from the Fast ForWord to Reading 4 product.

⁷ Exercise from the Fast ForWord to Reading 5 product

in the use of inflections and other grammatical forms. In this way, participants build accuracy and fluency in recognizing and constructing sentence structures.

Assessments:

Students who used products during the 2006 – 2007 school year were assessed on the LEAP or iLEAP in March, 2006, before Fast ForWord participation, and again in March, 2007, after students had used the products. At the time of this report, students who used the Fast ForWord products during the 2007 – 2008 school year did not yet have LEAP scores available from March, 2008. Therefore, Reading Progress Indicator was used to continue assessing the impact of the products in the St. Mary Parish School System. Students were assessed with the Reading Progress Indicator assessment at the beginning of Fast ForWord product use, and again at the end of each product. The first score and most recent score were used in the analysis.

Louisiana Educational Assessment Program for the 21st Century (LEAP 21): LEAP 21 is part of Louisiana’s criterion referenced state testing program. The LEAP is administered to students in grades 4 and 8 and measures how well a student has mastered the state content standards. Students receive a scaled score and one of five achievement ratings ranging from Unsatisfactory to Advanced.

Integrated Louisiana Educational Assessment Program (iLEAP): iLEAP is part of Louisiana’s criterion referenced state testing program. The iLEAP is administered to students in grades 3, 5, 6, 7, and 9 and has both a norm-referenced component and a criterion referenced component. Students receive two scores: one indicates the student’s performance relative to the Louisiana state standards while the other indicates the student’s performance relative to national norms.

Reading Progress Indicator (RPI): Reading Progress Indicator is a computer-based assessment designed to rapidly measure the effects of the Fast ForWord products. There are four levels of the assessment, each designed for a specific grade range. Each test level measures phonological awareness, decoding, vocabulary and comprehension. Scores are reported as grade equivalents, scaled scores, and percentiles.

Analysis:

Louisiana Educational Assessment Program scores for the LEAP and iLEAP were reported in terms of scaled score and proficiency level. All scores were analyzed using paired t-tests. Reading Progress Indicator scores were reported in terms of a scaled score. The scaled was used for the analyses and converted to a grade equivalent score for descriptive purposes. The criterion for identifying statistical significance was a p-value of less than 0.05 unless otherwise indicated.

RESULTS

Participation Level

Research conducted by Scientific Learning shows a relationship between product use and the benefits of the product. Product use is composed of content completed, days of use, and adherence to the chosen protocol (participation level and attendance level).

During the 2006 and 2007 school years, students in the St. Mary Parish Public School System used a variety of Fast ForWord products to improve their reading proficiency. Two hundred eighty (280) students used Fast ForWord products and had valid LEAP/iLEAP scores from both 2006 and 2007. Detailed product use for these students is shown in Table 1.

Fast ForWord Product	Number of Students	Days Participated	Number of Calendar Days	Percent Complete	Attendance Level	Participation Level
Fast ForWord Language	219	24	43	82%	85%	95%
Fast ForWord Language to Reading	224	37	104	74%	81%	98%
Fast ForWord Reading Level 1	146	13	36	78%	81%	97%
Fast ForWord Reading Level 2	135	23	62	74%	84%	96%
Fast ForWord Reading Level 3	125	43	105	69%	80%	97%
Fast ForWord Reading Level 4	69	27	58	54%	81%	96%
Total Fast ForWord Product Use	277	94.5	232.3			

Table 1. Fast ForWord product use data for students considered in the LEAP21-iLEAP analysis. The table shows the number of students who used each product along with group averages for the number of days participated, the number of calendar days between start and finish, the percentage of product completed, the participation level and the attendance level. Total values reflect the average total number of days that students used products. Percent complete pertains to content mastered within a specific product. Students often use multiple products. Three (3) students could not be matched to product use data and are not included in the table. Products used by fewer than 5% of the students are not shown (Fast ForWord Literacy and Fast ForWord Reading Level 5).

During the 2007 – 2008 school year, St. Mary Parish School System continued to use the Fast ForWord products. The impact was measured using the Reading Progress Indicator assessment. Six hundred fifty-three (653) students used Fast ForWord products

during this period and completed a valid Reading Progress Indicator assessment (RPI) before and after participation. Detailed product use for these students is shown in Table 2.

Fast ForWord Product	Number of Students	Days Participated	Number of Calendar Days	Percent Complete	Attendance Level	Participation Level
Fast ForWord Language	432	31	65	80%	83%	98%
Fast ForWord Language to Reading	298	31	79	58%	82%	99%
Fast ForWord Reading Level 1	143	18	45	78%	83%	96%
Fast ForWord Reading Level 2	451	31	63	92%	85%	98%
Fast ForWord Reading Level 3	459	36	76	68%	80%	98%
Fast ForWord Reading Level 4	211	26	54	61%	79%	98%
Fast ForWord Reading Level 5	53	21	42	27%	80%	98%
Total Fast ForWord Product Use	653	96.1	207.8			

Table 2. Fast ForWord product use data for students considered in the RPI analysis. The table shows the number of students who used each product along with group averages for the number of days participated, the number of calendar days between start and finish, the percentage of product completed, the participation level and the attendance level. Total values reflect the average total number of days that students used products. Since different students used different products, calculating a “total percent complete” does not have meaning and is not shown. Students often use multiple products. Products used by fewer than 5% of the students are not shown (Fast ForWord Literacy, Fast ForWord Literacy Advanced, and Fast ForWord Language Basics).

Assessment Results

Separate analyses were performed for the two assessments used in the study. The first analysis considered improvements in student reading ability as measured by the Louisiana Educational Assessment Program (LEAP/iLEAP). The second analysis considered improvements in student reading ability as measured by Reading Progress Indicator (RPI).

The Louisiana Educational Assessment Program was used to evaluate the reading ability of students before and after Fast ForWord use. The LEAP was administered to the students in 4th grade while the iLEAP was administered to students in 3rd, and 5th grades. This meant that 3rd and 4th grade students who were promoted to the next grade at the start of the 2006 – 2007 school year received the LEAP at one administration, and the iLEAP at the other administration. Table 3 shows the average gains made by these 280 St. Mary students.

Student Group	n	Before		After		Difference
		Mean	SE	Mean	SE	t-statistic
All Grades	280	275.49	3.30	288.31	3.27	t = 4.49

Table 3. Students had significant improvements on LEAP-iLEAP after Fast ForWord use. * $p < 0.001$

Changes in LEAP/iLEAP proficiency level were also analyzed for these students. Table 4 shows the changes in LEAP/iLEAP proficiency level between the 2006 and 2007 tests. Students in the green section (upper right) increased in proficiency level while students in the red section (lower left) decreased in proficiency level. Students who were at the same proficiency level in 2006 and 2007 are shown in the white boxes on the diagonal. Totals for 2006 and 2007 are given in the bottom two rows and demonstrate that the number of students at the Unsatisfactory level decreased while the number of students at the Basic and Mastery levels increased.

Students who used Fast ForWord Products								
		2007 Level					2006 Totals	2007 Totals
		Unsatisfactory	Approaching Basic	Basic	Mastery	Advanced		
2006 Level	Unsatisfactory	41	22	16	1	0	80	66
	Approaching Basic	16	25	29	1	0	71	72
	Basic	9	24	63	11	1	108	116
	Mastery	0	1	8	6	0	15	23
	Advanced	0	0	0	4	2	6	3
2007 Totals		66	72	116	23	3	280	280

Table 4. The group of 280 students who used Fast ForWord products made improvements between the 2006 and 2007 administrations of the LEAP/iLEAP assessments. Students in the green section (upper right) increased one or more proficiency levels while students in the red section (lower left) decreased. The white boxes on the diagonal indicate students who maintained a constant proficiency level. Rows and columns are summed to give 2006 and 2007 totals. For ease of comparison between the two years, 2007 totals are also in the right-most column.

The performance of 4th grade students who were retained is of particular interest because a comparison group can be formed. St. Mary's had 45 students who were retained in the 4th grade for the 2006 – 2007 school year and used the Fast ForWord products. These students took the LEAP test in both 2006 and 2007; unlike other students in this study, they did not have one LEAP assessment and one iLEAP assessment. Table 5 shows the gains made by these students between the 2006 and 2007 LEAP tests.

For comparison, St. Mary's provided data from the 57 students at the same schools who were retained in the 4th grade for the 2005 – 2006 school year (prior to the district using the Fast ForWord products). Table 6 compares the gains made by the 45 Fast ForWord students in 2006-07 to the gains made by these 57 students in 2005-2006. On average, the students who used Fast ForWord products improved by 31 more points than the students had the year before the products were available (Figure 2).

Student Group	n	Before		After		Difference
		Mean	SE	Mean	SE	t-statistic
4 th grade retained	45	245.38	6.27	294.47	5.58	t = 9.17*

Table 5. Retained 4th grade students demonstrated significant improvements on the LEAP after Fast ForWord use. * $p < 0.001$.

Student Group	n	LEAP Improvement		Difference	
		Mean	SE	Mean	t-statistic
4 th grade retained students 2005-2006 (no Fast ForWord)	57	17.8	5.2	31.28	t = 4.18*
4 th grade retained students 2006-2007 (Fast ForWord)	45	49.1	5.4		

Table 6. Retained 4th grade students who used Fast ForWord products in 2006-2007 demonstrated significantly greater improvements on the LEAP than retained 4th grade students who did not use Fast ForWord products in 2005-2006. * $p < 0.05$.

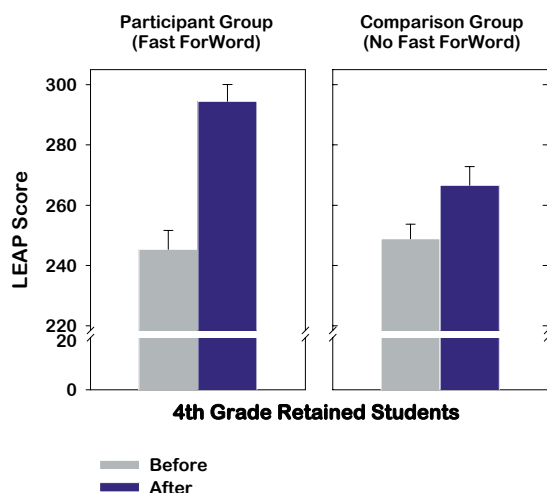


Figure 2. The 45 students retained in the 4th grade for the 2006 – 2007 school year who used Fast ForWord products made significantly greater gains on the LEAP than the 57 students retained at the same schools the year before Fast ForWord products were used (2005 – 2006).

Table 7 shows the changes in LEAP proficiency level between the 2006 and 2007 tests for retained 4th grade students who used Fast ForWord products. Of these students, 76% improved their proficiency level, and 24% stayed the same. Table 8 shows the changes in LEAP proficiency level between the 2005 and 2006 tests for retained 4th grade students. Of these students, 45% increased their proficiency level, 46% stayed the same, and 9% decreased their proficiency level. These results are not as strong as those posted by retained 4th grade students the following year who used Fast ForWord products. The group of retained 4th graders who used Fast ForWord products had a higher percentage of students increase one or more levels (76% vs. 47%), and a lower percentage of students decrease one or more levels (0% vs. 9%).

Retained 4 th Graders who used Fast ForWord Products								
		2007 Level					2006 Totals	2007 Totals
		Unsatisfactory	Approaching Basic	Basic	Mastery	Advanced		
2006 Level	Unsatisfactory	7	11	10	0	0	28	7
	Approaching Basic	0	3	13	0	0	16	14
	Basic	0	0	1	0	0	1	24
	Mastery	0	0	0	0	0	0	0
	Advanced	0	0	0	0	0	0	0
2007 Totals		7	14	24	0	0	45	45

Table 7. The group of 45 Fast ForWord students in the 4th grade who were retained in 2006 made improvements in their LEAP proficiency status between the 2006 and 2007 administrations of the LEAP assessment. 76% increased their proficiency level by one or more levels, 24% maintained their proficiency level, and no students decreased.

Retained 4 th Graders who did not use Fast ForWord Products								
		2006 Level					2005 Totals	2006 Totals
		Unsatisfactory	Approaching Basic	Basic	Mastery	Advanced		
2005 Level	Unsatisfactory	20	12	3	0	0	35	25
	Approaching Basic	5	6	11	0	0	22	18
	Basic	0	0	0	0	0	0	14
	Mastery	0	0	0	0	0	0	0
	Advanced	0	0	0	0	0	0	0
2006 Totals		25	18	14	0	0	57	57

Table 8. The 57 fourth graders at the same schools who were retained for the 2005 – 2006 school year did not fare as well as their peers the following year who used the Fast ForWord products. 45% increased their proficiency level, 45% maintained their proficiency level, and 9% decreased.

The St. Mary Parish School System had a particular interest in the impact of the Fast ForWord products on the performance of African-American students, many of whom came from generations of poverty. Of the 280 students included in the overall LEAP/iLEAP analysis, 200 were African-American. On average, the students in the study who were African-American had lower LEAP/iLEAP scores. Their initial average LEAP/iLEAP

score was 268 while the average score for all students across the study was 275. Table 9 shows the gains made between the 2006 and 2007 LEAP tests by these students who were African-American. Changes in LEAP/iLEAP proficiency level were also analyzed for these students. Table 10 shows the changes in their LEAP/iLEAP proficiency level between the 2006 and 2007 tests: 30% of the students increased one or more levels.

Student Group	n	Before		After		t-statistic
		Mean	SE	Mean	SE	
African-American Students	200	268.40	3.82	280.94	3.82	t = 3.61*

Table 9. African-American students demonstrated significant improvements on the LEAP after Fast ForWord use. * $p < 0.001$.

African-American Students who used Fast ForWord Products								
		2007 Level					2006 Totals	2007 Totals
		Unsatisfactory	Approaching Basic	Basic	Mastery	Advanced		
2006 Level	Unsatisfactory	36	18	12	1	0	67	56
	Approaching Basic	13	17	19	1	0	50	50
	Basic	7	15	42	9	0	73	81
	Mastery	0	0	8	2	0	10	13
	Advanced	0	0	0	0	0	0	0
2007 Totals		56	50	81	13	0	200	200

Table 10. The group of 200 students who were African-American and used Fast ForWord products made improvements between the 2006 and 2007 administrations of the LEAP/iLEAP assessments.

During the 2007 – 2008 school year, St. Mary Parish School System continued to use the Fast ForWord products. At the time of this report, the LEAP/iLEAP 2008 scores were not yet available; however 653 students in 2nd through 5th grades had Reading Progress Indicator scores available from before and after Fast ForWord product use. Most students used multiple Fast ForWord products between the first and last assessment with 2047 product used by 653 students (Table 1). The RPI scaled scores were used for the statistical analyses because they are most appropriate. This analysis examined the gains made by each student between their first RPI test and their most recent RPI test. On average, within each grade, significant improvements were made in the students' scores (Table 11). The average scaled scores were converted to a grade equivalent and showed that across the four grades, average improvement was one year two months (Figure 2).

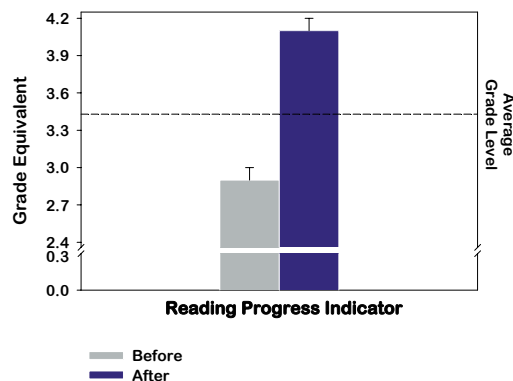


Figure 2. Students significantly improved their reading performance as reflected by Reading Progress Indicator Scores. Results from 653 students are shown.

Student Grade 2006-2007	n	Before		After		Difference t-statistic
		Mean	SE	Mean	SE	
2 nd	111	445.51	3.45	467.35	3.98	t = 6.89*
3 rd	262	457.34	2.16	500.57	2.55	t = 19.45*
4 th	171	506.26	2.36	531.77	2.82	t = 11.41*
5 th	109	519.65	3.43	542.02	3.36	t = 9.32*
All Grades	653	478.54	1.76	510.01	1.83	t = 23.95*

Table 11. On average, students in all grades had significant improvements on the Reading Progress Indicator assessment (RPI) after Fast ForWord use. * $p < 0.001$

DISCUSSION

Between the 2006 and 2007 administrations of the LEAP/iLEAP, students in the St. Mary Parish School System who used Fast ForWord products significantly improved their scores. The students used the products for 95 days during an eight month period. In that time, students used an average of nearly 3 ½ products each. Most students were performing below the Proficient level at the time of the pretest. After Fast ForWord use, students made improvements, significantly improving their scaled scores. As a group, the students significantly improved their LEAP/iLEAP scores with twenty-nine percent of the students increasing one or more proficiency levels.

The Fast ForWord products impact students across race. Results from the students who were African-American were comparable to the results of the entire group: LEAP/iLEAP improvement was 12 points with 30% of the students improving one or more levels.

By looking at students who had been retained in 4th grade, two comparable groups were formed: one group before Fast ForWord usage, and one group after Fast ForWord usage. The two groups were very similar at pre-test (245 vs 248). However, the group that used Fast ForWord products achieved significantly greater gains with an improvement of 49 points – 31 points more than the improvement of the students who did not use the Fast ForWord products.

During the 2007 – 2008 school year, elementary school students in the St. Mary Parish Public School System continue to make significant improvements in reading skills following Fast ForWord participation. As measured by the Reading Progress Indicator assessment, struggling students initially had reading skills approximately one-half year below grade level (reading skills of 2.9 relative to an average grade level of 3.4). On average, students spent 96 days during a seven month period working through the products. By the end of that period, the students had completed an average of slightly more than three products a piece, and increased their reading skills to a level of 4.1 – an improvement of one year, two months.

CONCLUSION

Language and reading skills are critical for all students, impacting their ability to benefit from instruction, follow directions and participate in class discussions. Strong linguistic skills also provide a critical foundation for building reading and writing skills. The current study reflects significant improvements in reading achievement, and demonstrates that the improvements of the African-American students who used Fast ForWord products were comparable to those of the entire group. This supports other studies showing that the Fast ForWord products strengthen the students' foundational skills and help them derive more benefit from the classroom curriculum.

Notes:

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