

# Improved Reading Skills by Students in the Raymore Peculiar School District who used Fast ForWord<sup>®</sup> Products

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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 during the 2007-2008 school year.

**Results:** On average, Fast ForWord participants made statistically significant gains on the Missouri Assessment Program reading tests. These students improved their scores by 17.4 MAP scaled score points. Furthermore, Fast ForWord participants made statistically significant gains on the Terra Nova reading tests, improving an average of 11.9 Terra Nova scaled score points and 48.1 Terra Nova Lexile points.

**Study Design:** The design of this study was a multiple school study using nationally normed, standardized tests.

**Participants:** Study participants were 299 students in fifth through eighth grade who used Fast ForWord products in the Raymore Peculiar School District in Peculiar, Missouri.

**Materials & Implementation:** Following staff training on the Fast ForWord products, the students used the products during the 2007-2008 school year. The reading achievement and reading skills of Fast ForWord participants were evaluated before and after Fast ForWord participation with the Missouri Assessment Program reading tests (MAP) and/or the Terra Nova reading test.

**Keywords:** Missouri, middle school, rural, Fast ForWord Literacy, Fast ForWord Literacy Advanced, Fast ForWord Middle & High School, Missouri Assessment Program, Terra Nova Reading Test

## 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).

Raymore Peculiar School District was interested in evaluating the effectiveness of an optimal learning environment with a focus on early reading and cognitive skills as a way for improving the reading achievement and skills of students in a school setting. In this study, commercially available computer-based products (Fast ForWord Literacy, Fast ForWord Literacy Advanced, Fast ForWord Middle & High School) were used to evaluate the effectiveness of an optimal learning environment for improving the reading skills of students.

## METHODS

### Participants

Raymore Peculiar School District is centered in Peculiar, a small rural town in western Missouri. The faculty of the Raymore Peculiar School District seeks to ensure that all students are given the opportunity to learn and fulfill their potential.

A total of 299 students in fifth through eighth grade from Raymore Peculiar's three middle schools used the Fast ForWord products during the 2007-2008 school year. One hundred seventy-three students had their reading achievement and skills assessed with the Missouri Assessment Program reading tests (MAP). One hundred seventy-two students had their reading achievement and skills assessed with the Terra Nova reading tests. 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. Each product includes several exercises designed to build cognitive skills critical for all learning, such as attention and memory. These exercises simultaneously develop academic skills critical for reading, such as English language conventions, phonemic awareness, vocabulary, and comprehension.

Some of the primary skills developed by these products are outlined below in Table 1. More detailed descriptions of the exercises and learning modes within each product can be found online at <http://www.scientificlearning.com>.

Primary Skills Product Name	Listening Accuracy & Auditory Sequencing	Auditory Word Recognition	English Language Conventions	Following Directions	Listening Comprehension	Phonological Skills / Phonemic Awareness	Phonics / Word Analysis	Vocabulary
Fast ForWord Literacy	•	•	•	•	•	•		•
Fast ForWord Literacy Advanced	•		•	•	•	•	•	•
Fast ForWord Middle & High School	•	•	•	•	•	•		•

Table 1. Primary skills covered by Fast ForWord products used by Raymore Peculiar School District students.

### Assessments

Students were assessed before and after Fast ForWord product use with the Missouri Assessment Program and the Terra Nova. Both assessments were given in the spring of 2007 (before participation) and again in the spring of 2008 (after participation).

**Missouri Assessment Program (MAP):** The Missouri Assessment Program is designed to assess student progress towards Missouri's Show Me academic standards. The MAP tests the knowledge, skills, and competencies that Missouri students should acquire by the time they complete high school.

**Terra Nova:** The Terra Nova is a standardized, nationally normed test of achievement that is multiple choice and classroom administered. Subtests include Language, Reading, Social Studies,

Math, and Science. The content in the Reading and Language subtests is aligned with contemporary classroom curricula, standards for English/Language Arts, and the conceptual frameworks of the National Assessment of Educational Progress.

## RESULTS

### Implementation Fidelity

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 2007-2008 school year, Raymore Peculiar School District used the 30-minute, 50-minute, and

90-minute protocols. These protocols call for students to use the products for 30, 50, or 90 minutes a day, five days per week for five to sixteen weeks.

Table 2 contains detailed product use information. For Attendance Level, Participation Level, and Percent Complete, cells which are shaded green and marked with a “↑” indicate good performance, cells shaded yellow and marked with a “•” indicate moderate performance, and cells shaded red and marked with a “↓” indicate poor performance on the implementation fidelity component.

	Number of Students	Days Participated	Number of Calendar Days	Attendance Level	Participation Level	Percent Complete
<b>Fast ForWord Language Series</b>						
Fast ForWord Literacy	198	31.1	66.4	73.0% (•)	90.4% (•)	89.4% (•)
Fast ForWord Literacy Advanced	237	38.7	91.5	69.7% (•)	92.0% (•)	76.7% (•)
Fast ForWord Middle & High School	104	20.7	40.0	71.9% (•)	91.8% (•)	78.0% (•)
<b>Total Fast ForWord Product Use</b>	299	58.4	130.4			

Table 2. Usage data showing the number of students who used Fast ForWord products 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. Students may use multiple products.

### Missouri Assessment Program Results

A total of 173 students in grades 5 through 8 had MAP Reading scores available for both the 2007 and 2008 test administrations. These students improved an average of 17.4 MAP scaled score points between test administrations. These improvements were statistically significant ( $p < 0.001$ ).

A subset of 143 students had MAP test results from the 2006 MAP administration in addition to scores

from 2007 and 2008. Between the 2006 and 2007 tests, these students improved an average of 4.8 MAP scaled score points. Between the 2007 and 2008 tests, after participating in Fast ForWord, these same students improved an average of 17.5 scaled score points. This large performance difference between testing intervals (2006-2007 versus 2007-2008) was statistically significant ( $p < 0.001$ ).

Table 3 and Figure 1 show the differences in gains between testing periods for these students.

Group	N	Scaled Score Gain	
		2006-'07	2007-'08
Students with 2007 and 2008 MAP scores	173	--	+ 17.4
Students with 2006, 2007 and 2008 MAP scores	143	+ 4.9	+ 17.5

Table 3. Missouri Assessment Program scaled score improvements for the 2006-2007 and 2007-2008 testing intervals.

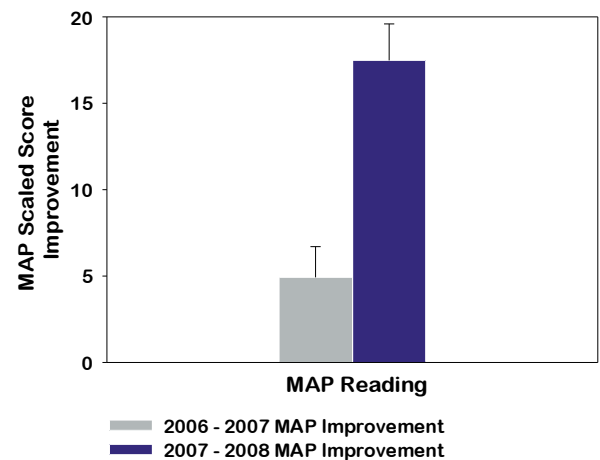


Figure 1. Average MAP Reading scaled score improvements for 143 fifth through eighth grade Fast ForWord participants for the 2006-2007 and 2007-2008 MAP testing intervals.

## Terra Nova Test Results

A total of 172 students in grades 5 through 8 had Terra Nova test scores for both 2007 and 2008. These students improved an average of 11.9 Terra Nova scaled score points between test administrations. This gain corresponded to a gain of 55.1 Terra Nova Lexile points. Both of these gains were statistically significant.

In addition, a subset of 142 students had Terra Nova test results from 2006 in addition to scores from 2007 and 2008. Between the 2006 and 2007 tests, these students improved an average of 2.9 Terra Nova scaled score points. Between the 2007 and 2008 tests, after participating in Fast ForWord, these same students improved an average of 12.4 Terra Nova scaled score points. This large performance difference between testing intervals (2006-2007 versus 2007-2008) was statistically significant ( $p < 0.001$ ). Furthermore, these students made large gains in their Terra Nova Lexile scores. From 2006-2007, they improved 28.7 Lexile points, whereas in 2007-2008, after Fast ForWord participation, they improved 55.1 Lexile points.

Group	N	Scaled Score Gain		Lexile Score Gain	
		2006-'07	2007-'08	2006-'07	2007-'08
Students with 2007 and 2008 Terra Nova scores	172	--	+ 11.9	--	+ 48.1
Students with 2006, 2007 and 2008 Terra Nova scores	142	+ 2.9	+ 12.4	+ 28.7	+ 55.1

Table 4. Terra Nova test scaled score and Lexile score improvements for the 2006-2007 and 2007-2008 testing intervals.

## DISCUSSION

During the 2007-2008 school year, 173 students in fifth through eighth grade in the Raymore Peculiar School District used Fast ForWord products and had their reading skills assessed before and after Fast ForWord participation with the Missouri Assessment Program. On average, these students improved 17.4 MAP scaled score points between test administrations. For the 143 students who also had 2006 MAP results, the gains made in 2007-2008 significantly outpaced the gains made in 2006-2007 (+ 17.5 scaled score points vs. + 4.9 scaled score points).

In addition, 172 students had their reading skills assessed with the Terra Nova reading assessment in 2007 and 2008. On average, these students improved 11.9 Terra Nova scaled score points and 48.1 Terra Nova Lexile points between test administrations. For

Figure 2 and Table 4 show the differences in gains between testing periods for these students.

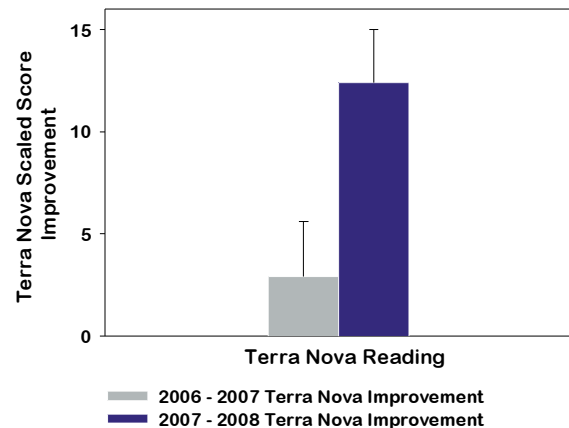


Figure 2. Average Terra Nova scaled score improvements for 142 fifth through eighth grade Fast ForWord participants for the 2006-2007 and 2007-2008 Terra Nova testing intervals.

the 142 students who also had 2006 Terra Nova results, the gains made in 2007-2008 significantly outpaced the gains made in 2006-2007 (+ 12.4 scaled score points vs. +2.9 scaled score points).

These findings demonstrate that, within the Raymore Peculiar School District, an optimal learning environment coupled with a focus on cognitive and early reading skills can help students attain a higher level of reading achievement.

## 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 skills by students in fifth through eighth grade in the Raymore Peculiar School District after Fast ForWord product use. This study supports other studies demonstrating that using the Fast ForWord products strengthens students' foundational skills allowing them to benefit more from the classroom curriculum.

#### Notes:

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