

*ReadAbout:*  
A Preliminary Evaluation in  
Frederick County, Maryland

IMPACT STUDY

**ReadAbout<sup>®</sup>**

## **Acknowledgments**

This research report was prepared by Stacey Storch Bracken, Ph.D., Statistical Consultant, and Lindsay Weil, Director of Research, Scholastic Research & Validation. It benefited immensely from the contribution and insights of Kristin DeVivo, Vice President, Scholastic Research & Validation; Francie Alexander, Chief Academic Officer, Scholastic; and Melissa King, Research Communications Manager, Scholastic Research & Validation.

The Scholastic Research & Validation Department is committed to developing innovative educational products that are grounded in research and proven to work. We collaborate with school districts and third-party research organizations to conduct evaluations that provide useful information to help school leaders assess and advance school change and improvement. Scholastic believes strongly in a mixed-methods approach to our research, an approach that provides meaningful and contextualized information and results.

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A Preliminary Evaluation  
in Frederick County, Maryland

Prepared for Frederick County Public Schools by:

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# Executive Summary

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In partnership with the Frederick County Public School District in Maryland, Scholastic conducted preliminary research focusing on the impact of *ReadAbout*, a supplemental technology- and print-based program, on the reading achievement of at-risk students in thirteen middle schools, grades six through eight. The primary purpose of this study was to examine student growth in reading during the 2007-2008 school year, as demonstrated by the Maryland School Assessment (MSA) Reading Test and *ReadAbout* software data.

Data were obtained from 1,009 students in thirteen middle schools from Spring 2007 through Spring 2008. In addition, telephone interviews with district officials were conducted to better understand the implementation of the *ReadAbout* program.

Quantitative findings from the study revealed the following:

- In the *ReadAbout* sample, the percentage of sixth-, seventh-, and eighth-grade students achieving proficiency on the MSA Reading Test significantly increased from 17% in 2007 to 47% in 2008—moving from just 1 proficient student in every 6 to almost 1 proficient student in every 2.
- When compared to the district as a whole, data indicated that the *ReadAbout* sample made substantially larger gains in the percentage of students achieving proficiency from 2007 to 2008 on the MSA Reading Test.
- When subgroups of students receiving Free and Reduced-Price Meals (FARM) and Special Education (SPED) services were examined, these gains remained statistically significant. Both subgroups demonstrated significant gains in the percentage of students reaching proficiency on the MSA Reading Test from 2007 to 2008; the SPED subgroup improved from 17% to 34%, while the FARM subgroup increased from 14% to 39%.
- Hispanic students made the greatest gains of any ethnic subgroup on the MSA Reading Test, rising from 13% achieving proficiency in 2007 to 52% in 2008.
- More time spent on the *ReadAbout* software was associated with greater improvement on the MSA Reading Test. A significantly greater percentage of students spending 12 or more hours on the *ReadAbout* software improved their MSA Performance Level from 2007 to 2008 than did students spending less than 12 hours on the software.

# ReadAbout Program Overview

ReadAbout  
Impact Study  
Frederick, Maryland

*ReadAbout* is a supplemental nonfiction reading program that uses adaptive technology and non-computer-based materials to improve reading comprehension, content knowledge, and vocabulary for upper elementary and middle school students.

*ReadAbout* begins by assessing a student's reading level and comprehension skill proficiency. The program then presents three reading topics that reflect a student's individual skill needs and interests. Every topic addresses reading achievement by providing anchored instruction, scaffolded support, informative assessment, personalized practice, and adaptive intervention.

## 1. Anchored Instruction

*ReadAbout* prepares students to learn by anchoring instruction and building mental models. Before students begin reading, *ReadAbout* preteaches vocabulary, frontloads comprehension with skill videos, and builds background knowledge with content-related videos.

## 2. Scaffolded Support

During reading, students read three leveled, nonfiction passages with overlapping content and recurring vocabulary. The program ensures multiple exposures to academic and content-area vocabulary, offers extensive contextual supports, and provides explicit instruction in the skills and strategies each student needs to learn.

## 3. Informative Assessment

*ReadAbout* assesses students on vocabulary performance and knowledge of ten nonfiction comprehension skills. Targeted corrective feedback provides further instruction when difficulty arises, along with the opportunity to try again.

## 4. Personalized Practice

*ReadAbout* provides students with the opportunity to practice vocabulary through dynamic instructional activities and personalized collections of vocabulary cards. It also provides topic-specific writing activities.

## 5. Adaptive Intervention

*ReadAbout* software adapts to stay on pace with students by delivering reading passages at a higher or lower level according to need. It engages students in tutorials on comprehension skills if performance shows that it is necessary. Dynamic scaffolds adjust passage text level based on student performance.

*ReadAbout* also provides supplemental non-computer-based materials to help reinforce what students learned on the computer. SmartFiles (leveled reading cards) provide students with independent reading practice on the skills and vocabulary learned in software topics. The program also offers vocabulary routines, differentiated comprehension lessons, text type lessons, and writing type lessons to support and challenge students. Teachers can print out reports that track student Lexile® growth and reading performance through a data management system called the Scholastic Achievement Manager (SAM).

# Study Introduction

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Research has demonstrated that students who were successful in their early elementary years often struggle when they reach upper elementary and middle school because the texts they read in content areas such as science and social studies contain content beyond their knowledge and experience, new vocabulary, and unfamiliar text structures (Chall, Jacobs, & Baldwin, 1990; Snow, 2002).

Studies show that students with limited background knowledge and vocabulary may struggle to form mental images, leading to poor comprehension (Cognition and Technology Group at Vanderbilt, 1990). Students need background knowledge to connect what they already know to the new ideas they encounter while reading (Hasselbring, Goin, Taylor, Bottge, and Daley, 1997). Further, because understanding a text depends on knowing the meaning of most of its words, an ample vocabulary is crucial to reading achievement (Hirsch, 2006). The intentional explicit teaching of vocabulary words has been shown both to increase the size of students' vocabularies and improve their comprehension of texts containing these words (McKeown, Beck, Omanson, and Pople, 1985; Stahl and Fairbanks, 1986).

Research indicates that comprehension of nonfiction can be further enhanced by teaching students metacognitive strategies to process and understand unfamiliar expository text structures (Saul and Dieckman, 2005). These strategies include asking questions before, during, and after reading; creating mental images; determining main ideas; monitoring comprehension throughout reading; repairing comprehension when needed; drawing inferences during and after reading; and synthesizing information (Saul and Dieckman, 2005). The explicit teaching of expository structures enables students to identify important information in a more organized way (Armbruster and Armstrong, 1993).

While background knowledge, vocabulary, and reading comprehension strategies are critical to students' success in reading, there is also a strong link between motivation and reading achievement. Current theory suggests that students who are motivated and interested in the material they read will learn more (Vogel et al., 2006). Games, particularly computer and video games, have been tapped as a potentially powerful way to motivate students in the classroom, due to their engaging and interactive nature. Vogel's meta-analysis illustrated that video games can foster greater cognitive outcomes and more positive student attitudes toward learning than other traditional instructional methods. Similarly, Jenkins (2005) pointed out that games can further accelerate student achievement by engaging students, lowering the threat of failure, linking learning to goals and rules, and utilizing multimodal media. Research has also demonstrated the importance of customizing learning tasks to both the needs and interests of each student and providing individualized feedback and guidance (Wise et al., 2007). This is particularly critical when a computer program is providing the instruction.

Building on this research, Scholastic developed *ReadAbout* to help improve elementary and middle school students' reading comprehension and vocabulary skills with motivating nonfiction content. This computer-adaptive technology and print program provides differentiated instruction based on ongoing assessment and monitoring of reading performance, with the software adjusting instruction accordingly for each student. The computer program contains 70 engaging, leveled topics in science, social studies, and contemporary issues, with three reading passages for each topic. Comprehension and vocabulary skills are reinforced through the use of offline SmartFiles, leveled reading cards linked with the content of each topic in the software; differentiated reading comprehension lessons; vocabulary routines; and writing lessons.

During the 2007–2008 school year, Frederick County Public Schools utilized *ReadAbout* as a supplement to their reading intervention program to improve students' reading achievement in all thirteen of its middle schools. In partnership with the district, Scholastic examined the growth in reading ability for students in grades six through eight, as demonstrated by the Maryland School Assessment (MSA) Reading Test. Scholastic also investigated the relationship between *ReadAbout* implementation and its impact on student outcomes.

## The Setting and Sample

The Frederick County Public School District (FCPS) in Frederick, Maryland, is located 48 miles northwest of Washington, DC. The K–12 district serves a city of approximately 225,000 people and enrolls more than 40,000 students in 63 schools (13 of which are middle schools). The district as a whole is approximately 74% Caucasian, 12% African-American, 8% Hispanic, and 5% Asian. About 17% of the students are considered low-income (who receive free or reduced-price meals), 12% receive Special Education services, and 3% are Limited-English Proficient.

FCPS adopted *ReadAbout* to address the high percentage of middle school students who had low reading scores on the Maryland School Assessment (MSA) Reading Test. FCPS students in grades six through eight were selected to participate in *ReadAbout* based on one of the following conditions:

- Tested in the Basic Level on the prior year's MSA Reading Test, or
- Did not meet expected grade-level standards, or
- Earned a C, D, or F grade in their English Language Arts class the prior year.

Thirteen middle schools used the *ReadAbout* program: Ballenger Creek, Brunswick, Crestwood, Governor Thomas Johnson, Middletown, Monocacy, New Market, Thurmont, Oakdale, Urbana, Walkersville, West Frederick, and Windsor Knolls.

A total of 1009 students participating in the *ReadAbout* program during the 2007–2008 school year comprised the sample described in this report. All *ReadAbout* students in this study completed a minimum of one *ReadAbout* topic and began the *ReadAbout* program during the first half of the school year (prior to December 31, 2007). Additionally, students in this sample had valid test data from the Spring 2007 and Spring 2008 administrations of the MSA Reading Test.

Table 1 presents the demographic data for this study sample, as provided by FCPS. As can be seen, this sample differs from the district as a whole in that there are higher numbers of African-American students, Special Education students, and students receiving Free and Reduced-Price Meals.

Table 1 Frederick County Public School District <i>ReadAbout</i> Students, 2007-2008 Demographic and Academic Characteristics of Students Included in the Study (N = 1009)		
	Number of Students	Percent of Students
<b>All</b>	1009	100%
<b>Grade</b>		
Sixth	302	30%
Seventh	390	39%
Eighth	317	31%
<b>Gender</b>		
Male	607	60%
Female	402	40%
<b>Ethnicity</b>		
American Indian/Alaska Native	2	0.2%
African-American	260	26%
Asian/Pacific Islander	26	3%
White	607	60%
Hispanic	114	11%
<b>Free and Reduced-Price Meals (FARM)</b>	374	37%
<b>Limited-English Proficiency (LEP)</b>	43	4%
<b>Special Education (SPED)</b>	356	35%

# Research Questions

The primary purpose of this study was to examine student growth in reading during the 2007–2008 school year, as demonstrated by Maryland School Assessment (MSA) Reading Test data. A secondary purpose was to better understand *ReadAbout* implementation and its impact on student outcomes. The evaluation focused on five research questions:

- 1. Did the *ReadAbout* sample as a whole make improvements in reading ability, as measured by the MSA Reading Test?**
- 2. How did the performance of students participating in *ReadAbout* change from 2007 to 2008?**
- 3. How did the performance of students participating in *ReadAbout* compare to the district as a whole from 2007 to 2008?**
- 4. Did specific subgroups of *ReadAbout* students (based on education classification, economic status, language background, and ethnicity) make significant gains in their reading comprehension? How does this compare to the Frederick County Public School District as a whole? What does this suggest about whom the program benefits?**
- 5. How did the amount of time students spent on the *ReadAbout* software relate to their growth in reading comprehension ability, as measured by the MSA Reading Test?**

## Research Measures

To address the central research questions, evaluators obtained data from the Maryland School Assessment (MSA) Reading Test and *ReadAbout* Program Data.

### **Maryland School Assessment Data**

The MSA Reading Test is a statewide test developed to assess whether students are proficient in the state reading standards, which meet criteria for No Child Left Behind. Students are assessed annually on the MSA Reading Test from grades three through eight. The MSA Reading Test evaluates a subset of the reading skills that are part of the Maryland Voluntary State Curriculum.

The MSA Reading Test contains two types of items: SAT 10 items and Maryland-specific items. Some items are selected-response (multiple choice), while others require a brief constructed response (written response). Each test item falls into one of three reading categories: General Reading (including vocabulary), Literary Reading (comprehension of texts such as short stories, realistic fiction, science fiction, historical fiction, fantasy, essays, biographies, personal narratives, plays, and poetry), or Informational Reading (comprehension of textbooks, reference and research materials, periodicals, editorials, speeches, interviews, articles, non-print materials, and online materials).

A student's performance on the MSA Reading Test is reported as both a scale score (which can range from 240-650) and a Performance Level. The scale scores have the same meaning within the same grade, but these scores are not comparable across grade level. The Performance Levels were designed to bring meaning to these scale scores. Each of the three Performance Levels (Basic, Proficient, or Advanced) is associated with a range of scale scores for each grade level. These Performance Levels are used in the analyses contained in this report.

Below are three public-release items from the MSA Reading Test for seventh graders. The first two are selected-response items, and the third is a brief constructed-response item.

**Question #1:** *As soon as I saw the painting in the museum, I knew it had been done by a master artist.* In which sentence does the word *master* mean the same as in the sentence above?

- a) Although he practiced, Don struggled to master the violin.
- b) A master switch controls all the electricity in the building.
- c) Mr. Johnson hired a master carpenter to work in his house.
- d) Bea's swimming coach helped her master her fear of water.

**Question #2:** The purpose of paragraphs 1 through 3 of this article is to—

- a) explain Fosbury's problem.
- b) describe Fosbury's appearance.
- c) describe where Fosbury grew up.
- d) explain why Fosbury liked sports.

**Question #3:** Explain how the Fosbury Flop changed the sport of high jumping. In your response, use information from the article that supports your explanation. Write your answer in the box below.

## ReadAbout Program Data

*ReadAbout* uses the Lexile Framework® for Reading to measure the text difficulty of the reading passages in each Topic. The reading passages in *ReadAbout* range from a Lexile of 300 (beginning readers) to a Lexile of 1100 (advanced readers). The *ReadAbout* software program also records the amount of time each student spends on the program. This study collected data on Text Level gain (calculated by subtracting the *ReadAbout* Initial Text Level from the *ReadAbout* Final Text Level) and the total time spent in *ReadAbout* (number of hours on the computer software).

# Implementation

During the 2007–2008 school year, FCPS began implementing *ReadAbout* as an intervention to accelerate struggling readers’ academic performance.

FCPS follows a tiered approach to intervention. In Tier 1, students receive the essential curriculum in the general classroom, differentiated as necessary. In Tier 2, students who lack the fundamental skills their peers mastered in Tier 1 are provided with short-term strategic intervention for eighteen weeks, with the goal of increasing achievement to meet grade-level standards. In Tier 3, students who have not adequately responded to Tier 2 are offered higher-intensity accelerated intervention to build mastery of entry-level skills, also for eighteen weeks. The goal is to allow optimal access to meet the standards of the essential curriculum. Tier 3 interventions often require additional staff and resources. In Tier 4, individuals with disabilities are provided with intensive services, as described in an individualized education plan.

Teachers were instructed to use *ReadAbout* as a supplement to the Tier 3 reading intervention programs, Reading/Writing Workshop and Learning Language Support, which use *Reading Advantage* (Great Source Education Group) materials. Toward that end, FCPS teachers integrated *ReadAbout* into either a 70- or 90-minute reading intervention block. All teaching staff using *ReadAbout* received two days of training designed to provide instructional strategies, hands-on experience, and practical advice on how to implement the program and how to use data to drive instruction.

Exhibit A shows how *ReadAbout* was implemented during either a Reading/Writing Workshop class or Learning Language Support reading intervention class. Students selected for the Reading/Writing Workshop class scored in the Basic range on the prior MSA Reading Test, in the Basic or Below Basic range on the Scholastic Reading Inventory, and demonstrated below-grade-level reading fluency. Students selected for the Learning Language Support class met the same criteria, but also demonstrated a need for additional decoding and spelling instruction. In each class, students used the software between 15 to 24 minutes every day in classrooms and in computer labs.

Exhibit A			
<i>ReadAbout</i> 70-90 Minute Implementation Model in Frederick County Public Schools			
Instructional Sequence		Reading/Writing Workshop	Learning Language Support
SIPPS (Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words)		N/A	15–20 minutes
Warm-Up		3–5 minutes	4–5 minutes
Whole-Group Instruction		10 minutes	10 minutes
ROTATIONS	Guided Small-Group Instruction Using <i>Reading Advantage</i>	17–24 minutes	15–17 minutes
	Independent Practice Using <i>ReadAbout SmartFiles</i> and <i>Reading Advantage</i>	17–24 minutes	15–17 minutes
	<i>ReadAbout</i> Software	17–24 minutes	15–17 minutes
Closure		4–5 minutes	5 minutes

Note: Each of the three rotations lasts the same amount of time—15, 17, or 24 minutes. In the 70-minute implementation model, there is no independent practice rotation.

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During the Warm-Up segment of the Reading/Writing Workshop class, teachers reviewed one of seven comprehension skills (identifying main idea and details; understanding literary elements; pinpointing author’s purpose; comprehending text structure; making inferences; drawing conclusions; and comparing and contrasting informational and literary text). Next, teachers provided ten minutes of Whole-Group Instruction. During this period, teachers used the following *ReadAbout* materials: SmartFiles; *ReadAbout* Assessment, Reports, and Differentiated Instruction (ARDI) Guide; and the Scholastic Achievement Manager (SAM). Then, teachers divided their class into three small groups for rotations. While the first group used the *ReadAbout* software, a second group worked independently to complete *ReadAbout* SmartFiles or additional vocabulary, comprehension, and writing activities using *Reading Advantage* materials from the reading intervention curriculum. At the same time, the teacher provided guided practice to a third group of students using magazines from *Reading Advantage*. After 17–24 minutes passed (depending on the length of the reading intervention block), the students switched to their second rotation and, after another 17–24 minutes, to the final rotation.

Students who required additional instruction in decoding were enrolled in a Learning Language Support class where they received 15–20 minutes of upfront instruction in decoding each day using the SIPPS program (Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words). After this initial decoding lesson, the rest of the reading intervention period followed similarly to that of the Reading/Writing Workshop class. To account for the shortened time, rotations were reduced to 15–17 minutes.

Students were given the opportunity to transfer what they learned on the *ReadAbout* software through independent reading homework. Students were required to read 100 minutes a week and complete a reading log where they answered higher-order thinking questions.

Teachers printed the *ReadAbout* Grading Report, Profile Report, and Skills Progress Report biweekly to monitor student progress through the program. In addition, data from the Differentiated Instruction Report and Skills Progress Report was gathered to better understand students’ skill deficits and provide feedback to students, parents, and other teachers during instructional conferences.

To help educators implement the district’s reading intervention program with fidelity, FCPS developed clear benchmarks on what they believed constituted effective language instruction. Educators were encouraged to develop lesson plans that had a clearly stated objective, assessments that were aligned with the objective, warm-up activities linked to the objective, and direct instruction that included daily modeling of the general reading process. In addition, educators were told to provide guided and independent practice designed to teach students **pre-reading** strategies (surveying the text, accessing prior knowledge, formulating questions, setting purpose, and making predictions), **during-reading** strategies (visualizing, making connections, re-reading, questioning, and summarizing), and **after-reading** strategies (comparing, contrasting, synthesizing, drawing conclusions, and validating the purpose for reading). To further ensure continuity between *ReadAbout* and the district curricula, curricular maps, grading rubrics, graphic organizers, and lesson plans were also provided to teachers.

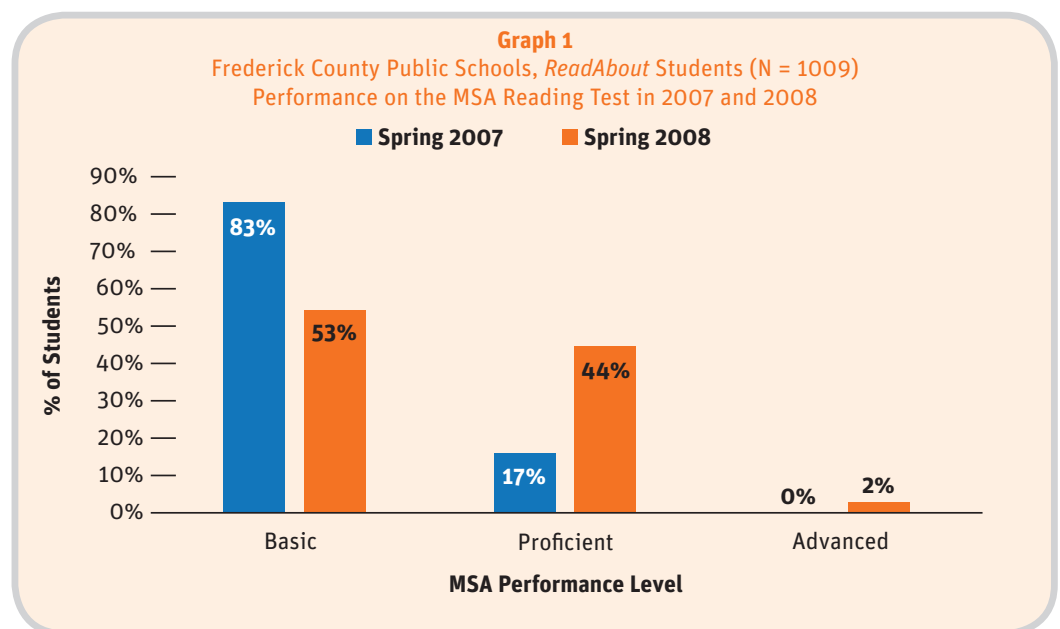
# Analyses and Results

This section presents results of the analysis of student outcome data.

## Research Question #1:

### Did the *ReadAbout* sample as a whole make improvements in reading ability, as measured by the MSA Reading Test?

To answer this first question, the percentage of students falling into each of the three MSA Reading Performance Levels—Basic, Proficient, or Advanced—was examined for 2007 and 2008. Graph 1 shows the percentage of participating students falling into each of the three MSA Performance Levels in 2007 and 2008.



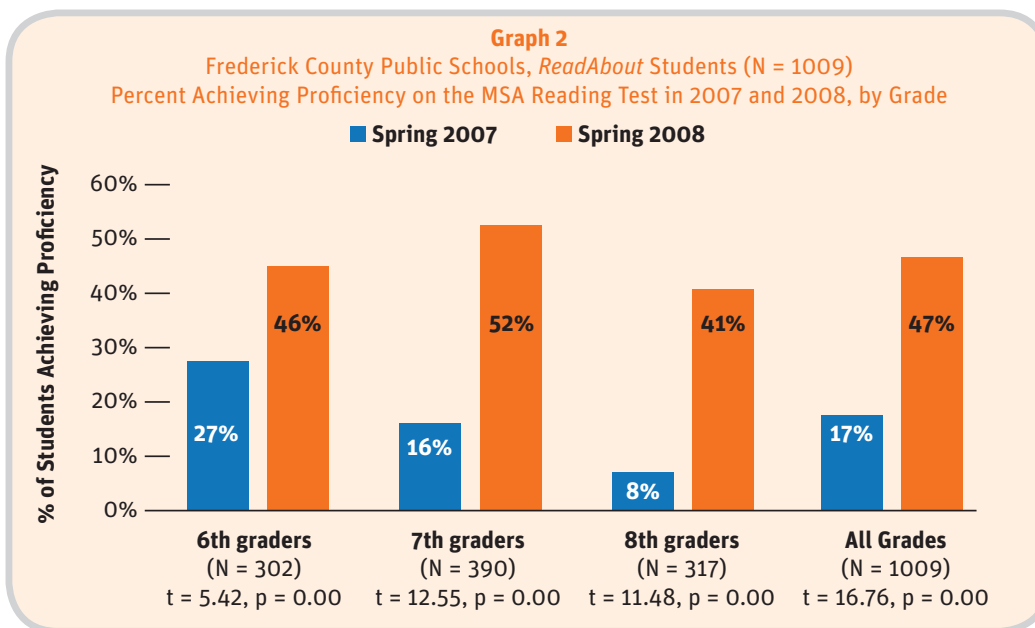
In 2007, prior to *ReadAbout*, 83% of these targeted students fell in the Basic range. However, by Spring 2008, only 53% did so, a significant reduction of 30%. Conversely, the percentage of students falling into the Proficient category more than doubled, from 17% to 44%.

## Research Question #2:

### How did the performance of students participating in *ReadAbout* change from 2007 to 2008?

The results of the MSA are used to determine whether a student has achieved “proficiency” in the subject of reading. In other words, does a student’s MSA score fall into the Proficient or Advanced MSA Performance Levels?

Graph 2 shows the percentage of students achieving proficiency in each of the three grades examined. Spring 2007 data reflects students’ MSA Reading Test scores prior to the implementation of *ReadAbout*, while Spring 2008 data reflects students’ MSA Reading Test scores afterwards.



Note: Results are significant at the 95% confidence level.

Dependent t-tests revealed that each grade level made significant gains in the number of students achieving proficiency on the MSA Reading Test. Students in the seventh and eighth grades made the largest improvements, showing gains in the percentage of students falling into the proficient category of 36% and 33%, respectively.

# Analyses and Results (cont'd.)

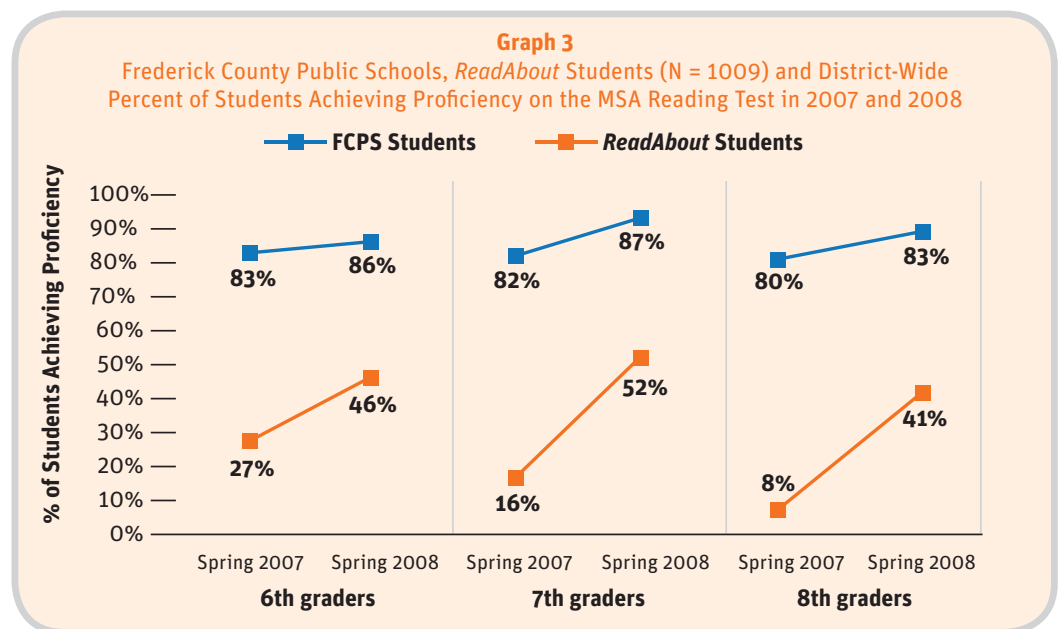
## Research Question #3:

### How did the performance of students participating in *ReadAbout* compare to the district as a whole from 2007 to 2008?

Public data show that FCPS posted gains on the MSA Reading Test from 2007 to 2008. Thus, it is important to compare how the gains demonstrated by the sample of students participating in the *ReadAbout* program compared to the gains shown by the district as a whole.

District data encompasses the performance of the approximately 3,000 students in each grade level. Note that the *ReadAbout* students from this study are a subset of all students in the district and their data is included in the district data. On average, the *ReadAbout* sample represents approximately 10% of the entire district sample.

The gains made by each grade level at both the district level and the *ReadAbout* sample level are shown in Graph 3.



Graph 3 illustrates two major points: 1) The sample of students targeted for the *ReadAbout* intervention was performing significantly lower on the MSA Reading Test in 2007 than their grade-level peers; and 2) these *ReadAbout* students made substantially larger gains from 2007 to 2008 on the MSA Reading Test. The gains in the percentage of students achieving proficiency, as demonstrated by the slope of the lines in Graph 3, show how the *ReadAbout* sample made great strides in closing the achievement gap with their peers. While they are still performing significantly below their peers, the gap between the two groups has been reduced considerably.

## Research Question #4:

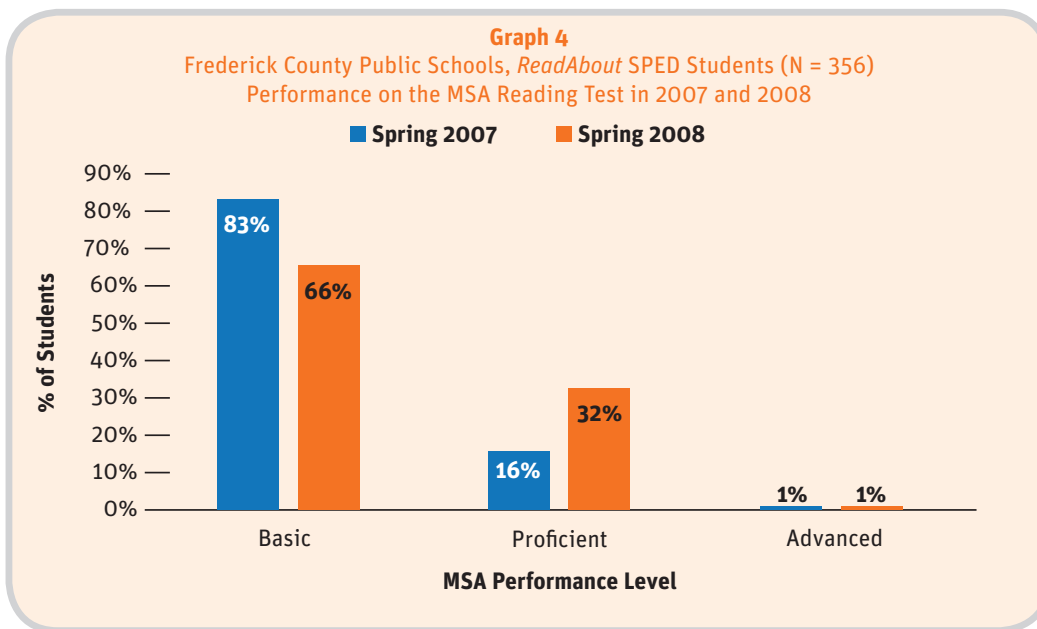
**Did specific subgroups of *ReadAbout* students (based on education classification, economic status, language background, and ethnicity) make significant gains in their reading comprehension? How does this compare to the FCPS District as a whole? What does this suggest about whom the program benefits?**

To address the fourth research question, the MSA Reading Test performance of Special Education students, students receiving free or reduced-price meals, Limited-English Proficient students, and various ethnic groups was examined.

### SPECIAL EDUCATION STUDENTS

This sample contained 356 students who were classified as receiving Special Education (SPED) services. SPED students were classified as speech- and language-impaired, health-impaired, hearing-impaired, autistic, orthopedic-impaired, emotionally disturbed, or as having multiple or specific learning disabilities.

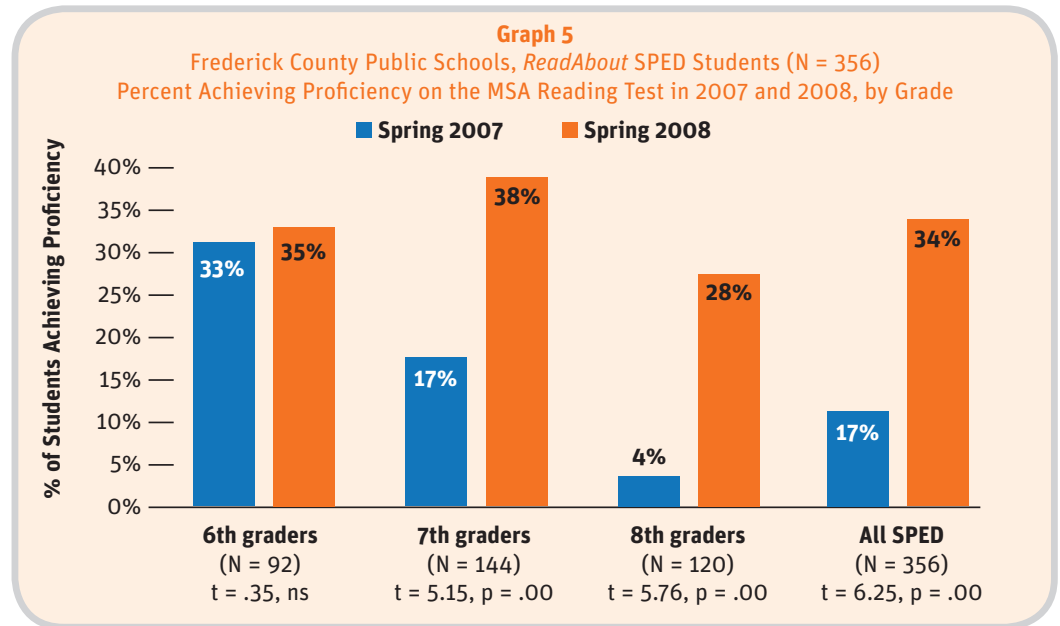
Graph 4 shows the percentage of SPED students falling into each of the three MSA Performance Levels in 2007 and 2008.



In 2007, prior to *ReadAbout*, 83% of these targeted SPED students fell in the Basic range. However, by Spring 2008, only 66% did so, a significant reduction of 17%. Conversely, the percentage of students falling into the Proficient category doubled, from 16% to 32%.

# Analyses and Results (cont'd.)

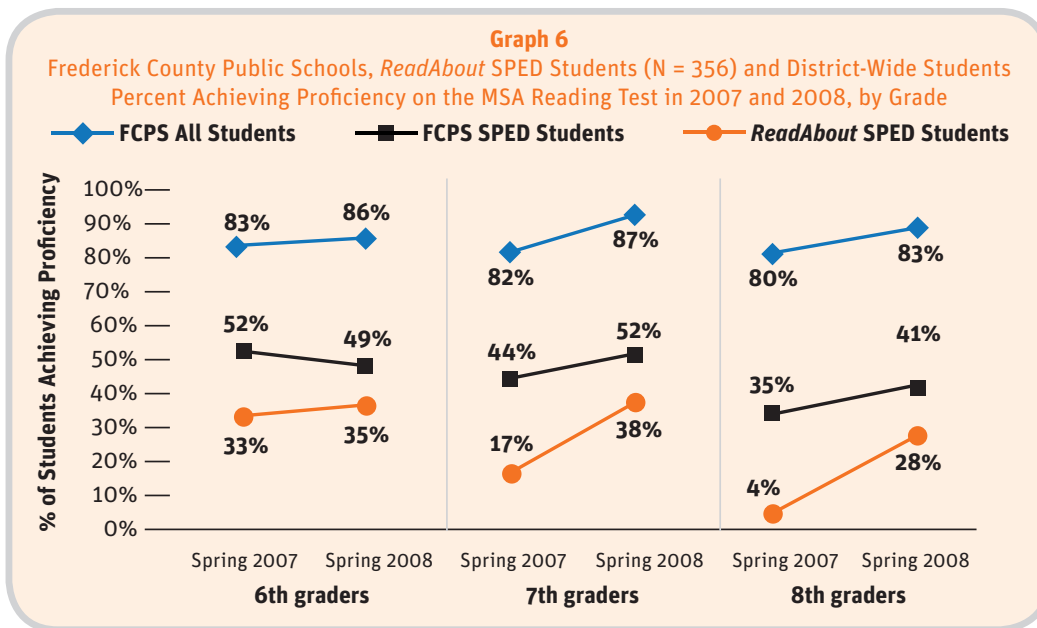
Graph 5 shows the percentage of SPED students achieving proficiency by grade level. Spring 2007 data reflects students' MSA Reading Test scores prior to the implementation of *ReadAbout*, while Spring 2008 data reflects students' MSA Reading Test scores afterwards.



Note: Dependent t-tests revealed that only the gains of students in the seventh and eighth grades were statistically significant ( $p \leq .05$ ).

The percentage of SPED students achieving proficiency on the MSA Reading Test doubled from 2007 to 2008—from 17% proficient to 34% proficient. Additionally, SPED students in each grade level made gains in the percentage of students achieving proficiency. Most notably, the percentage of eighth-grade SPED students achieving proficiency quadrupled in 2008—from 4% proficient to 28% proficient.

Next, the gains of *ReadAbout* SPED students on the MSA Reading Test were compared to the gains of all SPED students in the district. Graph 6 shows the gains made by SPED students in the sixth, seventh, and eighth grades at both the district level and the *ReadAbout* sample level. The performance of all students in Frederick County is also displayed for comparison.



Graph 6 illustrates two findings: 1) The sample of SPED students targeted for the *ReadAbout* intervention was performing substantially lower on the MSA Reading Test than their Special Education peers in 2007; and 2) the SPED students receiving *ReadAbout* showed greater improvement in their MSA Reading performance than did SPED students in the district as a whole. This can be seen by looking at the difference in slope of the two SPED lines (black vs. orange).

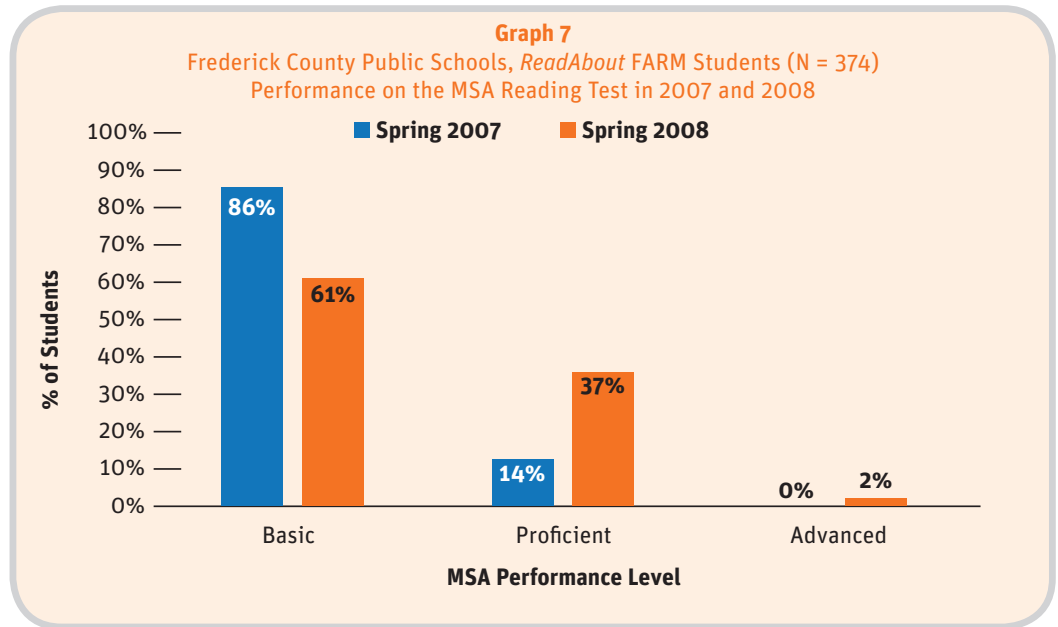
Among sixth graders, the percentage of *ReadAbout* SPED students reaching proficiency increased by 2 percentage points from 2007 to 2008; district-wide, the percentage of proficient SPED sixth graders declined by 3 percentage points. The seventh-grade *ReadAbout* SPED students saw an increase of 21 points in the percentage of proficient students in 2008 compared to 2007; district-wide, the percentage of SPED seventh graders reaching proficiency only increased by 8 percentage points. Perhaps most notably, in 2008, eighth-grade *ReadAbout* SPED students achieving proficiency on the MSA Reading Test increased by 24 percentage points; district-wide, there was only a 6 percentage-point increase in eighth-grade SPED students achieving proficiency.

This data suggests that the *ReadAbout* SPED students, in making these large gains, have reduced some of that gap that existed between themselves and other SPED students in the district. However, it should be noted that the overall performance of the SPED students, whether they were receiving *ReadAbout* or not, is still significantly below their peers who were not classified as requiring special education services.

# Analyses and Results (cont'd.)

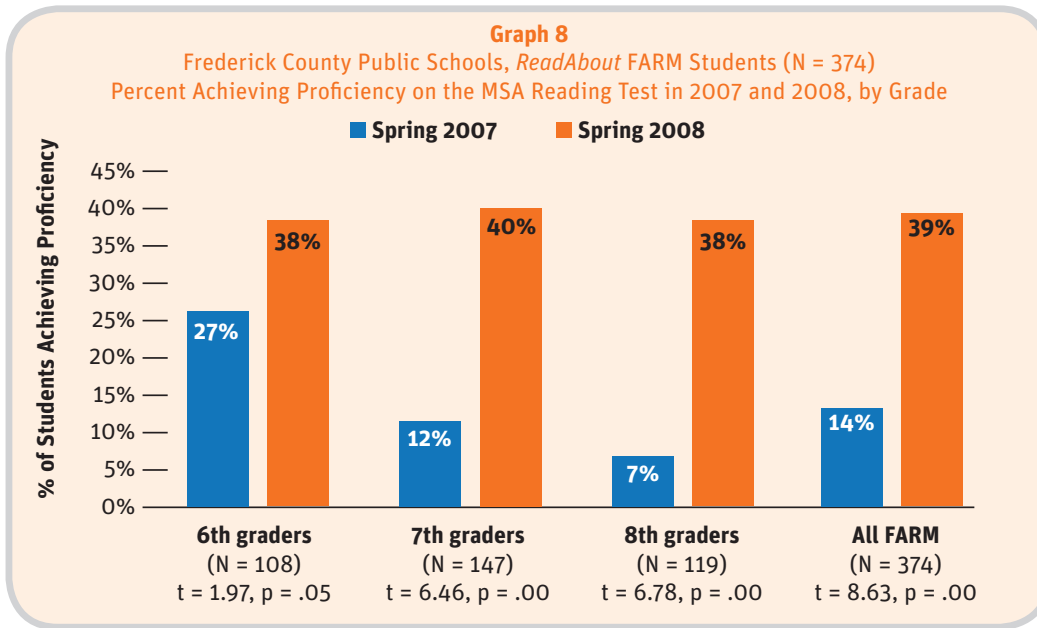
## FREE AND REDUCED-PRICE MEALS (FARM) STUDENTS

This sample contained 374 *ReadAbout* students who were classified as participating in the federal Free and Reduced-Price Meals (FARM) program. Graph 7 shows the percentage of *ReadAbout* FARM students falling into each of the three MSA Performance Levels in 2007 and 2008.



As shown in Graph 7, in 2007, prior to *ReadAbout*, 86% of these targeted FARM students fell in the Basic range. However, by Spring 2008, only 61% did so, a significant reduction of 25 percentage points. Conversely, the percentage of students falling into the Proficient category more than doubled, from 14% to 37%.

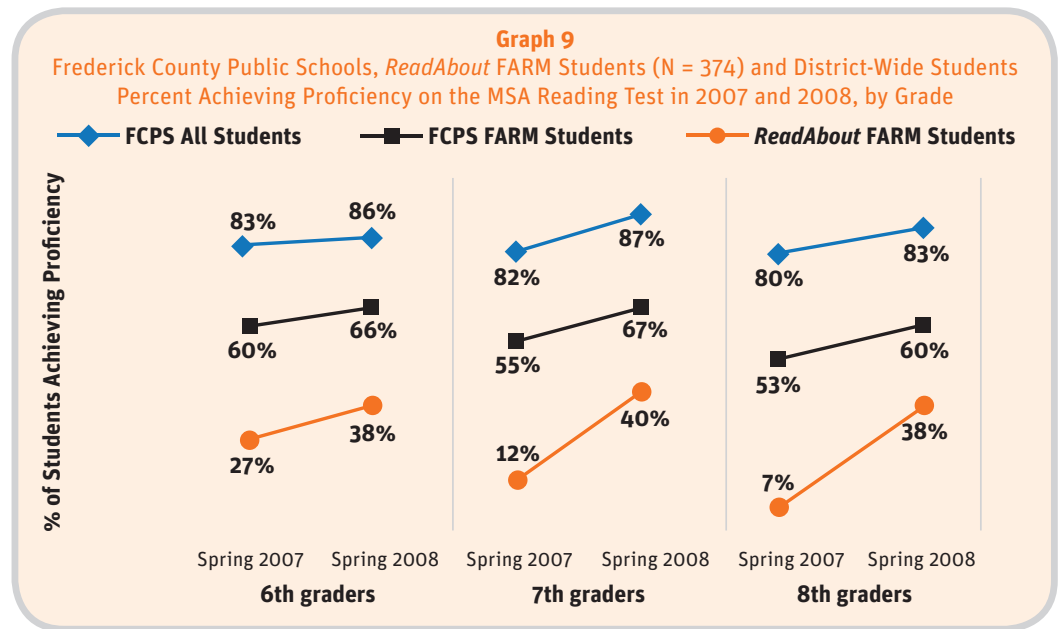
Graph 8 shows the percentage of FARM students achieving proficiency by grade level. Spring 2007 data reflects students' MSA Reading Test scores prior to the implementation of *ReadAbout*, while Spring 2008 data reflects students' MSA Reading Test scores afterwards.



Dependent t-tests revealed that the percentage of *ReadAbout* FARM students achieving proficiency more than doubled from 2007 to 2008, a significant gain. Additionally, FARM students in each grade level made gains in the number of students achieving proficiency. The eighth-grade FARM students made a particularly notable gain, with an increase from only 7% proficient in 2007 to 38% proficient in 2008.

# Analyses and Results (cont'd.)

In order to determine whether the 2007–2008 gains in MSA Reading proficiency levels were unique to *ReadAbout* FARM students, their gains were compared to FARM students in the district as a whole. Graph 9 illustrates the gains made by FARM students in each grade level at both the district level and the *ReadAbout* sample level. The performance of all students in Frederick County is also displayed for comparison.

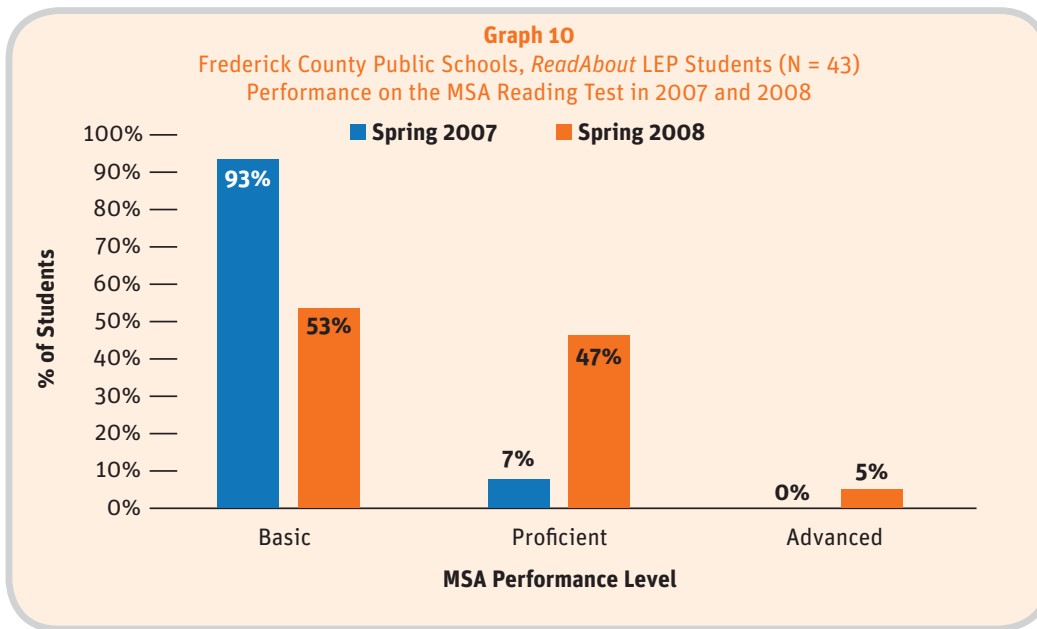


Graph 9 reveals two major findings: 1) the sample of FARM students targeted for the *ReadAbout* intervention was performing substantially lower on the MSA Reading Test than their FARM peers in 2007; and 2) a greater percentage of *ReadAbout* FARM students improved their performance on the MSA Reading Test compared to FARM students in the district as a whole. This can be seen by looking at the difference in slope of the two FARM lines (black vs. orange). For example, the percentage-point gain of *ReadAbout* eighth-grade FARM students was four times greater than that of eighth-grade FARM students district-wide. In 2008, there was a gain of 31 percentage points in *ReadAbout* FARM eighth graders who achieved proficiency on the MSA Reading Test compared to 2007. District-wide, there was an increase of only 7 percentage points in FARM eighth graders reaching proficiency on the MSA Reading Test from 2007 to 2008.

This data suggests that the *ReadAbout* FARM students have reduced some of the gap that existed between themselves and the other FARM students in the district. However, as with the Special Education students, it should be noted that the overall performance of FARM students, whether they were receiving *ReadAbout* or not, is still significantly below their non-FARM peers.

## LIMITED-ENGLISH PROFICIENT STUDENTS

This sample contained a very small group of 43 students who were designated as having Limited-English Proficiency (LEP). Graph 10 shows the percentage of LEP students falling into each of the three MSA Performance Levels in 2007 and 2008.

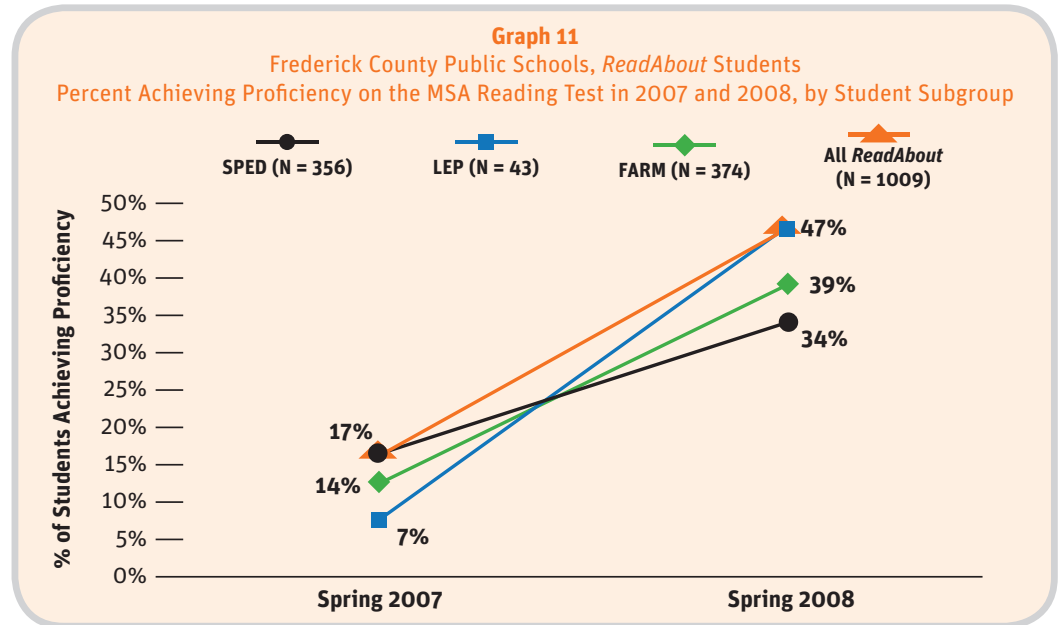


Note: Dependent t-tests revealed that these results were statistically significant ( $t(42) = 5.24, p = .00$ ). However, due to the small size of the LEP sample ( $N = 43$ ), further analyses of the results broken down by grade level were not conducted.

As this graph demonstrates, in 2007, prior to *ReadAbout*, 93% of these targeted LEP students fell in the Basic range. However, by Spring 2008, only 53% did so, a significant reduction of 40 percentage points. Conversely, the percentage of students falling into the Proficient or Advanced categories saw a significant increase, from 7% to 47%.

# Analyses and Results (cont'd.)

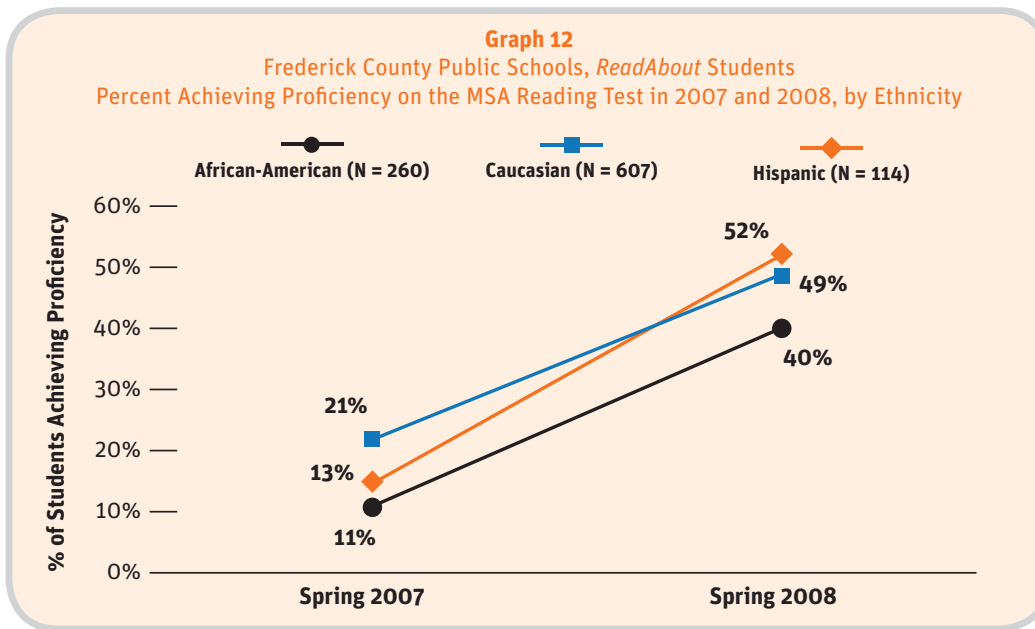
Research indicates that there are often large, persistent learning gaps between special education and general education students, between low-income and higher-income students, and between limited-English proficient students and non-English learners. Given these trends, it was important to compare the gains of *ReadAbout* SPED, FARM, and LEP students to the full *ReadAbout* sample. Graph 11 shows the gains in the percentage of students achieving MSA Reading Test proficiency attained by the full *ReadAbout* sample, as well as by the three student subgroups.



All student subgroups made substantial gains in terms of the percentage of students achieving proficiency on the MSA Reading Test from 2007 to 2008. The greatest gains were made by the LEP sample, with almost half (47%) of these students achieving proficiency on the MSA Reading Test after the *ReadAbout* program, as compared with only 7% prior to *ReadAbout*.

## ETHNIC GROUPS

Finally, the data was disaggregated by ethnicity. African-American, Caucasian, and Hispanic students' performance on the MSA Reading Test for 2007 and 2008 was examined (note that no other ethnic categories had sufficient numbers of students to allow for further analysis). Graph 12 shows the percentage of students in each of the three ethnic groups that achieved proficiency on the MSA Reading Test in 2007 and 2008.



Note: Dependent t-tests revealed that all of the gains in students achieving proficiency were statistically significant. African-American Gain:  $t(259) = 8.65$ ,  $p = .00$ . Caucasian Gain:  $t(606) = 11.88$ ,  $p = .00$ . Hispanic Gain:  $t(113) = 8.13$ ,  $p = .00$ .

As Graph 12 indicates, all three ethnic groups made significant gains in the percentage of students achieving proficiency on the MSA Reading Test from 2007 to 2008. Examination of the slopes of the lines shows that, despite starting out significantly lower than the Caucasian students, the African-American (black line) and Caucasian (blue line) students made nearly identical gains in the percentage of proficient students from 2007 to 2008. Interestingly, the Hispanic students (orange line) made the greatest gain in the number of students achieving proficiency; Hispanic students moved from only 13% proficient in 2007 to 52% proficient in 2008, at which point they not only “caught up to” but “outperformed” the Caucasian students.

# Analyses and Results (cont'd.)

## Research Question #5:

### How did the amount of time students spent on the *ReadAbout* software relate to their growth in reading comprehension ability, as measured by the MSA Reading Test?

The fifth research question addressed whether there was a relationship between students' use of the *ReadAbout* program software and gains in reading ability, as measured by the MSA Reading Test. First, *ReadAbout* software data from the 1,009 *ReadAbout* participants was examined. Table 2 provides descriptive data on program use.

Grade	Number of Students	Initial <i>ReadAbout</i> Text Level (L)*	Final <i>ReadAbout</i> Text Level (L)*	Text Level Gain (L)*	Number of Sessions	Total Time (hours)	Avg. Session Time (minutes)
Sixth	302	455	509	54	58	17	18
Seventh	390	498	569	71	61	18	18
Eighth	317	585	668	84	60	18	18
All Grades	1009	512	582	70	60	18	18

\*Note: In *ReadAbout*, Text Level Lexile refers to the difficulty of the reading passages in the software.

Table 2 shows that there was remarkable consistency in the average amount of *ReadAbout* exposure across the three grade levels, as measured by time on the software. Students overall averaged 18 hours on the software for the 2007-2008 school year, with an average session time of 18 minutes.

Next, the relationship between the time spent on *ReadAbout* and MSA Reading Performance was investigated at the student level. Students were divided into three groups based on the developer's software use recommendation of one hour per week, for a minimum of six months (at least 24 total hours). The groups were as follows:

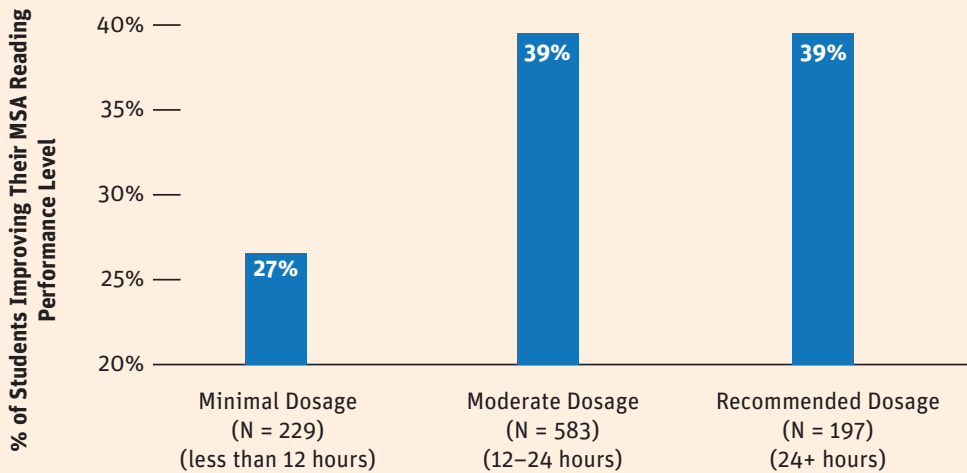
- **Minimal Dosage:** Less than 12 total hours on *ReadAbout* software
- **Moderate Dosage:** Between 12 and 24 total hours on *ReadAbout* software
- **Recommended Dosage:** 24 or more total hours on *ReadAbout* software

MSA Reading Performance was evaluated in terms of student improvement in Performance Level. That is, if a student performing at the Basic Level in 2007 improved to the Proficient or Advanced Level in 2008, the student is considered to have improvement in Performance Level. Likewise, if a student performing at the Proficient Level in 2007 improved to the Advanced Level in 2008, the student is also considered to have improvement in Performance Level.

As Graph 13 notes, students spending a greater number of hours on the *ReadAbout* software were more likely to exhibit improvement on the MSA Reading Test. Note that, whereas only 27% of the Minimal Dosage group showed an improvement in their MSA Reading Performance Level, 39% of both the Moderate and Recommended Dosage groups did so. An ANOVA (with *ReadAbout* Dosage group as the independent variable and Percentage of Students Improving their MSA Reading Level as the dependent variable) was significant ( $F(2,1006) = 5.66$ ,  $p = .00$ ). Post-hoc analyses showed that the Minimal Dosage group had significantly fewer students improving their MSA Reading Performance Level than either the Moderate or Recommended Dosage groups.

**Graph 13**

Frederick County Public Schools, *ReadAbout* Students (N = 1009): Percentage of Students Who Improved their MSA Reading Test Performance Level from 2007 to 2008, by *ReadAbout* Dosage



# Summary of Results

The results of the year-long participation by FCPS in the *ReadAbout* program revealed a number of important findings, summarized below.

## General MSA Reading Outcomes

- Overall, this sample of middle-school students targeted for *ReadAbout* demonstrated a significant gain in the percentage of students achieving proficiency on the MSA Reading Test from 2007 to 2008. The percentage of students achieving proficiency increased from 17% to 47%.
- All grade levels—sixth, seventh, and eighth—demonstrated significant increases in the percentage of students achieving MSA Reading proficiency. These gains were substantially larger than those demonstrated by FCPS students as a whole, and helped to shrink the considerable gap that existed between district-wide students and this sample of struggling readers.

## Findings Related to Specific Student Subgroups

- Student groups receiving Special Education (SPED) services, participating in the federal Free and Reduced-Price Meals program (FARM), or classified as Limited-English Proficient (LEP) each evidenced a significant gain in the percentage of students achieving proficiency from 2007 to 2008.
- The SPED, FARM, and LEP students receiving *ReadAbout* showed greater improvement in their MSA Reading performance than did SPED, FARM, and LEP students in the district as a whole. This data suggests that the *ReadAbout* SPED, FARM, and LEP students reduced some of the gap that existed between themselves and the non-participating SPED, FARM, and LEP students in the district.
- Overall, the LEP students made the largest gains of these student subgroups, moving from only 7% proficient in 2007 to 47% proficient in 2008.
- Among ethnic groups, Hispanic students showed the greatest increase in the number of students achieving proficiency, moving from only 13% proficient in 2007 to 52% proficient in 2008.

## Findings related to the Level of *ReadAbout* Implementation

- Students spent an average of 18 hours on the *ReadAbout* software. They averaged a total of 60 sessions, at approximately 18 minutes per session.
- There was a statistically significant relationship between the total time spent on the *ReadAbout* software and improvements on the MSA Reading Test. Thirty-nine percent of students in each of the two highest time groups—receiving either the Moderate (12–24 hours) or Recommended (24+ hours) Dosage on the software—improved one or more MSA Performance Levels from 2007 to 2008; this is compared with only 27% of students receiving the Minimal Dosage (less than 12 hours).

# Conclusions

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The two overarching questions addressed in this evaluation were “Did middle-school students participating in the *ReadAbout* program improve their reading skills?” and “Did the improvement demonstrated by students participating in the *ReadAbout* program lessen the achievement gaps between the *ReadAbout* students and their peers?” Based on the MSA Reading data from this study, the answer to both questions is “Yes.”

Findings indicated that this sample of struggling middle-school students using *ReadAbout* demonstrated a significant gain in the percentage of students who achieved proficiency on the MSA Reading Test from 2007 to 2008. The percentage of students achieving proficiency increased from 17% to 47%, moving from just 1 proficient student in every 6 to almost 1 proficient student out of every 2. Moreover, when compared to the district as a whole, the data indicated that the *ReadAbout* sample made substantially larger gains in the number of students at the proficient level from 2007 to 2008 on the MSA Reading Test.

These positive trends continued when the results were analyzed by subgroup. *ReadAbout* students receiving Free and Reduced-Price Meals (FARM) and Special Education (SPED) services showed great improvement in their 2008 MSA performance, moving from 14% to 39% proficient and 17% to 34% proficient, respectively. And, most notably, the Limited-English Proficient students made the largest gain of any of the student subgroups, moving from only 7% achieving proficiency in 2007 to 47% in 2008.

In addition, ethnic minority groups (African-American and Hispanic) also showed significant gains. Although the African-American *ReadAbout* students had significantly fewer students at the proficient level than the Caucasian *ReadAbout* students, the African-American and Caucasian *ReadAbout* students made nearly identical gains in the percentage of students achieving proficiency from 2007 to 2008. Moreover, the Hispanic *ReadAbout* students made the greatest gain in the number of students achieving proficiency; Hispanic *ReadAbout* students moved from only 13% achieving proficiency in 2007 to 52% in 2008, at which point they not only “caught up to” but “outperformed” the Caucasian *ReadAbout* students.

While this was not a randomized controlled study, this preliminary research suggests that *ReadAbout* is having a positive impact. Longitudinal research with a control group will deepen our understanding of the effect of *ReadAbout* on reading achievement.

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