Sycamore Readers: A Successful Model to Improve Student Learning

Debra Knaebel
Kathryn Bauserman
Diana Quatroche
Indiana State University
United States

Abstract
Operating in an average sized Midwestern city, the Sycamore Readers tutoring program has been a successful model for more than a decade. The community has high poverty levels and high-stakes test scores that fall below the state average. Struggling readers in local elementary schools are the focus of this after-school program. Services are provided free of charge by trained local college students. Results remain consistently positive: approximately two-thirds of the student participants gain in reading level, and they also gain in affective traits related to reading. In particular, this study examined the impact of the program on the comprehension skills of the students by comparing pretest and posttest scores on specific question types. Again, results were positive, especially for higher level comprehension.

With the Race to the Top legislation of 2009 came the push for the American school system to “elevate the quality of K-12 schooling and boost high school graduation rates” (Duncan, 2009, para. 4). However, even with the new focus on the elevation of the quality of reading instruction of students, it has been found “that proficient readers are improving while struggling readers are continuing to lose ground” (Mraz & Rasinski, 2007, p. 784). The concept that students who are skillful readers are becoming better and students who are weak in reading do not improve was called “The Matthew Effect” by the psychologist Keith Stanovich (Wright & Wright, 2008, p. 1). According to Guthrie, Wigfield, Humenick, Perencevich, Taboada, and Barboza (2006), “motivation for reading is an important contributor to students’ reading achievement and school success” (p. 232). What can be done to keep struggling readers from “losing ground” and being failed by the educational system? How can students be motivated for success in reading? What strategies will reach struggling readers early or before they are left behind? The program referred to in this article, complements the existing public educational opportunities of the community and provides struggling elementary students with the opportunity to improve reading ability and reverse the Matthew Effect.

Cunningham (2005) related the story about five poor readers who thought that reading was “dumb and silly” (p. 89). Cunningham read the classic fiction titled Charlotte’s Web out loud to her classroom, but provided no informational books about spiders. She wondered “if their ‘reading-is-dumb-and-silly’ attitude was engendered by the fanciful text I so enjoyed reading to them?” (p. 89). The choice of reading material (subject matter) does matter and has influenced students’ motivation and interest in reading (Edmunds & Bauserman, 2010). Reading topics that captured the student’s attention and imagination motivated the student to read more, and the more the student read, the better reader the student became. This concept is especially true of struggling readers. The reading tutor must first reach, inspire, and motivate the student in order to guide the student on his or her journey to becoming a successful reader (Cunningham, 2005). The purpose of this article is to describe what we did in one Midwestern school district to connect with struggling readers in an effort to provide good instruction for all participating students and to improve their reading abilities, especially in the area of comprehension.

Literature Review
Increasing student learning with one-on-one tutoring can be a powerful and motivating intervention for struggling readers. Furthermore, extremely motivated readers are self-regulating and create their own opportunities for reading which increases their reading abilities (Gambrell, Palmer, Codling, & Mazzoni, 1996). Deeney (2008) believes that “supplemental tutorial service can be a critical intervention for a struggling reader” (p. 218).
Even though the exact element of one-on-one tutoring is not clear, “research has consistently supported the effectiveness of adult-instructed, one-to-one tutoring programs” (Burns et al., 2007, p. 28). Furthermore, classroom teachers have identified adult led tutoring as “the ideal practice” (Elbaum, Vaughn, Hughes, & Moody, 2000, p. 605).

**Motivation to Read**

Motivation plays a significant role in the development of reading. Gambrell (2011) defines reading motivation as the probability of reading engagement or deciding to read. Gambrell gave seven rules for motivating students. These are 1) make the reading relevant to the student’s life, 2) give students a large assortment of reading materials, 3) give students plenty of time to engage in reading activities, 4) allow students to make choices about how they complete literacy tasks, 5) allow students to interact with others regarding what they have read, 6) provide opportunities for students to be successful with difficult text, and 7) provide incentives that show reading’s value and importance.

**Organizing Instruction**

According to Mokhtari, Hutchison, and Edwards (2010), many struggling readers will learn to read successfully when instruction is well organized and geared toward the student’s specific needs. First, they suggest using multiple assessment tools to gather data on the student’s reading strengths and weaknesses. Second, they suggest having an instructional framework for managing and organizing the lesson. Third, they suggest monitoring student’s responses to instruction and modifying the next lesson based upon the response.

**After School Tutoring Programs**

After school tutoring programs offer a wide variety of benefits to many different people in the community, such as struggling readers, schools, parents, college and universities, and local employers of the work force. Tutoring programs not only help the struggling students who are in the tutoring program, but they can help the local schools by “providing additional support for critical content areas” (Saddler & Staulters, 2008, p. 207). Parents benefit from after school tutoring programs by knowing that their children are receiving instruction from a caring, capable, dedicated tutor. Local colleges and universities can benefit from after school tutoring programs by providing an avenue for active participation in the community by faculty and students. Employers appreciate an educated work force from which to hire future employees. However, the biggest benefit of tutoring programs belongs “to the tutors and their students” (p. 207).

One after-school tutoring program that served fourth grade students in an inner-city school is an example of an effective after school tutoring program. The researchers, Saddler and Staulters (2008), used university students as tutors in the after school program. These tutors were trained in several components which included an interest inventory, the Analytical Reading Inventory (ARI), and how to monitor and record student progress. Saddler and Staulters found that many of the students in the one-year program increased their reading abilities approximately one grade level as measured by the ARI. Furthermore, the tutors themselves improved their teaching abilities. One of the tutors in this after school program is reported as saying, “Seeing how my reading partner has grown and benefited from working with me has given me confidence in my abilities to actually make a difference” (p. 208). A two-year research study was completed that asked two important questions regarding college students tutoring struggling readers (Allor & McCathren, 2004). These questions were first, “could college students with only minimal training and assistance fully implement a highly structured tutoring program designed to increase the early reading development of at-risk first graders?” and secondly, “would implementation of this highly structured tutoring program effectively increase the early reading development of at-risk first graders?” (p. 117). Their results showed that college students did execute the tutoring program “with reasonable degrees of fidelity, even though they received only a very minimal amount of training” (p. 124). Furthermore, the results of this study revealed that the very structured tutoring program was effective in raising the first graders early reading development. The researchers pretested and post-tested the first graders using the Woodcock Johnson Revised test, the Test of Word Reading Efficiency, and Dynamic Indicators of Basic Early Literacy Skills (DIBELS).

Finally, Invernizzi, Juel, and Rosemary (1997) reported on their three-year volunteer tutoring program for first graders in Virginia. This particular tutoring program was completely volunteer run. The tutors were trained three times a year during 2-hour long preparation sessions. The tutors were assigned one child to tutor, and each one worked with their child twice a week for 45 minutes.
This tutoring happened during the school day and was scheduled to coincide with seatwork time, music, art, library, or other specials. Each child was pre- and post-tested to measure growth and provide feedback for program changes for the next year. For the three years reported in this study, there were statistically significant gains “on measures of alphabet, phonemic awareness, and word recognition” (p. 308). Furthermore, some tutors were interested in working with their child again next year, and since the researchers found that some children needed another year of tutoring, second graders were included in the program the following year.

Methodology

The Sycamore Readers Program

Although the Sycamore Readers program was originally designed to respond to President Clinton's America Reads Challenge, the program is working toward helping to meet President Obama and Secretary Duncan’s (U.S. Department of Education) new educational reform Race to the Top. The original challenge, that all students read skillfully and independently by the end of the fourth grade, was issued in response to statistics indicating that many of our nation's students cannot read to learn. For the past decade, we have been implementing this successful reading tutoring program that motivates struggling readers by improving their reading abilities. Our department, part of a mid-sized Midwestern university, has sponsored this tutoring program that recruits both undergraduate work-study students and volunteers (minimal) to tutor struggling readers in kindergarten through 5th grade (K-5). The tutoring sessions take place at the main branch of the local public library during the school year. Each tutoring session is 40 minutes long and occurs twice a week during the after school hours of 3:00 p.m. – 7:00 p.m., Monday through Thursday. The program is FREE for elementary students who qualify (students reading at or below grade level) and administered on a first come, first served basis. The purpose of the program is to improve the reading abilities of struggling elementary students and to give low-achieving readers much needed practice and feedback.

In partnership with the Sycamore Readers, the local school systems distribute online flyers to the classroom teachers advertising the free tutoring available through Sycamore Readers. These classroom teachers then use the flyers to recommend to parents that they seek the free tutoring program for their children who are struggling with reading. The work-study and volunteer tutors were trained in the Sycamore Readers reading model. This reading model is a way of tutoring students with a focus on using real literature at the students’ instructional level, vocabulary from the literature, comprehension questions over the literature (prediction questions and higher order thinking questions), and writing activities related to the literature. The reading model is based upon six basic principles. These principles are 1) that the student’s reading ability is the single most important factor influencing success, 2) “early intervention in reading provides a lasting impact on student achievement”, 3) one-on-one sessions are paramount to meeting individual student needs, 4) “session intensity and duration directly correlates” with improvement in student reading accomplishment, 5) that “ongoing training supports the development and success of individuals serving as reading coaches”, and 6) “student screening with a valid assessment instrument establishes need, baseline scores, and a basis for evaluating improvement” (Indiana University-Purdue University Indianapolis, 2005, p. 1). Furthermore, the department of education of our Midwestern state approves this tutoring model as academically healthy and structurally easy enough to be put into operation at a wide assortment of locations.

The Sycamore Readers Lesson

All tutors were trained in the Sycamore Readers tutoring model and how to write tutoring lesson plans based on the model. Each tutor chose the vocabulary words, wrote the questions, and created the writing prompt based on the elementary student being tutored. The components of the lesson were designed with before, during, and after reading activities. Before the student read a story, there was an anticipatory set and sight words. During reading included Beautiful Language Words, prediction questions, and the fact and vocabulary questions from the T-FIVE questioning strategy. T-FIVE stands for Topic, Fact, Inference, Vocabulary, and Evaluation questions. Finally, the after reading activities consisted of the topic, inference, and evaluation questions from the T-FIVE questioning strategy and a writing activity related to the story. The T-FIVE questioning strategy was the primary intervention for reading comprehension for elementary students enrolled in the program. Picture books and chapter books were used in this model to promote interest and student motivation. Bogner, Raphael, and Pressley (2002) state that “students in whole language classrooms were more motivated to participate in literate activities than were students in basal-driven classrooms” (p. 136).
One important item to remember when using a chapter book is to treat each chapter in the chapter book as a separate lesson. Each lesson plan (whether for a picture book, an informational book, or a chapter in a chapter book) has a before, during, and after reading component. Tutors chose books based upon student interest and reading ability.

**Before Reading**

The before reading section of a lesson plan sets the stage for reading. According to Gunning (2008), “in preparing to read a text, strategic readers survey the text, activate appropriate prior knowledge, predict what the text will be about, set goals, and decide how to read the material” (p. 360). While students are reading, they construct meaning from the text. Students differentiate between important and unimportant details, organize information from the literature, summarize sections, and generate questions. Strategic readers use the structure of the literature as an aid to comprehension. Furthermore, these students “integrate information from the text with prior knowledge, make inferences, check predictions, seek clarification, and perhaps, create images of scenes and events portrayed by the text” (p. 364). Finally, “strategic readers reflect on what they have read, continue to integrate new information with old information, may evaluate the new information or use it in some way, and may seek additional information on the topic” (p. 366). The anticipatory set was used to create excitement, motivation, and interest in the literature and to help build background knowledge. There are four main parts to the anticipatory set. First, the opening activity must use one of the five senses. Second, there should be some mystery, imagination, or drama involved. Third, the tutors must use a prop of their own choice with the individual student in mind. The prop used must relate to the literature to be read. The last part of the anticipatory set includes a foreshadowing sentence. Blewitt, Rump, Shealy, and Cook (2009) have declared that the extent of a student’s sight word vocabulary seems to contribute significantly to success in school. Sight words are typically three to five words used to increase the vocabulary the student knows by sight. They are selected due to their high frequency in the story. Our tutors generally used dry erase boards with these sight words written down the left side. The tutor and child echo read the words, which helps with fluency and phonics, and then they found the word in the literature. The student pre-read that sentence with the sight word. Pre-reading the word in the book not only increases the student’s awareness of the word in context, but allows the student to read more fluently. After all the words have been found and read in the story, the tutor and student duet read the words in the list. Finally, the student wrote the sight words on the dry erase board. When needed, the tutor discusses prefixes, roots, or suffixes of the sight word with the student thereby increasing his or her structural analysis abilities.

**During Reading**

During reading, to help increase student motivation, three prediction questions were used to keep the student actively involved in the reading of the literature and to provide an opportunity for the student to use his or her imagination and background knowledge. Prediction questions encourage students to think at a higher level, therefore, they cannot be a yes or no question. Our tutors used Post-It™ notes for the prediction questions, by writing the question on the note and placing it in the story where the tutor planned on asking that question. According to Gambrell (1996), elementary students are quoted as saying “my teacher gets me interested in reading. She lets me read to her! She gave me a hug because I did so well…and she said, ‘Good job!’” (p. 14). All of our tutors were encouraged to let their students know when they did a good job and to praise them accordingly.

Beautiful Language Words were also used during reading. These words are vocabulary words used to increase the student’s oral and listening vocabulary through the introduction of new terminology in the book or suggested by the book. In addition, it is widely known that skilled readers use context clues, phonics, and structural analysis of words to determine the meanings of unknown words (Irvin, 2001). Furthermore, Palumbo and Sanacore (2009) state that “vocabulary knowledge not only produces additional word-meaning learning, but also provides teachers with the opportunity to encourage word recognition skills, which many struggling readings have not yet acquired” (p. 267). T-FIVE questions are very similar to Bloom’s Taxonomy of higher order questioning. See Figure 1 for a description and comparison to Bloom’s levels. It must be understood that the questions generated for the T-FIVE strategy cannot be questions that the student can answer with a yes or no. Bell (2003) found that “schools that focus on the basics for at-risk students perpetuate a never-ending class of bottom-quartile students” because they do not ask higher order thinking questions (p. 33). One of his suggestions for promoting higher order thinking skills was to create “open-ended, probing questions about the material” (p. 33). T-FIVE questions provide the structure for tutors to ask those open-ended and probing questions.
In this model, T stands for Topic; F stands for Fact; I stands for Inference; V stands for Vocabulary (most often requiring context clues); and E stands for Evaluation.

<table>
<thead>
<tr>
<th>T-FIVE</th>
<th>Bloom’s Taxonomy</th>
<th>Example Questions: based on “The Three Little Pigs”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic</td>
<td>Synthesis</td>
<td>In your own words, what happened in this story?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What was your favorite part of this story? (evaluation?)</td>
</tr>
<tr>
<td>Fact</td>
<td>Knowledge</td>
<td>From what did the third little pig build his house?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Who is the big bad character?</td>
</tr>
<tr>
<td>Inference</td>
<td>Analysis</td>
<td>What would have happened if the first two pigs would have built their houses using bricks?</td>
</tr>
<tr>
<td>Vocabulary (context clues)</td>
<td>Comprehension</td>
<td>What are “bricks?”</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Evaluation</td>
<td>What would you have built your house from if you had been one of the pigs?</td>
</tr>
</tbody>
</table>

Figure 1: This Figure Compares Bloom’s Taxonomy and T-FIVE Questioning levels. Example Questions are also Provided for the Common Story “The Three Little Pigs.”

All of our higher order open-ended T-FIVE questions (Topic, Inference, and Evaluation) can be asked after reading, but we asked the Fact and Vocabulary questions during reading because they connected directly to the text, and we wanted to lessen student perception of being drilled or tested after reading the story. Some example fact and vocabulary questions that could be used for Alexander and the Terrible, Horrible, No Good, Very Bad Day (Voirst, 1972) are “Where did Alexander want to go?” [Fact] and “What is a cavity?” [Vocabulary].

After Reading

The T-FIVE questions asked after reading were Topic, Inference, and Evaluation. Examples of Topic, Inference, and Evaluation questions for Alexander and the Terrible, Horrible, No Good, Very Bad Day (Voirst, 1972) are “What was this story mostly about?” [Topic], “How would Alexander feel if the dentist visit went well?” [Inference], and “Besides Australia, where would be a good place to go to escape a terrible day and why?” [Evaluation]. Remember, inference relates the text to background knowledge. Evaluation goes beyond the text and identifies what the reader would do. Asking the remaining T-FIVE questions after reading helped the students to think about and reflect on what they have read. Finally, the follow-up writing activity concluded the lesson. The purpose of the writing activity was to connect writing and reading in a meaningful way and to use the new information gained from reading. The tutors were instructed not to worry about correct spelling during the writing portion as creativity and linking the writing to the content read, not mechanics, was the goal of writing. According to Gunning (2008), “writing is a way of learning as well as a method of communication” (p. 372). When tutors used more creative ways to get students to write, their students were more receptive to writing for a closing activity.

Closing Activities

While the tutor and student were collecting their things to leave, each tutor was to ask the student to rank the story that they read that day. Was their interest high, medium, or low? This information was used by the tutor to help plan the next lesson and keep the student interested and engaged. During the oral reading portion of the lesson, each tutor also recorded up to five miscalls from the text read. Miscalls were then reviewed in future lessons.

Research Design

This study was quasi-experimental quantitative research. A pre test was administered to students before entrance into the tutoring program in September. A posttest and post survey were administered to the students on the last day of tutoring in April. Results were analyzed to determine average growth during the tutoring year. Participants and Setting Our program took place in a local public library in the Midwestern United States. Most students attended elementary schools in the local school district. The ethnicity of the student population in the school district was approximately 86% white and 14% other, mostly African-American and mixed ethnicities. Thirty-nine percent of the student population qualified for and received free lunch, and 10% reduced lunch. Therefore, 49% received some assistance. The students in our after school tutoring program were predominately male (mean = 53.3) mostly from K-5. Of the known grade levels, 30% of students were reading at or slightly above grade level and 47% were reading below grade level based upon John’s (2005) Basic Reading Inventory (BRI) results.
Due to attrition, some elementary students did not complete the program. The Sycamore Readers program was composed on average of approximately 25 undergraduate college student tutors per year who worked with anywhere between one and four elementary students each in one-on-one sessions. There were more female than male tutors. The majors of these tutors were varied, however, the vast majority of the majors were elementary education majors. Most of the tutors were freshman and sophomores and received Federal Work Study funding to pay them for their tutoring services. Tutors with at least one semester of experience as a tutor can work as site managers and administrative assistants.

**Tutoring Procedures**

Elementary students in the Sycamore Readers program received one-on-one tutoring for approximately seven months (October through April). Tutoring occurred in 40-minute sessions twice a week. A certified teacher coordinated the program and completed the tutor training. Federal Work Study tutors received three 2-hour training sessions prior to the start of tutoring. Initial training included BRI assessment procedures and evaluation, the basic format of the tutoring sessions, lesson plan training, and orientation to public library procedures and materials. Follow-up training at midyear includes leadership training and lesson plan training to add SPARKLE to lessons with games and other fun learning activities.

**Assessment Procedures**

This program has taken place for more than a decade. Each academic year data was collected in two phases: pre-test and post-test. The first phase involved a pre-test using Johns (2005) BRI section A. The BRI is “an individually administered informal reading test” (Johns, 2005, p. 4). The BRI has excellent reliability with a Pearson's r coefficient of 0.72 for determining instructional level and 0.73 for determining frustration level. Most of the undergraduate tutors who administered the pre-BRI were pre-service teachers. In a study completed in 2004, Johns and L’Allier affirmed that pre-service teachers are highly reliable on word lists (92%) and miscues (90%). Johns (2005) found that they were also reliable on comprehension questions (81%). Additionally, Nilsson (2008) concludes that the variety of passages found in the BRI provides flexibility for programs who work with students from “diverse classrooms that are skills-based and have more of a literacy emphasis” (p. 535).

The second phase of the program involved a follow up post-test using Johns (2005) BRI section B as well as a Student Post Survey. These two assessments were given on the last scheduled day of tutoring. The Student Post Survey asked the student to rate the tutoring program and any improvements in reading engagement and motivation. There were five questions on the survey. These questions were as follows. Has the tutoring helped you: 1) be a better reader, 2) want to read more books, 3) enjoy reading at home, 4) like reading in class more, and 5) learn more from what you read. Finally, throughout the program, informal observations were made of the tutoring sessions.

**Results**

Across the past decade, data was collected for 209 at-risk students who were tutored twice a week for 40-minutes a session at the local public library. Information gleaned from the pre- and post-tests, informal observations, and student post surveys suggested a relationship between one-on-one tutoring and literacy learning. Overall, the results show improved student confidence and student reading abilities. Our results show an average increase in reading levels of 2.58 levels (Knaebel, Bauserman, & Quatroche, 2013). On average across the years, only 17.33% showed no signs of reading growth. Although growth was facilitated by our program, we are not totally responsible for all the reading growth; our program was a supplement to regular classroom instruction, and in combination they worked together to boost students’ scores. Our students’ pre and post T-FIVE questions were also analyzed to determine if the students scored better on the T-FIVE questions at the end of the tutoring. For the students completing both the pre and post BRI, the pre and post BRI scores showed improvement in the average correct answers of the T-FIVE questions. The Topic questions went from 52.91% of the questions answered correctly to 90.06% of the questions answered correctly; Fact questions rose from 58.08% to 60.88%; Inference questions increased from 53.52% to 76.43%; Vocabulary questions elevated from 64.20% correctly answered to 74.16% correctly answered; and, Evaluation questions improved from 56.76% to 92.97%. It is interesting to note that the lowest change in percent was for Fact questions. The other four higher level questions had a much larger increase in percent of change. See Figure 2 for results.
<table>
<thead>
<tr>
<th>T-Five Question Types</th>
<th>% of Correct Answers For Pretest</th>
<th>% of Correct Answers For Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOPIC</td>
<td>52.91</td>
<td>90.06</td>
</tr>
<tr>
<td>FACT</td>
<td>58.08</td>
<td>60.88</td>
</tr>
<tr>
<td>INFERENCE</td>
<td>53.52</td>
<td>76.43</td>
</tr>
<tr>
<td>VOCABULARY</td>
<td>64.20 (context clues)</td>
<td>74.16</td>
</tr>
<tr>
<td>EVALUATION</td>
<td>56.76</td>
<td>92.97</td>
</tr>
</tbody>
</table>

*Figure 2: This Figure Shows the Percent of Correct T-FIVE Questions on Pretests and Posttests. Note that the Smallest Increase is on Fact Questions, which are the Lowest level of Comprehension. All of the other Question Types Involve Higher Levels of Thinking.*

As reported in a previous publication, the results of the Student Post Surveys indicate that the students perceived an improvement in their reading abilities and confidence level (Knaebel, Bauserman, & Quatroche, 2013). Anecdotal observation of tutoring sessions indicated that using dry erase boards and different colors of dry erase markers during the before reading activity with sight words increased the student’s perceived interest in writing the sight words on the dry erase board. Furthermore, tutors stated that using post-it-notes during reading to mark where the tutor would ask the prediction questions would keep the students interested in the story, and it motivated the student to keep going to find if their prediction was correct or not. Many times, the elementary student wanted to read the prediction question on the post-it-note to the tutor and then answer the question.

**Conclusions**

The Sycamore Readers program has had an impact of the reading success of elementary students for more than a decade. The benefits to the students included increased reading abilities, increased motivation, and a feeling of success as indicated by the the BRI post-test results and the Student Post Survey. Not only has it benefited the students, it has benefited the parents and the tutors. The benefits to the parents included free reading help for their child, seeing reading improvement in their child, and learning ways to help their child at home. Benefits to the reading tutors included real life experiences working with children and the intrinsic rewards of community service. Anecdotal observations indicated some other positive trends. The tutors were mainly white female students who were elementary education majors. There was substantial bonding that occurred between the elementary students and their college tutors, which may exceed that which happens in other tutoring situations. It may be that different tutor and student characteristics, different content materials and types of instruction, and other contextual factors could differentially affect bonding during the tutoring sessions. Providing students with opportunities to enjoy real books in authentic ways is motivating for them. When students become engaged in books, they will read more books, and when they read more books, they become strategic readers. Skillful strategic readers have enhanced comprehending abilities. So the payoff for students can be huge, and who knows, they just might become lifelong readers. What a legacy to give to students! This project was partially funded by a Faculty Research Grant from the Blumberg Center for Interdisciplinary Studies in Special Education, Indiana State University.
References


