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Implementing the STARS Program to Improve Reading Comprehension

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Abstract

The purpose of this action research project was to determine if there is a correlation between the implementation of specific reading comprehension strategies and analysis and practice of specific aspects of reading passages with scores in reading comprehension. The curriculum Strategies To Achieve Reading Success (STARS) was Implemented over an eight week period. To gather baseline data and to assess student progress over the course of the study, the researcher used the Comprehensive Assessment of Reading Strategies (CARS). Analysis of the data collected suggests that the students who were put through the STARS program showed greater gains in reading comprehension than the students in the control group.

Implementing the STARS Program to Improve Reading Comprehension

Teachers are always looking for reading curriculum that will increase student comprehension. Making Meaning is a popular curriculum that has a focus on comprehension. It teaches certain comprehension skills that helps students interact with their reading in a meaningful way. However, the researcher does not feel it gives students enough specific practice applying strategies and answering questions. The Strategies To Achieve Reading Success program, or STARS, which teaches students specific skills such as compare and contrast, finding main idea, word meaning in context, and fact and opinion, is a curriculum that can bridge that gap. The researcher feels that the two programs offer students two very different perspectives on comprehension and complement each other well. The question asked that helped decide the focus of this research is "How can teachers best help students improve their reading comprehension?" This then led to the question, "Will going through the STARS program help students with their reading comprehension?"

To assess the progress of students in reading comprehension the researcher will be using the Comprehensive Assessment of Reading Strategies (CARS) assessment, which directly aligns with STARS, as well as using Reading Counts quizzes. The reason for the use of the CARS assessment is that it most closely relates to the type of questions in the reading section of standardized tests such as the Iowa Assessments, the Scholastic Aptitude Test, and the American College Testing assessment. Reading Counts gives comprehension quizzes over books that students read. These are included in the data collected to see if the STARS program also helps students in the more practical area of reading comprehension, their independent reading. This research is important because schools, now more than ever before, are putting an emphasis on

reading achievement, and rightly so since reading success in early grades will help lead students to find success in other subjects later on in high school.

Literature Review

In reviewing literature in relation to improving reading comprehension, it is important to analyze data that suggests other ways to improve comprehension. In the action research performed by Eric Powell (2012) titled *Vocabulary pre-exposure and its effects on reading comprehension;* it studies the effects of vocabulary practice on reading comprehension. A group of 20 fifth grade students, split into a control group and treatment group of 10 each, was used for Powell's study. All 20 students indicted that English was their first language. The study was performed over a five-week period. The first week all 20 students were given the pre-assessment, in week-two the students in the treatment group were taught the expectations for the study and how they would make the flashcards. Items included on the flashcards were the vocabulary word, part of speech, the definition, a synonym, an antonym, and the word used in a sentence. During week-three of the study, students worked on making the flashcards. In week-four, they finished the flashcards, reviewed them, wrote additional sentences using the vocab words, and brought the flashcards home at night to study the words. Lastly, in week-five all students took the post-assessment.

"The results of the treatment and the outcome of the research affirm the hypothesis of the researcher—that increased focus on vocabulary will increase reading comprehension levels among students whom the treatment is applied to" (Powell, 2012, p. 17). All but one student in the treatment group showed an increase in reading comprehension, and only one student from the control group showed an increase in reading comprehension. Two questions that arose from the review of this study are, How many flashcards did students prepare during this study and

were words specifically chosen to reflect words used in the assessment? (Powell, 2012). In addition, one limitation that could affect the application of the research is that teachers in a regular classroom could find it difficult to allot the time needed to properly implement such a comprehensive vocabulary program.

In today's technology obsessed world it is easy go away from old-fashioned teaching tools in favor of shiny new, and often very expensive, toys and tools. In Jacqueline Geary's (2010) study titled, *Literacy and technology,* the author looks if reading E-books is more beneficial for improving reading skill and fluency than a traditional book. Benefits of the E-books, besides increased interest from students because of the use of technology, include video animations and sound and voice effects that help keep student's attention (Geary, 2010). The pre-test and post-tests that were given were both running records that calculated student comprehension scores and accuracy. The study was done with a group of five first graders over a two-week period (Geary, 2010). During those two weeks, each student completed 100 minutes of reading E-books.

Of the five students who were involved in the study two of the students' scores increased from the pretest to the post-test, and three students' scores stayed the same. "This shows that E-books do not help student's reading skill or fluency" (Geary, 2010, p. 27). However, the number of errors did decrease from the pre-test to the post-test so it is possible that the E-books help reading accuracy. One limitation of the study is that there were only five students used, that is a very small sample size and can have an effect on the accuracy of the study. In addition, there was no control group. This study lends itself nicely to the use of a control group that reads traditional books for the 100 minutes that the treatment group read the E-books.

The last of the research that was reviewed for this project is *Effective practices for developing reading comprehension,* which was published in The Journal of Education. Unlike the

first two studies, this one is not action research, and thus, has a broader focus and research base. This study starts by looking at what good readers do, and why they are successful (Duke, 2008/2009). Then, the researcher asks the question, "Can we teach students to engage in these productive behaviors?" (Duke, 2008/2009, p. 107). Based upon much evidence the researcher's answer is yes, and if the answer is yes, then how can it teachers best help students to engage in those behaviors? (Duke, 2008/2009). Duke (2008/2009) recommends the following five-step model:

1. An explicit description of the strategy and when and how it should be used.
2. Teacher and/or student modeling of the strategy.
3. Collaborative use of the strategy in action.
4. Guided practice using the strategy in action.
5. Independent use of the strategy.

This model describes a clear scaffolding in the use of reading comprehension strategies, starting with the direct teaching of the strategy and ending with independent practice of that strategy during student reading. Another important aspect of this approach that the study refers to is that when it comes to comprehension instruction, it is important to have a balanced approach where students are explicitly taught strategies and students are given ample time for reading to put the strategies to use in their own reading (Duke, 2008/2009). Elicit instruction without independent practice fails to allow the strategies to be put to work, if independent practice is provided without elicit instruction there is just a hope that students stumble into increased skills.

Methods

Participants

The participants for this study is a third grade class of 23 students, although one student moved out of the district during the study, and they were split into a treatment group of 12 students (later down to 11) and a control group of 11 students. The students were divided as evenly as possible based on ability, according to the scores of the Reading section on the previous year's Iowa Assessments.

Data Collection

The focus of the action research project was to determine if students that go through eight weeks of the STARS program would show more of an increase in reading comprehension than students who independently read for the same amount of time. The timeline for this study was eight weeks. The data that was collected during the study includes the comparison of two five-week period averages of each student's Reading Counts tests and CARS tests taken in week zero, four, and eight of the study. The treatment group received direct instruction in the STARS program working through 12 lessons during the eight-week period. The skills that the students worked with are:

1. Finding Main Idea
2. Recalling Facts and Details
3. Understanding Sequence
4. Recognizing Cause and Effect
5. Comparing and Contrasting
6. Making Predictions
7. Finding Word Meaning in Context

8. Drawing Conclusions and Making Inferences
9. Distinguishing Between Fact and Opinion
10. Identifying Author's Purpose
11. Interpreting Figurative Language
12. Distinguishing Between Real and Make-believe

During the eight-week study the researcher averaged one hour and 30 minutes of instructional time per week, for an approximate total contact time of 12 hours. During this eight-week period, while the researcher was working with the treatment group, the control group was independently reading. They also had the opportunity to take Reading Counts tests during this time.

Findings

Quantitative Data Analysis. The quantitative data collected for this research was collected at three different times. Once before students started the intervention, once in the middle of the intervention, and once at the end of the intervention. The assessments used to collect the data are all structured the same, but use different reading passages. Each assessment is 12 questions long, and each question addresses a different reading comprehension skill.

Table 1

CARS Assessment Data Treatment Group

Student	Week 0 Assessment	Week 4 Assessment	Week 8 Assessment	Point gain from week 0 to week 8
#2	6	10	12	+6
#6	9	8	9	+0
#7	7	6	9	+2
#10	5	12	12	+7
#12	4	4	8	+4
#14	8	8	11	+3
#15	7	7	11	+4
#17	7	7	10	+3
#18	9	12	12	+3
#21	5	5	12	+7
#22	9	12		+3
#23	7	9	12	+5

Table 2

CARS Assessment Data Control Group

Student	Week 0 Assessment	Week 4 Assessment	Week 8 Assessment	Point gain from week 0 to week 8
#1	7	12	12	+5
#3	6	5	10	+4
#4	9	11	10	+1
#5	5	5	9	+4
#8	7	4	9	+2
#9	8	9	9	+1
#11	5	3	7	+2
#13	9	12	10	+1
#16	8	8	11	+3
#19	7	9	11	+4
#20	7	3	7	+0

The data collected of the CARS scores shows that in both the treatment group and the control group there was only one student who failed to make progress. However, in the treatment group the average improvement was 3.91 points per student. In the control group, the average increase was almost a point and a half lower at 2.45 points per student. This shows a positive correlation between the STARS program and improvement on the CARS test. As stated earlier, the CARS tests have a similar structure to that of the Iowa Assessments, that all Iowa elementary students take as a standardized test each year. Because of the positive correlation between the

STARS program and the CARS tests, there should likewise be a positive correlation between the STARS program and the Iowa Assessments.

Table 3

Reading Counts Score Data Treatment Group

Student	August 23rd—September 27th	September 28th—October 31st	Percentage increase
#2	76%	82%	+6%
#6	82%	74%	-8%
#7	62%	75%	+13%
#10	87%	94%	+7%
#12	66%	61%	-5%
#14	74%	80%	+6%
#15	82%	70%	-12%
#17	73%	66%	-7%
#18	92%	98%	+6%
#21	74%	72%	-2%
#22	77%	97%	+20%
#23	86%	88%	+2%

Table 4

Reading Counts Score Data Control Group

Student	August 23rd—September 27th	September 28th—October 31st	Percentage increase
#1	89%	91%	+2%
#3	67%	55%	-12%
#4	76%	84%	+8%
#5	63%	72%	+9%
#8	62%	63%	+1%
#9	84%	64%	-20%
#11	65%	65%	0%
#13	72%	83%	+11%
#16	89%	96%	+7%
#19	91%	70%	-21%
#20	56%	70%	+14%

The data collected on the Reading Counts tests was not as clear-cut as the data on the CARS tests. Within the treatment group, there were seven students who increased their scores. However, there were also five students whose scores decreased. Within the control group, there were also seven students whose scores increased, but there were only three whose scores decreased, while one student's scores remained the same. However, when looking at the average of both groups the data shows a positive correlation between the STARS program and Reading

Counts scores. The treatment group had an average score increase of 2.17%, while the control group's scores actually decreased by an average of 1%.

Discussion

Since the STARS program directly teaches to the type of questions on the CARS tests, as well as having the same structure it is not surprising that there would be such a positive correlation between the treatment group and the CARS test. This draws the question "Is this just teaching to the test?", this should be seen as a two-fold answer, the easy answer is yes, but at the same time the STARS program teaches skills that are important in analyzing, processing, and understanding reading. So having a second data set, the Reading Counts reports, is important to the study to analyze the progress students are making in comprehending their independent reading. As previously stated the positive correlation between the STARS program and the CARS tests should bring about a positive correlation between the STARS program and the Iowa Assessments as well. Nevertheless, the whole point of standardized testing in the area of reading should be to see how well students are able to understand, analyze, and process their reading in both independent and curricular areas. Collecting data on Reading Counts tests, program that asks students questions about the books that they read independently, was important to this study because it bridges the gap between taking tests that students are specifically taught how to perform well on, and being able to apply those skills in their own reading.

When analyzing the Reading Counts data, even with the treatment group having average increases of 3.17% higher than the control group, it is still not clear whether the STARS program was the biggest contributing factor. The data could be skewed by a variety of factors. These factors could include students not taking Reading Counts tests soon enough after finishing a book, the small sample size of only five weeks, the first testing period being the first five weeks

of school where students are just getting into the hang of things and might not be doing as much reading, and the extra time that the control group had to take tests. If time allowed, it would have been better to collect data from the six weeks before the study, and from the six weeks after the study.

Limitations of Study

Some potential limitations include attendance; if any students in the treatment group miss school for an extended time period it will be hard to assess their progress. It will take careful planning to give direct instruction to half of the class as the treatment group, while the control group is reading independently. It is possible that some students will wish they were in the control group so they could get extra reading time, and then not put forth adequate effort on the STARS program. This program also takes up a considerable amount of instructional time; it could be hard for teachers to carve out that amount of time in their weekly schedule.

Further Study

As mentioned in the summary of findings section, the researcher was not satisfied with the accuracy of the data compiled on the impact that the STARS program has on increased comprehension of independent reading. Further research could be done to find larger sample sizes of data in order to prove or disprove that the STARS program is beneficial for student improvement in independent reading.

Conclusion

The findings from the collected data suggest that the STARS program has a positive impact on reading comprehension. The quantitative data suggests that the STARS program helps increase the scores on CARS tests. Because of limited data, it is unclear whether the STARS program has a positive impact on Reading Counts tests. Due to the positive impact on the CARS

tests, the researcher would recommends additional study to find if it would also have a positive impact on the Iowa Assessments.

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Appendix A

Anecdotal Notes for Capstone Project: Week 1

Student	Attendance	Behavior	Attn Span	Comments
#2	X	X	X	
#6	X	X	X	
#7	X	X	X	
#10	X	X	X	
#12	X	X	X	
#14	X	X	X	
#15	X	X	X	
#17	X	Talkative	Not following along	
#18	X	X	X	
#21	X	X	X	
#22	X	X	X	
#23	X	X	X	

Appendix B

Anecdotal Notes for Capstone Project: Week 2

Student	Attendance	Behavior	Attn Span	Comments
#2	X	X	X	
#6	X	X	X	
#7	X	X	X	
#10	X	X	X	
#12	X	X	X	
#14	X	X	X	
#15	X	X	X	
#17	ABS: tonsils out	N/A	N/A	
#18	X	X	X	
#21	X	X	X	
#22	X	X	X	
#23	X	X	X	

Appendix C

Anecdotal Notes for Capstone Project: Week 3

Student	Attendance	Behavior	Attn Span	Comments
#2	X	X	X	
#6	X	X	X	
#7	X	X	X	
#10	X	X	X	
#12	X	X	X	
#14	X	X	X	
#15	X	X	X	
#17	ABS: Tonsil out	N/A	N/A	
#18	X	X	X	
#21	X	X	X	
#22	X	X	X	
#23	X	X	X	

Appendix D

Anecdotal Notes for Capstone Project: Week 4

Student	Attendance	Behavior	Attn Span	Comments
#2	X	X	X	
#6	X	X	X	
#7	X	X	X	
#10	X	X	X	
#12	X	X	X	
#14	ABS: 2 days, sick	X	X	
#15	X	X	X	
#17	X	X	X	
#18	X	X	X	
#21	X	X	X	
#22	ABS: 1 day, Appt	X	X	
#23	X	X	X	

Appendix E

Anecdotal Notes for Capstone Project: Week 5

Student	Attendance	Behavior	Attn Span	Comments
#2	X	X	X	
#6	X	X	X	
#7	X	X	X	
#10	X	X	X	
#12	X	X	X	
#14	ABS: 1 day sick	X	X	
#15	X	X	X	
#17	X	X	X	
#18	X	X	X	
#21	ABS: 1 day sick	X	X	
#22	Moved	N/A	N/A	N/A
#23	X	X	X	

Appendix F

Anecdotal Notes for Capstone Project: Week 6

Student	Attendance	Behavior	Attn Span	Comments
#2	X	X	X	
#6	X	X	X	
#7	X	X	X	
#10	X	X	X	
#12	ABS: 1 day	X	X	
#14	X	X	X	
#15	X	X	X	
#17	X	X	X	
#18	X	X	X	
#21	X	X	X	
#22	Moved	N/A	N/A	
#23	X	X	X	

Appendix G

Anecdotal Notes for Capstone Project: Week 7

Student	Attendance	Behavior	Attn Span	Comments
#2	X	X	X	
#6	X	X	X	
#7	X	x	Distracted	
#10	X	X	X	
#12	X	X	X	
#14	X	X	X	
#15	X	X	X	
#17	Missed part of 1 lesson	X	X	
#18	X	X	X	
#21	X	X	X	
#22	N/A	N/A	N/A	Moved
#23	X	X	X	

Appendix H

Anecdotal Notes for Capstone Project: Week 8

Student	Attendance	Behavior	Attn Span	Comments
#2	X	X	X	
#6	X	X	X	
#7	X	X	X	
#10	X	X	X	
#12	ABS: 1 day	X	X	
#14	X	X	X	
#15	X	X	X	
#17	X	X	X	
#18	X	X	X	
#21	X	X	X	
#22	Moved	N/A	N/A	
#23	X	X	X	