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The Effects of Accelerated Reader (AR) as an Extrinsic Motivation Tool for Improving Gifted Students' Reading Levels

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ABSTRACT

The purpose of this study is to examine the effects of extrinsic motivation provided through an Accelerated Reading program (AR) on gifted students' reading levels as indicated by a voluntary test. Fifty-six gifted students enrolled at two middle schools located in central Georgia participated in this study. Twenty of the students received extrinsic motivation through AR during this research. Thirty-four of them also read through the AR program, but without any additional extrinsic motivation. Their scores on the voluntary test indicate that the group who did not receive extrinsic motivation actually gained more between the pretest to the posttest than the group who did receive extrinsic motivation, even though both groups of students made some gains from the pretest to the posttest. One implication of this study is that intrinsic instead of extrinsic motivation may be more effective for gifted students. Another implication for future research is to compare the effects of intrinsic versus extrinsic motivation on improving reading across different groups of students including regular education, special education, and gifted students.

INTRODUCTION

Purpose of the Study

The general purpose of this research was to add more knowledge to the highly examined subject of the Accelerated Reader program (AR) and its relationship to the reading levels of gifted students. The AR program allows students to read books and take computerized tests on these books. More specifically, I sought to discover if extrinsic motivational tools affected gifted sixth graders' reading levels through AR. It is assumed that, if found effective, motivational tools would be used more by classroom teachers to help increase the amount of reading done by these students. The increase in reading would, in turn, increase the reading levels of these students. Also, if motivational tools are found to help gifted students, future research can be conducted to determine how motivational tools affect general education and special education students.

Statement of Problem

Schools in the United States face a widespread problem of students not being able to read up to what educational field deems as "grade level." An average third grader should read on a third grade level, an average sixth grader should read on a sixth grade level… and so forth. Based on my personal experience, this is not happening. The problem lies more directly in the fact that schools are sending young adults who cannot read at a level required and deemed sufficient for success out into society. In terms of language (spoken, read, and written), many reading educators I know share the same concern that schools in the United States are not putting out a good product.

More than any other subject, reading is the cornerstone for ultimate academic success. Students need a strong foundation in reading to have a fair chance at achieving their educational and career goals. Even the higher level students like the gifted students need to be able to show strides in reading levels in order to compete on a worldwide basis with the students from other countries who can be achieving higher marks in reading. Many educators I know are stunned and frightened when they observe that many students worldwide who speak English as a second language can read and speak English better than Americans who know English as a native language.

Rationale

By conducting this research, I hope to see if reading more by means of motivation through AR actually increases one's grade level of reading. Specifically, I am focusing on gifted students in the sixth grade. Maybe the amount of reading has nothing to do with an increase in reading level. The uniqueness of this study is to what affect extrinsic motivation effects reading levels of gifted students. When someone is motivated to do something, they are more likely to put forth a better effort with a more positive attitude. A higher-level reader is put into a better position to succeed in society. If reading more through motivation is successful, I hope helping students in this way will lead to helping all students become better readers.

LITERATURE REVIEW

The first area of research I wanted to gain more background knowledge in before I actually started collecting data was related to Accelerated Reader (AR). I really wanted to find one or two examples of what others have researched and discovered about AR. Do most people accept AR as the standard in improving reading levels of students? Do most people detest AR? Are there inconsistencies as to how AR is embraced? From a negative point of view, AR

does not necessarily make students read more. Chenoweth (200l) reports that "students who were in the AR program did read more books than students who were not in the program; however, when AR stopped, so did the AR students' reading." From a positive perspective, Vollands, Topping, and Evans (1999) showed through their quasi-experiment that "when compared to gains from regular classroom teachings and an alternative method, at-risk readers using the Accelerated Reader program, even if not fully implemented, experienced gains in reading scores." AR certainly has both supporters and opponents among educators.

I next looked for some research in motivation. Motivation is a very import aspect of education. Many educators and researchers believe that motivation is a crucial determinant of student success in reading and writing, especially in the elementary grades (Miller & Meece, 1999; O'Flahavan, Gambrell, Guthrie, Stahl, Baumann, & Alvermann, 1992). Also, as far as motivation is concerned, research indicates that students who are motivated to read spend more time reading than those who are not as motivated (Edmunds & Tancock, 2003; Guthrie, Wigfield, Metsala, & Cox, 1999; Morrow, 1992; Wigfield & Guthrie, 1997). Just because a student reads more, does this have any connection to their increase in reading level? What about struggling readers? Sometimes they work just as hard as other students, but the results are not as easily seen.

In addition, motivation is multifaceted. Cultivation of intrinsic motivation in students can help educators come closer to the goal of instilling in all students a love for reading and learning perhaps more than provision of extrinsic motivation alone (Cole 2003). However, intrinsic motivation is often more difficult to develop. As we observe on daily basis, most people do not wake up in the morning to go to work because they like it. They are motivated to make money. People do not go on diets because they do not like food, they go on diets because they are motivated to lose weight and/or become healthier. The role of motivation in reading is a "piece of puzzle" for me. Unfortunately, I did not find any research solely devoted to the question of how to motivate gifted students to read and how the motivation strategies for gifted education are compared to those for regular and special education students.

Research Question and Hypothesis

My direct research question was: did gifted students who were provided with extrinsic motivation through AR performed better on standardized measurements than gifted students who read through AR without extrinsic motivation? Indirectly, I wanted to look at how effective AR is as an extrinsic motivation tool for improving reading. With these questions in mind, my hypothesis was that the more a student reads through motivation tools like AR, the higher his or her reading achievement.

METHOD

Participants

The participants for this research were gifted sixth grade students from two different middle schools in a central Georgia county with a population of about 25,000. Middle School A has twenty-two gifted sixth grade students. Middle School B has thirty-four sixth grade students. From an economic standpoint, Middle School A has a higher percentage of students on free or reduced lunch and is considered a "Title 1" school. The participants from both schools were taught with identical curriculum materials at the same time and at the same pace. The only significant difference between School A and School B was that School A's students received extrinsic motivational tools through the AR program, whereas School B's students did not receive any extrinsic motivation.

Instrumentation

The main instrument used for this research was the Standardized Testing and Reporting (STAR). STAR is a reading test of about twenty questions that tests a student's vocabulary. The students were given sentences and paragraphs in which one word was underlined. The student was given four choices and asked to choose the word with the correct meaning to fill in the sentences. STAR's diagnostic report shows a student's grade equivalent. A grade equivalent ranges from 1.1 to 12.9. For example, a grade equivalent of 1.1 means "first grade, first month," 5.3 means "fifth grade, third month," and so on. Each student was also given a raw score. Raw scores are arbitrary numbers that are only significant to STAR. The interpretation of these raw scores is very similar to that of the Scholarly Aptitude Test (SAT). A score of 1,400 may be perceived as "very good" for SAT. Similarly, raw score of 1,100 may be perceived as "very good" for STAR.

Research Procedures

All sixth grade students in this county are taught under the same curriculum. The county also requires teachers to teach this curriculum at the same time at the same pace. For example, all sixth grade teachers teach "linking verbs" on Tuesday through Friday of the same week. Naturally, both schools implement the AR program. The AR program factors into the final grades of all sixth grade students. The only difference between the two middle schools is that School A uses extrinsic forms of motivation and School B does not. Extrinsic motivation at School A appears in several forms. Students at School A are motivated beyond just getting good grades by certificates with their names posted on the wall if they reach certain AR goals. Classes that

achieve certain goals receive pizza parties. Other students that achieve goals are given personal pan pizzas. School B operates under a philosophy where the students are expected to perform to get good grades on AR, not focusing on extrinsic motivation.

This study adopts a quasi-experimental design. I obtained the STAR scores for all the gifted students enrolled at these two schools at two time points, at the beginning of the school year and again at the end of the school year. The scores at the end of the school year served as the outcome variable, while the scores at the beginning of the school year served as the covariate.

One factor that may have hurt the internal validity of this study is that some teachers' styles of teaching might be more appealing than others to the students. It has been observed in the past that certain students would intentionally perform poorly on a test if they did not like the teacher. This could very well affect how motivated a student is to read.

Another factor that could have contaminated the internal validity of this research is that it will never be completely clear if the students gave honest efforts while taking either STAR at the beginning of the year or at the end of the year. If a student did not score well at the beginning of the year, he or she was not expected to read as much. Students who were not motivated to read from the beginning may have taken advantage of this policy. It is like a runner in the 100-meter dash jogging instead of sprinting. Yes, his or her time can be measured, but the time is not based on his or her best effort. In order for this research to be fully valid and meaningful, I assumed that the students gave their best efforts when taking the tests.

A last issue is the automatic growth through outside factors that take place but are not connected to the reading instruction through AR. Just as a student may get taller over the school year, his or her exposure to things such as television, the Internet, and other people can influence the growth of that student's reading level. It is very difficult to determine how much these outside factors contribute to the increase in reading levels.

Data Analysis

The STAR scores at the beginning and the end of the school year were compared using analysis of covariance (ANCOVA) with the beginning scores as the covariate, the end-of-year scores as the outcome, and whether any form of extrinsic motivation was provided through AR as the independent variable.

RESULTS

Means and standard deviations of students' STAR reading scores from the beginning and end of the school year are presented in Table 1. The descriptive

statistics show that the average STAR reading scores for School A were higher than that of School B for the pretest. However, School B's average STAR reading score was higher than that of School A for the posttest.

In order to determine whether this difference in the current year's reading scores between the two schools were statistically different, one-way ANCOVA was conducted with the posttest STAR reading scores as the dependent variable, the pretest STAR reading scores as the covariate, and extrinsic motivation as the independent variable. ANCOVA results show that there is a statistically significant difference between the students in these two schools in their posttest STAR reading scores with a moderate effect size ($F = 50.57$, $df = (1, 53)$, $p < .001$, $\eta^2 = .488$). There is also a statistically significant difference between the students in these two schools in their pretest STAR reading scores but with a relatively smaller effect size ($F = 4.33$, $df = (1, 53)$, $p = .042$, $\eta^2 = .076$).

CONCLUSION

The major purpose of this research was to determine if extrinsic motivation had positive effects on the reading levels of sixth graders in the gifted program. The results from my research were very surprising. I hypothesized that the students who were offered extrinsic motivation would have greater increases in reading levels than those students who were not offered any extrinsic motivation. School A, the school that offered the extrinsic motivation, had a pretest score average of 931.27. They improved to an average score of 963.45 for a total improvement of 32.18. The surprise came from School B. The first test average for School B was 882.56. The posttest average jumped to 1017.68, improving to an average of 135.12. School B showed an average improvement of 102.94 more than School A.

This somewhat surprising result has shown me that gifted students who are not given extrinsic motivation far outscore those gifted students who are given this motivation. This is exactly the opposite of what I had hypothesized prior to my research. Based on findings alone, I would hypothesize that gifted students are not greatly swayed by the influence of extrinsic motivation. Perhaps intrinsic rather than extrinsic motivation is more effective for gifted students. Gifted students may not need the instant gratifications that extrinsic motivations present. I am very anxious to discover if this trend is also true for general education students as well as special education students. These two subgroups would be great candidates for follow-up research.

In retrospect, there were several limitations that accompanied this research. First, we could not guarantee that students gave their best efforts on the START pretest or posttest or both. Without honest efforts, true indications

cannot be determined. To be more specific with this issue, some teachers might have attached more importance to this test than others. This could have factored into how the students decided to perform on the test. In the future, a different measure could be used for a study of similar purposes and design.

A second limitation is that even though teachers teach the students the same curriculum at the same time, teachers may teach in different ways. Students, in return, respond to different teachers in different ways. For example, if a student does not like a teacher, the student may intentionally fail the test. One final limitation is that this study was conducted in a small isolated county in central Georgia, and only fifty-six students participated. Results may vary in different settings and with a larger research sample.

APPENDIX AND FIGURES

Table 1: Descriptive Statistics of STAR Reading Scores by School

	N	M	SD
School A			
Pretest	22	931.27	205.69
Posttest	22	963.45	252.62
School B			
Pretest	34	882.56	202.85
Posttest	34	1017.68	195.04

REFERENCES

Chenoweth, K. (2001). Keeping Score. School Library Journal, 42, 22-25.

Cole, J. (2003) What motivates students to read? Four literacy personalities. The Reading Teacher,56(4), 326-336.

Edmunds, K., & Tancock, S. (2003). The effects on the reading motivation of fourth-grade students. Reading Research and Instruction, 42(2), 17-38.

Miller, S., & Meece, J. (1999). Third graders' motivational preferences for reading and writing tasks. The Elementary School Journal, 10 (1), 19-35.

Vollands, S., Topping, K., & Evans, R. (1999). Computerized self-assessment of reading comprehension with the accelerated reader. Reading and Writing Quarterly,15(3), 197-213.