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A Mixed Method Study of the Effectiveness of the Accelerated Reader Program on Middle School Students' Reading Achievement and Motivation

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──────── **Abstract** ────────

The mixed-method explanatory research design was employed to investigate the effectiveness of the Accelerated Reader (AR) program on middle school students' reading achievement and motivation. A total of 211 sixth to eighth-grade students provided quantitative data by completing an AR Survey. Thirty of the 211 students were randomly selected to participate in semi-structured interviews and classroom observations over the course of a semester and the selected students' AR pretest and posttest scores were collected to provide quantitative data. Constant analyses using the content comparative method led to the identification of important themes related to the review of students using the AR program. The results showed that Accelerated Reader neither improved students' reading scores nor promoted intrinsic reading motivation for middle school students, but did increase the amount of time they read.

Introduction

Over the past decade, the rapid infiltration of technology has significantly affected U.S. schools and the daily lives of both teachers and students of all ages (Leu, 2002; Valmont & Wepner, 2000). Literacy instruction is also changing in profound ways as many of these new technologies have enhanced and extended current literacy practice (Larson, 2008). This affects what and how students learn (Valmont & Wepner, 2000), and also changes teaching approaches from developing traditional

literacy capacities to helping students learn to use new technologies to improve their literacy skills (Valmont, 2003). More specifically, many computer-based reading programs have been adopted by school districts in the United States (Thompson, Madhuri, & Taylor, 2008) and, in particular, Accelerated Reader (AR) has been implemented in more than 65,000 schools worldwide (Topping & Paul, 1999). The AR program is a computerized information system that provides students and teachers with immediate diagnostic feedback on student reading practice through short quizzes (Renaissance Learning, 2002). Accelerated Reader is not the only computerized reading program on the market, however it is the most popular reading software in the Prek-12 settings (School Renaissance Institute, 2001).

Despite the fact that a number of research studies report some educational and motivational benefits for using AR (Goodman, 1999; McGlinn & Parrish, 2002; Paul, VanderZee, Rue, & Swanson, 1996), there is little research and only a few peer-reviewed journal articles that document these effects (Pavonetti, Brimmer, & Cipielewski, 2003). An examination of research on the Accelerated Reader Program finds that much of the research focuses on the elementary school levels (Nunnery, Ross, & McDonald, 2006), relatively few studies have considered middle school (Mathis, 1996; Peak & Dewalt, 1993), and even fewer research studies discuss contradictory findings of the program. It is unclear whether AR is primarily designed for or used in elementary school or whether there are just limited studies regarding AR use for middle school students (Thompson et al., 2008). In spite of the program's popularity, there have been no publications of qualitative research or mixed methods research evaluating its effectiveness. Most of the published studies have applied experimental research designs to compare the differences between experimental groups using AR and those in control groups not using the program. In addition, many of these studies have been done by the AR Company (Biggers, 2001). Consequently, there is a need to conduct more research studies about the program in various school contexts.

Given the popularity and also some criticism of the AR program, the major purpose of this study was to investigate the effectiveness of the AR program on middle school students' reading achievement and motivation. Two research questions were addressed:

1. Does Accelerated Reader have an effect on middle school students' reading achievement?

2. What are the students' views about using the Accelerated Reader program? Does the program promote reading motivation for the middle school students?

The Program

The Accelerated Reader program was created to engage students in large amounts of reading practice with authentic materials at individually appropriate reading levels and to provide rewards for student success in reading achievement (Renaissance Learning, 2002). AR is also a tool for teachers to use to measure student learning in reading achievement, to increase the amount of time spent reading, and to invite and motivate students to read books (Paul, 2003).

To use the program, students take the Standardized Test for Assessment of Reading (STAR; Advantage Learning System, 1993), to determine their reading level and then self-select books, read them, and complete computerized tests (Renaissance Learning, 2002). The number of test questions is based on the book's length, reading level, and complexity and books are given a point value on the basis of length and reading level according to the AR formula (Paul et al., 1996). Unlike other computerized reading programs, students do not receive points if their test scores fall below 60%, and they can take each quiz only once (Institute for Academic Excellence, 1998).

Literature Review

There are varied reports on the AR program; some research findings reveal positive results from the implementation of the program. In a study by Vollands, Topping, and Evans (1999), norm-referenced test scores for a sixth-grade experimental group using AR were compared to those of a control group not using the program. The experimental group had access to the program for six months, including the collection of points for tangible rewards. Both groups had similar pretest reading abilities and experienced thirty minutes of reading time each day. The results showed a statistically significant increase in reading scores when compared with the control group. Peak and Dewalt (1993) compared two middle schools in North Carolina, where the same language arts courses were taught, but one school had used AR for five years. The results revealed that those students using AR reported spending five to six more hours reading a week than non-AR students. Goodman's (1999) study of an AR program that was implemented in one Arizona middle school for one year showed significant growth from the pretest to posttest in the total score section of the Gates-MacGinitie Reading Test, which combined vocabulary and comprehension. All of these studies found the only disadvantage of using AR was limited book selections.

Although the above-mentioned studies suggest that AR can be successful in improving students' reading skills and attitudes about reading, other researchers

have had different conclusions. Mathis (1996) found that AR did not have a significant effect on 30 sixth-grade students' reading comprehension scores. Pavonetti et al. (2003) found there was no significant difference between the amounts of reading when comparing middle school students who had used AR in elementary school and those who had not used the program. After reviewing the AR score system and reading materials, Chenoweth (2001) also reported some of the most common disadvantages of using the AR program. First, students did not read more books and second, the choice of books is too limited. Carter (1996) and Biggers (2001) complained that the program's focus is on the prize, not on reading. Howard (2003) also questioned whether AR promotes long-term reading growth or the motivation to read if rewards are taken away. The National Institute of Child Health and Human Education found that the AR program did not meet federal standards since the program could not demonstrate long-term gains in reading achievement (Chenoweth, 2001) Research also found the AR company's studies were not proven through rigorous research processes (Melton, Smothers, Anderson, Fulton, Replogle, & Thomas, 2004).

Methods

Participants

The participating school was a suburban sixth through eighth grade middle school located in the southern United States. The student population was 387 with five classes per grade and the school had been using the AR program for three years. A total of 211 sixth to eighth graders (103 boys and 108 girls) participated voluntarily, completing the AR survey during the first week of the fall semester. Thirty students (16 boys and 14 girls) of the 211 were randomly selected for interviews and observations, and these students also participated in both pretests and posttests during the course of the semester. Fourteen students were female and sixteen were male. Six were African Americans, two were Latin Americans, one was Native American, one was a new immigrant from Cambodia, and the remaining were Caucasian Americans. All students, except the Cambodian student, participated in the AR program during the first semester of the middle school year. Confidentiality was maintained for all data.

Procedures

Permission was sought before the study began and Parent Consent and Student Assent forms were returned by those interested in participating in the study. All participants were given an AR survey at the same time during the first

week of the semester. Two-hundred eleven (211) out of 387 surveys were returned to their homeroom teachers. During the second week, all of the selected students took the STAR Reading Program test, a computer-adaptive, norm-referenced reading test (Advantage Learning System, 1993), to determine their reading level. The test took approximately ten minutes to complete and involved the students choosing the best word to complete a sentence, and the software instantly delivered the next question. Based on the testing results, only three sixth graders did not achieve their grade level in reading. The researcher then observed each of the 30 selected students approximately 45 minutes once a week and took field notes, recording how they engaged themselves in classroom activities, how they spent time reading at the school, how they selected books to read, and what they discussed with their friends about the books that they had read. The researcher also interviewed each participant individually in a private room at the school site during the final week of the semester.

Methods and Measures

This study used a mixed-method explanatory research design, which is a two-phase design involving both quantitative and qualitative methods, but they were assigned unequal weight (Creswell & Plano-Clark, 2007). In this study, the quantitative data provided a support and primary data set, while the qualitative data explained the initial quantitative results. To collect quantitative data, all participants were given the AR survey, and the thirty selected students' pretest and posttest scores were collected to support the quantitative data. Semi-structured interviews and classroom observational notes were used for collecting qualitative data. Both quantitative and qualitative data were analyzed separately. Then the researcher identified specific quantitative findings that needed additional explanation and used the qualitative data to explain initial quantitative results. Finally, the researcher compared and contrasted the two data sets and discussed and explained the findings in the interpretation phases.

The AR reading scores and an AR survey were provided for quantitative data. The AR survey contains eight items that are open-ended questions with a 4-point Likert-type scale (1=Almost never, 2=Rarely, 3=Often, and 4=Almost always), and two items that are closed-ended questions, such as "List five negative and five positive aspects associated with the AR" (see Figure 1). The researcher also created eight interview questions discussing the effectiveness of using the AR program (see Figure 2). Observational notes about the students' attitudes toward the program were also included.

Please give your answer under the appropriate column. Only give one answer for each question.	1 Almost never	2 Rarely	3 Often	4 Almost always
1. The Accelerated Reader (AR) program increases your reading scores.				
2. The Accelerated Reader (AR) program increases your reading levels.				
3. The Accelerated Reader (AR) program improves your reading comprehension skills.				
4. The Accelerated Reader (AR) program increases your vocabulary size.				
5. The Accelerated Reader (AR) program changes your habits and attitudes toward reading.				
6. The Accelerated Reader (AR) program fosters your motivation in reading.				
7. The Accelerated Reader (AR) program fosters your joy of reading.				
8. The Accelerated Reader (AR) program fosters your social interaction with your friends about book talk.				
9. List five positive aspects associated with the Accelerated Reader (AR) program.				
10. List five negative aspects associated with the Accelerated Reader (AR) program.				

Figure 1. Accelerated Reader (AR) Survey

1. What types of books do you like to read? Why?

2. What are your favorite books? Why do you like reading them? What makes you want to read?

3. Tell me about reading in your classroom, do you read alone or with others? Do your classmates value reading? How do you know?

4. What are some things in school that help or get in the way of your wanting to read? How do they help or not help?

5. What type of computer-based reading programs do you like? Why? How does the AR program motivate your reading?

6. Does the AR program cultivate your reading skills? How does it work? How often do you go the library to check out AR books to read?

7. What types of the AR books do you like to read? Why?

8. What are the strengths and weakness of using the AR program? Why?

Figure 2. Accelerated Reader (AR) Interview Questions

Data Analysis

Question 1: Does AR have an effect on middle school students' reading achievement?

The descriptive statistics analysis was used to analyze the results of the AR Survey. A t-test statistical analysis was used to compare the AR points that the selected students gained from the primary scores to the final scores at the end of the semester. Research has recognized that student voices can be a valuable, notwithstanding underused, resource for institutional reform (Mullinix, 2001; Smith, Petralia, & Hewitt, 2005). Interview and observational notes were also included.

Question 2: What are the students' views about using the Accelerated Reader program? Does the program promote reading motivation for the middle school students?

Question 2 was answered by largely qualitative data to identify students' beliefs, experiences, and attitudes about the use of the AR program, and also how the program promoted their reading achievement and motivation but quantitative data was also included to answer this research question. The constant comparative method (Glaser & Strauss, 1967) was used to analyze the qualitative data. For the validity and reliability of the qualitative data, the researcher used triangulation by interpreting meaning and moving back and forth between inductive and deductive reasoning, and also including description and interpretation. The process of the analysis involved coding individual units, creating categories, comparing incidents applicable to each category, integrating categories, deleting overlapping categories, finalizing categories, and developing themes. Data analysis was completed when new information was no longer uncovered and appropriate categories were identified. The qualitative analyses led to identifying categories and subcategories related to the effectiveness of AR programs for middle school students. The themes emerged through the iterative process of content analysis.

Results

Accelerated Reader's Effectiveness on Middle School Students' Reading Achievement

Quantitative Results

Descriptive statistics were used to report the summarization of the AR Survey with two of the survey questions directly related to the research question. Total responses for the AR survey are shown in Table 1.

Table 1. *The AR Increases Reading Scores and Levels*

Degree	Number of Students	Percentage of Students
1 (Almost never)	73	35
2 (Rarely)	75	35
3 (Often)	39	19
4 (Almost always)	24	11
Total	211 students	

Seventy percent of the students reported that AR almost never or rarely increased their reading levels and reading scores. Only thirty percent of the participants indicated AR often or almost always increases their reading achievement.

A T-test was employed to see if there was a statistically significant change in reading scores when comparing both pretests and posttests among the selected students. The results showed there was no difference between pretests and posttests (t (29) =.63, p>.05, p=.54) as shown in Table 2.

Table 2. *AR Scores for Pretest and Posttest*

Item	Pretest	Posttest	t-value	p-value
N	30	30		
df	29	29		
Mean	84.26	82.99		
SD	25.07	25.09		
	.63	.54		

Qualitative Results

Many students reported that they disliked the AR testing components, for example, students commented that "Some books were too long to read. We could not remember everything when we took a test" and "We did not like memorizing the texts." Numerous students also described their concerns about the AR tests, for example, "We were good readers, but test scores did not prove that."

The AR points are computed based on the difficulty of the book, readability, and the length of the books. Some students commented, "Some books were over 400 or 500 pages, but were only weighted 5-7 points." Some of the students also questioned AR reading levels, such as "Some books were either too easy or too challenging to read." Some high achieving students also found out that there were not

many high-level vocabulary words or more complicated sentence structures in their reading-level books.

Accelerated Reader has been used differently among schools and within classrooms: the participating school rewarded students with pizza parties for earning a certain number of points to motivate them to read. The field notes revealed that students were not under any supervision when they took the AR tests and many students were taking AR quizzes and sharing answers with other students. This appeared more prevalent where AR points were tied to classes. The school principal also had an alternative award to encourage students to read; students would be given a movie ticket when they read up to 20 chapter books by the end of the semester. The field notes found that some students tended to select less challenging books and books with fewer pages so that they could easily receive the prizes from the principal. They also often skimmed through books and then took tests afterwards.

Students' Views about Using the Accelerated Reader Program

Qualitative Results

The qualitative results illustrated the students' experiences and perspectives of the AR program. Three major themes emerged from the qualitative analysis.

Theme 1: The book selection hindered the joy of reading and interest in reading.

Over 90% of the participating population indicated that the strongest negative associated with AR was book selection as more than 25 selected students were concerned about AR reading materials. Foremost, they all pointed out that there were limited book selections in the school yet currently, AR has over 1,000,000 books in its database (Renaissance Learning, 2010). The field notes indicated that the AR reading list generally included books from big publishing companies and popular authors and there were only a few small companies and unknown or new authors. Since the participating school purchased the economy package when they began the program three years ago, the students were not able to select newly released books. As a result, the ability of these students to explore currently available materials was severely restricted by the AR program.

Several of the selected students also indicated that "The AR books were not what our ages like to read because so many interesting books were not in the AR system." The researcher also discovered that many students were always wandering in the library, saying, "They (the books) are very boring subjects." The statement was often heard in either the library or in classrooms, especially from seventh and eighth

grade students. Some selected female students also complained about the content of the books; "Some books involved violent content." Some male students frequently critically reviewed some books as they commented that the books were, "All about slavery and savages" and "These subjects were repeated over and over again in the middle school textbooks." Even though these students made many negative comments about the AR reading materials, they all agreed that they were pushed to read but not voluntarily. They also believed AR could increase their amount of time in reading if the program provided more interesting topics and if the school designated some time to read AR books at the school.

Theme 2: The amount of time required for students to spend on the AR program inhibited their intrinsic motivation and engagement to read.

The participating school did not specifically allot a time for the AR hours; students had to find the time to read on their own which could conflict with their afterschool activities. Many comments students made supported this thinking, "We checked out books but we did not have the time to read at home because we had afterschool programs." Greater than 80% of the participating students indicated that the time required for AR reading was beyond what they could manage. The majority of those selected also believed that the amount of reading required for them was impractical and was too time consuming.

The field notes revealed that the use of AR tended to lead some students to cheat as they shared books and answer keys in the classroom or selected books that had been made into movies that they had already seen. Some eighth-grade students often talked about how to find answer keys for certain books and used websites to read chapter summaries in order to take AR tests without actually doing any reading. Many students seemed to have the attitude that one had to learn how to beat the AR system.

Additionally, the result of the survey given to all 211 students showed that more than 70% indicated that AR did not foster students' motivation to read (see Table 3). Field notes also revealed that since AR was being used at the school, many students felt they were being pressured or being "asked" to read as they were not given a choice to select from their personal reading interests. The field notes documented that there was little active motivation to read in the participating school and students' attitudes indicated that they read because they had to. Some students mentioned that they were more interested in reading personal choice materials without taking any tests. They believed that personal interest increased their levels of attention and comprehension even when they were reading very challenging books.

Table 3. *AR Promotes Reading Motivation and Engagement*

Degree	Number of Students	Percentage of Students
1 (Almost never)	80	38
2 (Rarely)	76	36
3 (Often)	29	14
4 (Almost always)	26	12
Total	211 students	

Theme 3: AR decreased positive social interaction with peers and increased competition.

The quantitative results showed that over 92% of the students believed AR did not foster social interaction or support social activities with their peers. Students also reported that the AR reading program was not a "social activity" within a school context and that AR led students to become competitors because they had to pass the tests to accumulate points for the class (see Table 4).

Table 4. *AR Supports Social Activities/Communications with Peers*

Degree	Number of Students	Percentage of Students
1 (Almost never)	109	53
2 (Rarely)	85	40
3 (Often)	13	6
4 (Almost always)	4	1
Total	211 students	

Based on AR's designed reading levels, students could identify their peers' reading level. In some situations, competition can lead to hard feelings, low self-esteem, or outright ostracism. It also can push students to read at their frustration reading level or create problems among students. The field notes found that some students felt embarrassed when their friends said such things as, "You lost points again." These students were also very nervous while taking the tests and struggling to find answers as they felt they were being neglected or denied when they did not pass the tests. Some sixth-grade students mocked other students for not earning enough points, or "making us lose a class pizza party."

In relation to classroom contexts, the field notes revealed that some eighth-grade English teachers sometimes used instructional time for the AR program and students were given the time to read AR books without any instructional application. Their thinking was that since students had been instructed on how to pass the required standardized tests, many teachers believed that AR could improve their test

scores because AR gave them practice in taking multiple choice tests. The field notes also showed that a large number of students complained about taking the AR tests. "All about taking tests," was a common phrase heard at the school. Students also tended to view reading as an isolated academic task, while there were fewer book communities developing a love for reading, and even fewer book talks in classes. The researcher found that while many students were discussing books in school, they were mainly searching for answers to pass the AR tests.

Discussion

Results of the study indicated that, after a semester of exposure to the Accelerated Reader program, there were no statistically significant increases in reading scores among these middle school students. It also indicated that tests and prizes were not motivating forces to foster students' reading achievement and that book choices and personal interests were more effective in encouraging reading and promoting literacy development. To verify the results, there are some areas that need further discussion as to why the AR did not promote reading motivation and achievement for these middle school students as well as why the findings differed from the AR company's studies.

First, there is a need to discuss the components of the STAR program used to diagnose students' reading levels. The STAR is a cloze procedure where students select the best vocabulary word for each question. It does not incorporate oral reading comprehension or any teacher's observations of students' reading behavior. According to the program's philosophy, the STAR tests tell students their Zone of Proximal Development (ZPD; Vygotsky, 1978), or what level books they should read. In this study, many students often guessed what they considered to be the best answers while taking the STAR assessment. Therefore, some students ended up reading books that did not match their grade level. This study also corroborated some findings from previous studies that the STAR test is not a reliable and valid instrument to determine students' reading levels or provide the student's independent performance level (Biggers, 2001; Pavonetti et al., 2003; Pennington, 2010).

Second, there was a question about the AR scoring system and quizzes. According to the AR program, it demonstrates students' reading achievement by student completion of computer-generated multiple-choice tests. The program does not suggest written responses, extension activities, or repeated interaction with the text. In AR, students are taking end-of-book tests that are composed of literal recall questions. There is only one specific correct answer for each question (Institute for Academic Excellence, 1998) and students cannot retake the test when the test

scores are below 60%. Therefore, students have to focus on memorizing the texts to pass the tests in order to demonstrate comprehension and readiness to progress to the next level, eventually scoring high on an AR test. The AR scoring points and multiple-choice tests could be detrimental to reading motivation and the quality of reading and learning for some students because the AR tests do not require high-level thinking skills and reflection on the texts (Bigger, 2001; Carter, 1996; Pavonetti et al., 2003; Pennington, 2010).

Third, looking at book selections, many kinds of books may not be present at the school library, especially the newest releases, nonfiction, and poetry. Students were neither given opportunities to select books not in the AR program nor allowed time for purely recreational reading. This could cause students to miss some wonderful new books or miss opportunities to access more current world literature. In this study, many students gradually lost their curiosity and interest in reading due to limited personal reading choices. While AR has over one million titles available, this school library chose the economy package and thus their selection was limited. The limited book selections could also decrease students' interest in reading for its own sake. This study has also corroborated several earlier research studies that said one of the disadvantages of using AR was the limited book selections (Carter, 1996; Chenoweth, 2001; Pennington, 2010; Thompson et al., 2008).

Fourth, concerning the attitude and motivation of the students about the program, AR focuses on external motivation, therefore control of reading is strengthened by the reward and competitive points systems built into the program (Biggers, 2001; Pavonetti et al., 2003). Extrinsic motivators such as those suggested by AR could be problematic and reduce intrinsic motivation to read because many students dislike having to pass a test to earn points. In this study, many students lost confidence in reading when they failed tests, read less challenging books, and cheated on the tests. AR is a highly reward-based reading program that could replace the intrinsic rewards of reading and devalue reading because many students were more interested in extrinsic awards. The current study also verified the claims of earlier studies that students become dependent on the reward for their motivation, and read less frequently when the reward was discontinued or taken away (Baker & Wigfield, 1999; Gambrell & Marinak, 1997; Sweet, 1997; Wigfield & Guthrie, 1997).

Fifth, AR tends to minimize the teaching and instructional practice of diagnostically based reading strategies (Pennington, 2010). Students are not grouped by ability or skill deficits with AR and teachers neither spent additional time with low achieving students nor did students receive differential instruction according to their designated AR reading ability. For example, the STAR test identified three students

who were below their reading grade level but they did not receive any supplemental reading materials or extra instruction. Some teachers believed they were giving differentiated instruction because all of their students were reading books at their own reading levels. Additionally, while comparing test scores, the social nature of reading and positive peer interaction was minimized. This caused more competition as students became discouraged and tried to avoid reading in the classroom context. The results of this study also corroborate some previous studies, such as Brisco (2003) and Krashen (2002), which found AR does not have an instructional component, nor does it offer extension activities or increased interaction with the text.

Limitations

The current study has four limitations. The study was conducted in only one middle school with 211 students in the southern United States so the results of the study cannot be generalized as a whole. This study also did not compare the students' standardized scores after they were exposed to the AR program thus there are no research findings that document the effectiveness of AR programs on the standardized test results. The original data collecting procedure was for the researcher to visit each classroom to recruit students to participate in this study. Since the school had varied schedules for each grade level, the principal suggested that the researcher give the surveys to each homeroom teacher. Self-reported surveys by students could be a limitation because they were done without having the researcher's supervision. The final limitation is that this study only explained one of many aspects of middle school students' computer-based reading activities. The effects of reading achievement and motivation need to be further investigated in middle school contexts. This research may include such topics as interesting reading topics, instructional practices, teacher's expectations, and peer influences in reading activities.

Implications

In spite of these limitations, the study suggests four important messages for teachers, librarians, and administrators. One is that we need to provide different genres and levels of books for students to make choices. Many studies have shown that students learn more or perform more efficiently when given choices about their reading. Choice also could increase students' reading interest and motivation (Parker & Lepper, 1992; Sweet, Guthrie, & Ng, 1998). Personal reading choice and interest can be powerful motivating forces to drive middle school students' reading and achievement.

The testing system has also been ingrained in American school contexts. Taking tests is inseparable from the larger school context and grades are often used as yardsticks to measure students' learning (Lau, 2004). Students are also being "tested" or put under "trial and error" experimental testing programs. We need to consider the effects of such testing on students' abilities to foster creative thinking and instead bring them the pure joy of reading (Pavonetti et al., 2003). We also need to value students' voices and let students have ownership and self-regulation of their reading experiences to promote reading motivation.

Since many state standardized or computer-assessed programs are considered as requirements in middle school contexts, many teachers, administrators, and policy makers seem more focused on students' testing scores and comparisons of nationally standardized, state-administered tests or even international ones. We often believe the results of these tests present or reflect the effectiveness of teacher instruction and student learning performance. This trend leads many publishers and commercial programs to create more computerized instruments and programs to promote their perspectives of reading achievement. We need to know how to implement a variety of effective strategies and assessments to better meet students' instructional needs and identify their learning outcomes.

With the standardized-test phenomenon, literacy instruction is changing in profound ways. As literacy educators, we should not limit reading to the computer-assisted testing domain because reading requires substantial strategic efforts and motivation (Stipek, 2002; Wigfield & Guthrie, 1997). Research has found that both teachers' designing of the classroom learning and interpersonal interaction with individual students can promote or reduce students' motivation for learning and achievement (Hardre & Reeve, 2003). We also need to continue providing effective literacy strategies including integrated technology applications, opportunities for students to participate in social interaction (Pavonetti et al., 2003), and a wide array of interesting reading materials and topics to advocate for middle school students' motivation to read.

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