THE EFFECTS OF A STORY FACT RECALL QUIZ AND GAME ON OFF-TASK BEHAVIOR DURING SUSTAINED SILENT READING (SSR) AND THE NUMBER OF STORY FACTS RECALLED FOLLOWING SSR FOR SECONDARY STUDENTS WITH DISABILITIES

DISSERTATION

Presented in Partial Fulfillment of the Requirements for Degree of Doctor of Philosophy in the Graduate School of The Ohio State University

By

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* * * * *

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ABSTRACT

Motivating students to read for pleasure challenges many educators. Sustained Silent Reading (SSR) is a strategy used by many teachers to provide children with a regular opportunity to read. The classroom teacher designates a time during the day during which students can read books, magazines or newspapers for pleasure. The purpose of SSR is to give students an opportunity to practice reading and to increase their enjoyment for literature (McCracken, 1971). One of the major concerns with SSR is that students are not held accountable for what they read during the SSR period and are often engaged in other tasks besides reading. The National Reading Panel (2000) reported there is insufficient research to support the use of SSR and that it has very little effect on student achievement and fluency.

The purpose of this study was to replicate and extend the research by Brame (2001) to secondary students with disabilities. This study evaluated a modified version of SSR using story fact recall quizzes, a story fact recall game, and a story fact recall game with a bonus incentive on the off-task behavior during SSR and number of story facts recalled on 5-question quizzes following SSR by secondary students with disabilities. Additionally, students’ pre- and post-SSR attitudes about reading were assessed at the beginning and end of the study.

Twelve 11th grade special education students enrolled in two developmental language arts classes participated in this study. Six students identified by their classroom
teacher as exhibiting elevated levels of off-task behavior were targeted for observation of off-task behavior. Over the course of the study all six target students reduced their levels of off-task behavior to near zero levels. Ten of the 12 students had higher mean scores on story fact quizzes during the game condition over the quiz-only condition. Social validity data from both the classroom teacher and students indicate that a modified SSR can be beneficial to high school students with disabilities.

The results of the study further support the need for more research surrounding SSR. Future research should address the concerns of increasing student motivation to read for pleasure but also seek methods for increasing achievement during SSR so that valuable instructional time is not lost.
Dedicated to the late H. Kenton Reavis,

who encouraged the ‘Young Lion’ within me.
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FIELDS OF STUDY

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CHAPTER 1
INTRODUCTION

Learning to read is a major part of a child’s education and education is that child’s key to future success (Adams, 1990). The current information age and global economy will be unforgiving to workers with poor reading and literacy skills, but unfortunately, many students do not read at a proficient level. The United States Department of Education (1999) reported that 40% of 4th graders are below basic in their reading ability. Juel (1988) found that students who are poor readers in the first grade have almost a 90% chance of remaining poor readers in the fourth grade. The International Reading Association indicated that today’s adolescents “live in a world that requires them to be more literate and engage in more kinds of reading and writing than was required of their counterparts in previous generations” (Moore, Bean, Birdyshaw, & Rycik, 1999).

One of the greatest challenges faced by educators is motivating students to read independently and recreationally so they become life-long readers. In a report by the Organization for Economic Cooperation and Development (Education at a Glance, 2002) it was stated that most 15-year-olds do not read for enjoyment. In a longitudinal study of students in 1st through 4th grade Juel found that 40% of struggling readers would rather clean their room than read, compared to only 5% of average readers. A possible solution to this problem is to find ways to not only increase reading ability, but also increase the
interest of students to read independently for leisure. Sustained Silent Reading is a strategy often recommended to increase students’ leisure reading (Brozo and Simpson 2003).

Sustained Silent Reading (SSR) is a procedure used in thousands of classrooms each school day. Many teachers, from elementary through secondary grades, use SSR to increase independent reading and provide opportunities for students to read for pleasure. SSR is 15-20 minutes set aside on a daily basis for all students to read a book of their own choosing. The students read books, magazines, or newspapers quietly and independently. The intent of SSR is to give students practice reading and to increase their appreciation of literature and enjoyment of reading. Hunt (1970) introduced the concept of uninterrupted sustained silent reading (USSR).

In 1971 McCracken recommended six guidelines for teachers to follow when implementing SSR:

1) each student reads silently,
2) the teacher reads,
3) each student selects a book, magazine or newspaper,
4) a timer is used,
5) there are absolutely no reports or records of any kind, and
6) use with a whole classes or large groups of students (adapted from pp. 521-522).

Pilgreen (2000) suggested some additional factors for enhancing the effectiveness of SSR: direct access to books (i.e., providing the reading materials rather than requiring the students to bring them from home), staff training, (i.e. training that clarified the
teacher’s role during SSR), designated time to read (i.e., providing reading opportunities on a regular basis) and follow-up activities (e.g., whole-class discussions, constructing murals related to the book).

One of the problems with McCracken (1971) and Pilgreen’s (2000) guidelines is that students are not held accountable for what they read. McCracken and Pilgreen make it very clear that there are to be no reports or records of any kind (e.g., book reports, oral retells). Without accountability some children will only occasionally read or not at all during the SSR period. Those students who are not reading are often those with learning disabilities and may be too distracted to concentrate on a reading task for an extended period of time (Mikulecky & Wolf, 1977). Although Hunt (1970) claimed that SSR gives children the power to “propel himself through print” (p. 150), SSR is of little benefit, if any, if students are not engaged in reading during the SSR period. If this is the case, many valuable minutes of instruction are lost in a child’s day.

The Individuals with Disabilities Education Improvement Act (IDEIA, 2004) requires that students with disabilities have measurable goals on their Individualized Education Plan. A teacher who wants to encourage leisure reading in her students would need a measurement system of reading performance in order to meet the criteria set forth in IDEA. Although time spent reading may seem sufficient, without some additional measure (e.g., comprehension, story recall) students who struggle to read may read very little or not at all during SSR.

The National Reading Panel (National Institute of Child and Human Development, 2000) reported that the best readers read the most and poor readers read the least. Additionally, high-ability high school readers tend to benefit more from
allocated reading time than low-ability readers. Students with learning disabilities represent the largest category of students with disabilities and approximately 90% of students with learning disabilities have deficits in reading (Kavale & Forness, 2000). Due to the academic delays of students with disabilities it is necessary for educators to modify their instructional methods, particularly when implementing a program like SSR. If educators are employing practices that do not require any type of accountability reporting the students’ annual progress may be difficult. The No Child Left Behind Act (NCLB) requires that students make annual progress and that progress be reported with the school’s report card. Teachers must find strategies that will improve the effectiveness of SSR and will contribute to efficient reporting on student yearly progress.

A possible solution for making SSR more effective in classrooms is to find ways to increase reading engagement during the SSR period and conduct comprehension checks following SSR. One idea may be the addition of a story fact recall quiz and story fact recall game in order to decrease off-task behavior during SSR and increase students’ reading comprehension. These two modifications of SSR are designed to increase student accountability and motivation to read during the SSR period.

Purpose of the Study

The purpose of this study was to replicate and extend previous research by Brame and colleagues to secondary students with disabilities (Brame, 2001; Brame, Ernsbarger, Heward, & Greulich, 2000). The intention was to evaluate students’ off-task behavior during SSR and conduct comprehension checks following SSR. The experimenter investigated the effects of a story fact recall game and that same game with bonus incentives on off-task behavior during SSR and quiz scores following SSR by secondary
students with disabilities. Researchers report that SSR results in an improved attitude toward reading (e.g., Pilgreen, 2000; Sadoski, 1980a), although the results vary greatly across studies. Therefore this study also included pre- and posttest measures of attitude toward reading to extend that body of research. Two concurrent experiments were conducted in two high school developmental language arts courses in a middle-class area of a mid-western state.

Research Questions

This study was designed to produce empirical data in response to the following questions:

1. What are the effects of a 5-question story fact recall quiz on the off-task behavior of secondary students with mild disabilities during SSR?

2. What are the effects of a story fact recall game on the off-task behavior during SSR of secondary students with mild disabilities?

3. What are the effects of a story fact recall game on the number of story facts recalled by secondary students with mild disabilities?

4. What are the effects of an additional reward incentive to the story fact recall game on students’ scores on story fact recall quizzes?

5. Do the attitudes of secondary students about reading change after participation in SSR, story fact recall quizzes, and a story fact recall game?

6. What are secondary students’ opinions regarding SSR, story fact recall quizzes, and a story fact recall game?

7. What are the classroom teacher’s opinions of SSR, story fact recall quizzes, and a story fact recall game?
8. What are teacher’s opinions of SSR, story fact recall quizzes, and a story fact recall game?
CHAPTER 2

REVIEW OF THE LITERATURE

This chapter reviews the literature on sustained silent reading (SSR). The suggested benefits and potential limitations of SSR are addressed, in particular, how those factors are likely to impact reluctant readers and students with disabilities who struggle with reading. This chapter will also review literature on strategies for motivating and changing student reading behavior.

Sustained Silent Reading

*Definition, Rationale and Purpose of SSR*

Sustained Silent Reading is the most common name for independent silent reading, but it is referred to by several names: Uninterrupted Sustained Silent Reading (USSR) (Hunt, 1970), Drop Everything and Read (DEAR) (Clary, 1991), and Sustained Quiet Reading Time (SQUIRT) (Benedict, 1982). Regardless of what it is called, SSR is a time when all students and the classroom teacher are supposed to read silently for a designated amount of time. It is a special time set aside during the school day for one class or even the entire school to read self-selected books. In some schools, everyone including the principal, secretaries, and custodians stop to read (Brozo & Hargis, 2003; Tompkins, 2003). Oliver (1970) suggested several positive outcomes of SSR. Those include increased attention span, improved self-discipline, increased ability to self-select reading material, and enjoyment of reading and finally, refined and extended reading skills. Most current SSR practices are based upon guidelines provided by McCracken
(1971). He suggested the following six guidelines for conducting SSR: (1) Each student must read silently -- the teacher must deliver the message that he/she is very serious about the business of silent reading; (2) The teacher also reads--McCracken’s rationale for this is to set an example for the class, (3) Each student selects a single book or magazine--a wide variety of materials should be available and no book changing is permitted, (4) A timer is used--a small timer is used so the students will not know how much time has lapsed because reluctant readers will become clock-watchers, (5) There are absolutely no reports or records of any kind--students should not even keep a list of the books they have read, (6) Begin with the whole class or large groups of students who are heterogeneously grouped. McCracken recommends that no modifications are made to the above prescription for at least one month.

Pilgreen (2000) discusses eight factors for SSR success. They are (1) access--all successful programs included access to books, magazines, comics, and newspapers, (2) appeal--reading materials are sufficiently interesting and provocative enough for students to want to read them, (3) conducive environment--comfortable quiet places, (4) encouragement--adult modeling, sharing and discussing their books, (5) staff training--clarify the teachers’ role during SSR, (6) non-accountability--the key to non-accountability is to omit any activity that leads the student to believe they are responsible for completing a task, comprehending what they are reading or showing some type of improvement, (7) follow-up activities--activities that sustain their excitement about the books they are reading, (8) designated time to read that results in the development of a habit for reading. Most of the published studies were implemented based upon the guidelines set forth by McCracken (1971) and Pilgreen.
SSR is a widely accepted practice from kindergarten through high school (e.g., Burns, 1999; Harp & Brewer, 2005). Levine (1984) refers to SSR as a “necessary component” (p. 394) of any reading program. During SSR the duration of the reading time may vary with age, but the intended purpose is the same, to encourage leisure reading habits in young children and youth.

Thirteen reading methods textbooks examined for this literature review recommend SSR as a way to increase students’ reading skills (e.g., Eldredge, 2005) and/or attitude toward reading (e.g., Brozo & Simpson, 2003; Walker, 2000). In each of the textbooks reviewed, the authors report the important use and validity of independent silent reading. Table 2.1 displays a summary of the textbooks reviewed, the stated benefits associated with SSR, and the recommended practices for implementation.

Although many authors indicate SSR increases reading attitude and achievement, Towner and Evans (1975) and the National Reading Panel (2000) caution that there is insufficient research to support the practice of SSR.

McCormick (2003) states that silent reading practice is important because poor readers need practice sustaining attention and gaining ideas during silent reading, by reading silently students learn to comprehend better because they are focusing on the message, rather than decoding the words. Additionally, students have the opportunity to move through the material at their own pace.
<table>
<thead>
<tr>
<th>Textbook Author</th>
<th>Purpose/Benefits of SSR</th>
<th>Recommended Practices</th>
<th>Author Comments</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Increased Reading Ability</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Increased Comprehension</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Increased Attitude toward Reading</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Burns (1999)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brozo &amp; Simpson (2003)</td>
<td>X</td>
<td>X</td>
<td>15 min. daily</td>
</tr>
<tr>
<td>Eldredge (2005)</td>
<td>X</td>
<td>X</td>
<td>10-20 min. daily</td>
</tr>
<tr>
<td>Leu &amp; Kinzer (2003)</td>
<td>X</td>
<td>X</td>
<td>10-20 min. daily</td>
</tr>
<tr>
<td>May &amp; Rizzardi (2002)</td>
<td>X</td>
<td>X</td>
<td>10-20 min. daily</td>
</tr>
<tr>
<td>McCormick (2003)</td>
<td>X</td>
<td>X</td>
<td>15-30 min daily</td>
</tr>
<tr>
<td>Tompkins, (2003)</td>
<td>X</td>
<td>X</td>
<td>15-30 min. daily</td>
</tr>
<tr>
<td>Walker (2000)</td>
<td>X</td>
<td>X</td>
<td>5-10 min. daily</td>
</tr>
</tbody>
</table>

Table 2.1: Summary of reading methods textbooks reviewed.
**Benefits of SSR**

**SSR and Increased Reading Achievement**

In an effort to describe the benefits of SSR, researchers have investigated the relationship of SSR and reading achievement (e.g., Collins, 1980; Minton, 1980; Pilgreen, 2000; Towner & Evans, 1975). The results from studies conducted to verify this relationship are mixed: some studies report a positive relationship (e.g., Davis, 1988; Holt & O’Tuel, 1989; Kornelly & Smith, 1983); others report no difference (e.g., Towner & Evans, 1975; Collins, 1980; Davis, 1988); and others report a minimal change, if any, in achievement following SSR activities (e.g., Manning & Manning, 1984). Although Hunt referred to SSR as “the pinnacle of achievement with regard to teaching skillful reading” (1984, p.192), but there has been insufficient research evidence to support his statement.

Minton (1980) investigated the effects of a 15-minute SSR period on the reading comprehension of 550 ninth graders. The study lasted one school semester. The researcher assessed students’ gains in reading ability by administering the *Gates-MacGinitie Reading Test* (MacGinitie, Kamons, Kowalski, MacGinitie, & MacKay, 1980) three times during the school year (September, February, and May). During the fall semester, prior to the implementation of SSR, the students showed 7 months growth in oral reading speed and accuracy and no change in vocabulary or comprehension. Results indicated that the students involved in SSR demonstrated a 6 months growth in oral reading speed and accuracy, 3 months growth in vocabulary and 4 months growth in reading comprehension during that three-month period. Although the authors report that the increase in vocabulary and comprehension skills were the result of SSR, it is possible
that the gains made were also influenced by the increases in speed and accuracy of decoding that occurred prior to the implementation of SSR (i.e., during Fall semester).

Davis (1988) reported that sustained silent reading was more beneficial for students with medium to high-ability in reading than teacher-directed reading activities. Davis randomly assigned 56 ethnically diverse eighth grade English students to either a teacher-directed reading activity or an SSR group. A comparison of student’s pre- and posttest scores from the Comprehensive Test of Basic Skills (CTB/McGraw Hill, 1988) was conducted. The students with both high and medium reading ability, who participated in SSR, outscored those in the directed reading activities. Students with medium reading ability assigned to the SSR group scored 13 percentile points greater than the students in the teacher-directed reading activities group on the CTB. This is more than one-year’s difference in gains in reading. For the high-ability readers a difference of 5 percentile points was reported, this is not a significant difference. However, the findings may not be accurate because the difficulty level of the reading material was not sufficiently controlled. The materials the students were reading were closer to the instructional level of the medium-ability readers and the independent level of the high-ability readers. Therefore the gains made would be substantial for the medium ability readers and minimal for the high-ability readers. Due to this limitation it is difficult to compare the effects of SSR on the reading ability of high- and medium-ability readers.

In a study conducted by Pilgreen and Krashen (1993) 125 high-school students who had English as a second language participated in a 16-week SSR program. The authors used two measures of reading ability, self-report and a standardized reading
comprehension test. The results on the standardized test were somewhat remarkable. The students gained, on average, 15 months during the 16-week study. The self-report data support the results of the standardized tests in that 62% of the students reported having improved ‘a great deal’ and 37% indicated they had improved ‘some’ over the course of the 16 weeks.

Collins (1980) studied the effects of SSR on the reading achievement of elementary students, grades 2-6 following a 15-week SSR period. Pre- and posttest scores on the Gates-MacGinitie Reading Achievement Test (MacGinitie et al., 1980), the Iowa Test of Basic Skills (Hieronymus, Lindquist, & Hoover, 1980) and basal reading book placement levels were used to measure the reading achievement of the participants.

Collins randomly assigned 94 students to a control group and 126 students to SSR. Students in the SSR group read daily for 15 to 25 minutes instead of participating in English and spelling instruction. Results on the Iowa Test of Basic Skills in spelling and English showed no difference between pre- and posttest scores even though students were engaged in SSR rather than regular English and spelling lessons. The Gates-MacGinitie Reading Achievement Test was administered and demonstrated no significant difference between groups on Total test scores. Students in the SSR group progressed through the basal reading texts slightly faster (1/10 of a book) than the control group, even though they were not reading from their basal texts during the 15-week study. In summary, the results of Collins (1980) indicate no difference in reading ability for students who engage in SSR and those who do not.

Evans and Towner (1975) compared SSR and selected commercial reading materials and its effects on reading achievement. Forty-eight 4th graders were randomly
assigned to either SSR or a commercial materials group. All students received 1 hour of
daily teacher-directing reading instruction. Following reading instruction they were
grouped for 20-minute reading practice. The SSR group read independently and the
control group used a selection of commercially available materials for reading skill
practice. Students in the SSR group adhered to the guidelines given by McCracken
(1971). The authors used two forms of the reading subtest of the *Metropolitan
Achievement Test* (Durost, 1971) as pre- and posttest measures of the students’ reading
achievement. Results indicate no significant difference in reading achievement across the
two reading interventions over the 10-week study.

Manning and Manning (1984) evaluated the effects of three reading interventions-
SSR, peer interaction, and teacher-student conferences- and a no treatment control group
on students’ reading achievement. Twenty-four teachers and 415 fourth-grade students
participated in this study. The authors randomly assigned six classes to each reading
intervention. Intervention occurred for 30 minutes daily for an entire school year,
although the authors only visited the classrooms four times during the school year. Those
in the SSR group followed the guidelines set forth by McCracken (1971). Those in the
peer interaction groups read orally in pairs, had small group activities and held
discussions about the books they were reading. The students in the teacher-student
conference groups met one-on-one with the teacher to discuss the books they were
reading and made plans for future reading while the remainder of the class continued to
read. No organized recreational reading occurred with the control group.

The results reported by Manning and Manning (1984) indicate differences in the
posttest scores for reading achievement in all four groups. However, the students in the in
the peer interaction groups demonstrated a higher degree of reading achievement when compared to the other three groups. One concern with this study is that pretest measures were from the spring prior, rather than immediately preceded the study. Manning and Manning suggested continued research in order to determine the effectiveness of SSR.

Sadoski (1980a) reviewed the literature 10 years after the Hunt (1970) and McCracken (1971) articles. He determined that SSR is neither more nor less effective than other approaches used to increase reading achievement, although he does not specify which approaches. Sadoski noted that many of the studies he reviewed were very short in duration and with small groups of students. He stated that these factors impact the ability to thoroughly investigate the effect of SSR on reading achievement.

Wiesendanger and Birlem (1984) reviewed eight studies and concluded that the studies have produced mixed results. Four studies that investigated the effects of SSR on word comprehension and reading comprehension found that SSR either made no significant difference or had a negative effect on word and reading comprehension. The other four studies reported that students involved in SSR achieved significantly higher word and reading comprehension scores when compared to students who were not involved in SSR.

Moore, Jones, and Miller (1980) reviewed 10 years of research on SSR and found contradictory results across the ten studies. Moore and colleagues report that SSR has a positive effect on reading ability when it is combined with a regular program of reading instruction and that additional research is needed on SSR.

In summary, the results of the studies reviewed that examined the relationship between SSR and achievement have been inconclusive. Table 2.2 contains a summary of
the literature reviewed. Some authors report positive effects on achievement (e.g., Davis, 1988; Minton, 1980; Pilgreen & Krashen, 1993), while others report no differences in the use of SSR when students were compared with the control groups (e.g., Collins, 1980; Manning & Manning, 1984; Towner & Evans, 1975). Given the mixed results of the studies in this literature review it is not surprising that the authors reviewing the effects of SSR on achievement have been unable to make a clear conclusion (e.g., Sadoski, 1980a; Wiesendanger & Birlem, 1984).

The National Reading Panel (NRP, 2000) reported that hundreds of correlational studies that have been conducted on SSR. But only 14 of the studies that examined the effect of independent silent reading on reading achievement very few met the methodological criteria of the NRP. These studies varied widely in their methodological quality and the reading variables that were measured. The NRP was unable to find a positive relationship between programs and instruction that included large amounts of independent silent reading and improvements in student achievement. There is insufficient research from high quality studies to support the idea that these types of independent reading programs result in improved reading skills. Krashen (2002) contends that the NRP misrepresented or underrepresented the existing supportive literature on SSR, but Bryan, Fawson, and Reutzel (2003) reviewed an expanded set of studies conducted on SSR only to reveal a larger group of poorly designed studies. Rigorous
<table>
<thead>
<tr>
<th>Author/ Year</th>
<th>Participants/ Setting</th>
<th>Duration of the Study</th>
<th>Dependent Variables/ Assessments used</th>
<th>Independent Variables</th>
<th>Results</th>
<th>Social Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collins 1980</td>
<td>220 Second to Sixth graders</td>
<td>15 weeks</td>
<td>Pre- and posttest measures on Gates-MacGinitie Reading Test, Iowa Test of Basic Skills, Basal reading book placement</td>
<td>15-25 min of SSR, 15-25 min of English and spelling instruction</td>
<td>Pre- and posttest measures indicate no difference between those who were in SSR and the control group</td>
<td>SSR group progressed slightly faster through basal reading text</td>
</tr>
<tr>
<td>Davis 1988</td>
<td>56 Eighth Graders Medium to High-Ability in reading</td>
<td>3 days/ week for the entire school year</td>
<td>Pre- and posttest scores on Comprehensive Test of Basic Skills (CTB)</td>
<td>Teacher-directed reading activity and SSR</td>
<td>Students with medium-ability had a one-year gain in reading</td>
<td>SSR discontinued the following semester</td>
</tr>
<tr>
<td>Evans &amp; Towner 1975</td>
<td>48 Fourth graders</td>
<td>10 weeks</td>
<td>Pre- and posttest scores on Metropolitan Achievement Test</td>
<td>20 min of reading “practice” either SSR or Supplemental Materials Group (e.g., word recognition practice and vocabulary games)</td>
<td>No difference between the SSR and Supplemental Materials group</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.2 Literature summary of the effects of SSR on achievement.
<table>
<thead>
<tr>
<th>Author/ Year</th>
<th>Participants/ Setting</th>
<th>Duration of the Study</th>
<th>Dependent Variables/ Assessments used</th>
<th>Independent Variables</th>
<th>Results</th>
<th>Social Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manning &amp; Manning 1984</td>
<td>415 Fourth Graders</td>
<td>One school year</td>
<td>Pre- and posttest scores on <em>California Achievement Test</em></td>
<td>30 minutes daily SSR, Peer-interaction, Teacher-student conferences, No treatment</td>
<td>Students in the peer interaction group made more gains than SSR, student-teacher interaction and control groups.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 classes assigned to each group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minton 1980</td>
<td>550 Ninth Graders</td>
<td>One school semester (3 months)</td>
<td>Oral reading speed, accuracy, vocabulary, comprehension on <em>Gates-MacGinitie Reading Test</em></td>
<td>15 min of SSR</td>
<td>6 months increase in oral reading speed &amp; accuracy, 3 months increase in vocabulary, 4 months increase in vocabulary</td>
<td></td>
</tr>
<tr>
<td>Pilgreen &amp; Knashen 1983</td>
<td>125 high-school ESL students</td>
<td>16 weeks</td>
<td>Student Self-Report</td>
<td>12-15 min of daily SSR</td>
<td>Self-report; 62% participants reported having improving a “great deal”</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pre- and posttest scores on <em>Stanford Diagnostic Reading Comprehension</em></td>
<td></td>
<td>Students gained 15 months of reading ability in 16 weeks</td>
<td></td>
</tr>
</tbody>
</table>
research studies designed to assess the effects that independent silent reading has on increased reading achievement, fluency, engagement and motivation have not yet been conducted. Robertson, Keating, Shenton, and Roberts (1996) report that unfortunately, teachers often use SSR because they “inherited the system” (p. 29), not because it is a research-based practice that increases reading ability or achievement.

**SSR and Student Attitudes about Reading**

Many teachers and administrators believe that improving student attitude toward reading is just as important as improving reading comprehension, word recognition and word analysis skills (Teale & Lewis, 1981). Harris and Sipay (1990) state that attitude is a mental construct that cannot be measured, but only inferred through observations and self-report. Even though this is the case, many researchers (e.g., Herbert, 1987; Mazur-Stewart, 1986) use measures of attitude toward reading as an indication of a successful program. In addition to the effects SSR has on reading achievement many researchers have investigated children’s attitudes toward reading. Grumbaugh (1986) indicated that “developing a positive attitude toward reading is perhaps the most important result of the research on SSR” (p. 169). Several studies (e.g., Collins, 1980; Manning & Manning, 1984; Sadoski, 1986) have investigated the effects of SSR on the attitudes toward reading of students across ages. While the research reports have been unclear regarding SSR and its effects on achievement, the consensus regarding SSR is that it is useful in developing reading maturity and a positive attitude about reading (Pilgreen, 2000; Sadoski, 1980b). Some researchers have used published attitude scales (e.g. Estes Attitude Scale, Estes, Estes, Richards, & Roettger, 1986) but many authors have created their own measure of reading attitude (e.g., Collins, 1980; Sadoski, 1986). For example, Tullock-Rhody and
Alexander (1980) developed a 25-item checklist to categorize a student’s attitude toward reading and books. It is a summative rating scale that allows students to express degrees of feelings about each item with a five-point Likert scale from “strongly disagree” to “strongly agree”. Some example items from the scale are “You think people are strange when they read a lot”, “You like to get books as gifts”, and “You are willing to tell people that you do not like to read” (p. 612). Another type of reading attitude scale was developed by Rowell (1972), in which the teacher completes the scale based upon the behavior that she has observed in her students.

Mazur-Stewart (1986) conducted a study with 44 college students with reading difficulties from two sections of a class titled, Effective Reading. Attitudes of students enrolled in an Effective reading course with SSR and the Effective reading course without SSR were compared. Effective Reading is an open reading-lab course in which students complete various assignments at their own level of difficulty and pace. The students in the class were given a pre-and post-study attitude questionnaire. They were asked to respond to a 5-point Likert scale questionnaire that had been developed by the experimenter. The students’ attitude scores changed from 3.44 to 3.67 (p<.05), a statistically significant reading attitude change. The difference between the students’ performance on the *Stanford Diagnostic Reading Test* were insignificant. One finding of note is the increased attendance during the semester with SSR. During the previous year the average number of class sessions missed in the Effective Reading class without SSR was 10.7, in comparison with the same class taught by the same instructor the next semester the average number of missed classes decreased to 6 during the Effective Reading class with SSR.
Sadoski (1980b) conducted a brief study using SSR in a high school in a lower-middle-class suburban area. The author created his own attitude scale that contained only five questions regarding the SSR program being implemented at the school (e.g., “To what extent did you participate in the SSR periods?”; “Did you come prepared to read during the SSR periods?”). The results of the survey indicate an increased attitude toward reading. After SSR several of the students in the study indicated an interest in continuing the program for the following school year.

Dwyer and Reed (1989) conducted a study with 40 fourth and fifth graders in a lower-middle class section of a mid-size city in an attempt to clarify the findings of several previous studies that had reported mixed results when measuring a change in attitude toward reading due to SSR. The authors used the *Rhody Secondary Reading Attitude Assessment* (Tullock-Rhody & Alexander, 1980) to assess student attitude. The authors assigned 19 students to the SSR group and 21 students to the control group. Both groups received reading instruction from one of the authors. The main difference occurred when the SSR group read independently for 15 minutes and the control group received an additional 20 minutes of instructional time. The results indicate that the SSR group had an overall drop of two points from pretest to posttest on the attitude scale following SSR. The boys’ attitude scores dropped slightly from 79.85 to 72.57 and the girls’ attitudes increased by 1.5 points. There were no substantial differences in any participants of the control group in pre- and posttest scores. These findings were similar to Parker and Paradis (1986) who reported that female students show a more positive attitude toward reading than do male students.
Mikulecky and Wolf (1977) evaluated the effects of three treatments on attitude scores of 135 seventh graders with pre- and posttest measures on the *Mikulecky Behavioral Reading Attitude Measure* (MBRAM). This is a 20-item measure that uses descriptions of “life-like-out-of-school” reading situations (e.g., “You find yourself giving special books to friends or relatives as gifts”, p. 128). The MBRAM was validated against eight other reading attitude scales and demonstrated a test-retest reliability of .91. Treatments were implemented for 20 minutes per week over a 10-week period. The students were randomly assigned to Sustained Silent Reading (SSR), Reading-related games or a Skills activities group. Students in the SSR group simply read book of their own choosing for approximately 20 minutes a week. Students in the Games group played reading-related games (e.g., Scrabble, Password), in pairs, for approximately 20 minutes per week. Those in the Skills group participated in self-selected activities for approximately 20 minutes per week either alone, in pairs or small groups. The Skills related materials included timed readings, word mazes, brain teasers etc. The results for all treatment groups were somewhat negative, indicating a small decrease in positive reading attitudes. Each of the students completed a self-report on an increased “liking for reading”, 1 indicated a decrease in liking, 3 indicating no change in liking and 5 indicating an increase in liking for reading. The mean rating for the entire group was 2.7 (N=129), indicating a slight decline in “liking for reading”, across groups over the 10 week period. Although not statistically significant, the SSR group demonstrated the smallest loss of reading attitude. Three open ended questions were asked of 112 of the subjects, one of which was the most and least liked activity. More students requested increased use of SSR during reading class. Although the authors report that students
preferred SSR over the other two methods, the lack of actual intervention for each of the treatments (20 minutes per week) would question their conclusions.

Minton (1980) investigated the effects of a 15-minute daily SSR period on attitude of 550 ninth graders. The study was conducted over one school semester and the researcher implemented SSR as described by McCracken (1971). Attitude was evaluated using a teacher-made questionnaire that included questions such as, “What word best describes your attitude toward reading?” and “How often do you notice yourself talking with someone about something you’ve read?” The questionnaires were administered to 20 classes that were randomly selected from 10 different subject areas. The results of the attitude survey were unclear. At the conclusion of the semester, 6% more students reported that an SSR period was “a good idea”, but 27% fewer students reported that they were currently reading a book for pleasure, compared to the number of students who were reading a book for pleasure prior to SSR. At the end of the school year 15% fewer students said they ‘enjoyed’ reading and 12% more described their feeling toward reading as ‘hate’. A staff survey indicated that 52% of the staff thought the program was unsuccessful. The program was discontinued the following semester due to lack of staff support.

Collins (1980) conducted a study to identify the effects of SSR on the attitude toward reading for elementary aged students, grades 2-6 following a 15-week SSR period. Three assessments were administered to the students: How I Feel About Reading, The Attitude Assessment and the Teacher Individual Pupil Evaluation, two of which were created by the author. Collins randomly assigned students to either a control group (n= 94 students) or SSR group (n= 126 students). Students assigned to the SSR group read daily
for 15-20 minutes in lieu of English and spelling instruction. No assignment changes were made for students in the control group. The authors report that student attitude, regardless of the group to which they were assigned, became more negative toward reading.

Herbert (1987) conducted a survey with 636 students enrolled in 7th, 8th and 9th grade who were participating in 12-minute SSR sessions in their school 4-5 times per week. The majority of the responses to the survey regarding SSR were negative (57%). The students reported that SSR did not improve their reading skills and many of them admitted to not actually reading during the SSR period. One interesting finding from the survey is that even those students who liked to read reported negative feelings about SSR.

Yoon (2002) conducted a meta-analysis of the effects of SSR on attitude toward reading. Initially, abstracts of 350 studies were reviewed, but 307 studies were removed because statistical information needed for calculating effect size was not available. The remaining 43 studies were reviewed, but due to insufficient information or missing criteria for inclusion, seven studies remained in the analysis. The inclusion criteria were; (a) an SSR group was compared to a control group, (b) studies contained statistical information to estimate effect size, (c) studies were after 1970, published or unpublished (e.g., doctoral dissertations) and (d) outcomes measures included reading attitude. There were several features of each study that were investigated. These included; the duration and type of treatment, the participant characteristics, the control group used, and the sample size. For the meta-analysis, two factors, duration of the treatment and the participant’s grade level were analyzed because they exerted more influence on the effect sizes than the other variables. Overall, the reading attitude score of those in SSR
exceeded 55% of the attitude scores of those in the control group. When calculated by grade level, the lower grade students’ in SSR exceeded the scores of 63% of the lower grade students and 52% of the higher grade students.

In some of the studies reviewed, although student attitude toward reading decreased, the data from those same students indicated an interest in continuing SSR for the following semester or year (e.g., Sadoski, 1980b). Similar to the findings regarding student achievement and SSR, the effects of SSR on reading attitude are inconclusive at best, and therefore make it difficult to draw a clear conclusion. The inability to do this may be due to insufficient ways to effectively measure attitude.

Some researchers (e.g., Sadoski, 1986; Mazur-Stewart, 1986) reported that SSR resulted in an increase in attitude toward reading. The rest of the literature reviewed (e.g., Collins, 1980; Herbert, 1987; Mikulecky & Wolf, 1977) indicated that SSR resulted in a negative attitude toward reading. Table 2.3 contains a summary of the literature reviewed on SSR and its effects on student attitude toward reading. Due to these results additional research that addresses the effects of SSR on student attitude toward reading is warranted.

*Limitations of Sustained Silent Reading*

This section of the literature review will discuss the limitations of Sustained Silent Reading (SSR) as it relates to students with disabilities and reluctant readers, lack of accountability for students and the potential for off-task and disruptive behaviors during SSR.

**SSR and Students with Disabilities, Reluctant Readers, and Poor Readers**

SSR is particularly appropriate for the independent medium- to high-ability readers who enjoy reading (Davis, 1988; Walker, 2000). However, when implemented as
designed, SSR poses a problem for students with learning and behavioral disabilities. During SSR, the teacher instructs students to read silently for a specified period of time, and often the teacher will implement the guidelines suggested by McCracken (1971). These guidelines include heterogeneous groups and that no reports of any kind are kept. Abiding by these guidelines for a classroom teacher whose students have a wide range of reading ability and inappropriate behavior during independent reading time would be a great challenge. Often this SSR time may be frustrating for struggling readers, particularly if they are being asked to perform a task for an extended period of time in which they do not perform well. In order for students to become fluent readers they should practice, but SSR may not be effective for a student who is struggling with basic word recognition skills. It is unlikely that a students’ fluency will improve if he spends 15 minutes staring at a book that he cannot decode (Reutzel & Cooter, 2003, 2005).

In addition to students who struggle with reading there are those students who can read, but who lack motivation and interest to read independently. These students are often referred to as reluctant readers (Stringer & Mollineaux, 2003). McCormick (2003) stated that during SSR, “reluctant readers may be disinclined to read and instead sit staring at an open page” (p. 322). Regardless as to why the student does not read during SSR, it is still wasted instructional time. Beckman (1984) reported that many students view in-class reading time as “supervised penance” (p. 84). This section addresses how SSR might affect students with reading disabilities and reluctant readers.

Burge (1983) investigated the effects that silent and oral reading have on the reading rates and comprehension skills of 4th graders. The students selected for the study performed below the 50th percentile on the SRA Achievement Test (Naslund, Thorpe, &
Lefever, 1983) and mean scores for these students were 2.9 grade equivalent and 34th percentile rank. The researcher assigned the students to either a silent or oral reading group. Data collected included students’ comprehension levels and reading rates at the second-, third, and fourth-grade levels.

Burge (1983) analyzed the data using a t-test, and reported a significant difference between silent and oral reading rates. The students’ mean reading rates were higher during the silent reading, 102.6 words per minute versus 86.9 words per minute during the oral reading. However, the comprehension rates were significantly higher for oral reading than for silent reading but only at the third-grade level. Burge stated, “When students read materials aloud, they know that the teacher is able to determine whether or not they have read” (p. 205).

In contrast to the above findings, Fuchs and Maxwell (1988) investigated the effects of oral and silent reading on the comprehension of 44 boys enrolled in grades 3-8 who were one year or more behind in reading and had been identified with a learning disability. The participants were given 5 minutes to read a story and then were required to immediately retell it. Those students in the silent reading group recalled more idea units than those in the oral reading group. The authors state that “The attentional capacities of poorer readers are taxed when reading orally, rather than silently, and thus that their reading ability to comprehend is limited by oral reading” (p. 103).

Weisendanger and Bader (1989) monitored the summer reading habits of students who had participated in SSR during the previous school year and those who had
<table>
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<tr>
<th>Author/Year</th>
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<th>Duration of the Study</th>
<th>Dependent Variables/Assessments used</th>
<th>Independent Variables</th>
<th>Results</th>
<th>Social Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collins 1980</td>
<td>220 Second to Sixth graders</td>
<td>15 weeks</td>
<td>Pre- and posttest measures on three attitude scales (2 were author-made)</td>
<td>15-25 min of SSR, 15-25 min of English and spelling instruction</td>
<td>Decrease in attitude for both SSR and control groups</td>
<td>Not reported</td>
</tr>
<tr>
<td>94 assigned to control group</td>
<td>126 assigned to SSR</td>
<td></td>
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<tr>
<td>Dwyer &amp; Reed 1989</td>
<td>40 lower class fourth and fifth graders</td>
<td>Pre- and posttest scores on <em>Rhody Secondary Reading Attitude Assessment</em></td>
<td>15 min SSR or 20 min instructional time (control group)</td>
<td>Overall loss of 2 points on attitude scale Boys’ attitude scores decreased slightly</td>
<td>Not reported</td>
<td></td>
</tr>
<tr>
<td>19 assigned to SSR</td>
<td>21 assigned to control group</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Herbert 1987</td>
<td>636 seventh, eighth and ninth graders</td>
<td>12-minute sessions of SSR 4-5 times/ week</td>
<td>57% of students responded negatively to SSR</td>
<td>Many students reported they did not read during the SSR period</td>
<td>Many reported negative feeling about SSR</td>
<td>Not reported</td>
</tr>
<tr>
<td>Manning &amp; Manning 1984</td>
<td>415 Fourth Graders</td>
<td>One school year</td>
<td>Pre- and posttest scores on <em>Manning Reading Attitude Inventory</em></td>
<td>30 minutes daily of SSR, Peer-interaction, Teacher-student conferences, or No treatment</td>
<td>Students in the peer interaction and student teacher interaction groups made more gains than SSR and control groups</td>
<td>Not reported</td>
</tr>
<tr>
<td>6 classes assigned to each group</td>
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Table 2.3 Literature summary on the effects of SSR on attitude
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<tr>
<th>Author/ Year</th>
<th>Participants/ Setting</th>
<th>Duration of the Study</th>
<th>Dependent Variables/ Assessments used</th>
<th>Independent Variables</th>
<th>Results</th>
<th>Social Validity</th>
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</thead>
<tbody>
<tr>
<td>Mazur-Stewart 1986</td>
<td>44 college students enrolled in an Effective Reading course</td>
<td>Pre- and posttest attitude scores on a 5-point author-made scale</td>
<td>Attendance to Effective Reading class</td>
<td>SSR</td>
<td>Students attitudes changed from 3.44 to 3.56 (p&lt; .05).</td>
<td>Not reported</td>
</tr>
<tr>
<td>Mikulecky &amp; Wolf 1977</td>
<td>135 seventh graders</td>
<td>10 weeks</td>
<td>Pre-and posttest measures on Mikulecky Behavioral Reading Attitude Measure (MBRAM)</td>
<td>20 min weekly in SSR, Reading Games or Reading Skills Groups</td>
<td>All groups had a small decrease in attitude toward reading</td>
<td>Not reported</td>
</tr>
<tr>
<td>Minton 1980</td>
<td>550 ninth graders</td>
<td>One school semester (3 months)</td>
<td>Pre- and posttest measure on a teacher made questionnaire</td>
<td>15 minutes of daily SSR</td>
<td>6% more students stated SSR was a “good idea” 27% fewer were reading a book for pleasure</td>
<td>Program discontinued due to lack of student and staff interest/ support</td>
</tr>
<tr>
<td>Sadoski 1986</td>
<td>High school middle-class suburban area</td>
<td>Five-question author made attitude survey</td>
<td></td>
<td></td>
<td>Increased attitude toward reading</td>
<td>Students wanted to continue SSR the following year</td>
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</table>
participated in a traditional reading program. The authors sent home a form on which the student would record the amount of time they engaged in reading over the 9 weeks of the summer. Of the 93 students originally asked to participate, 54 of those returned forms with at least 8 of the 9 weeks completed. Of the 54 that had been returned, 25 had participated in SSR and 29 had participated in the traditional reading program. Students in the SSR group read an average of 90 minutes per week compared to 76 minutes per week for students in the traditional reading group. SSR had the greatest effect on students of average reading ability as students in the SSR group read an average of 110 minutes per week and students in the traditional reading program read an average of 70 minutes per week. Overall, above average students read more during the summer—an average of 137 minutes per week compared to 90 minutes for average ability readers and 22 minutes for low-ability readers. However, the amount of reading by above average students was not affected by SSR, those in SSR read an average of 140 minutes per week and those in the traditional reading program averaged 135 minutes per week. These results are important because Wiesendanger and Bader found that low ability readers read “substantially less” than average or high ability readers, in both the SSR and traditional reading groups. Low-ability readers in the SSR group read an average of 21 minutes weekly and students in the traditional group read an average of 23 minutes weekly. Wiesendanger and Bader stated, “Below average readers were least affected by SSR, which indicates the need to develop motivational techniques that would encourage recreational reading” (p. 165).
In order to motivate reluctant readers Johns (1978) recommends conducting a careful assessment of the students’ reading ability and then finding materials for the student to read that interests them. In the interviews conducted by Robertson et al., (1996) many teachers stated that the majority of students enjoyed SSR, but for those children who were less able readers they were “Not getting as much out of it” (p. 34), because their reading was not at the same level as their better performing peers. Yallay (1992), a school media specialist, purchased high-interest low-level books for lower performing readers. She designed a survey to investigate the reading habits and attitudes of the students in reference to independent reading. The survey was administered pre- and post-implementation of a 2-week silent reading class. Yallay reported positive changes in student attitude toward reading and that the students wanted to continue to read when the SSR period was over.

After observing several of her students just staring at their books and not turning the pages, Hartman (1994) modified the SSR program she was conducting in her classroom. She arranged the low-readers together and had a volunteer read aloud to them while the rest of the class read silently. She stated, “It never occurred to me that quiet might not necessarily indicate student participation…” (p. 55).

Due to the nature of low-performing and reluctant readers it is necessary for educators to make some modifications in McCracken’s (1971) SSR guidelines. The Individuals with Disabilities Education Improvement Act (IDEIA 2004) requires that students receive their education in the least restrictive environment, which is most often the general education classroom. Kavale and Forness (2000) estimate that 90% of all children identified as having a learning disability have deficits in reading. Students with
emotional and behavioral disorders also have significant deficits in reading (Coleman & Vaughn, 2000). Children who have difficulty reading, if simply given the assignment to read independently for 20 minutes, may modify SSR on their own by sleeping, talking to peers, or engaging in other non-reading activities. It is the responsibility of the teacher to modify SSR to assure that the 20 minutes spent doing SSR is not wasted instructional time.

Lack of Accountability

McCracken’s (1971) SSR guideline that states students are not held accountable for what they read means that, “no records or reports of any kind are to be kept” (p. 522). When students are not held accountable there is some concern that students will read very little or not at all during the assigned SSR time. McCracken suggests that a teacher can determine whether or not the students are reading by the following behaviors; students sit quietly with books open, turn pages often and continue the behavior for consecutive days. Educators often assume that when classrooms are quiet the students are being productive (Kasten, 1997). It is not uncommon for a student to pretend to be reading during allocated SSR time or to negatively influence those students who are reading. Mackey (1993) mentions that although a room full of students bent over their books is a pretty sight, it does not necessarily mean the students are making mental contact with the content of the book. Fisher (2004) interviewed high school teachers who were implementing an SSR program, many of whom reported that the non-accountability piece of SSR was the most difficult concept for them to accept. Additionally, students with disabilities may be too distracted to focus on the reading task for an extended period of time, some chose to not
read at all, some just scan the books, and others often report being bored. (Bryan et al., 2003; Herbert, 1987; Lee-Daniels & Murray, 2000).

Holding students accountable for the material they are supposed to read during SSR does not require punitive or negative procedures. Alber (1996) provides some practical strategies for holding students accountable during SSR. Alber suggests one way to hold students accountable is to write a question on the board that the students should be prepared to answer following the SSR period. After the timer has rung the teacher pulls a student's name from a hat and calls on that person to answer the question.

In addition to the guidelines set forth by McCracken (1971) to determine if students are reading (e.g., talking about their books, requesting additional time to read) there are other strategies a teacher can implement during SSR (e.g., Akmal, 2002; Bryan et al., 2003). When classroom teachers hold students accountable for what they are reading they demonstrate accountability for the academic time they have set aside to conduct SSR.

Disruptive and Off-task Behaviors

One of the problems that can arise while conducting SSR is the potential for off-task and disruptive behaviors by the students. Teachers often get frustrated and discontinue SSR due to the management difficulties they encounter (Fisher 2004). Alber (1996) suggests the following to keep the students busy during the entire SSR period; requiring the students to stay in their seats and requiring silence during the designated reading time to prevent disruptions.

Gambrell, Wilson, and Gantt (1981) conducted an observational study that investigated the on- and off-task behaviors of good and poor readers during instruction.
Seventy fourth graders participated in the study, 35 good readers and 35 poor readers from 17 different elementary schools. The students were identified as good readers or poor readers based upon their scores on the *Iowa Test of Basic Skills* (Hieronymus et al., 1980). The students were observed at 15-second intervals for 10 minutes using an instrument that indicated the following: student working and/or attending to the specific reading task in which the student was engaged. The authors report that the good readers were on-task (i.e., working and/or attending) more (89%) than the poor readers (83%) during independent reading time. Good readers spent more time in contextual reading (57%) and less time in non-reading activities (36%) than the poor readers (33% and 54%, respectively). One classroom teacher estimated that 90% of the reading in her 9th grade class was done by 10% of the students (Johns 1978).

Dickinson and Butt (1989) investigated the effects of task difficulty on the on-task behavior of fourth and fifth grade students who were high and low achievers. The rationale for the study was based upon the premise that “the amount of success that students experience is directly related to being on task…” (p. 244). Choosing materials with which students can be successful will influence their level of on-task behavior. The participants were two students with a history of high achievement and one with a history of low achievement in mathematics. Those with a history of high achievement were included to learn whether their on-task behavior would decrease due to task difficulty.

The difficult tasks were math assignments in which the students could not score more than 50% correct and the typical assignments were those in which the students would score 70% or better. For one of the high achieving students, when the assignment could be completed with 70% accuracy or better, her on-task behavior was 92%, when
given the assignments that were at a high level of difficulty (<50% accuracy), her on-task behavior decreased to 52%. For the low achieving student during the difficult task condition he displayed a mean percent of 56% of on-task behavior, on the assignments which were more suited to his ability level the student was on-task 84% of the time. As indicated the greater the task difficulty the less the students were on-task, regardless of their ability level. Dickinson and Butt (1989) stated that

> adjusting the curriculum in order to provide higher levels of success would appear to be an appropriate intervention strategy for students who are frequently off-task and an important consideration for monitoring lesson difficulty for all children (p 251-252).

Wasson, Beare, and Wasson (1990) observed the classroom behavior of 106 students in grades 1, 3, 5, 7, 9, and 11. Half of the students had been identified as good readers and the other half as poor readers. The behaviors targeted for observation were seconds to start, materials missing, noise, out-of-place, physical contact or destruction, off-task, and volunteering. The target settings were social studies classes for each grade level. The results indicate no differences between good and poor readers for the following target behaviors; starting assignments, having the appropriate materials, making inappropriate noises, or making physical contact with another person or property. However, there was a significant difference in off-task behavior between good and poor readers. The median off-task behavior for all 108 students was 6 minutes during a 30-minute observation. Poor readers were significantly off-task more often than the good readers ($F= 7.9, p< .05$). The $F$ ratio is a within and between group variance, if there is no treatment effect $F= 1$. 

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Bryan et al. (2003) examined the effects of a story fact recall discussion on latency to begin reading and off-task behavior during SSR. A reversal design, nested within a multiple baseline design across subjects, was used with three students who were typically non-engaged in silent reading during the school-wide SSR period. Students who were non-engaged were described as passive, avoided reading, and were disinterested and unenthusiastic about reading. Baseline consisted of 20 minutes of SSR. The intervention consisted of 10 minutes of SSR and 10 minutes of literary discussion with the researcher. The literary discussion consisted of researcher raised questions and prompted topics for discussion. The ‘transfer’ phase was a return to baseline condition, during which the students read for the full 20 minutes of SSR. Results indicate a decrease in the number of off-task behaviors across subjects. One student had an increasing trend in the transfer phase and therefore the intervention was re-implemented, during which off-task behaviors immediately declined, similar to those during intervention phase I. For one of the participants his average latency to begin reading during baseline was 243 seconds (approximately 4 minutes) with a range of 70-500 seconds. Immediately following intervention the student’s latency dropped to 30 seconds and did not exceed 62 seconds throughout the phase. During the return to baseline phase the number of seconds of latency immediately increased, and one day exceeded 450 seconds. With the re-implementation of the literary discussion latency again decreased to levels similar to the previous intervention phase.

Fisher (2004) found that fewer than 40% of high school students engaged in reading during SSR. During the designated SSR period students were observed using
extra time for content area assignments, completing homework for other classes or talking.

There are several limitations associated with SSR. Teachers must be conscious of those students who struggle or are reluctant to read and provide modifications for them. Additionally, providing a non-aversive way to make the students accountable for the time spent reading is critical. By implementing a way to hold them accountable a teacher will reduce the risk of disruptive and off-task behaviors during the designated SSR period and also reduce the likelihood the teacher will stop using SSR altogether due to lack of classroom control (Fisher, 2004).

Modifications of SSR

Although many teachers implement SSR exactly the way McCracken (1971) suggested, some teachers address the limitations by modifying SSR to better meet the needs of their students. In Pilgreen’s (2000) handbook on SSR she makes clear that a teacher can implement follow-up activities, but they must be “carefully distinguished from accountability measures” (p. 65). She defines an accountability measure as any task that includes a “teacher-imposed evaluative criteria” (p. 54), this is determined by the student. Some students may not be able to determine the kinds of modifications that will help them be more successful, a list and description of some possible modifications for SSR follow.

Book Selection

Students may pay closer attention, sit for longer periods, and learn more when they are reading a text that interests them (Yoon, 2002). Rehder (1980) and Cecil (1984) indicate that liking a book can affect reading achievement and students who read books in
which they are interested have a higher reading attitude and better comprehension levels when compared to those less interested in their books. Preference for the books the students are reading may be a motivational element that can lead to an increase in reading attitude and reading comprehension (Yoon).

Pasco (1990) recommends the following when helping reluctant readers choose books to read:

1. prepare a list of books that includes a variety of topics and genre with graphics that indicate the subject matter,
2. interview the student regarding the types of books that interest them, and
3. if the list provided does not contain a book in which they are interested, tell them you will have to think about some other ideas and will get back to them at another time.

*Book Sharing/Discussions*

Several authors suggest having discussions or sharing books to increase the effectiveness of SSR (e.g., Bryan et al., 2003; Fisher, 2004; Petre, 1971; Speaker, 1990). Speaker (1990) indicated that giving students an opportunity to discuss what they have read in pairs or small groups following the standard SSR period may make SSR more meaningful. The author suggests the teacher model the topics to be discussed (e.g., something you liked and why, talk about the characters and what they are like).

*Contracts*

Akmal (2002) implemented a system in which he conferenced with his students and recorded on a contract the number of pages the student would read per week to complete their book in a timely manner. Expectations varied by the reading ability of the
students and ranged from 20-100 pages per week. Each student was required to submit a weekly progress sheet and projected completion date to the teacher. Four of the five students who participated in reading contracts met their stated goals.

Vocabulary and Book Review Sheets

Farrell (1982) instructed students to make a list of unfamiliar words while they were reading. The teacher then collected the lists and used them for vocabulary development in the upcoming weeks. Additionally, students completed a book review sheet on which students were required to recognize and write themes of the story, describe the characters, and the conflicts found in the story. Dyson (1991) required the students to complete a reading sheet on which they recorded the number of pages read and a three-line summary of what the student read that day.

Addressing Management Issues

As indicated previously SSR can pose a problem for teachers due to off-task and disruptive behaviors that often occur during the designated reading time. Researchers have attempted to identify management issues and those are reviewed below.

Group Contingencies. Using a peer group to control and enhance classroom behavior through the use of group contingencies has a strong empirical base (Ayllon & Roberts, 1974; Hayes, 1976; Speltz, Shimaamura, & McReynolds, 1982). There are Litow and Pumroy (1975) described three types of group contingencies: dependent, independent, and interdependent. A dependent group contingency occurs when the same response contingency is simultaneously in effect for all group members, but is only applied to the performance of one or more of the selected group members. An example of this type of contingency would be to make free-time activities for the entire class
contingent upon the student who completes the least amount of homework completing 80% of his homework for one week. Failure to complete this specified amount of homework would result in the entire class missing out on the week-end activity. An independent group contingency is established when the same response contingencies are in effect for all group members, but are applied to performances on individual basis. An example of this type of contingency would be making free-time activities for each class member being able to complete 80% of the assigned homework. Those who fail to complete 80% of their homework are not allowed to participate in the class activity. An interdependent group contingency is established when the same response contingencies are simultaneously in effect for all group members, but are applied to a certain level of group performance. An example of this type of contingency would be making free-time activities for the entire class contingent upon each class member being able to complete 80% of the assigned homework. Failure to achieve this level of performance would result in none of the students having access to the class activity.

Barrish, Saunders, and Wolf (1969) described a behavior management technique, the Good Behavior Game, that featured an interdependent group-contingency. The Good Behavior Game was implemented in a fourth-grade classroom in an effort to decrease disruptive behavior. The class was divided into two teams, the winners had access to certain privileges, and the two teams were not competing with each other. Points were given when a team member broke a class rule, in order to win, a team could not accumulate a certain number of points. Barrish and colleagues reported that the students “won” 82% of the time. The game greatly decreased the number of disruptive out-of-seat and talking-out behaviors of the students.
In a study conducted by Speltz, Shimamura, and McReynolds (1982) the authors investigated the effects of varying the responder criteria when implementing a group contingency. Twelve students ages 7 to 10 with learning disabilities participated in a study in which rewards for math work were delivered based upon the work of a group average, a designated low achiever or a randomly chosen student. The target behavior was number of correct math problems completed during a 10-minute work period. The students earned one point for each problem solved correctly in a 10-minute work period. All 12 students increased correct math problems with the use of a group contingency. Four low achieving students all performed better during the group contingency phases over baseline. A Latin square analysis indicated that there was no significant difference between the type of group contingency that was in effect, the different contingencies were equally effective in producing a change in mathematics performance.

McLaughlin (1981) used both an individual and group contingency to increase correct responses on reading workbook assignments. Students received individual points based upon their accuracy on assignments. Those assignments were also linked to a group contingency. During the group contingency phase, points were awarded on the average performance of the group, rather than the individual. Results indicate a greater percentage of mean accuracy under the group contingency across students (88%-98%) over baseline (46%-74%) and individual contingency (68%-88%) phases. Even though the students continued to receive individual reinforcers for their reading workbook performance on a weekly basis, the group contingency appeared to have a more significant effect on reading assignments.
In an effort to increase vocabulary word retention, increase word attack skills and story comprehension, Piper and Powe (1977) incorporated the use of a group contingency with 45 first graders. The children could earn smiley faces for correct responses during their reading groups which could then be exchanged for an item to be added to the class mural. After the children began earning smiley faces for hand raises the number of hand raises during reading group tripled, the number of words retained increased from 4 to 25 per day. Prior to the implementation of the group contingency the students had never been observed applying effective word attacks skills (i.e., decoding) while reading, after the implementation of the class reinforcement plan the number of times observed increased from 0 times per session to more than 20.

Indiscriminable Contingencies. Some students may be disinclined to read and instead will sit staring at an open page (McCormick, 2003). Using an indiscriminable contingency may be an effective way to motivate students who are reluctant readers or are simply disinterested in reading. An indiscriminable contingency is a strategy that is used to promote generality of behavior change. The essential features of an indiscriminable is an intermittent schedule of reinforcement in which the student cannot predict when the target behavior will be reinforced (Rhode, Jenson, & Young, 1983). Behaviors maintained under this type of schedule are particularly resistant to extinction. The unpredictability of an intermittent schedule may account for the maintenance of a behavior over time (Cooper et al., 1987).

Indiscriminable contingencies have been used to alter both academic (Brame, 2001; Freeland & Noell, 2002) and social behaviors (Dunlap, Koegel, Johnson, & O’Neill, 1897; Rhode et al., 1983). Pilgreen (2000) states that children will read during
SSR because they enjoy reading, but unless they have contacted the natural rewards of reading, this is unlikely. Using an indiscriminable contingency when the student has not yet contacted the natural contingencies of reading can be an effective intervention for decreasing off-task behavior during an SSR period and increasing the number of story details the student recalls from his or her reading (Heward, 2004).

Brame (2001) investigated the effects of a post-SSR game on the off-task behavior during SSR and the number of story facts recalled on a post-SSR quiz. Participants were regular 4th and 5th graders in a split classroom in a charter school. She selected two target students enrolled in the fifth grade to observe for off-task behavior and quiz scores. During phase 1 (typical SSR) one student exhibited 55% off-task behavior for the observed intervals. During phases 2 and 5 (quiz only) his mean off-task behavior was 34% of the observed intervals. In phase 3 (game, which incorporated a group contingency) the students off-task behavior decreased to 7% of the observed intervals, during phases 4 and 6 (game plus) his mean off task behavior was 1%. The other target student was off-task 48% of the observed intervals during phase 1 (typical SSR), during phases 2 and 5 (quiz only) her mean off-task behavior was 36%. In phase 3 (game) the students off-task behavior decreased to 13%, during phases 4 and 6 (game plus) her mean off task behavior was 2%. For these two students their quiz recall scores out of five total possible points were the following, phases 2 and 5; 1.3 and 2.8, respectively. In phase 3 (game) the student quiz were scores 3.1 and 3.7, respectively. In phases 4 and 6 (game plus, which implemented an individual contingency) the mean quiz scores were 3.8 and 3.6. For the remaining students in the class mean quiz scores increased with the implementation of the game plus condition for 19 students and
decreased for 4 students. The results of this experiment indicated that by implementing modified SSR (i.e., implementing a game with a group contingency) students tend to exhibit a high percentage of off-task behavior. The results also indicate that a story fact recall game with a group contingency with indiscriminable contingencies may result in decreased off-task behavior for the target students and an increase of scores on a story fact recall quiz.

Rhode et al., (1983) conducted a study with six students with behavior disorders using self-management to increase appropriate classroom behavior. The students had a history of refusing to work, talking out in class, out-of-seat, noncompliance, aggression, bizarre talk and daydreaming. After being taught to self-monitor their behavior with a ‘teacher match’ for 100% of the sessions, the researcher began to randomly choose students. A name was drawn from a container to determine which student would be targeted for the match and would have the opportunity to earn bonus points for having matched with the teacher scores. When the students were successfully maintaining appropriate levels of behavior in the resource room they were re-introduced into the regular classroom in which the classroom teacher began to conduct teacher ‘matches’ to the students’ self-monitoring behavior. Initially, the teacher conducted matches every 30 minutes but was eventually faded to two days of the week, which were randomly chosen. Four of the participants demonstrated a marked increase in appropriate behavior and a decrease in inappropriate behavior, the other two students needed ‘booster sessions’. A booster session resulted if the student’s appropriate classroom behavior was below 80% for 3 successive school days. As a group, the students’ appropriate behavior was 54% higher in the regular classroom than it was initially. For the four students who progressed
through the program as sequenced (i.e., no booster sessions) their average appropriate behavior was 97%, 63% higher than during baseline.

Dunlap and colleagues (1987) demonstrated that on-task behavior could be increased and maintained at high levels through the use of infrequent and delayed contingencies. All three participants in this study were diagnosed with autism and engaged in self-stimulation and were often off-task and disruptive during class. The treatment began by prompting and reinforcing high rates of on-task behavior and delivering immediate reprimands for off-task behavior, the experimenters then thinned the reinforcement schedule by increasing the criterion duration of appropriate behavior. The results indicate that infrequent and delayed contingencies can effectively maintain appropriate behavior.

Freeland and Noell (2002) investigated the effects of programming indiscriminable contingencies to maintain the number of digits correct per minute on a math worksheet for two 3rd grade girls. During the study the students were given math worksheets to complete. During baseline, all math worksheets were green and during treatment they were blue. During the treatment phase, the students worksheets were immediately graded and if they had a predetermined number of problems correct, they were given access to a ‘goodie box’. The authors then implemented an indiscriminable contingency during which math worksheets were not graded everyday and not every paper was graded. The worksheets to be graded were randomly chosen by the experimenter (i.e., the students did not know whether or not their paper would be graded) and if the student had completed correctly a predetermined number of problems they were given access to the ‘goodie box’. Results indicate that using an indiscriminable
contingency when determining which papers to grade resulted in higher numbers of correct problems over baseline during both the treatment and maintenance phases.

Moore (1994) implemented a Mystery Motivator for increasing homework completion for five 3rd and four 5th grade students. In the 3rd grade classroom baseline rates of average homework completion was 65% with an average of 56% accuracy. In the 5th grade classroom baseline rates of homework completion averaged 70% with 52% average accuracy. A mystery motivator combines two key treatment components: performance feedback and reinforcement uncertainty. After the implementation of the Mystery Motivator, which functioned as an indiscriminable contingency, homework completion and accuracy rates increased. In the 3rd grade classroom average rate of homework completed was 89% with 81% accuracy. In the 5th grade classroom the average homework completion was 81% with an average accuracy of 65%. For two of the students who had consistently received failing homework grades with the implementation of the Mystery Motivator improved to passing levels.

*Bonus Rewards.* On occasion it is necessary to add additional reinforcers to an existing contingency in order to see behavioral change. This section of the literature review includes studies in which back-up or bonus reinforcers were implemented to increase the behavioral change in the targeted participants.

Whitlock and Bushell (1967) conducted a study with a 6-year-old girl who had been identified as a struggling reader, even though she had an average IQ. The dependent variable was the correct texting of sentences, with each correct sentence constituting one correct response. For each correct response the child heard on audible ‘click’, being controlled by the experimenter with a counter. During the initial “counter on” phase the
students’ response rate was approximately seven sentences per minute. During the “counter off” phase the students’ rate decreased rapidly and even inquired as to why the counter was not working. When the experimenter added back-up reinforcers the number of correct responses increased dramatically. After an increasing trend had been established with the “counter on” with back-up reinforcers, they were withdrawn. The number of correct responses decreased to levels similar to the original “counter off” phase. When the back-up reinforcers were re-instated there was an immediate increase in the number of correct responses made by the child. As indicated by this study the addition of back-up reinforcers to an existing reinforcement system can increase correct responding during reading tasks.

In an after school tutoring program 27 reluctant readers ages 6-14 participated in a study in which stickers were awarded for reading behavior (Brown, Fuqua, & Otts, 1986). The students individually charted the number of stickers they were earning and after having earned 30 small stickers were awarded one large ribbon sticker to adhere to their reading chart. The authors report a significant improvement in attitude and reading performance of the participants. One participant made a comment indicating that the stickers were a motivator for him when he said, “I don’t mind reading when I get some stickers!” (p. 604)

In order to further the effects of a group contingency game, Brame (2001) added a bonus reward. The bonus consisted of adding a stamp to the students’ bookmark if they received a score of a four or a five on the daily quiz. After three stamps were earned the student was awarded a prize coupon and could draw from the class prize box. If the students earned less than a four or a five on their quizzes they could still earn a prize.
After they had accumulated 12 or more quiz points they were awarded a prize coupon. The addition of the bonus increased quiz scores and decreased off-task behavior for both students.

As noted several modifications can be made to SSR to make it a more effective intervention, particularly when working with students who struggle with or dislike reading. These modifications range from a simple SSR-related discussion (e.g., Bryan et al., 2003) to the use of a game that includes story comprehension questions (e.g., Brame, 2001). Regardless of the modification chosen, it is necessary to alter SSR in order to meet the diverse needs of the students in our schools today.

**Summary**

Krashen stated there is “overwhelming evidence that free voluntary reading makes a powerful contribution to language and literacy development” (as cited by Pilgreen, 2000, p. vii). The National Reading Panel (NRP, 2000) indicated in their report that they were unable to find a positive relationship between large amounts of independent reading and improvements in reading achievement, including fluency. Due to the contradictory statements by both Krashen and the NRP, additional research is needed on the effectiveness of SSR. If a teacher spends 15 minutes a day, 180 days a year engaged in SSR it seems we need the empirical base to support the resulting 2700 minutes of instructional time.

In the 35 years since Hunt’s (1970) seminal article on SSR, studies on the effects of SSR on student achievement and attitude toward reading have produced mixed results. The research base using group-oriented contingencies to alter student behavior is well-established. This present study replicates Brame (2001) by combining the use of a group-
oriented contingency with SSR. This study will extend Brame to students with disabilities at the secondary level in an attempt to decrease off-task behavior during SSR and increase the number of story facts recalled following SSR.
CHAPTER 3

METHOD

This chapter describes the methods and materials used to conduct the study. The study consisted of two concurrent experiments that were conducted in different class periods of secondary language arts. The experiments were essentially the same, with some minor variations. The main difference between Experiments I and II was the procedure for generating questions for the story fact recall game.

EXPERIMENT I

The purpose of Experiment I was to evaluate the effects of a story fact recall game on the off-task behavior of three target students and the number of story facts recalled on a five-question quiz immediately following the SSR period for each student during a 15-minute SSR period.

Participants

Students

All five students enrolled in an 11th grade developmental language arts class in a large public high school located in a middle class suburb participated in this study. Three of the students were targeted for off-task behavior observation. Criteria for selecting target students were consistent attendance (>80%) and levels of excessive off-task behavior during language arts or other classes. The classroom teacher reported that the target students exhibited frequent off-task behavior during independent reading or work
time. Direct observations by the experimenter prior to the study confirmed an elevated percentage of off-task behavior by those nominated by their teachers. All five students participated in the paper-pencil quiz following SSR. Of the students enrolled, one had a learning disability, two students had cognitive disabilities, one was a student with emotional disturbance, and one was categorized other health impaired for Tourette’s Syndrome. Table 3.1 displays the demographic information for each student.

Students’ parents/guardians were informed of the purpose of the study and permission was obtained prior to starting the study. The experimenter mailed a letter from the classroom teacher (Appendix A), a letter from the experimenter containing a brief description of the study (Appendix B) and a consent form (Appendix C). The experimenter’s parent letter contained a brief description of the study and the parents were asked to provide written permission for their son/daughter to participate in the study. All five students also received a letter explaining the study informing them that their participation in the project was voluntary and then could withdraw at any time with no penalty (Appendix D). Because two of the participants were 18 years old at the time of the study, they were asked to sign a consent form to participate in the study (Appendix E).

Classroom Teacher

The classroom teacher has a Bachelor of Science degree in Health Education from The Ohio State University (OSU). At the time of the study she was certified in health education and held temporary certification as an intervention specialist for students with mild to moderate disabilities. She was enrolled in the Masters of Arts program in applied behavior analysis and special education at OSU. She had 6 years experience in education,
<table>
<thead>
<tr>
<th>Student</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Age</th>
<th>Disability&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Years in Spec Ed</th>
<th>IQ&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Reading Comprehension Achievement Test Scores&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Most Recent Grade Point Average</th>
<th>Most Recent English Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sean</td>
<td>Male</td>
<td>Multi-racial</td>
<td>18</td>
<td>LD</td>
<td>7</td>
<td>82</td>
<td>82 (WISC-III)</td>
<td>1.7</td>
<td>B-</td>
</tr>
<tr>
<td>Sam</td>
<td>Male</td>
<td>Caucasian</td>
<td>18</td>
<td>ED</td>
<td>11</td>
<td>97</td>
<td>80 (WIAT)</td>
<td>1.3</td>
<td>C</td>
</tr>
<tr>
<td>Robin</td>
<td>Female</td>
<td>Caucasian</td>
<td>16</td>
<td>OHI</td>
<td>5</td>
<td>90</td>
<td>92 (WISC-III)</td>
<td>2.9</td>
<td>B</td>
</tr>
<tr>
<td>Sue</td>
<td>Female</td>
<td>Caucasian</td>
<td>16</td>
<td>CD</td>
<td>8</td>
<td>68</td>
<td>76 (WJC-III)</td>
<td>1.8</td>
<td>D</td>
</tr>
<tr>
<td>Stan</td>
<td>Male</td>
<td>Caucasian</td>
<td>17</td>
<td>CD</td>
<td>4</td>
<td>64</td>
<td>80 (WIAT)</td>
<td>3.4</td>
<td>B</td>
</tr>
</tbody>
</table>

<sup>a</sup> = Special Education Disability Category; LD = Learning Disabled, ED = Emotional Disturbance, OHI = Other Health Impaired, CD = Cognitive Disability

<sup>b</sup> = WISC = Wechsler Intelligence Scale for Children, 3<sup>rd</sup> Ed.

<sup>c</sup> = WIAT = Wechsler Individual Achievement Test, WIAT-II = Wechsler Individual Achievement Test, 2<sup>nd</sup> Ed., WJ = Woodcock Johnson, Revised, WJ-III = Woodcock Johnson, 3<sup>rd</sup> Ed.

Table 3.1: Demographic information for students in Experiment I.
3 years of which had been in special education classes. This was her second year teaching this same group of students. This classroom teacher had a well-managed classroom. Her classroom management system consisted of the students having the opportunity to earn points each day for arriving to class on time, coming prepared, completing the assigned task and using appropriate classroom language. At the end of the week if the students had earned a certain number of points they were allowed to draw from the class prize box.

The classroom teacher participated in this study by assisting in the book selection process, reading during the 15-minute SSR period, reading additional books and generating quiz questions from those books for the students, and conducting the story fact recall game. The same teacher participated in Experiments I and II

*Experimenter*

The experimenter was a doctoral candidate in special education and applied behavior analysis at OSU. She received her Master’s of Science degree in special education from The University of Utah in 2002 and her Bachelor of Science in special education from Utah State University in 1993. The experimenter’s responsibilities included collaborating with the classroom teacher during the book selection process, reading books and generating quiz questions for those books, scoring the story fact recall quizzes, observing and recording off-task behavior during the SSR period, conducting procedural reliability checks, and collaborating with the classroom teacher to ensure proper implementation of the story fact recall game.

*Data Collectors*

The experimenter, another doctoral candidate and an undergraduate student served as the data collectors. The doctoral candidate was attending OSU and majored in
applied behavior analysis and special education. The undergraduate student was a junior at OSU and majored in Communications and Behavior Disorders. The students collected interobserver agreement (IOA) data for off-task behavior during the SSR period and accuracy checks on student quizzes. IOA data collectors were trained to recognize target behaviors in participant children and were monitored throughout the study for accuracy.

Definition and Measurement of the Dependent Variables

Two dependent variables were measured in this study: (a) the percentage of observed intervals in which three target students exhibited off-task behavior during the 15-minute SSR period, and (b) the number of correct responses by each student to a paper-pencil story fact recall quiz administered immediately following the SSR period.

Off-task Behavior

Off-task behavior during SSR was defined to include any of the following: (a) being out-of-seat (e.g. standing up, walking around), (b) talking out loud or other vocalizations (e.g., laughing, singing), (c) making non-language noises (e.g., tapping feet, humming, drumming on the desk/book), (d) touching another student, (e) writing, (f) eyes closed or looking away from the book, and (g) the book is closed. A 5-second partial interval observation and measurement procedure was used to record off-task behavior of the target students. The experimenter observed a target student for 5 seconds and then recorded for 5 seconds. Each 15-minute SSR period was divided into 10-second intervals. The experimenter listened to a cassette tape with headphones so as to not interrupt the class. The following was recorded on the cassette, “Observe”, 5-second pause, “Record”, 5-second pause, “Observe”, 5 second pause, “Record”, 5-second pause, etc. To ensure that observations began when the SSR period began, when the classroom teacher started
the timer signaling the beginning of SSR the experimenter pushed ‘play’ on the cassette player. The cassette tape played for the entire 15-minute SSR period. If off-task behavior was observed at any time during the 5-second interval “yes” was circled, or if the student was not off-task “no” was recorded on the off-task data recording sheet (Appendix F).

Cooper, Heron, and Heward (1987) recommend partial interval recording when the goal is to produce a decrease in a target behavior because data obtained via partial interval recording may overestimate the actual occurrence of the target behavior. The use of a whole-interval recording system would underestimate the occurrence of student behavior and many off-task behaviors may be overlooked or missed. All sub-behaviors of off-task were recorded on a partial interval occurrence excluding “looking away from the book.” This behavior was only recorded if it occurred during the entire 5-second interval, in order to eliminate practices that occur naturally during reading (i.e., looking away from a book momentarily). Each 15-minute SSR period was divided into 10-second intervals, therefore each student was observed during 30 intervals each session. In the event that one of the target students was absent the experimenter recorded data for the remaining students who were present, thereby increasing the number of intervals during which they were observed.

**Number of Story Facts Recalled**

Students were asked to recall facts from assigned pages for that day’s SSR period. Following the SSR period each student was given a five-question story fact recall quiz. The students had 3 minutes to complete the quiz. The quiz questions were short answer (1-5 words) and required the students to recall who, what, where, when, how, and why facts from the story (Appendix G). To ensure that a variety of questions were asked, no
more than three questions of one type (e.g., what questions) were asked on the same quiz. The quiz questions were carefully crafted to ensure that the students had read the material and could not “guess” the answers from the title of the book or the book cover, also all books used were chapter books without illustrations to avoid the likelihood a student could guess the answers based upon any illustrations. The classroom teacher collected the quizzes after the 3-minute time period. Each quiz was graded by comparing the students’ answers to those on an answer key (Appendix H). Correct answers were marked with a “C” for correct or an “X” for incorrect through the question’s corresponding number. Phonetic spellings (e.g., prizon for prison), words that had the same meaning as those included on the key, and partial responses that included key words were not marked as incorrect. For the answers that were incorrect the correct answers were written below the incorrect answer. The following day the quizzes were returned to the students to review the corrected answers and quiz scores and after which they were collected by the classroom teacher.

**Attitude Scale Scores**

The *Rhody Secondary Student Attitude Assessment* was given to each student pre- and post-SSR. They were asked to complete the assessment independently before the study began and following the final session. The students were instructed to read each item and then mark the number that best described how they felt about the statement. This assessment scale consists of 25 statements about reading (e.g., “You seldom buy a book.”, “You like to share books with friends.”) which the student rates on a 5-point Likert scale ranging from strongly agree to strongly disagree. Student post attitude assessment scores were compared with their scores prior to the study.
Procedures to Ensure Accuracy and Believability of the Data

IOA for Off-task Behavior

Secondary observers were trained to collect data on the off-task behavior of the target students. Training included the secondary observers recording off-task behavior during SSR and the scores were compared to the scores of the experimenter. Discrepancies in the scores were discussed with the secondary observers to clarify the defined behavior. This continued until scores of the data collectors matched the scores of the experimenter over 90% of the off-task behavior across three sessions. Throughout the study observers were held to 90% accuracy of off-task data collection, which was monitored by the experimenter. Retraining consisted of reviewing the criterion for the target behavior and practice observing and recording off-task behavior, when IOA dropped to 90% or below, retraining occurred by clarifying the definitions of the dependent variables.

An IOA percentage was calculated by taking the number of agreements and dividing them by the number of agreements plus disagreements and multiplying by 100. To ensure that both observers received the “observe” and “record” cues simultaneously the experimenter and secondary observers wore headphones that were plugged into the same cassette player. Both experimenter and secondary observers independently recorded the off-task behavior of the target students. IOA was calculated on an interval-by-interval basis. An interval was scored as an agreement if both observers circled either yes or no in the same interval on the recording form. An interval was scored as a disagreement if one of the observers circled yes and the other no. IOA for Experiment I was approximately 19
of the 58 sessions (33%) across conditions and 11 of the 59 sessions (19%) across conditions for Experiment II.

Accuracy Check for Story Facts Recalled

Photocopies of the quizzes were made so that each observer received an unmarked quiz to score. The experimenter and classroom teacher independently scored each of the quizzes. The quizzes were scored by comparing the student’s responses to an answer key. If the student’s answer was correct a ‘C’ was placed through the number of the question number, if the student’s answer is incorrect, an ‘X’ was placed through the number of the question. After the secondary observers scored their quizzes, the experimenter conducted a question-by-question comparison of the scoring. If the experimenter and secondary observer both scored a question the same, an “A” for agreement was placed next to that question number on the secondary observer’s copy of the quiz. The agreements were indicated on the secondary observer’s copy because the original copy of the quizzes were returned to the students the next day for review. If the experimenter and secondary observer did not score the quiz the same, then a “D” for disagreement was placed next to that question number on the secondary observer’s copy of the quiz.

IOA percentage was calculated by dividing the number of agreements by the number of agreements plus disagreements and then multiplying by 100. For all questions on which the observers disagreed, a second comparison was made with the answer key to determine whether the experimenter scoring of the quiz was accurate, to correctly record the students’ quiz scores. On a few occasions it was necessary to consult the book the
student was reading to determine if the answer they had written was correct, but not found on the answer key.

*Treatment Integrity*

The experimenter assessed the treatment integrity of each experimental condition during the study. To ensure correct implementation of the independent variable the classroom teacher was given a procedural reliability checklist that contained the steps for correct implementation of the SSR procedures, the quiz condition and the story fact recall game with and without bonus marbles. The experimenter created treatment integrity checklists for each condition: Procedural Reliability Checklist SSR (Appendix I), Procedural Reliability Checklist Quiz (Appendix J), Procedural Reliability Checklist Game (Appendices K & L), Procedural Reliability Checklist Game with Bonus Marbles (Appendices M & N). The experimenter marked a check in the “Yes” column if all the steps were executed correctly. If a step was omitted or implemented incorrectly, a check was marked in the “No” column, and a comment written to indicate what was done instead. The experimenter discussed the results of the treatment integrity observations with the classroom teacher before beginning the next SSR session. Procedural reliability for each phase of the study was calculated by dividing the number of steps that were implemented correctly by the total number of steps and then multiplying by 100.

*Materials*

*Bookmarks*

Each student was given a bookmark in the book they had chosen to read. The bookmark indicated the date and the assigned reading pages (Appendix O).
Materials for Story Fact Recall Game

The following materials were used during the story fact recall game: two small containers with Popsicle sticks inside (one with students’ names and the other with the numbers one through five), a bag of marbles, and a jar with a lid for the marbles.

Experimental Design

The design used in this study was ABCC’BC’ in order to analyze the effects of a 5-question story fact recall quiz and a story fact recall game on the off-task behavior during the SSR period and the students’ correct answers to a story fact recall quiz immediately following the SSR period. This type of design can be one of the most powerful single-subject designs as the participants serve as their own controls. The multiple treatment reversal design is used when the effects of two or more independent variables are compared to baseline conditions or to each other; each phase serves as a baseline for each phase that follows. The experimental variables are introduced, withdrawn, changed, and then reintroduced (Cooper et al., 1987).

The first condition (A) was a typical SSR session as described by McCracken (1971). The students read independently for 15 minutes. The second condition (B) consisted of the administration of a five-question paper-pencil recall quiz following a 15-minute SSR. The third condition (C) was a story fact recall game following SSR and the quiz that used a group contingency. The fourth condition (C’) included the addition of bonus marbles to the story fact recall game based upon student performance during the game and quiz scores.
Procedures

Assessment of Student Ability and Attitude

Each student’s reading level was assessed by the classroom teacher prior to the first session. The students also completed reading surveys and book surveys in order to assist the classroom teacher and experimenter choose books to suit the interests of the students.

Reading Assessment. The classroom teacher administered the Qualitative Reading Inventory-3 (QRI-3, Caldwell, 2001). The QRI-3 is an informal reading inventory designed to provide diagnostic information about a students’ word identification ability and comprehension level. Each student was given a passage to read and answer questions based upon the passage the student read.

Reading Attitude Survey. The experimenter administered the Rhody Secondary Reading Attitude Assessment (RSRAA), (Tullock-Rhody & Alexander, 1980; see Appendix P). This assessment scale consists of 25 statements about reading (e.g., “You seldom buy a book.”, “You like to share books with friends.”) which the student rates on a 5-point Likert scale ranging from strongly agree to strongly disagree. The test-retest method was chosen to establish reliability of the instrument. The results of the analysis showed that the instrument obtained an $r$ of 0.84. This was administered at the outset and again at the conclusion of the study. The scores on the RSRAA range from 25 to 125. The authors indicate that a score of 25 is a “very negative” attitude toward reading and a score of 125 indicates a very “positive attitude” toward reading. However, no further information is provided for interpreting the scores between 25 and 125 on the RSRAA.
Reading Survey. The experimenter orally administered the reading survey (Appendix Q) to each of the students. The experimenter and classroom teacher discussed the students’ responses to the survey when choosing books for the students to read.

Book Selection

The experimenter and classroom teacher reviewed the student comprehension scores from the QRI-3 and reading interests of the students before selecting book titles. Books for each of the students were chosen from grade levels at which they scored 80% or better on the explicit comprehension questions. The experimenter met with the high school librarian to discuss books that met the reading levels and interests of the students. The experimenter reviewed reading lists published by several high school English departments from across the nation as good books for secondary students (Appendix R). The experimenter generated a list of ten books based upon student reading levels, student reading surveys, classroom teacher recommendations, librarian recommendations and those found on the recommended reading list.

The readability of each book was determined by using the Flesch-Kinkaid Readability option in Microsoft Word. This was done to assure that the books offered to the students were within their reading ability. The experimenter or classroom teacher typed in three 100-word segments selected from the beginning, middle, and end of the book. After the text was entered, a grammar check was conducted, and the statistics of the document were listed, including the Flesch-Kinkaid Readability grade level (Appendix S).

Book Show and Tell. For each of the books on the list, the students were given a worksheet with specific book titles and a brief description of the book. The classroom
teacher administered this survey orally. For each of the books on the list the teacher showed the students the book and then provided them with a detailed description of its contents. The worksheet was completed as a group in order to clarify any questions the students had regarding a particular book. The purpose of this survey was to avoid choosing books the students have already read or were not interested in reading (Appendix T). After all of the above procedures were completed the primary experimenter chose the books the students would read during the study.

After each individual student finished a book the experimenter met with them one-on-one to chose the next book the student would read. The experimenter reviewed the students’ previous book survey and then conducted an individual ‘show and tell’ with the student by showing them books on topics in which they were interested (i.e., from the reading survey) and then providing them with a detailed description of the books contents. The students were offered 2-3 books from which to choose.

Observation of Typical SSR Sessions

Prior to the first SSR session the experimenter observed the students during the 15-minute typical SSR sessions based upon the guidelines given by McCracken (1971). The experimenter observed four sessions of typical SSR. These observations provided the experimenter with a baseline of the approximate number of pages the students could read during the 15 minutes and an opportunity to identify those students to be targeted for off-task behavior. The experimenter also observed the off-task behavior of several of the students in their math classes. During these pre-baseline observations the same procedures were used. The experimenter observed each student on a 5-sec partial interval recording system and used the off-task behavior observation sheet (see Appendix F) that
was used throughout the study. During these pre-baseline SSR sessions the students read books similar to those that the experimenter and teacher used for the remainder of the study (e.g., chapter books and appropriate reading level). Each student was given a bookmark and asked to record the first and last page read during the 15-minute SSR session. A timer was set for 15 minutes and the students were told when to start and stop reading. These typical SSR sessions were conducted for the purpose of verifying the off-task behaviors of the potential target students identified by the classroom teacher as exhibiting increased amount of off-task behavior during independent seat work and silent reading.

**General Procedures for SSR**

Each student was given his or her assigned book and a bookmark with the assigned number of pages to be read during that day’s session. The teacher set the timer for 15 minutes and told the students “Open your books and start reading, keep reading until the timer sounds.” During the SSR period the classroom teacher sat at her desk reading and monitoring student behavior. The experimenter sat on a stool at the front of the room and observed the off-task behavior of the target students. In the event of interruptions on the P.A. system, the timer was turned off and the students were instructed to stop reading. Following the announcements, SSR resumed. At the end of the 15-minute SSR period when the timer rang the classroom teacher told the students “Stop reading, put your bookmarks in your books and close them.” The classroom teacher scanned the room to verify that all the students had closed their books and then collected the books. These general procedures were implemented throughout each condition of the study.
Baseline

The classroom teacher followed the general procedures as indicated above. Students were given their books, a bookmark indicating the assigned pages for the day and were instructed to read until the timer rang. After the timer rang, indicating the end of the 15-minute SSR period, the teacher collected the students’ books.

Story Fact Recall Quiz

Following the 15-minute SSR period each student was given a story fact recall quiz consisting of five questions from the assigned pages for that day. The students had 3 minutes to complete the quiz. The classroom teacher walked around the classroom and observed the students while they took the quiz. After 3 minutes the classroom teachers said “Times up” and collected the quizzes.

Story Fact Recall Game

During the Story Fact Recall Game (Game) condition, after the students completed and turned in their five-item recall quiz, a story fact recall game was played. The Game consisted of the teacher pulling three students’ names from a jar and having the identified student answer a question from that days reading directly from the quiz he or she had just completed. The classroom teacher would draw a Popsicle stick from a jar that contained sticks with each of the students’ names. After the name was drawn, the students’ whose name was drawn drew a Popsicle stick from another jar that had numbers 1-5 written on them. The number drawn corresponded with the question from the quiz the students would be asked for the game questions (i.e., if the student drew a 4, he would be asked question #4 from the quiz). If the student correctly answered the question he or she earned marbles toward a class party. The number of marbles was determined by the
number the student drew from the jar (i.e., if the student drew a 4, answered question number 4 correctly he or she earned 4 marbles toward a class party). Below is an example of the Game Script

Game Script Experiment I

1. The teacher is standing at the front of the room with the jars of Popsicle sticks, jar of marbles, and quiz keys nearby. “Okay students, we are going to play a quick game.”

2. The teacher will randomly draw a Popsicle stick from the name jar. “Jaynee!”

3. The teacher walks over to Jaynee’s desk and offers her the number jar and tells her to draw a number. Jaynee draws a five from the jar. The teacher asks, “What book are you reading?” “Petey”, she says.

4. The teacher looks at the quiz key for Petey and reads question number five, “Name one of the three school bullies that were teasing Trevor.”

5. Jaynee says, “Kenny.” The classroom teacher responds, “Perfect, Jaynee, and the other two are Bud and String.”

6. The teacher gives Jaynee five marbles and she puts them into the class jar

7. The classroom teacher draws another Popsicle stick from the jar, “Michael!”

8. Michael draws a Popsicle stick from the number jar, “Two”, he says.


10. The classroom teacher looks at question number two on the Heroes quiz key and asks, “Michael, what medal did Lieutenant LaSalle earn?”

12. The teacher draws one more name and follows the above procedures. After the game the materials are stored until the next day. The marble jar is left out on the teacher’s desk for the students to see.

*Story Fact Recall Game with Bonus Marbles*

During the Story Fact Recall Game with Bonus Marbles (Game with Bonus Marbles) condition, the students were awarded bonus marbles toward the class party; if all three students answered their game question correctly, they also could receive bonus marbles dependent upon the quiz scores they received the day prior. The classroom teacher continued to play the game as indicated, but when a student answered a question correctly, rather than earning them according to the number on the drawn Popsicle stick they were awarded three marbles. If all three students whose names were called answered their game question correctly they earned a bonus three marbles to put into the jar.

After the students received their quiz from the day before at the top of the page the experimenter had indicated if the student had earned bonus marbles. Students who scored five out of five on the quiz, “2M” (indicating 2 marbles) was written next to their score. When they returned their quizzes to the classroom teacher they were given two bonus marbles to put into the class jar. Students who earned a four out of five on the quiz, “1M” was written next to their quiz score and when they returned their quiz to the classroom teacher they were given1 bonus marble to put into the class jar.
Script for Game with Bonus Marbles Experiment I

1. The classroom teacher is standing at the front of the room with the jar of Popsicle sticks with student names written on them and the jar of marbles. “Okay students, we are going to play a quick game, when I call your name bring the book you are reading and your bookmark.”

2. The classroom teacher randomly draws a Popsicle stick from the name jar. “Jonathon!” The teacher walks over to Jonathon’s desk and offers him the number jar and tells him to draw a number. He draws a five from the jar, the teacher says, “If you get this question right you will earn three marbles for the class jar”. The teacher asks, “What book are you reading?” He says, “The Things they Carried.”

3. The teacher looks at the quiz key for The Things they Carried and reads question number five, “What item did Tim leave in the field where Kiowa died?”


5. The classroom teacher gives Jonathon three marbles and he puts them into the class jar.

6. The classroom teacher draws another Popsicle stick from the jar, “Keri”

7. The teacher walks over to Keri’s desk and offers her the number jar and tells her to draw a number. She draws a one from the jar.
8. The teacher says, “If you get this question right you will earn three marbles for the class jar. What book are you reading?” Keri responds, “The Things they Carried.”

9. The classroom teacher looks at question number one on “The Things they Carried” quiz key and asks, “Where was Tim shot?”

10. After a few seconds, Keri says, “In the leg.” The teacher says, “No, nice try though. He was shot in the stomach”.

11. The teacher draws one more name and follows the above procedures. After the game concludes the materials are stored until the next day. The jar that contains the marbles the students have earned is left out on the teacher’s desk for the students to see.

12. If all three students answer the game questions correctly, they are awarded three additional marbles to be placed in the class jar.

13. The following day Sage picks up her book, bookmark and previous days quiz. After reviewing her quiz, she shows the classroom teacher her score.

14. The classroom teacher says, “Sage, that’s awesome, you got a 4, you can put 1 bonus marble in the class jar.”

15. If a student received a 5 on his quiz, they earned 2 bonus marbles toward the class jar.

16. For any student who received a score of 3 or less, no bonus marbles were awarded.
Assessment of Student and Teacher Opinions

*Students’ Opinions and Attitudes*

The day after the last session of SSR the students were asked to complete the attitude survey that was administered at the outset of the study (Appendix O). Additionally, each student was interviewed by one of the secondary data collectors (Appendix U). The secondary data collectors verbally administered the survey to each of the students. An audio recording of the interview was made to verify and supplement the accuracy of the interview notes taken by the data collectors. The individual conducting the interview explained that the experimenter wanted the students’ opinions about the way SSR was implemented, about the quizzes, the game, and any other ideas they might want to share regarding the study, including those procedures they would change. The students were encouraged to respond to each question honestly.

*Staff/Teacher Opinions of SSR*

Following the last session of SSR the classroom teacher was given a post study questionnaire (Appendix W). The classroom teacher completed the questionnaire and returned it to the experimenter two days later.

Two language arts teachers, a special education language arts teacher and the school librarian who are currently or had in the past conducted SSR in their classrooms were asked to observe during the Game with Bonus Marbles condition of the study. They were asked to complete a teacher social validity questionnaire regarding the procedures they observed and their opinions about those procedures (Appendix V).
EXPERIMENT II

The procedures for Experiment II were the same as Experiment I except for the way in which the questions were generated for the story fact recall game. All dependent variables remained the same.

Participants

Students

All seven students enrolled in an 11th grade developmental language arts class in a large public high school located in a middle class suburb participated in this study. Three of the students were targeted for off-task behavior observation. Criteria for selecting target students were consistent attendance (>80%) and levels of excessive off-task behavior during language arts or other classes. The classroom teacher reported that the target students exhibited frequent off-task behavior during independent reading or work time. Direct observations by the experimenter prior to the study confirmed an elevated percentage of off-task behavior by those nominated by their teachers. All seven students participated in the paper-pencil quiz following SSR. Of the students enrolled, six are identified as having a learning disability and one student has a cognitive disability. Table 3.2 displays the demographic information for each of the students.

Students’ parents/guardians were informed of the purpose of the study and permission was obtained prior to starting the study. The experimenter mailed a letter from the classroom teacher (Appendix A), a letter from the experimenter containing a brief description of the study (Appendix B) and a consent form (Appendix C). The experimenter’s parent letter contained a brief description of the study and the parents were asked to provide written permission for their son/daughter to participate in the
study. All five students also received a letter explaining the study informing them that their participation in the project was voluntary and then could withdraw at any time with no penalty (Appendix D).

Experimental Design

The design used in this study was ABCC’B and was used to analyze the effects of a paper-pencil quiz and a story fact recall game on the off-task behavior during the SSR period and the students’ correct answers to a story fact recall quiz immediately following the SSR period. The first condition (A) was a typical SSR session as described by McCracken (1971). The students read independently for 15 minutes. The second condition (B) consisted of the administration of a five-question paper-pencil recall quiz following a 15-minute SSR. The third condition (C) was a story fact recall game following SSR and the quiz that used a group contingency. The fourth condition (C’) included the addition of bonus marbles to the story fact recall game based upon student performance during the game and quiz scores.

All procedures in Experiment II were identical to those in Experiment I, accept for the Game and Game with Bonus Marbles condition. The difference between the two experiments was simply the way in which the questions for the game were generated.

Story Fact Recall Game

During the Story Fact Recall Game (Game) condition after the students completed and turned in their five-item recall quiz, a story fact recall game was played. The game consisted of the teacher pulling students’ names from a jar and
<table>
<thead>
<tr>
<th>Student</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>Age</th>
<th>Disability&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Years in Spec Ed</th>
<th>IQ&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Reading Comprehension Achievement Test Scores&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Most Recent Grade Point Average</th>
<th>Most Recent English Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ned</td>
<td>Male</td>
<td>Caucasian</td>
<td>17</td>
<td>LD</td>
<td>3</td>
<td>92</td>
<td>103 (WISC-III)</td>
<td>1.5</td>
<td>B+</td>
</tr>
<tr>
<td>Cy</td>
<td>Male</td>
<td>African American</td>
<td>17</td>
<td>LD</td>
<td>8</td>
<td>99</td>
<td>88 (WISC-III)</td>
<td>2.5</td>
<td>C</td>
</tr>
<tr>
<td>Len</td>
<td>Male</td>
<td>African American</td>
<td>17</td>
<td>LD</td>
<td>2</td>
<td>83</td>
<td>75 (WJ-III)</td>
<td>1.5</td>
<td>C</td>
</tr>
<tr>
<td>Raydean</td>
<td>Female</td>
<td>Caucasian</td>
<td>16</td>
<td>LD</td>
<td>4</td>
<td>86</td>
<td>93 (WJ-III)</td>
<td>2.8</td>
<td>B+</td>
</tr>
<tr>
<td>Kay</td>
<td>Female</td>
<td>African American</td>
<td>17</td>
<td>CD</td>
<td>9</td>
<td>63</td>
<td>53 (WIAT)</td>
<td>1.6</td>
<td>B</td>
</tr>
<tr>
<td>Amos</td>
<td>Male</td>
<td>Caucasian</td>
<td>17</td>
<td>LD</td>
<td>8</td>
<td>75</td>
<td>40 (WJ-III)</td>
<td>2.5</td>
<td>A-</td>
</tr>
<tr>
<td>Patty</td>
<td>Female</td>
<td>Caucasian</td>
<td>17</td>
<td>LD</td>
<td>8</td>
<td>94</td>
<td>90 (WIAT-II)</td>
<td>1.6</td>
<td>B</td>
</tr>
</tbody>
</table>

<sup>a</sup> = Special Education Disability Category; <sup>b</sup> = Learning Disabled, <sup>c</sup> = Emotional Disturbance, OHI = Other Health Impaired, CD = Cognitive Disability

<sup>b</sup> = WISC = Wechsler Intelligence Scale for Children, 3<sup>rd</sup> Ed., Stanford Binet, 4<sup>th</sup> Ed.

<sup>c</sup> = WIAT = Wechsler Individual Achievement Test, WIAT-II = Wechsler Individual Achievement Test, 2<sup>nd</sup> Ed., WJ-R = Woodcock Johnson, Revised, WJ-III = Woodcock Johnson, 3<sup>rd</sup> Ed.

Table 3.2: Demographic information for students in Experiment II.
having the identified student answer a question from that day's reading. After the SSR period and the students completed the quiz, the story fact recall game was played. The teacher drew a Popsicle stick from the jar and read the name written on it. The classroom teacher drew a Popsicle stick from a jar that contained each of the students’ names. After the students’ name was called, the student drew a Popsicle stick from the jar to determine how many marbles the students earned if he/she answered the game question correctly.

The student told the teacher which book they were reading, the teacher opened the book, quickly scanned through the pages and asked a recall question from that day's reading. This allowed the teacher to create ‘real-time’ recall comprehension questions. If the student was correct, he/she earned marbles corresponding with the number on the Popsicle stick. If the student was incorrect, she will be told “that’s ok,” given the correct answer, and then asked to return to her seat. Below is an example of the game script.

Game Script Experiment II

1. The classroom teacher is standing at the front of the room with the jars of Popsicle sticks, the jar of marbles and the class jar for the marbles earned.

   “Okay students, we are going to play a quick game, when I call your name bring the book you are reading and your bookmark.”

2. The classroom teacher will randomly draw a Popsicle stick from the name jar.

   “Casey!”

3. Casey walks to the front of the room with his book and bookmark and gives it to the classroom teacher Casey draws a Popsicle stick from the number jar.

   “Three”, he says. The classroom teacher states, “If you get this question right you will earn three marbles for the class jar”
4. The classroom teacher opens Casey’s book and begins to scan the pages for a recall question from the pages listed on the bookmark. “Where does Murray work?”

5. Casey says, “Gladstone’s Shoe Store.” The classroom teacher responds, “Good work, Casey. You earned three marbles for the jar.”

6. The classroom teacher gives Casey three marbles and he puts them into the class jar.

7. The classroom teacher draws another Popsicle stick from the jar, “Jessica!”

8. Jessica comes to the front of the room with her book and bookmark and gives it to the teacher. She then draws a Popsicle stick from the number jar, “Two”, she says. The classroom teacher states, “If you get this question right you will earn two marbles for the class jar”

9. The classroom teacher opens Jessica’s book and begins to scan the pages for a recall question from the pages listed on the bookmark.

10. The classroom teacher asks, “What happened to Linda’s house?”

11. After a few seconds, Jessica says, “I don’t know.” The teacher says, “Take a guess, Jessica.” Jessica does not respond, the teacher says, “That’s OK, the answer is ‘It caught on fire’.” Jessica returns to her seat.

12. The teacher draws one more name and follows the above procedures. After the game concludes the materials are stored until the next day. The jar that contains the marbles the students have earned is left out on the teacher’s desk for the students to see.
Story Fact Recall Game with Bonus Marbles

During this phase of the study, the students were awarded bonus marbles toward the class party dependent upon the quiz scores they received the day prior, and if during the game all three students answered their game question correctly. When the students received their quiz from the day before at the top of the page the experimenter had indicated if the student had earned bonus marbles. If a student earned five out of five on the quiz, “2M” (indicating two marbles) was written next to their score and when they returned their quizzes to the classroom teacher they were allowed to put two bonus marbles into the class jar. If a student earned a four out of five on the quiz, “1M” was written next to their quiz score and when they returned their quiz to the classroom teacher they allowed to place one bonus marble into the class jar. The classroom teacher continued to play the game as indicated, but when a student answered a question correctly rather than earning them according to the number on the drawn Popsicle stick they were awarded three marbles. If all three students whose names were called answered their game question correctly they earned a bonus three marbles to put into the jar.

Script for Game with Bonus Marbles Experiment II

1. The classroom teacher is standing at the front of the room with the jar of Popsicle sticks with student names written on them and the jar of marbles. “Okay students, we are going to play a quick game, when I call your name bring the book you are reading and your bookmark.”

2. The classroom teacher randomly draws a Popsicle stick from the name jar. “Cody!”
3. Cody walks to the front of the room with his book and bookmark and gives it to the classroom teacher. The classroom teacher states, “If you get this question right you will earn three marbles for the class jar.”

4. The classroom teacher opens Cody’s book and begins to scan the pages for a recall question from the pages listed on the bookmark. “What did the reverend say that Louie could do to redeem himself for what happened at the funeral?


6. The classroom teacher gives Cody three marbles and he puts them into the class jar.

7. The classroom teacher draws another Popsicle stick from the jar, “Tyler!”

8. Tyler comes to the front of the room with his book and bookmark and gives it to the teacher. The classroom teacher states, “If you get this question right you will earn three marbles for the class jar.”

9. The classroom teacher opens Tyler’s book and begins to scan the pages for a recall question from the pages listed on the bookmark.

10. The classroom teacher asks, “Who passed Louie a note when he arrived to school on Monday?”

11. After a few seconds, Tyler says, “I don’t know.” The teacher says, “Take a guess.” Tyler does not respond, the teacher says, “That’s OK, the answer is ‘Carter.’” Tyler returns to his seat.

12. The teacher draws one more name and follows the above procedures. After the game concludes the materials are stored until the next day. The jar that
contains the marbles the students have earned is left out on the teacher’s desk for the students to see.

13. If all three students answer the game questions correctly, they are awarded three additional marbles to be placed in the class jar.

14. The following day N’tima picks up her book, bookmark and previous days quiz. After reviewing her quiz, she shows the classroom teacher her score.

15. The classroom teacher says, “N’tima, that’s awesome, you got a 5, you can put 2 bonus marbles in the class jar.”

16. If a student received a 4 on his quiz, they earned 1 bonus marble toward the class jar.

17. For any student who received a score of 3 or less, no bonus marbles were awarded.
CHAPTER 4
RESULTS
Experiment I

Experiment I investigated the effects of a post-SSR quiz and story fact recall game on the off-task behavior of students during a 15-minute Sustained Silent Reading (SSR) period, and on students quiz scores on a five-question paper-pencil story fact quiz following the 15-minute SSR period.

Procedural Reliability and Believability of the Dependent Variable

Procedural Reliability

The experimenter completed procedural reliability checklists for 7 of the study’s 58 (12%) sessions. Interobserver agreement data were collected for three of those seven sessions. Checklists were completed during the Quiz Condition (Appendix J), Game Condition (Appendix K) and the Game with Bonus Marbles Condition (Appendix M). The mean procedural reliability was 93% across conditions with a range of 75%-100%. On Session #25 when procedural reliability was only 75%, the classroom teacher was on crutches and unable to walk around the room and follow steps 9, 11, and 14 (Appendix J). Mean IOA for procedural reliability was 97% with a range across sessions of 92%-100%. Table 4.1 displays the results of the procedural reliability completed by condition. Table 4.2 displays the IOA on procedural reliability across conditions.
Condition

<table>
<thead>
<tr>
<th>Condition</th>
<th>Baseline</th>
<th>Quiz (3)</th>
<th>Game (2)</th>
<th>Bonus Marbles (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>* 87.5</td>
<td>96</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>* 75-100</td>
<td>92-100</td>
<td>92-96</td>
<td></td>
</tr>
</tbody>
</table>

Note: * = No procedural reliability conducted during this condition. Number in parentheses show the number of sessions that procedural reliability data were obtained.

Table 4.1 Procedural reliability completed by condition for Experiment I.

<table>
<thead>
<tr>
<th>Session #</th>
<th>Condition</th>
<th>Steps Completed Primary Experimenter</th>
<th>Steps Completed Secondary Data Collector</th>
<th>A</th>
<th>D</th>
<th>% IOA</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Quiz</td>
<td>9</td>
<td>9</td>
<td>12</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>26</td>
<td>Game</td>
<td>25</td>
<td>24</td>
<td>25</td>
<td>2</td>
<td>92</td>
</tr>
<tr>
<td>31</td>
<td>Game</td>
<td>26</td>
<td>26</td>
<td>27</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: A = # of agreements D = # of disagreements

Table 4.2 Interobserver agreement on procedural reliability for the game and quiz conditions for Experiment I.

Believability of Dependent Variables

Off-task Behavior. Table 4.3 displays the percentage of interobserver agreement (IOA) for off-task behavior by experimental phase and condition. Off-task behavior IOA was calculated on an interval-by-interval basis. IOA data were obtained during 19 (33%).
of the 58 study’s sessions. IOA for Sam, Robin, and Sean ranged across sessions from 91%-100%, 96%-100%, and 98%-100%, respectively.

<table>
<thead>
<tr>
<th>Student</th>
<th>Baseline</th>
<th>Quiz</th>
<th>Game</th>
<th>Bonus Marbles</th>
<th>Quiz</th>
<th>Bonus Marbles</th>
<th>Baseline</th>
<th>Quiz</th>
<th>Game</th>
<th>Bonus Marbles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sam</td>
<td>97</td>
<td>100</td>
<td>99</td>
<td>99</td>
<td>100</td>
<td>*</td>
<td>99</td>
<td>100</td>
<td>99</td>
<td>100</td>
</tr>
<tr>
<td>Robin</td>
<td>98</td>
<td>100</td>
<td>99</td>
<td>100</td>
<td>99</td>
<td>100</td>
<td>99</td>
<td>100</td>
<td>99</td>
<td>100</td>
</tr>
<tr>
<td>Sean</td>
<td>100</td>
<td>100</td>
<td>99</td>
<td>100</td>
<td>99</td>
<td>100</td>
<td>99</td>
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<td>99</td>
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<tr>
<td>Group</td>
<td>98</td>
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<td>100</td>
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<td>99</td>
<td>100</td>
<td>99</td>
<td>99</td>
<td>99</td>
<td>99</td>
</tr>
</tbody>
</table>

**Note:** * = Student was not present for this condition

Table 4.3 Percentage interobserver agreement for off-task behavior across phases and condition by student.

**Story Fact Recall Quizzes.** Table 4.4 displays the percentage of IOA on the number correct on the story fact recall quizzes for each student by experimental phase and condition. Accuracy checks were conducted for 18 (38%) of the 47 quizzes administered during the study. IOA on accuracy was conducted on a question-by-question basis. On all quizzes, except one, IOA was 100% across students, phases, and conditions. The one exception was 80% IOA with Sean on the quiz administered in Session #16. Sean’s quiz score was adjusted so the results and graph presented reflect the correct quiz score for Sean.
### Table 4.4 Interobserver agreement for story fact recall quizzes across phases and condition by student.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Condition</th>
<th>Quiz</th>
<th>Game</th>
<th>Bonus Marbles</th>
<th>Quiz</th>
<th>Game</th>
<th>Bonus Marbles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Quiz Game Bonus Marbles Quiz Bonus Marbles</td>
<td>100</td>
<td>100</td>
<td>100 *</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Sam</td>
<td></td>
<td>100</td>
<td>100</td>
<td>100 *</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Sean</td>
<td></td>
<td>95</td>
<td>100</td>
<td>100 *</td>
<td>97</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Robin</td>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Sue</td>
<td></td>
<td>100</td>
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<td>100</td>
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<td>100</td>
</tr>
<tr>
<td>Stan</td>
<td></td>
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<td>100</td>
<td>100</td>
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<td>100</td>
</tr>
<tr>
<td>Group</td>
<td></td>
<td>99</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

*Note:* * = Student was absent during the session and did not take the quiz.

**Individual Student Data**

**Sam**

Sam attended 40 of the 58 sessions throughout the study—8 of 11 during Baseline condition, 17 of 23 during the Quiz condition, 7 of the 10 during the Game condition, and 8 of 14 during the Game with Bonus Marbles condition.

**Off-task Behavior.** Sam was observed on two different pre-baseline occasions prior to the study to verify an elevated level of off-task behavior. He was observed twice during a typical SSR session during which the students were choosing books of their own. His average percentage of intervals off-task during these observations was 8% with a range of 3%-13%.

Figure 4.1 shows the percent of intervals off-task by Sam during each session of the study. Sam’s average percentage of intervals off-task during Baseline was 15.8% with a range of 0%-62%. His average percent of intervals off-task during the Quiz 1 phase was 12.3% with a range of 0%-100%. The day he was off-task 100% of the intervals he slept...
During the 15-minute SSR period. During the Game phase Sam’s average percent of intervals off-task was 10.5% with a range of 0%-31%. During the Game with Bonus Marbles phase Sam averaged 0.75% off-task with a range of 0%-3%. During the Quiz 2 phase Sam’s average percent of off-task behavior was 0%. Sam was not present for the Game with Bonus Marbles 2 due to absences.

Sam’s average percentage of intervals off-task during the Baseline condition was 15.8% with a range of 0%-62%. His average percentage of intervals of off-task during the Quiz condition was 10% with a range of 0%-100%. During the Game condition Sam’s average percentage of intervals off-task was 10.5% with a range of 0%-31%. During the Game with Bonus Marbles condition his average percentage of intervals off-task was .75% with a range of 0%-3%. Sam’s percent of intervals of off-task behavior decreased over the course of the study, as did the variability in the data. Sam’s off-task behavior during Baseline and Quiz 1 was elevated, and during session #14 was 100% of the intervals. Initially, the addition of the game resulted in a brief increase of percentage of intervals off-task but by the fourth day of the Game condition percentage of off-task behavior decreased to near zero levels. The variability in Sam’s percentage of intervals off-task decreased greatly with the addition of the Game with Bonus Marbles. With the addition of the bonus marbles to the game his off-task behavior never exceeded 3% of the observed intervals.

**Quiz Scores.** Figure 4.2 shows Sam’s scores on story fact quizzes during each session of the study. Sam’s average quiz score during Quiz 1 was 2.9 (range, 0-5). His average quiz score during the Game phase was 2.3 (range, 0-5). During the Game with Bonus Marbles phase his mean quiz score was 4.3 (range, 3-5). During the Quiz 2 phase
his mean quiz score was 3.7 (range, 3-5). Sam did not participate in the Game with Bonus Marbles 2 phase due to absences.

![Figure 4.1: Percentage of 5-sec observation intervals in which Sam was off-task during sustained silent reading. Breaks in data paths indicate student absences.](image)

Sam’s average score during the Quiz condition was 2.9 correct with a range of 0-5 correct. During the Game his average quiz score was 2.3 correct with a range of 0-5 correct. During the Game with Bonus Marbles phase Sam’s average quiz score was 4.3 correct with a range of 3-5 correct. Sam’s quiz scores were extremely variable over the course of the study, excluding the Game with Bonus Marbles condition. During this condition his quiz scores were 3 or above on all quizzes, unlike the other conditions during which he received scores that ranged from 0-5. Because Sam started a new book on the first day of Game with Bonus Marbles it is difficult to determine if the stability of
his quiz scores during this condition are the result of the addition of the bonus marbles or the change of book.

Figure 4.2 Number of correct answers on story fact quizzes by Sam. Breaks in data paths indicate student absences.

**Attitude Scale Scores.** Prior to the beginning of the study Sam scored a 65 on the RSRAA, his post-study attitude score was 87. This score indicates an increase in a positive attitude toward reading.

**Sean**

Sean attended 54 of the 58 sessions throughout the study— 11 of 11 during the Baseline condition, 20 of 23 during the Quiz condition, 10 of the 10 during the Game condition, and 13 of 14 during the Game with Bonus Marbles condition.
Off-task Behavior. Sean was observed on four different pre-baseline occasions prior to the study to verify an elevated level of off-task behavior. He was observed twice during independent seat work in math class and twice during a typical SSR session during which the students chose their own books. His average percentage of intervals off-task during these observations was 30.5%, with a range of 0%-60%.

Figure 4.3 shows the percent off-task behavior by Sean during each session of the study. Sean’s average percentage of intervals off-task during baseline was 0.6% of the intervals with a range of 0%-4%. His average percent of intervals off-task during the Quiz 1 phase was 0.3% with a range of 0%-3%. During the Game phase Sean’s average percent of intervals off-task was 3.8% with a range of 0%-14%. During the Game with Bonus Marbles 1 phase Sean averaged 11.5% off-task with a range of 0%-100%. During the Quiz 2 phase Sean’s average percent of off-task behavior was 11.3% with a range of 0%-100%. In both cases during which Sean was off-task 100% of the intervals he stood at his desk to read. During the Game with Bonus Marbles 2 phase Sean’s average intervals off-task was 0%.

Sean’s average percentage of intervals off-task during Baseline was 0.6% of the intervals with a range of 0%-4%. His average percentage of intervals off-task during the Quiz condition was 5.3% with a range of 0%-100%. The day on which Sean was 100% off-task occurred on a day when he stood at his desk and read. During the Game phase Sean’s average percentage of intervals off-task was 3.8% with a range of 0%-14%. During the Game with Bonus Marbles condition Sean’s average percentage of intervals off-task was 9% with a range of 0%-100%. The one day that Sean was 100% off-task during this condition he chose to stand at his desk to read. Sean’s levels of off-task
behavior were unremarkable when compared to observations conducted prior to the study. Excluding the days on which he stood up to read, his off-task behavior was less than 15% of the observed intervals across all phases of the study.

**Note:** * = Student stood while reading

Figure 4.3: Percentage of 5-sec observation intervals in which Sean was off-task during sustained silent reading. Breaks in data paths indicate student absences.

**Quiz Scores.** Figure 4.4 shows Sean’s scores on story fact recall quizzes during each session of the study. Sean’s average quiz score during the Quiz 1 phase was 3 (range, 1-5). His average quiz score during the Game phase was 2.7 (range, 0-4). During the Game with Bonus Marbles 1 phase his mean quiz score was 2.9 (range, 1-4). On two occasions during this phase Sean read the wrong pages and scored a 1 on the quiz on both days. During the Quiz 2 phase Sean’s mean quiz score was 3.4 (range, 2-5). In the Game with Bonus Marbles 2 phase Sean’s average quiz score was 4.5 (range, 4-5).
Sean’s average quiz score during the Quiz condition was 3.1 correct with a range of 1-5 correct. During the Game condition his average quiz score was 2.7 correct with a range of 0-4 correct. During the Game with Bonus Marbles condition his average number correct on the quizzes was 4.3 correct with a range of 1-5 correct. During this condition Sean had two sessions in which he refused to read or read the wrong pages, but still took the quiz. Sean’s quiz scores were quite variable over the course of the study. Although still variable, Sean’s average quiz scores during the Game with Bonus Marbles condition were higher than any other condition of the study.

Figure 4.4: Number of correct answers on story fact quizzes by Sean. Breaks in data paths indicate student absences.
**Attitude Scale Scores.** Prior to the beginning of the study Sean scored 102 on the RSRAA, his post-study score was 98. This post-study score on the attitude scale is a slight decrease from his original score.

**Robin**

Robin attended 46 of the 58 sessions throughout the study—10 of 11 sessions during Baseline, 19 of 23 during the Quiz condition, 6 of 10 during the Game condition, and 11 of 14 during the Game with Bonus Marbles condition.

**Off-task Behavior.** Robin was observed on four different pre-baseline occasions prior to the study to verify an elevated level of off-task behavior. She was observed twice during independent seat work in math class and twice during a typical SSR session during which the students were choosing books of their own. Her average percentage of intervals off-task during these observations was 9.8% with a range of 0%-13%.

Figure 4.5 show’s the percent of off-task behavior by Robin during each session of the study. Robin’s average percentage of intervals off-task during Baseline was 9.3% with a range of 0%-77%. During the Quiz 1 phase her average percentage of intervals off-task was 0.3% with a range of 0%-3%. During the Game phase Robin’s average percentage of intervals off-task behavior was 1.2% with a range of 0%-3%. During the Game with Bonus Marbles 1 phase her average intervals off-task was 3.4% with a range of 0%-21%. In the Quiz 2 phase her average intervals off-task were 2% with a range of 0%-10%. In the Game with Bonus Marbles 2 phase her average percentage of intervals off-task was 0%.

Robin’s average percentage of intervals off-task during Baseline was 9.3% with a range of 0%-77%. During the Quiz condition her average percentage of intervals off-task
was 1% with a range of 0%-10%. During the Game condition Robin’s average percentage of intervals off-task behavior was 1.2% with a range of 0%-3%. During the Game with Bonus Marbles condition Robin’s average percentage of intervals of off-task behavior was 2.5% with a range of 0%-21%. Although her off-task behavior was minimal during baseline there seems to be a decrease in both the mean off-task behavior and variability of the behavior over the course of the study from 9% during Baseline to 2.5% during the Game with Bonus Marbles condition.

Figure 4.5: Percentage of 5-sec observation intervals in which Robin was off-task during sustained silent reading. Breaks in data paths indicate student absences.

**Quiz Scores.** Figure 4.6 shows Robin’s scores on story fact recall quizzes during each session of the study. Robin’s average quiz score during the Quiz 1 phase was 2.2 (range, 0-4). Her average quiz score during the Game phase was 3.3 (range, 1-5). During the Game with Bonus Marbles 1 phase her mean quiz score was 2.8 (range, 1-4). During
the Quiz 2 phase her mean quiz score was 2.2 (range, 0-4). In the Game with Bonus Marbles 2 condition Robin’s average quiz score was 2.3 (range, 2-3).

Robin’s average quiz score during the Quiz condition was 2.1 with a range of 0-4. Robin’s average quiz score during the Game condition was 3.3, with a range of 1-5. Her average quiz score during the Game with Bonus Marbles condition was 2.7 with a range of 1-4. Robin’s quiz scores were quite variable across phases. During the Game condition, Robin performed better on the quizzes than in any other condition. It was during this condition that she received a 5 on a quiz, which did not occur in any other condition. Immediately following the implementation of the Game Robin’s quiz scores display a rapidly increasing trend, this trend did not maintain overtime and the remainder of her quiz scores were quite variable throughout the rest of the study.

Figure 4.6: Number of correct answers on story fact quizzes by Robin. Breaks in data paths indicate student absences.
Attitude Scale Scores. Prior to beginning the study Robin scored a 43 on the RSRAA. Her post-study RSRAA was 51, this score indicates a slight increase in a positive attitude toward reading.

Sue

Sue attended 30 of the 47 sessions during which a quiz was administered. She attended 12 of the 23 during the Quiz condition, 8 of the 10 during the Game condition, and 10 of 14 during the Game with Bonus Marbles condition.

Quiz Scores. Figure 4.7 shows Sue’s scores on story fact recall quizzes during each session of the study. Sue’s average quiz score during the Quiz 1 phase was 1.8 (range, 0-3). Her average quiz score during the Game phase was 2.5 (range, 1-4). During the Game with Bonus Marbles phase her mean quiz score was 3.8 (range, 3-5). During the Quiz 2 phase her mean quiz score was 3 (range, 1-5). In the Game with Bonus Marbles 2 condition Sue’s average quiz score was 3.5 (range, 3-4).

Sue’s average quiz score during the Quiz condition was 2.4 correct with a range of 0-5 correct. During the Game condition her average number correct was 2.5 correct with a range of 1-4 correct. During the Game with Bonus Marbles condition Sue’s average number correct was 3.7 with a range of 3-5 correct. During the Quiz and Game conditions Sue’s average quiz scores were very similar, 2.4 and 2.5 correct, respectively. Sue’s performance on the quizzes during the Game with Bonus Marbles condition is more stable than other any other condition. During the Game with Bonus Marbles condition her range of scores is 3-5 correct unlike the other conditions which ranged from
0-5 correct on the quizzes. The Game with Bonus Marbles condition appeared to influence her performance on the quizzes.

_**Attitude Scale Scores.**_ At the beginning of the study Sue scored a 50 on the RSRAA. Her post-study score on the attitude scale was 91. This score on the attitude scale indicates a significant increase in her attitude toward reading.

![Figure 4.7: Number of correct answers on story fact quizzes by Sue. Breaks in data paths indicate student absences.](image)

Stan

Stan attended 42 of the 47 sessions during which a quiz was administered. He attended 20 of the 23 during the Quiz condition, 10 of the 10 during the Game condition, and 12 of 14 during the Game with Bonus Marbles condition.

_**Quiz Scores.**_ Figure 4.8 shows Stan’s scores on story fact recall quizzes across all sessions of the study. Stan’s average quiz score during the Quiz 1 phase was 2 (range, 0-
4). His average quiz score during the Game phase was 2.7 (range, 1-5). During Game with Bonus Marbles 1 phase his mean quiz score was 3.3 (range, 0-5). During the Quiz 2 phase his mean quiz score was 4.7 (range, 4-5). In the Game with Bonus Marbles 2 phase Stan’s average quiz score was 4.7 (range, 4-5).

Stan’s average quiz score during the Quiz condition was 3.2 correct with a range of 0-5 correct. During the Game condition Stan’s average quiz score was 2.7 correct with a range of 1-5 correct. During the Game with Bonus Marbles condition his average quiz score was 3.7 correct with a range of 0-5 correct. Stan’s quiz scores increased over the course of the study. During the Quiz 1 phase his average quiz score was 2, but during the final phase of the study his average quiz score was 4.7, a significant increase. The implementation of the game influenced Stan’s quiz scores; the variability decreased, and the average number correct increased. With the addition of the bonus marbles Stan’s quiz scores continue to increase and stabilize. During the Quiz 2 phase Stan’s quiz scores remain high, similar to those during the Game with Bonus Marbles condition, due to behavioral irreversibility.

*Attitude Scale Scores.* Prior to the beginning of the study Stan scored 100 on the RSRAA. His post-study attitude score was 95, this in a slight decrease in a positive attitude toward reading score.

*Group Summary*

*Off-task Behavior.* Table 4.5 contains a summary of the percentage of intervals off-task by each student by phases and conditions. The students’ percent of intervals off-task decreased over the course of the study. Two of the students, (Sam and Sean), had
Figure 4.8: Number of correct answers on story fact quizzes by Stan. Breaks in data paths indicate student absences.

days on which they were 100% off-task, but for Sam and Robin their off-task behavior during the Game with Bonus Marbles condition was less than 3% of the intervals.

*Quiz Scores.* Table 4.6 contains a summary of the mean and mode correct on the story fact recall quizzes by each student during each phase and condition. For all students, the average number correct increased from the Quiz only condition to the Game condition. For all students the addition of the bonus marbles to the game resulted in an increase in the average number correct on the quizzes when compared to the baseline condition. When comparing the Game with Bonus Marbles to the Game condition all students, except Robin, had an increase of number correct on the quiz. For Robin, the addition of the bonus marbles to the game resulted in a decrease (2.9 to 2.7) of her average quiz score when compared with the Game condition.
**Attitude Scale Scores.** Table 4.7 contains a summary of the students pre- and post-attitude scale scores on the *Rhody Secondary Attitude Assessment Scale*. Three of the students had an increase in their attitude toward reading (Sam, Robin, and Sue). The change from pre- to posttest score for Sam was 22 points, for Robin the change was 8 points, and for Sue the change was 41 points, which was the most significant change across students. Sean and Stan had a decrease in attitude as measured by the *Rhody Secondary Attitude Assessment Scale*. Sean’s score decreased by four and Stan’s by five points, both very minimal changes.

**Experiment II**

Experiment II investigated the effects of a post-SSR quiz and story fact recall game on the off-task behavior of students during a 15-minute Sustained Silent Reading (SSR) period, and on students’ quiz scores on a five-question paper-pencil story fact quiz following the 15-minute SSR period.

**Procedural Reliability and Believability of the Dependent Variable**

*Procedural Reliability*

The experimenter completed procedural reliability checklists for 6 (10%) of the 59 sessions. Interobserver agreement data were collected for two of those six sessions. Checklists were completed during the Quiz Condition (Appendix J), Game Condition (Appendix L) and the Game with Bonus Marbles Condition (Appendix N). The mean
<table>
<thead>
<tr>
<th>Phase</th>
<th>Baseline (11)</th>
<th>Quiz (14)</th>
<th>Game (10)</th>
<th>Game with Bonus Marbles (11)</th>
<th>Quiz (9)</th>
<th>Game with Bonus Marbles (3)</th>
<th>Baseline (11)</th>
<th>Quiz (23)</th>
<th>Game (10)</th>
<th>Game with Bonus Marbles (14)</th>
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</thead>
<tbody>
<tr>
<td>Sam</td>
<td>15.8 / 0-62</td>
<td>12.3 / 0-100</td>
<td>10.5 / 0-31</td>
<td>0.75 / 0-3</td>
<td>0.0</td>
<td>N/A</td>
<td>15.8 / 0-62</td>
<td>10 / 0-100</td>
<td>10.5 / 0-31</td>
<td>0.75 / 0-3</td>
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<td>(7)</td>
<td>(8)</td>
<td>(3)</td>
<td></td>
<td>(8)</td>
<td>(17)</td>
<td>(7)</td>
<td>(8)</td>
</tr>
<tr>
<td>Sean</td>
<td>0.6 / 0-4</td>
<td>0.3 / 0-3</td>
<td>3.8 / 0-14</td>
<td>11.5 / 0-100</td>
<td>11.3 / 0-100</td>
<td>0.0</td>
<td>0.6 / 0-4</td>
<td>5.3 / 0-100</td>
<td>3.8 / 0-14</td>
<td>9 / 0-100</td>
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<td>(10)</td>
<td>(10)</td>
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<td>(11)</td>
<td>(20)</td>
<td>(10)</td>
<td>(13)</td>
</tr>
<tr>
<td>Robin</td>
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<td>2 / 0-10</td>
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<td>1 / 0-10</td>
<td>1.2 / 0-3</td>
<td>2.5 / 0-21</td>
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<td>(9)</td>
<td></td>
<td>(10)</td>
<td>(19)</td>
<td>(6)</td>
<td>(11)</td>
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</tbody>
</table>

**Note:** a= Indicates the number of sessions per phase or condition

Table 4.5 Mean/Range (top row) of percentage of intervals off-task by students in Experiment I by experimental phase and condition. Numbers in parentheses (bottom row) show number of sessions per phase/condition.
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<tr>
<th></th>
<th>Quiz (14)</th>
<th>Game (10)</th>
<th>Game with Bonus Marbles (11)</th>
<th>Quiz (9)</th>
<th>Game with Bonus Marbles (3)</th>
<th>Quiz (23)</th>
<th>Game (10)</th>
<th>Game with Bonus Marbles (14)</th>
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<tr>
<td><strong>Sam</strong></td>
<td>2.9 / 0-5</td>
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<td>4.3 / 3-5</td>
<td>3.7 / 3-5</td>
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<td>2.3 / 0-5</td>
<td>4.3 / 3-5</td>
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<td>(7)</td>
<td>(8)</td>
<td>(3)</td>
<td>N/A</td>
<td>(17)</td>
<td>(7)</td>
<td>(8)</td>
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<td>2.3 / 0-5</td>
<td>4.3 / 3-5</td>
<td>3.7 / 3-5</td>
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<td></td>
<td>4</td>
<td>3</td>
<td>3</td>
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<tr>
<td><strong>Sean</strong></td>
<td>3 / 1-5</td>
<td>2.7 / 0-4</td>
<td>2.9 / 1-4</td>
<td>3.4 / 2-5</td>
<td>4.5 / 4-5</td>
<td>3.1 / 1-5</td>
<td>2.7 / 0-4</td>
<td>4.3 / 1-5</td>
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<td>(9)</td>
<td>(2)</td>
<td>(20)</td>
<td>(10)</td>
<td>(12)</td>
</tr>
<tr>
<td><strong>Robin</strong></td>
<td>2.2 / 0-4</td>
<td>3.3 / 1-5</td>
<td>2.8 / 1-4</td>
<td>2.2 / 0-4</td>
<td>2.3 / 2-3</td>
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<td>3.3 / 1-5</td>
<td>2.7 / 1-4</td>
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<td>(6)</td>
<td>(8)</td>
<td>(9)</td>
<td>(3)</td>
<td>(19)</td>
<td>(6)</td>
<td>(11)</td>
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<tr>
<td><strong>Sue</strong></td>
<td>1.8 / 0-3</td>
<td>2.5 / 1-4</td>
<td>3.8 / 1-5</td>
<td>3 / 1-5</td>
<td>3.5 / 3-4</td>
<td>2.4 / 0-5</td>
<td>2.5 / 1-4</td>
<td>3.7 / 3-5</td>
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<td>2, 4</td>
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<td>(6)</td>
<td>(2)</td>
<td>(12)</td>
<td>(8)</td>
<td>(10)</td>
</tr>
<tr>
<td><strong>Stan</strong></td>
<td>2 / 0-4</td>
<td>2.7 / 1-5</td>
<td>3.3 / 0-5</td>
<td>4.7 / 4-5</td>
<td>4.7 / 4-5</td>
<td>3.2 / 0-5</td>
<td>2.7 / 1-5</td>
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<td>(3)</td>
<td>(20)</td>
<td>(10)</td>
<td>(12)</td>
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</table>

**Note:** a = Indicates the number of sessions per phase or condition

Table 4.6 Mean /Range (top row) and mode (middle row) number correct on the story fact recall quizzes by students in Experiment I. Maximum score = 5. Number in parentheses (bottom row) shows the number of sessions per phase or condition.
Table 4.7 Pre- and post-SSR attitude scale scores for all students as generated on the *Rhody Secondary Attitude Assessment Scale* for students in Experiment I.

Procedural reliability was 99% across conditions with a range of 96%-100%. The mean IOA for procedural reliability was 92% for the quiz condition and 100% for the game condition. Table 4.8 displays the results of the procedural reliability completed by condition. Table 4.9 displays the interobserver agreement on procedural reliability across conditions.

Table 4.8 Percentage of procedural steps completed correctly by condition during Experiment II.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Baseline</th>
<th>Quiz (2)</th>
<th>Game (2)</th>
<th>Bonus Marbles (2)</th>
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<tr>
<td>Mean</td>
<td>*</td>
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<td>99</td>
<td>100</td>
</tr>
<tr>
<td>Range</td>
<td>*</td>
<td>N/A</td>
<td>96-100</td>
<td>100</td>
</tr>
</tbody>
</table>

*Note: * = No procedural reliability conducted during this condition. Numbers in parentheses show the number of sessions that procedural reliability data were obtained.

Table 4.8 Percentage of procedural steps completed correctly by condition during Experiment II.
Table 4.9 Interobserver agreement on procedural reliability for the game and quiz conditions during Experiment II.

<table>
<thead>
<tr>
<th>Believability of Dependent Variable</th>
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<tr>
<td><strong>Off-task Behavior.</strong> Table 4.10 displays the percentage of interobserver agreement (IOA) for off-task behavior by experimental phase and condition. Off-task behavior IOA was calculated on an interval-by-interval basis. IOA data were obtained during 11 (19%) of the 59 study’s sessions (19%). IOA for Ned, Cy and Len across ranged across sessions from 100%, 93%-100%, 97-100%, respectively.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Baseline</td>
</tr>
<tr>
<td>Ned</td>
<td>100</td>
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<tr>
<td>Cy</td>
<td>97</td>
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<tr>
<td>Len</td>
<td>100</td>
</tr>
<tr>
<td>Group</td>
<td>99</td>
</tr>
</tbody>
</table>

Table 4.10 Percentage of interobserver agreement for off-task behavior across phases and condition by student during Experiment II.
Story Fact Recall Quizzes. Table 4.11 displays the percentage of IOA on the number correct on the story fact recall quizzes for each student by experimental phase and condition. Accuracy checks were conducted for 9 (20%) of the 46 quizzes administered during the study. IOA on accuracy was conducted on a question-by-question basis. IOA data ranged between 93%-100% across students, phases, and conditions.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Quiz</td>
</tr>
<tr>
<td>Ned</td>
<td>100</td>
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<tr>
<td>Cy</td>
<td>100</td>
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<tr>
<td>Len</td>
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<td>Kay</td>
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<td>Patty</td>
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<tr>
<td>Group</td>
<td>97</td>
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</tbody>
</table>

Note: * = Student was absent during the session and did not take the quiz

Table 4.11 Interobserver agreement for story fact recall quizzes across phases and conditions by student during Experiment II.
Individual Student Data

Ned

Ned attended 48 of the 59 sessions throughout the study—7 of 13 during Baseline, 20 of 24 during the Quiz condition, 9 of 10 during the Game condition, and 12 of 12 during the Game with Bonus Marbles condition.

*Off-task Behavior.* Ned was observed on three different pre-baseline occasions prior to the study to verify an elevated level of off-task behavior. He was observed twice during an independent work session in math. His average percentage of intervals off-task during these observations was 43% with a range of 40%-45%. Ned was also observed during a typical SSR session and was off-task for 8% of the observed intervals.

Figure 4.9 shows the percent off-task behavior by Ned during each session of the study. Ned’s average percentage of intervals off-task during Baseline was 3.6% with a range of 0%-7%. His average percent of intervals off-task during the Quiz 1 phase was 0.3% with a range of 0%-3%. During the Game phase Ned’s average percent of intervals off-task was 1% with a range of 0%-4%. During Game with Bonus Marbles phase Ned averaged 0.5% off-task with a range of 0%-3%. During the Quiz 2 phase Ned’s average percent of off-task behavior was 0.6% with a range of 0%-3% intervals off-task.

Ned’s average percentage of intervals off-task during the Baseline condition was 3.6% with a range a 0%-7%. His average percentage of intervals of off-task during the Quiz condition was 0.5% with a range of 0%-3%. During the Game condition Ned’s average percentage of intervals off-task was 1% with a range of 0%-4%. During the Game with Bonus Marbles condition Ned averaged 0.5% off-task with a range of 0%-3%. Ned’s percent of intervals of off-task behavior were unremarkable throughout the
study during SSR, even though he had been identified as having elevated levels of off-task behavior in other settings. His off-task behavior in math class was over 40% of the observed intervals. During a pre-baseline observation of SSR his percentage of observed intervals off-task was only 8%. Although already low during baseline, with the implementation of the quiz and game his off-task behavior decreased even further, to 1% or fewer of the observed intervals.

*Quiz Scores.* Figure 4.10 shows Ned’s scores on story fact quizzes across all phases of the study. Ned’s average quiz score during the Quiz 1 phase was 2.4 (range, 1-4). His average quiz score during the Game phase was 2.3 (range, 1-3). During the Game with Bonus Marbles phase his mean quiz score was 3.4 (range, 1-5). During the Quiz 2 phase his mean quiz score was 3.6 (range, 2-5).

![Figure 4.9: Percentage of 5-sec observation intervals in which Ned was off-task during sustained silent reading. Breaks in data paths indicate student absences.](image)
Ned’s average score during the Quiz condition was 3.1 correct with a range of 1-5 correct. During the Game condition his average quiz score was 2.3 correct with a range of 1-3 correct. During the Game with Bonus Marbles condition Ned’s average quiz score was 3.4 correct with a range of 1-5 correct. Ned’s quiz scores were quite variable over the course of the study, across all phases and conditions, although with the addition of the Game with Bonus Marbles his mean number correct increased by 1.1 points over the Game, indicating the addition of the bonus reinforcers were influencing his quiz performance on story fact recall quizzes.

**Attitude Scale Scores.** Ned scored a 48 on the RSRAA at the beginning of the study. His post-study attitude score was 41, indicating a slight decrease in his attitude toward reading.

![Figure 4.10: Number of correct answers on story fact quizzes by Ned. Breaks in data paths indicate student absences.](image_url)
Cy

Cy attended 55 of the 59 sessions throughout the study—12 of 13 during Baseline condition, 22 of 24 during the Quiz condition, 9 of the 10 during the Game condition, and 12 of 12 during the Game with Bonus Marbles condition.

Off-task Behavior. Cy was observed on four different pre-baseline occasions prior to the study to verify an elevated level of off-task behavior. He was observed twice during a typical SSR session, during which the students were choosing their own books. His percentage of intervals off-task during these observations was 100% and 17% off-task. Cy was also observed during independent work time in his math class, he was observed as being 42% off-task during the observed intervals.

Figure 4.11 shows the percent of off-task behavior by Cy during each session of the study. Cy’s average percentage of intervals off-task during Baseline was 10.3% with a range of 0%-96%. The day he was off-task 96% of the intervals there was a substitute teacher present and he was completing homework for another class. His average percent of intervals off-task during the Quiz 1 phase was 1.3% with a range of 0%-3%. During the Game phase Cy’s average percent of intervals off-task was 2% with a range of 0%-7%. During the bonus marbles phase Cy averaged 2.6% off-task with a range of 0%-10%. During the Quiz 2 phase Cy’s average percent of off-task behavior was 2.5%, with a range of 0%-10%.

Cy’s average percentage of intervals off-task during the baseline condition was 10.3% with a range of 0%-96%. His average percentage of intervals of off-task during the quiz condition was 2%, with a range of 0%-10%. During the game condition Cy’s average percentage of intervals off-task was 2% with a range of 0%-7%. During the game
with bonus marbles condition his average percentage of intervals off-task was 2.6% with a range of 0%-10%. Cy’s percent of intervals of off-task behavior seemed to decrease over the course of the study, as did the variability in the data. Cy’s off-task behavior during baseline was 10% of observed intervals, with one outlier of 96%. With the addition of the quiz, his off-task behavior decreased to an average of 2% of the observed intervals. Cy’s average off-task behavior remained low (i.e., < 3%) for the remainder of the study.

**Quiz Scores.** Figure 4.12 shows Cy’s scores on story fact quizzes across all phases of the study. Cy’s average quiz score during the Quiz 1 phase was 3.2 (range, 1-5). His average quiz score during the Game phase was 2.6 (range, 1-4). During the Game with Bonus Marbles phase Cy’s mean quiz score was 3.1 (range, 2-5). During the Quiz 2 phase his mean quiz score was 3.8 (range, 2-5).

![Figure 4.11: Percentage of 5-sec observation intervals in which Cy was off-task during sustained silent reading. Breaks in data paths indicate student absences.](image-url)

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Cy’s average score during the Quiz condition was 3.7 correct with a range of 1-5 correct. During the Game condition his average quiz score was 2.6 correct with a range of 1-4 correct. During the Game with Bonus Marbles condition Cy’s average quiz score was 3.1 correct with a range of 2-5 correct. Cy's quiz scores were quite variable (range 1-5) across phases and conditions throughout the study. With the implementation of the game his quiz scores decreased, but with the addition of the bonus marbles his average quiz score returned to Quiz condition levels. His highest average of quiz scores occurred during the Quiz 2 phase (e.g., 3.8).

*Attitude Scale Scores.* Cy scored a 44 on the reading attitude survey prior to the beginning of the study. His post-study attitude score was 43, this was an unremarkable change.

![Figure 4.12: Number of correct answers on story fact quizzes by Cy. Breaks in data paths indicate student absences.](image-url)
Len

Len attended 55 of the 59 sessions throughout the study—12 of 13 during Baseline, 23 of 24 during the Quiz condition, 8 of the 10 Game condition, and 12 of 12 during the Game with Bonus Marbles condition.

*Off-task Behavior.* Len was observed on six different pre-baseline occasions prior to the study to verify an elevated level of off-task behavior. He was observed three times during a typical SSR session during which the students were choosing their own books. Over these three observations his average percent of intervals off-task was 5.3% with a range of 4%-6%. Len was also observed in his math class during independent seat work. His average percentage of intervals off-task during these observations was 46% and ranged from 31%-63%.

Figure 4.13 shows the percent of off-task behavior by Len during each session of the study. Len’s average percentage of intervals off-task during Baseline was 4.5% with a range of 0%-12%. His average percentage of intervals off-task during the Quiz 1 phase was 0.9% with a range of 0%-6%. During the Game phase Len’s average percent of intervals off-task was 2.3% with a range of 0%-6%. During the Game with Bonus Marbles phase Len averaged 3.2% off-task with a range of 0%-9%. During the Quiz 2 phase Len’s average percent of off-task behavior was 1.5% with a range of 0%-6%.

Len’s average percentage of intervals off-task during Baseline was 4.5% with a range of 0%-12%. His average percentage of intervals off-task during the Quiz condition was 1.2% with a range of 0%-6%. During the Game condition Len’s average percentage of intervals off-task was 2.3% with a range of 0%-6%. During the Game with Bonus Marbles condition his average percentage of intervals off-task was 3.2% with a range of
0%-9%. Len’s level of off-task behavior was unremarkable over the course of the study. Although he was targeted for off-task behavior by his classroom teacher, direct observations during SSR indicate he was rarely off-task. He was off-task fewer than 5% of the intervals during SSR throughout the study.

Figure 4.13: Percentage of 5-sec observation intervals during which Len was off-task during sustained silent reading. Breaks in paths indicate student absences.

**Quiz Scores.** Figure 4.14 shows scores on story fact quizzes over the course of the study. Len’s average quiz score during the Quiz 1 phase was 1.3 (range, 0-3). His average quiz score during the Game phase was 2.4 (range, 0-5). During the Game with Bonus Marbles phase his mean quiz score was 2.3 (range, 0-5). During the Quiz 2 phase his mean quiz score was 2.5 (range, 0-4).

Len’s average score during the Quiz condition was 2 correct with a range of 0-4 correct. During the Game condition his average quiz score was 2.4 correct with a range of 0-5 correct. During the Game with Bonus Marbles condition Len’s average quiz score
was 2.3 correct with a range of 0-5 correct. Len’s quiz scores were extremely low over the course of the study. On two occasions he received a 5 on his quiz, once during the game phase and once during the bonus marbles phase. In all conditions his median score was 2 out of 5 correct.

*Attitude Scale Scores.* At the beginning of the study Len scored a 54 on the RSRAA, his post-study score was 83. This change indicates an increase in his positive attitude toward reading.

![Figure 4.14: Number of correct answers on story fact quizzes by Len. Breaks in data paths indicate student absences.](image)

*Raydean*

Raydean attended 38 of 48 sessions during which a quiz was administered. She attended 17 of the 24 during the Quiz condition, 9 of the 10 during the Game condition, and 12 of 12 during the Game with Bonus Marbles condition.
Quiz Scores. Figure 4.15 shows Raydean’s scores on story fact recall quizzes across all phases of the study. Raydean’s average quiz score during the Quiz 1 phase was 3.7 (range, 1-5). Her average quiz score during the Game phase was 4 (range, 2-5). During the Game with Bonus Marbles phase her mean quiz score was 4.3 (range, 3-5). During the Quiz 2 phase her mean quiz score was 4.1 (range, 2-5).

Raydean’s average quiz score during the Quiz condition was 3.9 correct with a range of 1-5 correct. During the Game condition Raydean’s average quiz score was 4 correct with a range of 2-5 correct. During the Game with Bonus Marbles condition her average quiz score was 4.3 correct with a range of 3-5 correct. Raydean’s quiz scores were somewhat stable across phases and conditions. There was greater variability in Raydean’s quiz scores during the Quiz 1 phase. The implementation of the game resulted in an increase of quiz scores and a decrease in variability. With the addition of the bonus marbles all of her quiz scores were 3 or higher. The first day of the return to the quiz (Session #47) she received a 2 on her quiz, but after that her scores were three and higher for the remainder of the study.

Attitude Scale Scores. Raydean scored a 77 on the RSRAA at the beginning of the study. Her post-study attitude score was 90, indicating an increase in her positive attitude toward reading.

Kay

Kay attended 35 of the 46 sessions during which a quiz was administered. She attended 19 of the 24 during the Quiz condition, 9 of the 10 during the Game condition, and 7 of 12 during the Game with Bonus Marbles condition.
Figure 4.15: Number of correct answers on a story fact quizzes by Raydean. Breaks in data paths indicate student absences.

**Quiz Scores.** Figure 4.16 shows Kay’s scores on story fact recall quizzes across all phases of the study. Kay’s average quiz score during the Quiz 1 phase was 1.5 (range, 0-4). Her average quiz score during the Game phase was 2.4 (range, 0-5). During the Game with Bonus Marbles phase her mean quiz score was 4.2 (range, 3-5). During the Quiz 2 phase her mean quiz score was 3.8 (range, 2-5).

Her average quiz score during the Quiz condition was 2.8 correct with a range of 0-5 correct. During the Game condition Kay’s average quiz score was 2.4 correct with a range of 0-5 correct. During the Game with Bonus Marbles condition her average quiz score was 4.2 correct with a range of 3-5 correct. Kay’s quiz scores were quite variable during Quiz 1 and Game. Her scores increase and somewhat stabilize during the Game with Bonus Marbles and Quiz 2 phase. During the Game with Bonus Marbles condition
she never scored below a 3 on any quiz and her mode score was a 5. The last few sessions of Quiz 2 show a decreasing trend in quiz scores. This may be due to a change in the book she was reading, that occurred four days before the final session.

_Attitude Scale Scores._ Kay scored a 68 on the RSRAA prior to the beginning of the study. Her post-study score on the attitude scale was 70, indicating very little change in her attitude toward reading.

_Amos_

Amos attended 43 of the 46 sessions during which a quiz was administered. He attended 22 of the 24 during the Quiz condition, 9 of the 10 during the Game condition, and 12 of 12 during the Game with Bonus Marbles condition.

_Quiz Scores._ Figure 4.17 shows Amos’s scores on story recall quizzes across all phases of the study. Amos’s average quiz score during the Quiz 1 phase was 1.9 (range, 0-5). His average quiz score during the Game phase was 2.8 (range, 1-5). During the Game with Bonus Marbles phase his mean quiz score was 3.7 (range, 0-5). During the Quiz 2 phase his mean quiz score was 3.8 (range, 2-5).

Amos’s average quiz score during the Quiz condition was 3.0 correct with a range of 0-5 correct. During the Game condition Amos’s average quiz score was 2.8 correct with a range of 1-5 correct. During the Game with Bonus Marbles condition his average quiz score was 3.7 correct with a range of 0-5 correct. Amos’s quiz scores were quite variable across phases and conditions, but the data began to stabilize during the Game with Bonus Marbles condition. During the Quiz 2 phase Amos’ average quiz score
remained high (3.8), similar to those during the Game with Bonus Marbles (3.7), due to behavioral reversibility. The change in Amos’ quiz scores during the Game with Bonus Marbles condition may have been confounded by a change in the books he was reading, the day the condition began Amos started a new book, which may have affected his performance on the quizzes.

*Attitude Scale Scores.* At the beginning of the study Amos scored a 65 on the RSRAA. His post-study score on the RSRAA was 74, indicating a slight increase in his positive attitude toward reading.
Figure 4.17: Number of correct answers on story fact quizzes by Amos. Breaks in data paths indicate student absences.

**Patty**

Patty attended 25 of the 46 sessions. She was sick during a large portion of the study and was not in attendance for Quiz 1 or Game phases. She attended 9 of the 24 during the Quiz condition, 5 of the 10 during the Game condition, and 11 of 12 during the Game with Bonus Marbles condition.

**Quiz Scores.** Figure 4.18 shows Patty’s scores on story fact recall quizzes across all phases of the study. During the Game phase Patty’s average quiz score was 1.6 correct with a range of 0-4 correct. During the Game with Bonus Marbles phase her average quiz score was 2.5 correct with a range of 0-5 correct. Patty’s average quiz score during the Quiz 2 phase was 3.1 correct with a range of 0-5 correct. Patty’s quiz scores were quite variable across all conditions for which she was present. Her excessive absences contribute to an inability to draw much conclusion from her data.
Figure 4.18 Number of correct answers on story fact quizzes by Patty. Breaks in data paths indicate student absences.

**Attitude Scale Scores.** At the beginning of the study Patty scored a 68 on the RSRAA. Her post-study RSRAA score was 76 indicating a slight increase in her positive attitude toward reading.

**Group Summary**

*Off-task Behavior.* Table 4.12 contains a summary of the percentage of intervals off-task by each student and by phases and conditions. The students’ percentage of intervals off-task decreased over the course of the study. Although all three target students had low levels of off-task behavior during baseline, they decreased even further over the course of the study. Cy’s off-task behavior during Baseline ranged from 0-96%, but with the implementation of the Quiz, Game, and Game with Bonus Marbles his off-task behavior never exceeded 10% of the intervals. All three students had exhibited
excessive off-task behavior during pre-baseline observations, particularly during independent math work sessions. The students also exhibited elevated levels of off-task behavior during pre-baseline SSR sessions. During Ned’s pre-baseline observation, he was off-task 8% of the intervals, higher than any time during the study. Cy’s was observed twice during pre-baseline, his off-task behavior during these observations was 100% and 17%, also much higher than his average intervals off-task during the entire study.

**Quiz Scores.** Table 4.13 contains a summary of the number correct on the story fact recall quizzes by each student by phase and condition. Four students (Len, Raydean, Kay, and Amos) increased the average number correct when comparing the Quiz 1 phase to the Game condition. For all students the addition of the bonus marbles to the game resulted in an increase in the average number correct on the quizzes when compared to the Quiz condition. Cy was the only student who had a decrease in average quiz scores when comparing the Quiz 1 phase with the Game with Bonus Marbles condition.

**Attitude Scale Scores.** Table 4.14 contains a summary of the students pre- and post-attitude scale scores on the Rhody Secondary Attitude Assessment Scale. Five of the students had an increase in their attitude toward reading (Len, Kay, Raydean, Amos, and Patty). The most significant change in scores on the attitude scale was for Len. His
<table>
<thead>
<tr>
<th></th>
<th>Baseline (13(^a))</th>
<th>Quiz (10)</th>
<th>Game (10)</th>
<th>Game with Bonus Marbles (12)</th>
<th>Quiz (14)</th>
<th>Baseline (13)</th>
<th>Quiz (24)</th>
<th>Game (10)</th>
<th>Game with Bonus Marbles (12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ned</td>
<td>3.6 / 0-7 (7)</td>
<td>0.3 / 0-3 (9)</td>
<td>1.0 / 0-4 (9)</td>
<td>0.5 / 0-3 (12)</td>
<td>0.6 / 0-3 (11)</td>
<td>3.6 / 0-7 (7)</td>
<td>0.5 / 0-3 (20)</td>
<td>1.0 / 0-4 (9)</td>
<td>0.5 / 0-3 (12)</td>
</tr>
<tr>
<td>Cy</td>
<td>10.3 / 0-96 (12)</td>
<td>1.3 / 0-3 (9)</td>
<td>2.0 / 0-7 (9)</td>
<td>2.6 / 0-10 (12)</td>
<td>2.5 / 0-10 (13)</td>
<td>10.3 / 0-96 (12)</td>
<td>2 / 0-10 (22)</td>
<td>2.0 / 0-7 (9)</td>
<td>2.6 / 0-10 (12)</td>
</tr>
<tr>
<td>Len</td>
<td>4.5 / 0-12 (12)</td>
<td>0.9 / 0-6 (10)</td>
<td>2.3 / 0-6 (8)</td>
<td>3.2 / 0-9 (12)</td>
<td>1.5 / 0-6 (13)</td>
<td>4.5 / 0-12 (12)</td>
<td>1.2 / 0-6 (23)</td>
<td>2.3 / 0-6 (8)</td>
<td>3.2 / 0-9 (12)</td>
</tr>
</tbody>
</table>

**Note:** \(a\) = Number of sessions during the phase or condition

Table 4.12 Mean/Range (top row) of percentage of intervals off-task by students in Experiment II by experimental phase and condition. Numbers in parentheses (bottom row) show number of sessions per phase/condition.
<table>
<thead>
<tr>
<th>Phase</th>
<th>Quiz (10)</th>
<th>Game (10)</th>
<th>Game with Bonus Marbles (12)</th>
<th>Quiz (14)</th>
<th>Game (10)</th>
<th>Game with Bonus Marbles (12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ned</td>
<td>2.4 / 1-4</td>
<td>2.3 / 1-3</td>
<td>3.4 / 1-5</td>
<td>3.6 / 2-5</td>
<td>3.1 / 1-5</td>
<td>2.3 / 1-3</td>
</tr>
<tr>
<td></td>
<td>(9)</td>
<td>(9)</td>
<td>(12)</td>
<td>(11)</td>
<td>(20)</td>
<td>(9)</td>
</tr>
<tr>
<td>Cy</td>
<td>3.2 / 1-5</td>
<td>2.6 / 1-4</td>
<td>3.1 / 2.5</td>
<td>3.8 / 2-5</td>
<td>3.7 / 1-5</td>
<td>2.6 / 1-4</td>
</tr>
<tr>
<td></td>
<td>(9)</td>
<td>(9)</td>
<td>(12)</td>
<td>(13)</td>
<td>(22)</td>
<td>(9)</td>
</tr>
<tr>
<td>Len</td>
<td>1.3 / 0-3</td>
<td>2.4 / 0-5</td>
<td>2.3 / 0-5</td>
<td>2.5 / 0-4</td>
<td>2.0 / 0-4</td>
<td>2.4 / 0-5</td>
</tr>
<tr>
<td></td>
<td>(10)</td>
<td>(8)</td>
<td>(12)</td>
<td>(13)</td>
<td>(23)</td>
<td>(8)</td>
</tr>
<tr>
<td>Raydean</td>
<td>3.7 / 1-5</td>
<td>4 / 2-5</td>
<td>4.3 / 3-5</td>
<td>4.1 / 2-5</td>
<td>3.9 / 1-5</td>
<td>4.0 / 2-5</td>
</tr>
<tr>
<td></td>
<td>(8)</td>
<td>(9)</td>
<td>(12)</td>
<td>(9)</td>
<td>(17)</td>
<td>(9)</td>
</tr>
<tr>
<td>Kay</td>
<td>1.5 / 0-4</td>
<td>2.4 / 0-5</td>
<td>4.2 / 3-5</td>
<td>3.8 / 2-5</td>
<td>2.8 / 0-5</td>
<td>2.4 / 0-5</td>
</tr>
<tr>
<td></td>
<td>(2)</td>
<td>(9)</td>
<td>(7)</td>
<td>(11)</td>
<td>(19)</td>
<td>(9)</td>
</tr>
<tr>
<td>Amos</td>
<td>1.9 / 0-5</td>
<td>2.8 / 1-5</td>
<td>3.7 / 0-5</td>
<td>3.8 / 2-5</td>
<td>3.0 / 0-5</td>
<td>2.8 / 1-5</td>
</tr>
<tr>
<td></td>
<td>(2)</td>
<td>(9)</td>
<td>(12)</td>
<td>(13)</td>
<td>(22)</td>
<td>(9)</td>
</tr>
<tr>
<td>Patty</td>
<td>N/A</td>
<td>1.6 / 0-4</td>
<td>2.5 / 0-5</td>
<td>3.1 / 0-5</td>
<td>3.1 / 0-5</td>
<td>1.6 / 0-4</td>
</tr>
<tr>
<td></td>
<td>(0)</td>
<td>(5)</td>
<td>(11)</td>
<td>(9)</td>
<td>(0)</td>
<td>(5)</td>
</tr>
</tbody>
</table>

Note: a = Number of sessions during the phase or condition

Table 4.13 Top Row Mean/Range of number correct on the story fact recall quizzes by students in Experiment II by experimental phase and condition. Bottom Row is number of sessions. Maximum score = 5
pretest score was 54 and his posttest was 83. Although his improved attitude toward reading appears to have increased over the course of the study his showed very little improvement in his quiz performance, with a median score of 2 throughout the study. Ned and Cy had a decrease in attitude as measured by the *Rhody Secondary Attitude Assessment Scale*. Ned’s score decreased by three points and Cy’s by one point, both very minimal changes.

<table>
<thead>
<tr>
<th></th>
<th>Pre-SSR</th>
<th>Post-SSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ned</td>
<td>44</td>
<td>41</td>
</tr>
<tr>
<td>Cy</td>
<td>44</td>
<td>43</td>
</tr>
<tr>
<td>Len</td>
<td>54</td>
<td>83</td>
</tr>
<tr>
<td>Raydean</td>
<td>79</td>
<td>90</td>
</tr>
<tr>
<td>Kay</td>
<td>68</td>
<td>70</td>
</tr>
<tr>
<td>Amos</td>
<td>65</td>
<td>74</td>
</tr>
<tr>
<td>Patty</td>
<td>68</td>
<td>76</td>
</tr>
</tbody>
</table>

Table 4.14 Pre and post attitude scores for all students as generated from the *Rhody Secondary Attitude Assessment Scale*.

**Student and Teacher Opinions**

**Student Opinions**

The day after the last session of the study, a post-study interview (Appendix W) was conducted by the secondary data collectors. All students from both Experiments I and II participated in the interview. The data collectors took notes and also recorded the interview onto a cassette tape to ensure accuracy of the written responses. For Sam, who withdrew himself from school, his interview was conducted on his last day which
occurred on Session #54. With the exception of Sean all of the students made positive statements about SSR. Students’ responses to questions are included along with the number of students in parentheses who made the same or similar comments.

Did you have enough time to read all of the assigned pages during the reading session?

Never (1)
Sometimes (5)
Most of the time (5)
All of the time (1)

Were there some days that you did not want to read? If so, what did you do?

Yes, and I chose not to read (2)
Yes, but I read anyway (6)
No, I wanted to read everyday (4)

How do you prefer to read, silently or out loud?
Silently (10)
Out loud (2)

Do you have trouble reading silently?
No (8)
Yes (4)

Why?
Have to go slower
Pronouncing words
Sometimes understanding what I read
Forget what I read

What did you think about the game that Ms. DuBois played where you answered questions and earned marbles after you read?

Favorable
It was fun (6)
Game was cool, earned breakfast

Neutral
Didn’t care
OK (2)

Unfavorable
Rigged
Kid-like
What do you think about the quizzes you took after reading each day?

<table>
<thead>
<tr>
<th>Favorable</th>
<th>Neutral</th>
<th>Unfavorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good questions</td>
<td>Easy (5)</td>
<td>Hard (3)</td>
</tr>
<tr>
<td>Liked them (4)</td>
<td>OK (2)</td>
<td>Didn’t like (2)</td>
</tr>
<tr>
<td>Comprehensive</td>
<td>Sometimes I forgot (3)</td>
<td>Completely irrelevant</td>
</tr>
<tr>
<td>Quizzes are good for your brain</td>
<td></td>
<td>Sucked at first, then got easier</td>
</tr>
<tr>
<td>Liked how they were right from the reading</td>
<td></td>
<td>Focused on the wrong things</td>
</tr>
<tr>
<td>Opportunity to become a better reader</td>
<td></td>
<td>Didn’t always understand the questions</td>
</tr>
<tr>
<td>Helped me remember what I read about</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Makes you pay attention to what you’re reading</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What did you think about the marbles you earned for getting either a 4 or 5 on your quizzes?

<table>
<thead>
<tr>
<th>Favorable</th>
<th>Neutral</th>
<th>Unfavorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liked it (2)</td>
<td>OK (3)</td>
<td>N/A</td>
</tr>
<tr>
<td>It was pretty cool (2)</td>
<td></td>
<td>Just marbles, didn’t care</td>
</tr>
<tr>
<td>It was nice to know you did something good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The only time I liked SSR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Didn’t like it when I didn’t earn marbles</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What did you like or dislike the amount of time given to read (15 min)?

**Favorable**
Wanted more time to read (2)

**Neutral**
Wasn’t too long or too short

**Unfavorable**
N/A

Liked, Good (7)

Enough time to read assigned pages

What did you like about earning marbles toward a class party based on your quiz scores?

**Favorable**
Liked (6)

**Neutral**
Didn’t care

**Unfavorable**
N/A

Tried harder on the quiz OK

What did you like or dislike about the way you chose your own books with the experimenter’s help?

**Favorable**
Liked it (3)

**Neutral**
N/A

**Unfavorable**
Didn’t like it

Gave you options

She helped me find out there are some books I like reading

Pretty cool

Helped me choose a book that fit me best (2)

Better than having someone just give you a book
What did you like or dislike about using a timer?

**Favorable**
- Liked it (3)
- Improved my reading
- Challenged me to read faster
- Knew I wouldn’t have to read the whole period, made time go fast

**Neutral**
- N/A

**Unfavorable**
- Felt rushed
- Not enough time to read (2)

What about the way we did sustained silent reading would you like to have him/her do?

**Favorable**
- Do the same thing (8)
- Timed reading and quizzes

**Neutral**
- Rather just read

**Unfavorable**
- N/A

What did you like or dislike about earning marbles toward a class party by answering verbal questions?

**Favorable**
- Liked it (6)
- Made you want to get it right
- Not reading for nothing
- Felt like you were getting somewhere

**Neutral**
- Fair

**Unfavorable**
- N/A

Would you like your teacher next year to have a daily time for silent reading?

Yes (8)
No (3)
### Why? or Why not?

<table>
<thead>
<tr>
<th>Favorable</th>
<th>Neutral</th>
<th>Unfavorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading is cool if you have a good book</td>
<td>If there’s nothing else to do, let us read</td>
<td>Don’t like reading</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Waste of time</td>
</tr>
<tr>
<td>It helped me become a better reader</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Read more often, not be strained for time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It helped me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did better reading</td>
<td></td>
<td></td>
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</tbody>
</table>

### What did you think when the teacher quit playing the game?

<table>
<thead>
<tr>
<th>Favorable</th>
<th>Neutral</th>
<th>Unfavorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>I wondered why, don’t like reading with or without the game</td>
<td>Not a problem</td>
<td>N/A</td>
</tr>
<tr>
<td>Wanted to hurry and get back to the game</td>
<td>Didn’t really effect me (2)</td>
<td></td>
</tr>
<tr>
<td>Sad, cause the next day I got a 5 on the quiz</td>
<td>It was kind of kid-like</td>
<td></td>
</tr>
<tr>
<td>I thought it kinda sucked, it gave people a reason to do good on their quizzes</td>
<td>No opinion (2)</td>
<td></td>
</tr>
<tr>
<td>I was mad (2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Did not playing the game affect your interest in reading?

Yes (2)
No (10)

Why?
Really into my book/held my attention (2)
Made me not want to read as often
Made me feel like I was getting somewhere
The game was a bonus (2)

Why not?
Read a lot anyway
Just a game
Liked reading (3)

What would you change about the way we conducted sustained silent reading?

Nothing (5)
No game (2)
Don’t use the timer
Add 5 more minutes (2)
Verbal report, no quizzes

Classroom Teacher Opinions

After the final session of SSR the classroom teacher was asked to complete a questionnaire regarding what occurred over the course of the study.

Were you doing SSR in your classroom before the study began?
If yes, how often? If no, why not?
No, I didn’t believe it would work.

Will you continue to use SSR in your classroom? If yes, how often? If not, why not?
Yes – probably 3 days a week 15 minutes each time

Why did you agree to have this study conducted in your classroom?
Interested in the results, believed my students would benefit
Do you think it was worthwhile? Why or Why not?

<table>
<thead>
<tr>
<th>Favorable</th>
<th>Neutral</th>
<th>Unfavorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes! The kids began reading before the bell rang for class and I would have to physically remove the books from their hands when the timer would go off.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

My students expressed that they enjoyed reading and that they felt they were better readers.

Students wanted to take their books home.

What components of the SSR study did you like/dislike? (e.g., marbles, quiz, bonus marbles)
- Timer – it is so magically powerful.
- Consistency of procedure – students quickly fell into the routine
- Marbles were reinforcing and fun

If you chose to implement SSR would you prefer using game questions from the quizzes or real-time?
- Real-time

How difficult was it to generate the real-time questions?
- Not difficult – I think I will make cheat sheets for each book that has main characters names to speed up process – I got the books mixed up sometimes.

What components of the study did you like/dislike?

<table>
<thead>
<tr>
<th>Favorable</th>
<th>Neutral</th>
<th>Unfavorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timer</td>
<td>N/A</td>
<td>Difficult to write daily quizzes due to prep time</td>
</tr>
</tbody>
</table>

Real-time quizzes with marbles

Consistent schedule

I think the game would work with any size class – keeps all on their toes
What major events took place during the study that stand out in your memory?
– A student dropped out of school with about 2 weeks to go. He wanted to take his SSR book with him. Two days later, he called to tell me and the experimenter that he had finished his book and had plans for two more books.
– One student who most teachers call lazy, never wanted to stop reading his SSR book when the timer would go off.
– Another student checked out a book from the library for leisure reading.
– One student who hates school, talked about how much he loved his books.
– In a year-end reflection paper in English, a student wrote: “Practicing this skill (reading for 15 minutes and taking the quiz) has helped me in other classes when I am searching for answers or reading a section assigned to me. I can comprehend what I read a lot better.”

What would you change about the way SSR was conducted?

<table>
<thead>
<tr>
<th>Favorable</th>
<th>Neutral</th>
<th>Unfavorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing</td>
<td>Include discussions about the books</td>
<td>Probably wouldn’t do SSR 5 days a week.</td>
</tr>
<tr>
<td></td>
<td>Limit the choice of books to make it easier for the teacher</td>
<td></td>
</tr>
</tbody>
</table>

Teacher Opinions

Four different faculty members from the high school in which this study was conducted were asked to observe SSR and provide feedback and comments on what they observed. Two of the teachers taught regular language arts classes, one was a special education language arts teacher and the other the school librarian. Table 4.15 contains a list of the comments made by the teachers generated from the social validity questionnaires.
Table 4.15 Faculty comments generated from social validity questionnaire.

<table>
<thead>
<tr>
<th><strong>Have you used SSR in the past?</strong></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Are you currently using SSR in your classroom?</strong></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>1*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Were the students you observed less off-task than your own?</strong></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** * = The school librarian no longer has a traditional classroom

*Do you think the use of the quiz takes away from the intended purpose of SSR (increase student leisure reading)?*  
*Why or why not?*

<table>
<thead>
<tr>
<th><strong>Favorable</strong></th>
<th><strong>Neutral</strong></th>
<th><strong>Unfavorable</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>No, the students need to be accountable for their assignment</td>
<td>Not sure, Leisure reading that is tested seems to make it less leisure, but it holds the students accountable</td>
<td>N/A</td>
</tr>
<tr>
<td>No, it was non-threatening/rewarding and the books seems to interest the students</td>
<td>As long as the quiz doesn’t interfere with leisure reading, it’s fine</td>
<td></td>
</tr>
</tbody>
</table>

**What is your general opinion of the game?**

<table>
<thead>
<tr>
<th><strong>Favorable</strong></th>
<th><strong>Neutral</strong></th>
<th><strong>Unfavorable</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool idea</td>
<td>N/A</td>
<td>Hard to manage with 28-30 kids</td>
</tr>
<tr>
<td>I thought it worked well</td>
<td>Suggest the use of open-ended questions, not just factual</td>
<td>Less likely to be implemented in a class of 25-30 students</td>
</tr>
<tr>
<td>I’m a ‘big fan’ of the game. It’s short and sweet and doesn’t require teacher prep time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Do you think the use of the game takes away from the intended purpose of SSR? Why or why not?

<table>
<thead>
<tr>
<th>Favorable</th>
<th>Neutral</th>
<th>Unfavorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, Team effort makes it less threatening</td>
<td>N/A</td>
<td>The fact that the teacher is creating questions ‘on the spot’ can be a problem, she may be asking irrelevant questions</td>
</tr>
<tr>
<td>No, Keeps it fun, yet holds them accountable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No, it’s an enjoyable incentive for students and lets the instructor know students aren’t wasting time</td>
<td></td>
<td></td>
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</table>

Do you think you would implement something similar in your own classroom? Why or why not?

<table>
<thead>
<tr>
<th>Favorable</th>
<th>Neutral</th>
<th>Unfavorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would definitely use this concept in my classroom</td>
<td>N/A</td>
<td>I would be overwhelmed at the prospect of generating constant quizzes for several different books (2)</td>
</tr>
<tr>
<td>The whole approach is doable in a small class</td>
<td></td>
<td>No, too many kids, 30 is too many to ask individual questions during the game</td>
</tr>
</tbody>
</table>
CHAPTER 5
DISCUSSION

This chapter discusses the limitations of the study, interprets the results with respect to the research questions, examines implications for classroom practice and offers suggestions for future research. This study investigated the effects of (A) a 5-question story fact recall quiz following Sustained Silent Reading (SSR) on students’ off-task behavior during SSR, (B) a story fact recall game on students’ off-task behavior during SSR and the number of story facts recalled on a 5-question quiz following SSR, (C) a story fact recall game with additional reinforcers on students’ off-task behavior during SSR and the number of story facts recalled on a 5-question quiz following SSR, and (D) the change in attitude toward reading following approximately 60 sessions of SSR.

Limitations

The results of this experiment should be viewed within the following limitations: student and school characteristics, materials and procedures, and experimental design.

Participants and Setting

This study was conducted in a suburban high school in a mid-western state. The socioeconomic status of the population attending this school is fairly diverse, due to the geographic boundaries of this school. Results of this experiment may not generalize to populations of a different age, from a different geographic region, of different racial
makeup or of a different socioeconomic status. This study was conducted in a special
education classroom with very few students. There were only 5 students in Experiment II
and 7 in Experiment II, therefore results of this study may not generalize to classes of
larger sizes.

The classroom teacher’s management skills were exceptional as she used many
“best practice” management strategies described in the special education and applied
behavior analysis literature (e.g., Kerr & Nelson, 2006). Results of this study may not
generalize to classrooms in which the teacher may not have the same management skills
as the classroom teacher in this study.

This study took place during the last two-thirds of a school year. The students had
a well-established relationship with the classroom teacher and were willing to participate
in the activities she presented to them. The results of this study may not generalize to
classrooms in which the students are new acquaintances to the teacher (i.e. at the
beginning of the year) and less interested in participating in classroom activities.

An additional limitation with conducting this study is the interference of the
school calendar with the ability to conduct SSR sessions. During an entire week the
students were involved in school-wide testing and no sessions of SSR were conducted.
Also, the school calendar (e.g., spring break and end-of-school-year activities) placed
limitations on the number of sessions that were conducted.

Materials and Procedures

Books. The students identified by the classroom teacher as frequently being off-
task behaviors demonstrated elevated levels of off-task behavior during pre-baseline
observations. However, on the first day of baseline, when the students were provided
with a book that had been determined through interviews and surveys would interest them and was at their reading level their levels of off-task behavior decreased to near zero levels and remained low throughout the remainder of the study. Providing books to students at their reading level and of interest to them may have functioned as an intervention for decreasing off-task behavior. This was not anticipated by the experimenter and may be a limitation when interpreting the results of the study.

On several occasions during the study a student was given a new book on the same day that experimental conditions were changed. This could not be controlled due to the different pace at which the students read. After the students finished a book they were given a new book the following session. It was possible that several students would be starting new books in the same week, but not necessarily on the same day. This made changing phases without this new book variable difficult to control.

**Rewards.** Some students may not have viewed the class pizza party as a reward. When the experimenter discussed what they preferred to have for the class party all the students agreed they would like to work for a pizza party (Experiment I) or breakfast (Experiment II). After having earned a pizza party, one student did not participate, because he was “not hungry”. This response may indicate that pizza was not motivating for him. Also, some of the students may have preferred non-tangible items such as computer time or free time, but these were not offered as a reward for the class.

**Attitude Scale.** The *Rhody Secondary Reading Attitude Reading Assessment* attitude scale was used in this study. This is a published survey, that has been frequently used by researchers (e. g., Dwyer & Reed, 1989; Tullock-Rhody & Alexander, 1980) when assessing student attitude toward reading, but the scale’s authors do not provide a
sufficient description of what the scores mean. They indicate that a score of 25 is a “poor” attitude toward reading and that a score of 125 indicates a “very positive” attitude toward reading, but provide no information on how to interpret scores between 25 and 125. This proved difficult because the all of the students’ scores ranged between 41 and 102 pre- and posttest (Tables 4.7 and 4.14).

**SSR Procedures.** Students were assigned a specific number of pages to read during each SSR session. The number of pages was based upon the number of pages the students self-reported during pre-baseline phases. For some of the students the number of pages assigned to read during each SSR session may have been too many or too few, due to inaccurate reporting by the students. For the students who were not able to read all of the assigned pages their performance on their story fact recall quizzes may have been related to the students not finishing all of the assigned pages and not because the students were unable to recall the facts from the story. During a post-study interview one student said she that for one of her books she was “sometimes” able to finish all of the assigned pages, another student stated that she “never” was able to finish.

Students who finished the assigned pages before the 15-minute SSR session ended may have read ahead in their book or stopped reading altogether. Students’ quiz scores may have been affected because they were unable to recall facts from pages that were read during previous SSR sessions. Additionally, students who finished reading before the 15-minute SSR session ended may have engaged in off-task behavior (e.g. sleeping, doing homework).

Student accuracy on the quizzes may not accurately reflect their recall of what they read during the SSR period. Amos commented that if the experimenter had asked
him what happened in the story he could tell me verbally, and Cy commented that he remembered different things from the story than what was on the quiz.

*Experimental Design Experiments I and II*

An ABCC’BC’ reversal design (Baseline, Quiz 1, Game, Game with Bonus Marbles 1, Quiz 2, Game with Bonus Marbles 2) was used during Experiment I. Cooper, Heron and Heward (1987) discuss the limitations related to this design. On occasion the behavior may become irreversible. The authors state, “Once improved, many target behaviors of interest to the applied behavior analyst remain at their newly enhanced level even when the intervention responsible for the behavior change is removed” (p. 177). Although this is desirable from a practical view, the behavior has demonstrated durability, irreversibility precludes demonstrating the effect of the independent variable. For example, the Game with Bonus Marbles 1 (C’) was implemented during phase 4 of the study, phase 5, Quiz 2, may have been affected by the Game with Bonus Marbles phase. Ten of the twelve students’ quiz scores increased with the addition of the Bonus Marbles. When the Bonus Marbles were removed Sean, Stan, Ned, Cy, Len, Amos, and Patty’s quiz scores continued to increase during the Quiz 2 phase. For those in Experiment I when the Game with Bonus Marbles was reinstated all students’ quiz scores either maintained during the Quiz 2 phase (Stan) or they increased (Sean, Robin, and Sue), which may have been related to behavioral irreversibility. Sam was not present for the Game with Bonus Marbles 2 phase.

An ABCC’B design (Baseline, Quiz 1, Game, Game with Bonus Marbles, Quiz 2) was used during Experiment II. One limitation of this design is that the study was terminated during the Quiz condition. It is not standard practice to terminate a study in a
non-intervention phase. Because the students were performing well enough on the quizzes and appeared interested in their books, the classroom teacher and experimenter decided if the students’ quiz scores and off-task behavior continued, there would be no need to re-implement the game. The addition of the Bonus Marbles to the game condition resulted in an increase of average number correct on quizzes and had become irreversible for some of the students when the Game was removed (Ned, Cy, Len, Amos, and Patty). Raydean and Kay’s quiz scores decreased when the Game with Bonus Marbles was removed. Their change in scores were minimal; 0.2, 0.4, respectively. The students had contacted the natural contingencies of reading.

For Experiment I, (ABCC’BC’) the experimenter can only describe the effects of the Game following the Quiz condition and not Baseline, because of the sequence of the phases. Also, the experimenter can only describe the effects of the Game with Bonus Marbles following the Game condition and not Baseline. For Experiment II, (ABCC’B) the experimenter can only describe the effects of the Game with Bonus Marbles following the Game condition but not the Game with Bonus Marbles following the Baseline and Quiz conditions.

Additionally, the books themselves may have altered the ability of the experimenter to reverse the behavior of the students. Cooper et al. (1987) discuss that contacting the natural contingencies of reinforcement to maintain behavioral improvement is one of the “major objectives of applied behavior analysis” (p. 178). When a student learns that reading itself can be reinforcing (e.g., story content, characters they can relate to), they are motivated to read. On one occasion, Raydean begged the experimenter to allow her to read her book during study hall because she was “Reading a
really good part when the timer rang.” The experimenter was led to believe this was the case, for many of the students. Sam commented that “Reading is cool as long as you have a good book”, Cy stated “[I] was really into my book, the game was just a bonus”.

Summary of the Findings

This section addresses the results with respect to each of the research questions.

Research Question One: What are the effects of a 5-question story fact recall quiz following SSR on the off-task behavior of target students during SSR?

One of the problems with implementing SSR as designed by McCracken (1971) is that students may choose to read on occasion or not at all during the SSR period, this is especially true for students who are reluctant readers or have a disability in reading. Often this results in a loss of important instructional time. Unless a teacher takes the time to modify SSR the students may modify it themselves by sleeping or talking. A quiz following the SSR session is one way to increase the level of accountability for the students during SSR.

All six students had low levels of off-task behavior during baseline but their off-task behavior continued to decrease with the implementation of the quiz. Robin was off-task an average of 9.3% during baseline, after the implementation of the quiz, her off-task behavior decreased to 0.3% of the intervals and never exceeded 3.5% throughout the remainder of the study. Sam’s off-task levels decreased across the study from 15.8% of intervals off-task during baseline to 12.3% during the Quiz 1 phase. His off-task behavior continued to decrease throughout the study. During Quiz 2 his off-task behavior was 0% of the intervals. Ned’s average off-task behavior during baseline was 3.6% of the intervals with the implementation of the quiz his off-task behavior decreased to 0.3% and
never exceeded 1% of the intervals for the remainder of the study. Cy’s average off-task behavior during baseline was 10.3%, when the quiz was added his off-task behavior decreased to 1.3% and remained below 3% of the intervals during every phase that followed. For Sean, his percent of intervals off-task appeared to increase over the course of the study, but with further examination of the data, this was not the case. There are two out-lying data points, one during the Game with Bonus Marbles phase (Session 38) and one during the Quiz 2 phase (Session 52), which indicate he was off-task 100% of the time during that session. On these two occasions Sean chose to stand to read. Although he was in fact reading, being out of seat was part of the definition of off-task behavior. When the data were recalculated, and those outlying data points removed Sean’s off-task behavior during the first Game with Bonus Marbles phase was 0.38% and 0.25% during the Quiz 2 phase. Len’s off-task behavior during baseline was 4.5% with the implementation of the quiz his off-task behavior dropped to 0.9% of the intervals and never exceeded 3.2% for the remainder of the study.

Off-task behavior was at low levels throughout the study for the majority of the students. All of the students exhibited off-task behavior during pre-baseline observations, both during SSR and independent math work sessions. Their off-task behavior during the independent math sessions were much more elevated than during the SSR sessions. Dickinson and Butt (1989) reported that task difficulty is directly related to the level of student off-task behavior. Their levels of off-task behavior may have been influenced by the level of difficulty of the math assignments they were completing. On the first day of baseline off-task behavior for all students during SSR decreased dramatically. The experimenter had provided books to the students at their reading level and of interest to
them, and this may have functioned as an intervention for decreasing off-task behavior. This was not anticipated by the experimenter and may be a limitation when attempting to answer this research question.

During the Quiz 1 phase five students started new books. Due to the pace at which each student read it was difficult to determine if the changes in student behavior were the result of the intervention or the presentation of a new book. In fact, Robin started a book she had chosen to read and two days later she requested a different book, stating that she did not like it. Her off-task behavior during those two days remained low (0%) but her quiz scores seem to be affected by her dislike for the book she was reading. For those two days her quiz scores were 0 and 1, respectively. When she was given her new book she earned quiz scores ranging from 2-4, with a mean score of 2.8.

Implementing a small accountability measure (e.g., quiz) may alter the behavior of students during SSR and will avoid situations in which students rarely read during the assigned SSR period (Herbert, 1987). Results of this experiment show that the implementation of a 5-question story fact recall quiz can affect the off-task behavior of the six target students during SSR. Unlike Brame (2001), who reported that the addition of a quiz to SSR had little or no effect on the off-task behavior of the students in her study, the implementation of a quiz decreased the off-task behavior of the students in this study. These findings are similar to that of Bryan et al. (2003) who reported that increasing student accountability (e.g., book discussions) following SSR can decrease off-task behavior during SSR.
**Question Two: What are the effects of a story fact recall game on the off-task behavior during SSR of secondary students with mild disabilities?**

Addressing the off-task behavior by students is critical for teachers. Fisher (2004) reported that less than 40% of high school students engaged in reading during SSR. In the SSR literature reviewed for this study there is limited research that addresses this issue. Bryan et al. (2003) conducted a study with elementary-aged boys that investigated the effects of a post-SSR discussion on the off-task behavior of students during SSR. Brame (2001) implemented a group-oriented contingency in order to decrease off-task behavior during SSR.

In this study the experimenter attempted to replicate Brame (2001) and implemented a story fact recall game following the SSR period. For each experiment three students were randomly selected to answer a question from the assigned pages during that session of SSR. The results in this study are quite different from those reported by Brame. Again, although the off-task levels were low, the addition of the game resulted in an increase of off-task behavior for five of the six students. Sam’s off-task behavior continued to decrease with addition of the Game. His off-task behavior during the Quiz 1 phase was 12.3%, the addition of the game decreased his off-task behavior to 10.5%. Although minimal, the remainder of the students’ off-task behavior increased with the addition of the game. The change in off-task behavior for Robin, Ned, Cy and Len ranged from 0.7-1.4%. Sean had the greatest increase of off-task behavior with the addition of the game. His off-task behavior increased from 0.3% off-task during the Quiz 1 phase to 3.8% during the Game phase. On day 7 (Session 32) of the Game
Sean said, “I used to love reading, now I hate it.” Although he made this comment, his off-task behavior remained low.

Little research exists in which investigators address off-task behavior or attempt to increase student motivation to read except for Bryan et al. (2003). Researchers (Barrish et al., 1969; Brame, 2001) have reported that the use of a group oriented contingency can result in a decrease of disruptive and off-task behaviors. This study, like Brame, was designed to decrease off-task behavior during SSR with the use of a group-contingency. The results of this study are quite different from those studies found in the literature that report a decrease in disruptive and off-task behavior with the use of a group-contingency. In this study, the addition of the game resulted in an increase of off-task behavior for five of the six students. Brame reported a significant decrease in off-task behavior with the implementation of a group contingency. Barrish (1989) also reported a reduction in disruptive and talking-out behaviors as a result of a group contingency.

Research Question Three: What are the effects of a story fact recall game on the number of story facts recalled by secondary students with mild disabilities?

On a five-question quiz, 0.5 points is 10%, which can make a difference in a student’s overall grade. Based on the premise that 70% is a passing grade, the difference between a 3.0 and a 3.5 on a 5-question quiz is the difference between passing and failing. (e.g., 3/5 = 60%, 3.5/5 = 70%), or the difference between a B (4/5 correct) and an A (4.5/5 correct).

During the Game condition Cy and Kay received new books, which may have affected their quiz scores. Cy’s score decreased by 1.4 correct, whereas Kay’s quiz scores increased by 0.9 correct. Although the experimenter attempted to find books that suited
the students’ interests, it was at times quite difficult. The students rarely complained that they did not like the books, or that the quizzes were too difficult.

During the Game condition, seven students’ quiz scores increased and four students’ scores decreased. Len, Kay, Amos, Robin, Sue, and Stan all increased their scores by 0.5 or more points, Cy’s and Sam’s quiz scores decreased by 0.5 or more points. Raydean’s quiz scores increased from a 3.7 to a 4.0 during the Game condition, which educationally is the difference between a C and a B-. Unfortunately, none of the other student’s whose scores increased did so to a passing grade.

Due to the variability of student’s scores within phases and the minimal and mixed behavior changes in mean scores between conditions it is difficult to determine if the implementation of the Game was influencing the scores on the story fact recall quizzes. These findings are inconclusive and are quite different from those found in the Brame (2001) study. Her study indicated that with the implementation of the story fact recall game, the majority of the students’ quiz scores increased when compared to the Quiz condition.

Research Question Four: What are the effects of an additional reward incentive to the story fact recall game on students’ scores on story fact recall quizzes?

During the Game with Bonus Marbles condition the students had the opportunity to earn additional marbles toward the class party. They were given 3 bonus marbles if during the game all 3 students whose names had been drawn answered their questions correctly. The students were also given the opportunity to earn marbles based upon their quiz scores. If a student scored a 4 on a quiz, the class earned a bonus marble, if a student earned a 5 on their quiz, two bonus marbles were added to the class total.
During the Game with Bonus Marbles 1 phase, 7 of the 12 students changed books, 3 of them on the same day that the Game with Bonus Marbles was implemented. Ten of the 12 students increased their quiz scores with the implementation of the additional reward incentive. Seven students’ mean scores in Game with Bonus Marbles were 0.5 or higher than the Game condition. Kay increased her average quiz score from 2.4 (48%) during the game condition to 4.2 (84%) during the Game with Bonus Marbles condition. Sam increased his quiz scores from 2.3 (46%) during the Game condition to 4.3 (86%) during the Game with Bonus Marbles. Amos increased his quiz scores from 2.8 (56%) during the Game condition to 3.7 (74%) during the Game with Bonus Marbles condition. Amos changed books on the first day of the Game with Bonus Marbles condition, the new book may have confounded his quiz scores. Sue increased her quiz scores from 2.5 (50%) during the Game condition to 3.8 during the Game with Bonus Marbles condition (76%).

When comparing the Quiz 1 phase to the Game with Bonus Marbles 1 phase, 9 of 11 students’ scores increased. The two students whose scores did not increase had a minimal decrease of 0.1. The remaining nine students had an increase of 0.5 or more points. The most significant increase was observed in Kay with an increase of 2.7 more points earned during the Game with Bonus Marbles over Quiz only. This difference is a change in percentage points from 30% to 84%.

For Experiment I, Game with Bonus Marbles was removed and then reinstated. When the Game with Bonus Marbles was withdrawn, three of the five students (Sam, Robin, Sue) showed a decrease in their quiz scores. Sean and Stan’s quiz scores increased even though the Game with Bonus Marbles had been withdrawn. When Game
with Bonus Marbles was reinstated, Sean’s quiz scores continued to increase. During the Quiz 2 phase his average quiz score was 3.4 (68%) when Game with Bonus Marbles was reimplemented his average quiz score was 4.5 (90%). Stan’s average quiz score during the Quiz 2 phase was 3.4, with the reinstatement of the Game with Bonus Marbles his average quiz score increased to 4.5 correct. The lack of ‘reversal’ of student quiz scores may be due to behavioral irreversibility, the students had contacted the natural contingencies of reading and the game was no longer functioning as a reinforcer. For Robin and Sue when Game with Bonus Marbles was reinstated their quiz scores increased, but did not return to the same level that occurred during the Game with Bonus Marbles 1 phase. Sam was not present for the second phase of Game with Bonus Marbles.

When comparing Game with Bonus Marbles condition against the Quiz condition in Experiment II, 5 of the 7 students showed an increase in their quiz scores. However, except for Kay, whose average scores during the Quiz condition was 2.8 (56%) and her Game with Bonus Marbles average was 4.2 (84%), the improvements were minimal.

The additional incentive of bonus marbles added to the story fact recall game coincided with an increase of quiz scores for most students. When asked about the bonus marbles in her interview, Robin indicated “[the marbles] make you feel like you’re getting somewhere…nice to know you did something good”. In a study conducted by Brown, Fuqua, and Otts (1986), one of their participants made a similar comment when he said, “I don’t mind reading when I get some stickers”. Brame (2001) reported a functional relationship between her Quiz condition and Game Plus condition (i.e., the condition with an additional incentive) for 12 of 30 students. Results of this experiment
show that adding the bonus marbles to the Game condition resulted in an increase of average quiz scores for 10 of 12 students, adding an incentive may increase the effectiveness of the story fact recall game. As indicated by Wiesendanger and Bader (1989) below average readers are minimally affected by SSR, and therefore a need for motivational techniques exists. The story fact recall game is an idea teachers can use to increase motivation during recreational reading.

Research Question Five: Do the attitudes of secondary students about reading change after participation in SSR, story fact recall quizzes and story fact recall game?

The Rhody Secondary Reading Attitude Assessment scale was administered to each student pre and post-study. The authors of the scale provide little information about how to interpret the scores generated from the Rhody Secondary Reading Attitude Assessment, but due its availability, previous researchers using this scale (e.g., Dwyer & Reed, 1989) and its specific design for secondary students it was chosen for this study. Eight students’ attitude scores increased and four of the students’ attitude scores decreased by a maximum of five points. Tables 4.7 and 4.14 display those scores. All four of the students whose scores decreased were male. Similar findings were reported in a study conducted by Dwyer and Reed (1989) who also used the Rhody Secondary Reading Attitude Assessment in their study. They investigated the effects of SSR on the attitude differences between males and females. The scores of the males of the study decreased from pre- to posttest. Three of the students in this study had a substantial increase in their attitude scale score, Sam increased his attitude score by 22, Len increased his score by 29 and Sue by 41 points. These changes appear to demonstrate a change of attitude toward reading, but due to the nature of the attitude assessment scale.
and insufficient information available for interpreting these scores it precludes the ability to sufficiently answer the research question. Their attitude scores did in fact change, but it is difficult to determine what those changes represent. In reference to the four students whose attitudes decreased from pre- to post-attitude assessment, the anecdotal data from three of those students (Ned, Cy, and Stan) indicated an interest in continuing SSR for the following year. Robin had a change in her attitude scores from 43 to 51, which would indicate an increase in positive attitude toward reading. During her post-study interview she informed the data collector that she did not like reading. Although her scores increased on the *Rhody Secondary Reading Attitude Assessment* her verbal comments, did not correspond with the increase. Sadoski (1980b) found similar findings in his study reporting that although some of the students’ attitudes had decreased following SSR they were interested in continuing SSR the following semester and year. These data are in contrast to other researchers (e.g., Herbert, 1987; Minton, 1980) who reported that following their studies, the students wanted SSR discontinued.

Another indication of a potential change in reading attitude may be that on several occasions during the study the students would continue to read their books when the timer rang, indicating the end of the SSR period. Continuing to read following the end of the SSR period may also indicate an increased interest in reading that may have affected change in a student’s attitude toward reading. Behavioral correlates may be a better indicator of student attitude toward reading. Ned, Cy and Stan’s attitude scores decreased, but they indicated they wanted to continue SSR next year. Robin, whose attitude score increased, indicated she did not like reading. Attitude is a difficult to
measure. As stated by Harris and Sipay (1990) attitude can only be inferred through observations and self-report.

Research Question Six: What are secondary students’ opinions regarding SSR, story fact recall quizzes and a story fact recall game?

When interviewed at the conclusion of the study, 11 of 12 students made very positive comments about the SSR study. Eleven students reported that the SSR study was a positive experience for them. In reference to SSR the students made comments such as: “Add 5 more minutes to the reading time”, and “Not enough time to read.” This response was similar to Yallay (1992) who reported that the students wanted to continue to read when the SSR period was over.

When referring to the quizzes the students said the following: “Liked the quizzes because they were right from the reading”, “The quizzes are good for your brain.” One student said they were too easy, another said they were too complicated. In reference to the game the students made the following comments; “Felt like I wasn’t reading for nothing”, “Gave people a reason to do good on the [quiz] scores”, “It was fun”, and “[The game was] not necessary, the quiz was enough”. When asked about the removal of the game one student said that he wanted to “Get back to the game…made him not want to read as often”, “Sad”, “Didn’t notice…reading is cool if you have a good book”, “Book held my attention”, and “Didn’t matter read a lot anyway.”

Sean was the only student who expressed dislike for SSR, the quizzes, or the game. He stated that the quizzes focused on the wrong ideas from the reading and indicated that he would perform better if he could verbally respond to the questions,
rather than write his answers. Sean also said that it was “Pointless and trivial” and that you “Can’t make someone want to read”

On the experimenter’s final day at the school the students made her a “Thank You” banner, on which they all had written personal notes to the experimenter. On the banner was a five-question quiz the students had prepared for her to take. They also gave her a card that stated, “We love reading” and had pictures of all the items the experimenter had used throughout the study (Appendix X).

Research Question Seven: What are the classroom teachers’ opinions of SSR, story fact recall quizzes and story fact recall game?

The teacher indicated that she would continue SSR the following year. In reference to the quizzes, she indicated it would be difficult to create daily quizzes if each student was reading a different book, but would be willing to give quizzes on a random schedule. She expressed great interest in continuing the game and said she preferred generating real-time questions for the game because she saw that as more doable than generating daily quizzes. She also stated that she would generate some “cheat sheets” for each of the books for her to refer to during the game to avoid getting the books mixed up.

When asked about any significant events that may have occurred over the course of the study the teacher made the following comments; one of the students dropped out of school but called a few days later to tell the teacher to tell the experimenter that he had finished his book and had started the sequel, several students refused to stop reading when the timer rang, another student checked out a book from the library to read on her own, and another student who is quite vocal about hating school made several comments about how much he liked the books he was reading and often wanted to talk about what
he was reading. At the conclusion of the study the teacher asked that the experimenter to leave all the materials for her to use next school year, including the books used, the quizzes and all the materials for the game.

In the literature reviewed for this study only one study reported social validity data for the staff involved in SSR (e.g., Minton, 1980). Minton reports that following the implementation of SSR 52% of the staff reported they did not want to continue SSR the following semester, these data are in direct contrast from those found in this study. The classroom teacher involved in this study plans to implement SSR with the game in the upcoming school year.

_Research Question Eight: What are teachers’ opinions of SSR, story fact recall quizzes, and story fact recall game?_

Two regular education language arts teachers, a special education language arts teacher and the school librarian were asked to observe the study during the Game with Bonus Marbles condition and complete a questionnaire. They were asked to observe during this condition because it included all the components of the study (i.e., SSR, Quiz, Game, and Game with Bonus Marbles). Each of the teachers were currently using or had used SSR in their classrooms. These teachers indicated that the students in this study were much less off-task than their own students were during SSR. One teacher said that the game looked, “Fun, yet holds them accountable”; another teacher stated she was a “Big fan of the game”. All of them stated that it would be difficult to conduct the procedures in a class of 25-30 students but that they were willing to conduct something similar with smaller groups. The teachers all indicated some concern with generating quizzes for each of the students for each of the books they were reading. After observing
for the study, the special education teacher contacted the classroom teacher to obtain
details about how SSR was being conducted and met with the experimenter to go over
additional details so she could implement it in her own classroom.

Implications for Classroom Practice

The National Reading Panel (NRP, 2000) reported that there is little evidence to
support the use of Sustained Silent Reading (SSR) in schools. The NRP was unable to
find a positive relationship between programs that included large amounts of independent
silent reading and improvements in student achievement. Rigorous research studies have
not been conducted that are designed to assess the effects of independent silent reading
on increased reading achievement, fluency, engagement and motivation. Robertson,
Keating, Shenton, and Roberts (1996) report that teachers often use SSR because they
have “inherited the system” (p. 29), not because it is a research-based practice that
increases reading ability or achievement. Although the results of this study for decreasing
off-task behavior and increasing quiz scores were mixed, there were some significant
educational changes in students’ quiz scores. The mean scores on story fact quizzes for 9
of the 12 students in this study were higher during the Game then during the Quiz
Condition and 10 of 12 students scored higher on the quizzes during the Game with
Bonus Marbles Condition over the Quiz Condition.

Although much research investigating the potential benefits of SSR and how to
implement it most effectively remains to be done, some suggestions can be offered for
teachers who are using SSR in their classrooms.
Book Selection

The results of this study indicate extremely low levels of off-task behavior during baseline and throughout the study when compared to pre-baseline levels. Providing books to students at their reading level and of interest to them may have functioned as an intervention for decreasing off-task behavior. One educational benefit of this study is the systematic process of assisting students in choosing the books they will read. The guidelines for SSR (Pilgreen, 2000) instruct teachers to have a ‘library’ available for students to choose reading material. This may be a problem as students may choose something that is above their reading level or of little interest to them, leading to off-task behavior during SSR and as a result a loss of instructional time. Students who have access to a teacher library are likely to pick up books randomly without taking the time to determine if it’s something they are interested in reading. Also, students may choose books that are above their reading level to avoid potential ridicule from peers for reading “easy” books. In this study the reading skills of the students varied from 4th grade level to post-high school. Simply having a ‘library’ available for students to choose from with such diverse reading skills may cause problems for the students and teacher. During SSR, students’ reading ability and areas of interest should match the materials they are reading, if this is not the case the students may experience failure and refuse to participate in SSR.

In this study the experimenter used a systematic, multi-step process to assure that the students were reading books that were at their reading level and of interest to them. She conducted verbal interviews, had them complete a survey and then met with them individually to talk about their reading choices. Combining the information she gathered from the students themselves and the data on their current reading ability the
experimenter provided a limited number (2-3) of book choices that met both their reading ability and area of interest.

An additional benefit of taking the time to choose books the students will enjoy are the anecdotal comments made by those high school students regarding the books they were reading. One comment made by Ned who had stated on several occasions that he hated school was, “Reading is cool if you have a good book.” On several occasions the classroom teacher would exclaim, “They’re reading!” often said with a tone of surprise in her voice.

Dickinson and Butt (1989) stated that adjusting the curriculum in order to provide higher levels of success would appear to be an appropriate intervention strategy for students who are frequently off-task and an important consideration for monitoring lesson difficulty for all children (p 251-252).

This is particularly important when implementing SSR as students will need guidance to choose appropriate books to read.

**Duration of the SSR and Time of Day**

A few students slept during the SSR period when it was conducted as soon as the bell rang in the morning. These indicated that it might be better if they did something first and then read, rather than reading as soon as school started. Teachers need to implement SSR during a time of day when it is likely the students will read. It may be necessary to try different times during the day and different duration of the SSR period to find the time that best meets the needs of the students and the teacher.
The teacher and students enjoyed the story fact recall game used in this study, and it resulted in increased students quiz scores. When the game was removed the students’ reactions varied. Some said they were “mad” and others said it was “…just a bonus, I was really into my book.” The teachers who observed the game indicated that the game was something they would be interested in implementing in their classrooms. One teacher stated she was a “Big fan of the game. It’s short and sweet and doesn’t require teacher prep time”, and actually met with the experimenter to discuss the details on how to successfully implement the game.

Throughout the study the experimenter monitored the time required to implement the game, it ranged between 3-5 minutes. This is important for teachers because it adds an accountability piece to SSR and does so in a relatively short amount of time. The classroom teacher who conducted the game stated she would continue to implement SSR next year with the game component. She indicated generating real-time questions (i.e., the format used in Experiment II) was not difficult and would continue this format next year. She stated it was difficult to generate daily quizzes for each student due to the amount of time required. Similar comments were made by the other teachers who observed SSR during the study, stating “I would be overwhelmed at the prospect of generating constant quizzes for several different books”.

The contribution that this study makes to the current practice of SSR is the potential to add an accountability piece without an extensive time commitment from the teacher. The quizzes were used in this study to measure the impact of the game on student off-task behavior and quiz scores. The implication for practice is that with the
game, the quiz would not be necessary; the game provides the accountability piece SSR needs to be a more effective intervention. The game takes very little classroom time and the accountability is built-in. Because the students do not know if their name will be called to answer a question during the game it increases the likelihood they will be reading during the SSR period.

Some additional ideas for making the Game more successful are having “cheat sheets” for each of the books that the teacher could refer to during the game to avoid getting the characters mixed up. The school librarian was concerned that during the real-time questions the teacher may ask an irrelevant question if he or she were unfamiliar with the book the student was reading. Having a cheat sheet that included the main characters and a summary of the plot will help the teachers ask relevant real-time questions. An additional time-saver for the classroom teacher would be to have students read the same books. On many occasions the students in this study would influence what other students would read because of the comments they made during class. When students read books that others have already read it reduces the time commitment for the teacher because he or she already has the “cheat sheet” prepared for that particular book.

Think to Write Recall

As indicated by both the classroom teacher who participated in this study and the teachers who observed the SSR sessions, generating daily quizzes for each of the students may be a great challenge. Also, some of the students in the study stated that the quizzes asked the wrong questions, or that they remembered different ideas from the story that were not on the quiz. An idea for implementing SSR in the classroom may be to implement a think to write recall activity following the SSR period, rather than a written
quiz. This type of intervention would include an accountability piece, but would not involve the same time commitment that generating quizzes requires.

Suggestions for Future Research

Larger Classes

This study was conducted in a special education classroom with very few students. It would be beneficial to investigate the use of the game with a larger general education class that included students with and without disabilities. Brame (2001) conducted her study in a regular class setting of elementary-aged students. Although this study extended Brame’s research to special education students, the class sizes were very small. Every staff member who completed observations during the SSR study expressed doubt about conducting the game in a class of 25-30 students. Investigating the effects of the game at the high school level with a regular class size would be important.

Time of Day and Duration of SSR

It may be necessary to try different times during the day in order to find the time that best meets the needs of the students and the teacher. In this study Patty reported that because SSR occurred immediately upon her arrival to school that she was often tired and slept through the SSR period. In the Brame (2001) study her students participated in SSR immediately following lunch and recess and these activities seemed to interfere with the students’ abilities to remain attentive during the SSR period. Research that investigates conducting SSR during different times of the day may be beneficial to teachers; it would provide them with an empirical base for determining when independent reading may be the most effective for increasing recall and decreasing off-task behavior during SSR.
In this study the SSR period was 15 minutes. A few of the students indicated during their interviews they would like to have additional time to read. The duration of the SSR period varies in the research (e.g., Collins, 1980; Herbert, 1987; Manning & Manning, 1984) There have been no studies conducted solely to determine the most effective duration for SSR. This is an important area to investigate considering it varies from 10-30 minutes per day. This translates into either 1800 minutes per year, or 5400 minutes per year of instructional time, determining the most effective way to use that time is critical.

**Content Area SSR**

IDEA (2004) requires that students have access the general education curriculum. Extending the use of group-oriented contingencies to content area classes may assist educators in increasing reading comprehension and decrease off-task behavior during independent work in these settings. A history or science teacher could assign a section for the students to read, provide them with 15 minutes to read the section and then play the game, as described in this study, to check for comprehension.

**Attitude Measure**

Numerous studies on SSR have assessed student reading attitude as a dependent variable (e.g., Dwyer & Reed, 1989; Mazur-Stewart, 1986; Sadoski, 1980b). This study included an attitude measure, but found it extremely difficult to measure. Harris and Sipay (1990) state that attitude is a mental construct that cannot be measured, but only inferred through observations and self-report. Behavioral correlates may be a better measure of student behavior than an attitude scale. Some behaviors that may indicate a student’s attitude toward reading has increased may be spending more time in the library.
or reading outside of school. Some behaviors that may indicate a student’s attitude toward reading has decreased may be refusing to read during SSR or any other time, making statements stating his or her dislike for reading. The classroom teacher in this study reported that many students began reading before the bell rang, and she would often have to physically remove the books from their hands when the timer rang. At the beginning of the study Kay indicated on her survey that she had never checked out a book from the library. However, during the study the teacher noticed she was reading a book from the library by the same author of the book she was reading during SSR. These behaviors may be a better indicator of a students’ attitude toward reading than an attitude scale.

The *Rhody Secondary Reading Attitude Assessment* developed by (Tullock-Rhody & Alexander, 1980) has been used as a measurement when investigating SSR (Dwyer and Reed, 1989) and its effect on the attitude of secondary students. The *Rhody Secondary Reading Attitude Assessment* scale was used in the present study but the experimenter found it difficult to interpret as little information was provided by the authors for doing so. This particular scale was chosen due to its availability, previous researchers using this scale (e.g., Dwyer & Reed, 1989) and its specific design for secondary students. Developing an attitude measure, or adapting an existing one, that provides specific guidelines as to what the scores mean would increase the likelihood that researchers could use attitude as an objective measure.

**Student Population**

Future research that includes students who exhibit higher rates of off-task behavior during SSR would assist in determining the effects of the game on student
behavior. Student performance during baseline did not match teacher recommendations and pre-baseline observations. The students in this study had lower levels of off-task behavior during SSR than in the math classes in which they were observed, and even lower levels of off-task behavior beginning with the baseline condition.

In Davis (1988) the authors did not control for the difficulty of the reading material which may have confounded the results of the study. In this study, lower levels of off-task behavior during SSR may have been the result of the students having reading materials on their appropriate reading level and of interest to them. Additionally, when observing the off-task behavior of Cy, Len, Sean, Robin, and Ned during their math classes, their off-task behavior was much higher than during SSR and may attributed to task difficulty.

Investigating the effects of a experimenter-selected book versus a student-selected book on off-task behavior and quiz scores would extend the findings of this study. As mentioned, during pre-baseline the target students exhibited elevated levels of off-task behavior. When the students were given books selected for them by the experimenter, levels of off-task behavior decreased to near zero levels. The empirical question to be answered is whether or not the book itself served as an intervention.

The students in this study were from a suburban area of a mid-western state. It would be beneficial to extend this research to secondary students with other demographic characteristics Brame (2001) conducted her study with a population that was 97% African American. Researching that same population at the secondary level would be of great benefit. This is particularly important because African American adolescents leave
school with inadequate reading and writing skills (Gadsden, 1993). This research could also be extended to students at the middle school level.

_Timing and Duration_

Another modification that may extend the research concerns the timing and duration of the study. Due to university constraints and the school calendar this study was conducted from March to May, and often missed sessions due to school breaks. The teacher commented that it would have been beneficial to have the entire school year to conduct the study. Future investigations could start earlier in the year and would increase the ability of the experimenter to manipulate the independent variable to more clearly establish a functional relationship between the dependent and independent variables.

Summary

Motivating students to read for pleasure challenges many educators. Sustained Silent Reading (SSR) is a strategy used by many teachers to provide children with a regular opportunity to read. The classroom teacher designates a time during the day during which students can read books, magazines or newspapers for pleasure. The purpose of SSR is to give students an opportunity to practice reading and to increase their enjoyment for literature (McCracken, 1971). One of the major concerns with SSR is that students are not held accountable for what they read during the SSR period and students are often engaged in other tasks besides reading. The National Reading Panel (NRP, 2000) reported there is insufficient research to support the use of SSR and that it has very little effect on student achievement and fluency.

Brame (2001) found that the addition of a story fact recall game decreased off-task behavior during SSR and increased the number of story fact recalled on a quiz.
following SSR. The purpose of this study was to replicate and extend the research by Brame to secondary students with disabilities. This study evaluated a modified version of SSR using story fact recall quizzes, a story fact recall game, and a story fact recall game with a bonus incentive on the off-task behavior during SSR and number of story facts recalled on a 5-question quiz following SSR for secondary students with disabilities. Additionally, students’ pre- and post-SSR attitudes about reading were assessed at the beginning and end of the study.

Twelve 11th grade special education students enrolled in two developmental language arts classes participated in this study. Six students identified by their classroom teacher as exhibiting elevated levels of off-task behavior, which was verified by pre-baseline observations, were targeted for observation of off-task behavior. However, during baseline the students exhibited off-task behavior less than 15% of the intervals. Over the course of the study all six target students reduced their levels of off-task behavior to near zero levels. Ten of the 12 students had higher mean scores on story fact quizzes during the Game with Bonus Marbles Condition over the Quiz condition.

Social validity data from both the classroom teacher and students indicate that SSR can be beneficial to high school students with disabilities. Although many of the students were quite vocal about their dislike for reading at the onset of the study, over the course of the study the students made positive comments regarding the books they were reading. Several of the students even asked if the time set aside for reading could be increased.

The results from the study further support the need for more research surrounding SSR. Numerous reading methods textbooks for teachers (Burns, 1999; Combs, 2002; Cox
& Zarrillo, 1993; Eldredge, 2005; Leu & Kinzer, 2003; May & Rizzardi, 2002; McCormick, 2003; Rasinki & Padak, 2004; Reutzel & Cooter, 2003, 2004; Tompkins, 2003a, 2003b; Walker, 2000) recommend the use of SSR as a way to increase student reading achievement and attitude toward reading, but the NRP (2000) concluded that there is little empirical evidence to support the use of SSR. Learning to read for pleasure opens many doors for students, but reading for pleasure does not automatically result in increased achievement. There must be additional instruction provided to students because a minimal level of reading achievement is necessary before a student can begin to enjoy reading. Future research should be directed in addressing the concerns of increasing student motivation to read for pleasure but also find a way to increase achievement during SSR so that valuable instructional time is not lost.
REFERENCES


APPENDICES
APPENDIX A

CLASSROOM TEACHER LETTER
Dear Parents or Guardians,

Our class has been given the opportunity to be part of a reading study conducted by Natalie J. Allen from The Ohio State University. Miss Allen is a doctoral candidate and has requested the use of our class as a study site for a project on Sustained Silent Reading. The students will be asked to read for fifteen minutes every day and expected to answer questions. This will be an excellent opportunity for the students to increase their individual reading time and interest in novels and potentially increase their comprehension. I am looking forward to this project and hope you will allow your son/daughter to participate. If you have any questions please feel free to call me at or or e-mail me at

Thank you,

Amy DuBois
Dear Parent,

We are writing this letter to inform you of an opportunity for your son/daughter to participate in a research study we will be conducting in collaboration with Mrs. DuBois at Westerville Central High School. The study will evaluate a variation of sustained silent reading (SSR) in the hope of discovering more effective teaching methods.

Sustained silent reading (SSR) is widely used by school teachers to encourage their students to read. The standard procedure for SSR is simple: each school day the teacher reserves a 15 to 20 minute time period in which students are to read silently from a book of their choice. The teacher also reads during this designated time to serve as a model for the students. SSR poses a problem for some students, especially those who are poorly motivated, poor readers and especially those with learning disabilities. This study will evaluate the effects (if any) of adding a quiz and a game-like comprehension activity after the SSR period on the students ability to recall what they read during the SSR period.

Prior to the study, Mrs. DuBois and Ms. Allen will administer a reading test and a reading survey. To assist Ms. Allen in selecting the books for your son/daughter and to write the research report, she will obtain information from your child’s school records. The first few weeks of the study will involve a 15-minute SSR period in which the students will be asked to read 10-15 pages from a book the student has chosen from the list of two to three titles as recommended by Mrs. DuBois.

During the second part of the study the students will continue to read during the SSR period as before, but SSR will be immediately followed by a story fact recall quiz. The students will be given a pencil and paper recall quiz that contains five questions. The third phase of the study will include a story fact recall game. The comprehension game will take place immediately after the students have completed the quiz. Mrs. Dubois will randomly select three students and then ask them a question from that day’s SSR reading. The game questions will be the same as those that were on the quiz. The rationale for including the quiz is that it may motivate some students to read more consistently and with more purpose during SSR as they might get selected and have a chance to answer a question. Correct answers by the students to the game questions will result in tickets to be placed in a drawing and also tokens earned toward a reward to be earned by the entire class.

At the conclusion of the study, we will ask your son/daughter a series of questions regarding his or her opinions regarding the two types of SSR and any suggestions or recommendations they might have as how SSR can be changed or improved. For the purpose of writing the report it is necessary to obtain information from your students’
academic records including grades, special education history and standardized test scores. Your son's or daughter's identity will not be revealed to anyone not directly involved in conducting the research, nor will his/her identity be revealed by means of publication, document, computer storage or any other form of report developed from this research.

In order for us to include the results and input from your son/daughter in this study, we must obtain your written consent. If you are willing to have your child participate in this research project, please sign a copy of the enclosed Parent/Guardian Consent Form for Participation in Educational Research and return it as soon as possible with your son/daughter to school. There are two copies, one of which you may keep for your own records. If you have any questions or concerns regarding your child's participation in this study, please contact Ms. Allen Dr. William Heward and Mrs. Dubois

Sincerely,

Natalie J. Allen
Ph.D. Candidate

William L. Heward
Professor

Enclosures: Two copies of Parent Consent for Participation in Research

c: Amy DuBois, Classroom Teacher, Westerville Central High School
    Todd Meyer, Principal, Westerville Central High School
APPENDIX C

PARENT/GUARDIAN CONSENT FORM
PARENT CONSENT FOR PARTICIPATION IN RESEARCH

I consent to my child's participation in research entitled: Effects of a story fact recall game following Sustained Silent Reading (SSR) on off-task behavior during SSR and the number of story facts recalled by Secondary Special Education students.

Natalie J. Allen, the primary experiment has explained the purpose of the study, the procedures to be followed, and the expected duration of my child's participation. Possible benefits of the study have been described, as have alternative procedures, if such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have raised have been answered to my full satisfaction. Furthermore, I understand that my child is free to withdraw consent at any time and to discontinue participation in the study without prejudice to me or my child.

Finally, I acknowledge that I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

_____________________________
Student's Name

_____________________________
Signature of Parent or Guardian

_____________________________
Natalie J. Allen
The Ohio State University

_____________________________
William L. Heward, Faculty Advisor
The Ohio State University

_____________________________
Date

1-31-05

1-31-05
February 1, 2005

Dear Student,

My name is Natalie Allen and I am a doctoral student at The Ohio State University. I am doing a project about reading and ways to increase what students understand when they read. Each day we will have a reading period and afterward a quiz to see what you understood about what you read that day. You will have the opportunity to earn tickets for Mrs. DuBois' regular class drawing and also earn marbles toward a class party.

Mrs. DuBois will have you read as you normally do. You will not have to leave class to participate in this project. Your participation in this project is voluntary, and you do not have to be in the project if you do not want to. You will not be punished or your grades negatively effected in any class for saying you do not want to participate. Also, if you decide you want to quit the project at any time for any reason that will be okay. During the reading period I will take notes about whether or not you are reading during the designated time. Your name will not be on these notes and only Mrs. DuBois and I will see them.

Sincerely,

Natalie J. Allen
Doctoral Candidate

c: Amy DuBois, Classroom Teacher, Westerville Central High School
William L. Heward, Faculty Adviser, The Ohio State University
APPENDIX E

CONSENT FORM FOR PARTICIPATION IN EDUCATIONAL RESEARCH
CONSENT FOR PARTICIPATION IN RESEARCH

I consent to participating in research entitled: Effects of a story fact recall game following Sustained Silent Reading (SSR) on off-task behavior during SSR and the number of story facts recalled by Secondary Special Education students.

Natalie J. Allen, the primary experimenter, has explained the purpose of the study, the procedures to be followed, and the expected duration of my participation. Possible benefits of the study have been described, as have alternative procedures, if such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have raised have been answered to my full satisfaction. Furthermore, I understand that I am free to withdraw consent at any time and to discontinue participation in the study without prejudice to me.

Finally, I acknowledge that I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

________________________________________
Student’s Name

________________________________________
Signature of Participant

________________________________________
Natalie J. Allen
The Ohio State University

Date

________________________________________
William L. Heward, Faculty Advisor
The Ohio State University

Date
APPENDIX F

OFF-TASK DATA RECORDING SHEET
Date ____________     Off-task Behavior Recording Form      Session # _______
Condition: SSR
Observer: NJA / Other                    SSR + Quiz
SSR + Quiz & Game
Bonus Marbles
Start Time ________ Stop Time __________        IOA Yes/No

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<td><strong>/</strong></td>
<td><strong>% off task</strong></td>
<td><strong>/</strong></td>
<td><strong>% off task</strong></td>
<td><strong>/</strong></td>
</tr>
</tbody>
</table>

Off-task behavior a) being out of seat (e.g., standing up, walking around) b) talking aloud or other vocalizations (e.g., singing, laughing) c) making non-language noises (tapping book, humming) d) touching another student e) writing f) eyes closed or looking away from the book for the full 5-second observation or g) the book is closed

Explanation of codes:
YES Off-task behavior
NO On-task behavior

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APPENDIX G

SAMPLE QUIZ
Wanted
Quiz pgs. 12-22

Name ______________________
Date _______________________

1. Why is Alice afraid?

2. What is the man in the Condo looking for?

3. How did the man know that Alice was in the house?

4. Where does Alice hide?

5. Who does Alice think the man killed?
APPENDIX H

SAMPLE ANSWER KEY
6. Why is Alice afraid?
   She hears a man talking inside the condo that is not her dad, someone is in the condo

7. What is the man in the Condo looking for?
   The two disks labeled TWIN, computer disks,

8. How did the man know that Alice was in the house?
   There were clothes on the floor

9. Where does Alice hide?
   Under the Corvette, in the garage

10. Who does Alice think the man killed?
    Her father
APPENDIX I

PROCEDURAL RELIABILITY CHECKLIST BASELINE
SSR Study  
Procedural Reliability Checklist  
Baseline Condition

Ms. Dubois’ 11th graders

Session # _________  Date # _________  Observer __________________

<table>
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<th>No.</th>
<th>Step Followed?</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1.</td>
<td>Classroom teacher says, “It’s time for SSR”.</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>The teacher passes out to the students the books they chose.</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>The teacher reminds the students to check the page numbers to read that are listed on the bookmark</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>The teacher presses the button to begin the timer and says, “students you can start reading”.</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>At the end of the SSR period, the timer rings and the teacher turns it off.</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>The teacher says, “Students, please close your books”.</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The students return their books to the shelf/desk.</td>
<td>Yes No</td>
<td></td>
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</table>
APPENDIX J

PROCEDURAL RELIABILITY CHECKLIST QUIZ CONDITION
SSR Study  
Procedural Reliability Checklist  
Quiz Condition  

Ms. Dubois’ 11th graders  

Session # __________  Date __________  Observer __________________

<table>
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<th>No.</th>
<th>Step Followed?</th>
<th>Comments</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>The students pick up their books and view their scores from the previous days quiz</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>The teacher collects the previous day’s quizzes</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Teacher states it’s time for SSR</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>The teacher reminds the students to read the pages numbers listed on the bookmark and that the quiz will be based upon those page numbers</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>The teacher presses the button to begin the timer and says, “Students you can start reading”</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>At the end of the SSR period, the timer goes rings, the teacher turns it off.</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The teacher says, “Students, please close your books”.</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>The classroom teacher pass out the quizzes face down onto the students’ desks and collects their books</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>The teacher begins the timer and says “Class you may turn your quizzes over and begin, remember you have three minutes.”</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>While the students take the quiz the teacher walks around the room and monitors the class</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>When the timer beeps, the teacher turns off the timer.</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Teacher collects the students’ quizzes</td>
<td>Yes  No</td>
<td></td>
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</table>
### SSR Study

#### Procedural Reliability Checklist

**Game Condition**

**Experiment I**

Ms. Dubois’ 11th graders

Session # _________  Date _________  Observer __________________

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<tbody>
<tr>
<td>1.</td>
<td>The students pick up their books and view their scores from the previous day's quiz</td>
<td>Yes  No</td>
<td></td>
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<tr>
<td>2.</td>
<td>The teacher collects the previous day’s quizzes</td>
<td>Yes  No</td>
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<tr>
<td>3.</td>
<td>Teacher states it’s time for SSR</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>The teacher reminds the students to read the pages numbers listed on the bookmark and that the quiz will be based upon those page numbers</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Teacher indicates that after the quiz we will play a game that will help the class earn a party</td>
<td>Yes  No</td>
<td></td>
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<tr>
<td>6.</td>
<td>The teacher presses the button to begin the timer and says, “Students you can start reading”.</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>At the end of the SSR period, the timer goes rings, the teacher turns it off.</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>The teacher says, “Students, please close your books”.</td>
<td>Yes  No</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>The classroom teacher pass out the quizzes face down onto the students’ desks and collects their books</td>
<td>Yes  No</td>
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<td>10.</td>
<td>The teacher begins the timer and says “Class you may turn your quizzes over and begin, remember you have three minutes.”</td>
<td>Yes  No</td>
<td></td>
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<td>11.</td>
<td>While the students take the quiz the teacher walks around the room and monitors the class</td>
<td>Yes  No</td>
<td></td>
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<tr>
<td>12.</td>
<td>When the timer beeps, the teacher turns off the timer.</td>
<td>Yes  No</td>
<td></td>
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<tr>
<td>13.</td>
<td>Teacher collects the students’ quizzes</td>
<td>Yes  No</td>
<td></td>
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<td></td>
<td>Classroom teacher says, “We are going to play a game now that will help us earn a class party”</td>
<td>Yes No</td>
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<td>--------------------------------------------------------------------------------------------------</td>
<td>-------</td>
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<td>15.</td>
<td>Teacher randomly draws a Popsicle stick from the name jar.</td>
<td>Yes No</td>
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<td>16.</td>
<td>The teacher calls the name of the student, if the student is there, the student comes to the front of the room. If the student is absent, another name is drawn.</td>
<td>Yes No</td>
<td></td>
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<tr>
<td>17.</td>
<td>The student draws a number from the number can</td>
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<td></td>
</tr>
<tr>
<td>18.</td>
<td>The teacher asks, “What number did you draw?” Student answers.</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>The teacher asks, What book are you reading? Student states the name of the book he/she is reading.</td>
<td>Yes No</td>
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<td>20.</td>
<td>The teacher asks the student a story fact question according to the book he/she is reading and the numbered Popsicle stick.</td>
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<td>21.</td>
<td>Student responds to the question</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>The teacher verifies the student’s answer with the key</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>If the student is correct, the teacher praises the student for answering correctly.</td>
<td>Yes No</td>
<td></td>
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<tr>
<td>24.</td>
<td>The student receives marbles according to the Popsicle number drawn and drops them in the jar.</td>
<td>Yes No</td>
<td></td>
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<td>25.</td>
<td>If the students’ answer is incorrect, the classroom teacher tells the student the correct answer.</td>
<td>Yes No</td>
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<tr>
<td>26.</td>
<td>The teacher provides words of encouragement to the student.</td>
<td>Yes No</td>
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<td>27.</td>
<td>Steps 15-26 are repeated two more times.</td>
<td>Yes No</td>
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APPENDIX L

PROCEDURAL RELIABILITY CHECKLIST
GAME CONDITION EXPERIMENT II
SSR Study  
Procedural Reliability Checklist  
Game Condition  
Experiment II  

Ms. Dubois’ 11th graders

Session # _________  Date _________  Observer __________________

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<td>37.</td>
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<td></td>
</tr>
<tr>
<td>41.</td>
<td>Classroom teacher says, “We are going to play a game now that will help us earn a class party”</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>42.</td>
<td>Teacher randomly draws a Popsicle stick from the name jar.</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>43.</td>
<td>The teacher calls the name of the student, if the student is there, the student comes to the front of the room. If the student is absent, another name is drawn.</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>44.</td>
<td>The student comes to the front of the room with their book and bookmark</td>
<td>Yes No</td>
<td></td>
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<td>45.</td>
<td>The teacher checks the bookmark for the page numbers the student read that day</td>
<td>Yes No</td>
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<tr>
<td>46.</td>
<td>The teacher opens the book to those designated pages and skims for a story fact recall question, the question may or may not be one that was on the quiz</td>
<td>Yes No</td>
<td></td>
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<tr>
<td>47.</td>
<td>If the student is correct, the teacher holds out the container with numbered Popsicle sticks to the student and he/she draws</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>48.</td>
<td>The student receives marbles according to the Popsicle number drawn and drops them in the jar.</td>
<td>Yes No</td>
<td></td>
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<tr>
<td>49.</td>
<td>The teacher praises the student for answering correctly.</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>50.</td>
<td>If the student’s answer is incorrect, the classroom teacher tells the student the correct answer.</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>51.</td>
<td>The teacher provides words of encouragement to the student.</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>52.</td>
<td>Steps 15-24 are repeated two more times.</td>
<td>Yes No</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX M

PROCEDURAL RELIABILITY CHECKLIST
GAME WITH BONUS MARBLES CONDITION
EXPERIMENT I
SSR Study
Procedural Reliability Checklist
Game with Bonus Marbles Condition
Experiment I

Ms. Dubois’ 11th graders

Session # __________  Date __________  Observer __________________

<table>
<thead>
<tr>
<th>Step #</th>
<th>Description</th>
<th>Step Followed?</th>
<th>Comments</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>53.</td>
<td>The students pick up their books and view their scores from the previous day's quiz</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>54.</td>
<td>The students show their quiz scores to the teacher and they are awarded 2 marbles for a score of 5 out of 5 and 1 marble for a score of 4 out of 5</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>55.</td>
<td>The teacher collects the previous day’s quizzes</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>56.</td>
<td>Teacher states it’s time for SSR</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>57.</td>
<td>The teacher reminds the students to read the pages numbers listed on the bookmark and that the quiz will be based upon those page numbers</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>58.</td>
<td>Teacher indicates that after the quiz we will play a game that will help the class earn a party</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>59.</td>
<td>The teacher presses the button to begin the timer and says, “Students you can start reading”.</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>60.</td>
<td>At the end of the SSR period, the timer goes rings, the teacher turns it off.</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>61.</td>
<td>The teacher says, “Students, please close your books”.</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>62.</td>
<td>The classroom teacher pass out the quizzes face down onto the students’ desks and collects their books</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>63.</td>
<td>The teacher begins the timer and says “Class you may turn your quizzes over and begin, remember you have three minutes.”</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>64.</td>
<td>While the students take the quiz the teacher walks around the room and monitors the class</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65.</td>
<td>When the timer beeps, the teacher turns off the timer.</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66.</td>
<td>Teacher collects the students’ quizzes</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>67.</td>
<td>Classroom teacher says, “We are going to play a game now that will help us earn a class party”</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>68.</td>
<td>Teacher randomly draws a Popsicle stick from the name jar.</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>69.</td>
<td>The teacher calls the name of the student, if the student is there, the student comes to the front of the room. If the student is absent, another name is drawn.</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70.</td>
<td>The student draws a number from the number can</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>71.</td>
<td>The teacher asks, “What number did you draw?” Student answers.</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>72.</td>
<td>The teacher asks, What book are you reading? Student states the name of the book he/she is reading.</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73.</td>
<td>The teacher asks the student a story fact question according to the book he/she is reading and the numbered Popsicle stick.</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>74.</td>
<td>Student responds to the question</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75.</td>
<td>The teacher verifies the students answer with the key</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>76.</td>
<td>If the student is correct, the teacher praises the student for answering correctly.</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>77.</td>
<td>The student receives 3 marbles for a correct answer</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>78.</td>
<td>If the students’ answer is incorrect, the classroom teacher tells the student the correct answer.</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>79.</td>
<td>The teacher provides words of encouragement to the student.</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80.</td>
<td>Steps 15-26 are repeated two more times.</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>81.</td>
<td>If all three students answer correctly they receive a bonus 3 marbles</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX N

PROCEDURAL RELIABILITY CHECKLIST
GAME WITH BONUS MARBLES CONDITION
EXPERIMENT II
SSR Study  
Procedural Reliability Checklist  
Game with Bonus Marbles Condition  
Experiment II  

Ms. Dubois’ 11th graders  
Session # _________  Date _________  Observer __________________

<table>
<thead>
<tr>
<th>Step #</th>
<th>Step</th>
<th>Step Followed?</th>
<th>Comments</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>82.</td>
<td>The students pick up their books and view their scores from the previous days quiz</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>83.</td>
<td>The students show their quiz scores to the teacher and they are awarded 2 marbles for a score of 5 out of 5 and 1 marble for a score of 4 out of 5</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>84.</td>
<td>The teacher collects the previous day’s quizzes</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>85.</td>
<td>Teacher states it’s time for SSR</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>86.</td>
<td>The teacher reminds the students to read the pages numbers listed on the bookmark and that the quiz will be based upon those page numbers</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>87.</td>
<td>Teacher indicates that after the quiz we will play a game that will help the class earn a party</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>88.</td>
<td>The teacher presses the button to begin the timer and says, “Students you can start reading”</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>89.</td>
<td>At the end of the SSR period, the timer goes rings, the teacher turns it off.</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90.</td>
<td>The teacher says, “Students, please close your books”.</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>91.</td>
<td>The classroom teacher pass out the quizzes face down onto the students’ desks and collects their books</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>92.</td>
<td>The teacher begins the timer and says “Class you may turn your quizzes over and begin, remember you have three minutes.”</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>93.</td>
<td>While the students take the quiz the teacher walks around the room and monitors the class</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Description</td>
<td>Yes</td>
<td>No</td>
<td></td>
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<td>-----</td>
<td>-----------------------------------------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>94.</td>
<td>When the timer beeps, the teacher turns off the timer.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>95.</td>
<td>Teacher collects the students’ quizzes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>96.</td>
<td>Classroom teacher says, “We are going to play a game now that will help us earn a class party”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>97.</td>
<td>Teacher randomly draws a Popsicle stick from the name jar.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>98.</td>
<td>The teacher calls the name of the student, if the student is there, the student comes to the front of the room. If the student is absent, another name is drawn.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>99.</td>
<td>The student comes to the front of the room with their book and bookmark</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100.</td>
<td>The teacher checks the bookmark for the page numbers the student read that day</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>101.</td>
<td>The teacher opens the book to those designated pages and skims for a story fact recall question, the question may or may not be one that was on the quiz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>102.</td>
<td>If the student is correct, the student earns 3 marbles ad drops them in the jar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>103.</td>
<td>The teacher praises the student for answering correctly.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>104.</td>
<td>If the students’ answer is incorrect, the classroom teacher tells the student the correct answer.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>105.</td>
<td>The teacher provides words of encouragement to the student.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>106.</td>
<td>Steps 15-24 are repeated two more times.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>107.</td>
<td>If all three students answer correctly they receive a bonus 3 marbles</td>
<td></td>
<td></td>
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</table>
APPENDIX 0

BOOKMARK
Sample of bookmark used during SSR

<table>
<thead>
<tr>
<th>Date</th>
<th>Pages to Read</th>
</tr>
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<tbody>
<tr>
<td>4/27</td>
<td>1-10</td>
</tr>
<tr>
<td>4/28</td>
<td>11-20</td>
</tr>
<tr>
<td>4/29</td>
<td>21-30</td>
</tr>
<tr>
<td>5/2</td>
<td>31-40</td>
</tr>
<tr>
<td>5/3</td>
<td>41-50</td>
</tr>
<tr>
<td>5/4</td>
<td>51-60</td>
</tr>
<tr>
<td>5/5</td>
<td>61-70</td>
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<tr>
<td>5/6</td>
<td>71-80</td>
</tr>
<tr>
<td>5/7</td>
<td>81-90</td>
</tr>
<tr>
<td>5/9</td>
<td></td>
</tr>
<tr>
<td>5/10</td>
<td>91-100</td>
</tr>
<tr>
<td>5/11</td>
<td>101-110</td>
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<tr>
<td>5/12</td>
<td>111-120</td>
</tr>
<tr>
<td>5/13</td>
<td>121-130</td>
</tr>
<tr>
<td>5/14</td>
<td></td>
</tr>
<tr>
<td>5/17</td>
<td>131-140</td>
</tr>
<tr>
<td>5/18</td>
<td>141-150</td>
</tr>
<tr>
<td>5/19</td>
<td>151-160</td>
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<tr>
<td>5/20</td>
<td>161-170</td>
</tr>
<tr>
<td>5/23</td>
<td>171-180</td>
</tr>
<tr>
<td>5/24</td>
<td>181-190</td>
</tr>
<tr>
<td>5/25</td>
<td>191-200</td>
</tr>
</tbody>
</table>
APPENDIX P

RHODY SECONDARY READING ATTITUDE ASSESSMENT
Rhody Secondary Reading Attitude Scale
Directions: Read the following statements silently as the teacher reads them aloud. Put an X on the line under the letter or letters that represent how you feel about the statement.

SD Strongly Disagree  D Disagree  U Undecided  A Agree  SA Strongly Agree

1. You feel you have better things to do than read. ___ ___ ___ ___ ___
2. You seldom buy a book. ___ ___ ___ ___ ___
3. You are willing to tell people that you do not like to read. ___ ___ ___ ___ ___
4. You have a lot of books in your room at home. ___ ___ ___ ___ ___
5. You choose to read whenever you have free time. ___ ___ ___ ___ ___
6. You get really excited about books you have read. ___ ___ ___ ___ ___
7. You love to read. ___ ___ ___ ___ ___
8. You like to read books by well-known authors (e.g. Shakespeare, Dickinson). ___ ___ ___ ___ ___
9. You never check out a book from the library. ___ ___ ___ ___ ___
10. You like to stay at home and read. ___ ___ ___ ___ ___
11. You seldom read, except when you have to do a book report. ___ ___ ___ ___ ___
12. You think reading is a waste of time. ___ ___ ___ ___ ___
13. You think reading is boring. ___ ___ ___ ___ ___
14. You think people are strange if they read a lot. ___ ___ ___ ___ ___
15. You like to read to escape from your problems. ___ ___ ___ ___ ___
16. You make fun of people who read a lot. ___ ___ ___ ___ ___
17. You like to share books with your friends.

18. You would rather someone just tell you the information so that you won’t have to read it yourself.


20. You generally check out a book when you go to the library.

21. It takes you a long time to read a book.

22. You like to broaden your interests by reading a book.

23. You read a lot.

24. You like to improve your vocabulary so you can use more words.

25. You like to get books as gifts.
APPENDIX Q

READING SURVEY
SSR Study
Reading Survey

Name ___________________________________  Date ___________________

1. Do you like to read? ___________   Why or Why not? ______________________
   _______________________________________________________________________
   _______________________________________________________________________

2. What is the best book you have ever read? ________________________________
   _______________________________________________________________________

3. What kind of books do you like to read? (e.g. biography, mystery, animal stories, war
   stories, sports stories, fantasy, informational books, science fiction, other) ________
   _______________________________________________________________________
   _______________________________________________________________________

4. Do you like to tell other people about the books you read? ___________________
   _______________________________________________________________________

5. Do you have any books of your own? ________________ If yes, what kind?
   _______________________________________________________________________
   _______________________________________________________________________

6. How often do you read in your own? _____________________________________

7. Do you read because you have to or because you like to? ________________

8. Do you have trouble finding books that you like to read? ________________

9. Do you prefer to read alone or in a group? ________________________________

10. Do you get the newspaper at your house? ______ Do you read the newspaper? _____
    If so, what section do you like best? ______________________________________

11. Who is your favorite author? __________________________________________

12. Do you have a library card? ________________ If so, how often do you check out
    books? ________________ How many books do you check out at a time? ________

13. Name one of your favorite book characters and why? _____________________
    _______________________________________________________________________
    _______________________________________________________________________

210
14. If someone were going to select something for you to read, what should that person know so that he or she could pick out the perfect book for you? ____________________
________________________________________________________________________
________________________________________________________________________
APPENDIX R

RECOMMENDED READING LIST
### Entering Grade 9 -

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Genre</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemingway, Ernest</td>
<td><em>The Old Man and the Sea</em></td>
<td>Fiction</td>
<td>All students must read this book.</td>
</tr>
<tr>
<td>McCullers, Carson</td>
<td><em>Member of the Wedding</em></td>
<td>Fiction</td>
<td>Frankie Adams, a bored twelve-year-old girl, is extremely jealous of her brother's upcoming wedding.</td>
</tr>
<tr>
<td>Crutcher, Chris</td>
<td><em>Ironman</em></td>
<td>Contemporary</td>
<td>A high school senior, and would-be triathlete, is forced to take an anger management class in this dark, humorous novel.</td>
</tr>
<tr>
<td>Lowry, Lois</td>
<td><em>The Giver</em></td>
<td>Sci-fi/Fantasy</td>
<td>A young boy lives in a world of no war or poverty or choice.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Genre</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gunther, John</td>
<td><em>Death Be Not Proud</em></td>
<td>Nonfiction</td>
<td>Accelerated students must also read this book. A boy's battle with a terminal illness is recounted with honesty and emotion.</td>
</tr>
</tbody>
</table>

### Entering Grade 10

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Genre</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bradbury, Ray</td>
<td><em>Farenheit 451</em></td>
<td>Sci-fi/Fantasy</td>
<td>All students must read this book.</td>
</tr>
<tr>
<td>Gibbons, Kaye</td>
<td><em>Ellen Foster</em></td>
<td>Contemporary</td>
<td>A spirited eleven-year-old Ellen Foster overcomes many hardships in her life.</td>
</tr>
<tr>
<td>Griffin, John Howard</td>
<td><em>Black Like Me</em></td>
<td>Nonfiction</td>
<td>A white author darkens his skin and relates his experiences of traveling through the South as a black man.</td>
</tr>
<tr>
<td>Townsend, Sue</td>
<td><em>The Secret Diary of Adrian Mole Aged 13 3/4</em></td>
<td>Contemporary Fiction</td>
<td>A British teenager records the events of his troubled and humorous life.</td>
</tr>
<tr>
<td>Author</td>
<td>Title</td>
<td>Genre</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------------------------------</td>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Potok, Chaim</td>
<td>The Chosen</td>
<td>Fiction</td>
<td>Two Jewish boys develop a strong friendship as they face several conflicts. Acclerated students must also read this book.</td>
</tr>
<tr>
<td>Jiminez, Fransisco</td>
<td>The Circuit</td>
<td>Fiction</td>
<td></td>
</tr>
<tr>
<td>Callahan, Steven</td>
<td>Adrift</td>
<td>Nonfiction</td>
<td>Steven Callahan recounts his 76 day battle for survival on a rubber raft.</td>
</tr>
<tr>
<td>Dorris, Michael</td>
<td>A Yellow Raft in Blue Water</td>
<td>Contemporary Fiction</td>
<td>The rifts and bonds of a teenaged daughter, mother, and grandmother are described in humorous and poignant fashion.</td>
</tr>
<tr>
<td>Knowles, John</td>
<td>A Separate Peace</td>
<td>Fiction</td>
<td>The relationship of two friends at prep school is examined against the backdrop of World War II.</td>
</tr>
</tbody>
</table>

Accelerated students must read The Circuit, a second selection from above, and The Grapes of Wrath OR Friday Night Lights.

Steinbeck, John | The Grapes of Wrath                    | Historical Fiction         | The unfair treatment of migrant workers during the Depression is examined.                                                                  |
| Bissinger, H.G. | Friday Night Lights                   | Nonfiction                 | A town's obsession with high school football is examined in a critical fashion.                                                             |

Advanced Placement Language and Composition students must read The Adventures of Huckleberry Finn by Mark Twain and The Autobiography of Malcolm X by Malcolm X and Alex Haley.

See teacher for related summer writing assignments.
### Entering Grade 12 -

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Type</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philbrick, Nathaniel</td>
<td>In the Heart of the Sea: Tragedy of the Whaleship Essex</td>
<td>Nonfiction</td>
<td>All students must read this book.</td>
</tr>
<tr>
<td>Parker, Robert B.</td>
<td>Early Autumn</td>
<td>Contemporary Fiction</td>
<td>A Boston private eye who is hired to locate a kidnapped boy finds that there is a contract out on his own life.</td>
</tr>
<tr>
<td>Hurston, Zora Neale</td>
<td>Their Eyes were Watching God</td>
<td>Fiction</td>
<td>A proud, independent black woman searches for her identity</td>
</tr>
<tr>
<td>Krakauer, Jon</td>
<td>Into the Wild</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homer, Amy</td>
<td>The Iliad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tan, Amy</td>
<td>The Joy Luck Club</td>
<td>Advanced Placement Literature and Composition students must also read these books.</td>
<td></td>
</tr>
</tbody>
</table>

(Other titles by teacher conference)
APPENDIX S

FLESCH-KINKAID READABILITY RESULTS
Flesch-Kinkaid Grade Level for *Forged by Fire*
APPENDIX T

BOOK SHOW AND TELL
**Book Show & Tell**  
Name ________________________________

Directions: Please complete the following questionnaire. Read the description of the book, circle whether or not you would like to read it. When you are finished go back and write the numbers 1-4 on the books you would like to read. Number 1 being the most important.

<table>
<thead>
<tr>
<th>Book Title</th>
<th>Description</th>
<th>Have you read this book before?</th>
<th>Would you like to read this book?</th>
<th>Rank Order Your top 4 choices</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Rats saw God</em></td>
<td>Steven is about to flunk out of high school. His counselor says he can graduate if he writes a 100 page paper about how he got where he is and where he wants to go.</td>
<td>Yes No</td>
<td>Yes No</td>
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<td><em>Slam</em></td>
<td>Greg “Slam” Harris can do it all on the basketball court. He knows he could be one of the lucky ones, making it all the way to the top. But what if his luck runs out? His grades aren’t so hot. His teachers are starting to catch on. And his temper, well his temper is always on the verge of exploding.</td>
<td>Yes No</td>
<td>Yes No</td>
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<td><em>If You Come Softly</em></td>
<td>Jeremiah &amp; Elisha could tell you the first moment they saw each other. A first love is special and rare, but many don’t see it that way: Elisha is Jewish and Jeremiah is black…</td>
<td>Yes No</td>
<td>Yes No</td>
<td></td>
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<tr>
<td>Title</td>
<td>Summary</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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<td><strong>A Separate Peace</strong></td>
<td>Set at a boys’ boarding school during the early years of World War II, this book is a harrowing and luminous parable of the dark side of adolescence. Gene is a lonely, introverted intellectual. Phineas is a handsome, taunting, daredevil athlete. What happens between the two friends one summer banishes the innocence of these boys and their world.</td>
<td></td>
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<td>Yes</td>
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<td><strong>The Things They Carried</strong></td>
<td>They carried malaria tablets, love letters, 28-pound mine detectors, dope, bibles and each other. And if they made it home alive, they carried images of a nightmarish war that history is just beginning to understand.</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td><strong>Forged by Fire</strong></td>
<td>When his loving aunt dies, Gerald suddenly thrust into a new home filled with anger and abuse. A brutal step-father with a flaming temper and an evil secret makes Gerald miserable, and the only light in his grim life is Angel, his young stepsister. Gerald and Angel grow close as he strives to protect her from Jordan, his abusive step-father.</td>
<td>Yes</td>
<td>No</td>
<td></td>
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<tr>
<td>Title</td>
<td>Summary</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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<td><strong>Wanted</strong></td>
<td>In a tense voice, Alice’s very rational father suggests that she drives his precious Corvette and meet him. But Alice doesn’t have a driver’s license. “It doesn’t matter!” he yells. Yet he never shows up. Then Alice hears an announcement over the radio. Her father is dead. And someone has already confessed to his murder via E-mail. That someone is Alice.</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td><strong>Running Loose</strong></td>
<td>He’s got a starting spot on the football team, good friends, and a smart, beautiful girlfriend who loves him as much as he loves her. Early in the fall, he sees all of his ideas of fair play go up in smoke; by spring, what he cares about most has been destroyed. How can Louie keep going when he’s lost everything?</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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<td><strong>Chinese Handcuffs</strong></td>
<td>Dillon is living with the painful memory of his brother’s suicide—and the role he played in it. To keep his mind and body occupied, he trains intensely for the Ironman triathlon. Dillon finds a confidante in Jennifer, a star high school basketball player who’s hiding her own set of destructive secrets.</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td><strong>The Rescue</strong></td>
<td>Volunteer fireman Tyker McAden is driven to terrifying, heroic risks to save lives. But there’s one leap he can’t take, he can’t fall in love. Then, one day, a record-breaking storm hits his small Southern town, and Taylor comes across a single young mother named Denise is a crashed car. When she revives, Taylor finds himself looking for her missing son, and involved in a rescue like no other.</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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APPENDIX U

SSR POST-STUDY STUDENT INTERVIEW
SSR Post Study Student Interview

Directions: Please read the following questions to the students and record their answer below.

Male / Female       Age ________

1. How many different books did you read for the silent reading study during the 15-minute sessions? 1 2 3 4

2. Which books did you read?

<table>
<thead>
<tr>
<th>Book Name</th>
<th>Yes</th>
<th>No</th>
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</thead>
<tbody>
<tr>
<td>Wanted</td>
<td></td>
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<tr>
<td>Things they Carried</td>
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<tr>
<td>Until we Meet Again</td>
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<tr>
<td>Running Loose</td>
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<tr>
<td>Meg</td>
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<tr>
<td>Slam</td>
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<tr>
<td>Separate Peace</td>
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<td>Flight #116 is Down</td>
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<td>Bleachers</td>
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<td>Rescue</td>
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<tr>
<td>True Colors of Caitlynne Jackson</td>
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<tr>
<td>Forged by Fire</td>
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<td></td>
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<tr>
<td>Rats saw God</td>
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<tr>
<td>Pretend You Don’t See Her</td>
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<td>A Hole in my Life</td>
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<td>Summer of Secrets</td>
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</tbody>
</table>

3. Did you have enough time to read all of the assigned pages during the reading session?
   A. Never
   B. Sometimes
   C. Most of the time
   D. All of the time

4. Were there some days that you did not want to read? What did you do?
   A. Yes, and I chose not to read
   B. Yes, but I read anyway
   C. No, I wanted to read everyday

5. Which do you prefer reading silently or out loud?

6. Do you have trouble reading silently? If so, why?

7. What do you think about the quizzes you took after reading each day?
8. What did you think about the game that Ms. DuBois played where you answered questions and earned marbles after you read?

9. What did you think about the marbles you earned for getting either a 4 or 5 on your quizzes?

10. What did you like or dislike about the way we did silent reading? (ask about the following components)
   1. Choosing your own books with Miss Allen’s help,
   2. Using a timer,
   3. Quizzes,
   4. The amount of time given to read (15 min),
   5. Earning marbles toward a class party by answering verbal questions
   6. Earning marbles toward a class party based on your quiz scores

11. Would you like your teacher next year to have a daily time for silent reading? Yes/ No
    Why or Why not?

12. What about the way we did sustained silent reading would you like to have him/her do?

13. What would you change about the way we conducted sustained silent reading?
14. What did you think when Mrs. DuBois quit playing the game?

15. Did not playing the game affect your interest in reading? Why or Why not?

16. Is there anything else you want to comment on regarding silent reading in Ms. DuBois’ class?
APPENDIX V

TEACHER SOCIAL VALIDITY QUESTIONNAIRE
Social Validity Teacher Survey

Please complete the following questionnaire and return it to Mrs. DuBois

1. What grade do you teach? 9th 10th 11th 12th

2. What subjects do you teach?

3. Are you currently using sustained silent reading in your class? Yes No

4. Have you used SSR in the past? Yes No
   If you have used SSR and are no longer doing so, why did you discontinue?

5. Were the students you observed in Mrs. DuBois more or less off-task than your own students (in general)?

6. Do you think the use of the quiz takes away from the intended purpose of SSR (increase student leisure reading)? Why or why not?

7. Do you think the use of the game takes away from the intended purpose of SSR? Why or why not?

8. What is your general opinion of the game?

9. Do you think you would implement something similar in your own classroom? Why or why not?
APPENDIX W

SSR POST STUDY TEACHER QUESTIONNAIRE
Sustained Silent Reading Post Study Questionnaire

1. Were you doing SSR in your classroom before the study began? If yes, how often? If no, why not?

2. Will you continue to use SSR in your classroom? If yes, how often? If not, why not?

3. Why did you agree to have this study conducted in your classroom?

4. Do you think it was worthwhile? Why/Why not?

5. What components of the SSR study did you like/dislike? (e.g., marbles, quiz, bonus marbles)
6. If you chose to implement SSR would you prefer using game questions from the quizzes or real-time?

7. How difficult was it to generate the real-time questions?

8. What components would you keep/not keep?

9. Please comment on the use of the story fact quizzes and whether you would use them.

10. Please comment on the recall game and whether you would you it or something similar.

11. What major events took place during the study that stands out in your memory?
12. Did your students make comments or ask questions about SSR when the experimenter was not present? If so, please describe.

13. What would you change about the way SSR was conducted?

14. What can we do to improve the way we implemented SSR?
APPENDIX X

CARD GIVEN TO THE EXPERIMENTER FROM THE STUDENTS