A Quasi-experimental Study of the Relationship Between Teaching Intensive Reading Using Novels and Student Skills in English Language Arts

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A QUASI-EXPERIMENTAL STUDY OF THE RELATIONSHIP BETWEEN TEACHING INTENSIVE READING USING NOVELS AND STUDENT SKILLS IN ENGLISH LANGUAGE ARTS

by

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ABSTRACT

Many research-based reading interventions exist, but little literature examines teaching secondary reading using entire novels as an intervention. This quasi-experimental study examined the relationship between whether entire novels were included in secondary intensive reading and students’ English language arts skills. Data were collected through an online survey of eight reading teachers from one Florida school district. Data collected by the survey were teacher qualifications, inclusion of entire novels in reading curriculum, and implementation of research-based teaching strategies. Survey data, Florida Standards Assessment of English Language Arts (FSA ELA) student scores, student demographics and reading placement data were analyzed to answer six research questions regarding the use of entire novels in secondary reading classes. Students were enrolled in one of three leveled abilities reading classes (identified as a Reading Treatment). Data were analyzed using a series of Analysis of Variances (ANOVAs) with Kruskal-Wallis post hoc tests. Results indicated there were no statistically significant interactions between Reading Treatment, novels use, and student race or ethnicity, gender, and socioeconomic status. No interaction effect was found between Reading Treatment and teacher self-reported implementation of research-based teaching strategies for students taught with entire novels. A statistically significant difference in language arts skills was found for students in Reading Treatments 1 and 3. Among those students, those taught without entire novels had higher levels of language arts skills than students taught using entire novels. Another statistically significant difference was in Reading Treatments 3 students who had teachers without reading
endorsements had higher language arts levels. This research was conducted to better inform educational leaders in best practices when determining secondary intensive reading curriculum.
Dedication

I dedicate this dissertation to my son, Joshua Brevoort, who has grown into a teenager as I wrote this but promised he would still want to spend time with me when I completed my dissertation. I also dedicate it to my husband, Dane Brevoort, who has supported me in every way possible as I undertook this epic adventure.
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# TABLE OF CONTENTS

**LIST OF FIGURES** .............................................................................................................. xi

**LIST OF TABLES** ................................................................................................................ xii

**CHAPTER 1: INTRODUCTION** ............................................................................................. 1

  Background of the Study ................................................................................................. 1
  Statement of the Problem ............................................................................................... 6
  Purpose of Study .............................................................................................................. 7
  Significance of the Study ................................................................................................. 8
  Definition of Terms .......................................................................................................... 8
  Research Questions ......................................................................................................... 12
  Delimitations .................................................................................................................. 14
  Limitations ..................................................................................................................... 15
  Assumptions ................................................................................................................... 16
  Organization of the Study .............................................................................................. 17
  Summary ........................................................................................................................ 17

**CHAPTER 2: LITERATURE REVIEW** .................................................................................. 19

  Introduction .................................................................................................................... 19
  Conceptual Framework .................................................................................................. 20
  Theoretical Framework .................................................................................................. 22
  Overview of National Policies Impacting Reading Interventions ................................. 26
  Factors Impacting Adolescent Striving Readers ................................................................ 32
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Question 2</td>
<td>76</td>
</tr>
<tr>
<td>Research Question 3</td>
<td>79</td>
</tr>
<tr>
<td>Research Question 4</td>
<td>81</td>
</tr>
<tr>
<td>Research Question 5</td>
<td>84</td>
</tr>
<tr>
<td>Research Question 6</td>
<td>88</td>
</tr>
<tr>
<td>Research Question 6a</td>
<td>88</td>
</tr>
<tr>
<td>Research Question 6b</td>
<td>90</td>
</tr>
<tr>
<td>Research Question 6c</td>
<td>91</td>
</tr>
<tr>
<td>Summary</td>
<td>93</td>
</tr>
<tr>
<td>CHAPTER 5: DISCUSSION</td>
<td>95</td>
</tr>
<tr>
<td>Introduction</td>
<td>95</td>
</tr>
<tr>
<td>Summary of the Study</td>
<td>95</td>
</tr>
<tr>
<td>Discussion of the Findings</td>
<td>99</td>
</tr>
<tr>
<td>Research Question 1</td>
<td>99</td>
</tr>
<tr>
<td>Research Question 2</td>
<td>101</td>
</tr>
<tr>
<td>Research Question 3</td>
<td>103</td>
</tr>
<tr>
<td>Research Question 4</td>
<td>104</td>
</tr>
<tr>
<td>Research Question 5</td>
<td>105</td>
</tr>
<tr>
<td>Research Question 6</td>
<td>107</td>
</tr>
<tr>
<td>Limitations</td>
<td>108</td>
</tr>
<tr>
<td>Implications for Practice</td>
<td>113</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure 1 Interaction of Reading Treatment and Novel Use Condition, Research Question 1 ..... 76
Figure 2 Kruskal-Wallis Gender Boxplot, Research Question 2 .......................................................... 78
Figure 3 Kruskal-Wallis Socioeconomic (SES) Boxplot, Research Question 4 .......................... 84
Figure 4 Kruskal-Wallis Research Based Teaching Strategies (RBTS) Boxplot, Research Question 5 ..................................................................................................................................... 86
Figure 5 Kruskal-Wallis Reading Treatment Boxplot, Research Question 5 ............................... 87
Figure 6 Kruskal-Wallis Reading Endorsement Boxplot for Reading Treatment 3, Research Question 6c ................................................................................................................................... 93
LIST OF TABLES

Table 1 Twelfth grade National Assessment of Education (NAEP) Reading Assessment Scores
Achievement Gap Between Minority & White Students.......................................................... 35
Table 2 Twelfth Grade National Assessment of Education (NAEP) Reading Assessment
Achievement Gap Between Male and Female Students....................................................... 37
Table 3 Twelfth grade National Assessment of Education (NAEP) Reading Assessment Scores
Achievement Gap Between Students eligible for Free and Reduced-Price Lunch (FRL) and
Ineligible Students ............................................................................................................. 39
Table 4 Variables and Statistical Tests .............................................................................. 68
Table 5 Research Questions, Variables, and Statistical Tests ............................................ 70
Table 6 Assumption Tests Results and Descriptive statistics for Research Question 1 ........ 74
Table 7 Assumption Tests Results and Descriptive statistics for Research Question 2 ........ 77
Table 8 Assumption Tests Results and Descriptive statistics for Research Question 3 ........ 79
Table 9 Assumption Tests Results and Descriptive statistics for Research Question 4 ........ 82
Table 10 Assumption Tests Results and Descriptive statistics for Research Question 5 ........ 85
Table 11 Assumption Tests Results and Descriptive statistics for Research Question 6a ...... 89
Table 12 Assumption Tests Results and Descriptive statistics for Research Question 6b ...... 90
Table 13 Assumption Tests Results and Descriptive statistics for Research Question 6c ...... 92
CHAPTER 1: INTRODUCTION

Background of the Study

Reading interventions have changed drastically in the last century (Alexander & Fox, 2019; Alexander, Kulikowich, & Jetton, 1994; Bolter, 1991; Clay, 1967; Clay, 1976; Collier & Richardson, 1971; Scammacca et al., 2016). Early interventions from 1914 to 1920 focused on children in grades four through twelve who could see and hear properly and had an average Intelligence Quotient (IQ), but had great difficulty learning how to read (Scammacca et al., 2016; Uhl, 1916). At that time, students who struggled with reading were labeled mentally deficient or were believed to have a disability or physical ineptitude. Uhl (1916) became the first practitioner to use the term remedial as he created individualized plans in response to the need to administer reading interventions to several students. Gates (1927) identified a lack of learning early reading skills as the root of students' reading problems. To address the early reading skills deficiencies experienced by struggling readers, widescale remedial reading programs were introduced in public schools in the 1930s (Alexander & Fox, 2019; Clay, 1967; Clay, 1976; Scammacca et al., 2016). From the early 1920s through the 1960s, the focus shifted from case studies to group-based reading interventions that transitioned from word recognition to the complex process of reading comprehension (Alexander & Fox, 2019; Collier & Richardson, 1971). This shift was possible due to the contributions of cognitive psychology theories regarding vocabulary.
acquisition, background knowledge, and metacognition (Alexander, 1998; Alexander & Murphy, 1998; Samuels & Kamil, 1984; Scammacca et al., 2016).

As education garnered national attention, government policies became intertwined with reading interventions (Jeffrey, 1978; Library of Congress, 2001-2002; National Institute of Child Health and Human Development, 2000; Ortlieb, 2012; United States, 1983). The federal Elementary and Secondary Education School Act (ESEA) of 1965 provided funding for curriculum to schools with high populations of students who struggled with reading (Ortlieb, 2012; United States, 1983). A Nation at Risk: The Imperative for Educational Reform (United States, 1983) highlighted underachievement in American schools at national and international levels and provided suggestions to improve education. Two such significant recommendations which focused on underperforming students and teachers were to provide four years of English to all high school students and add accountability to education (United States, 1983). Further government action in education occurred in 1997 when the federal government passed the Reading Excellence Act. The Act refocused early reading interventions on phonics instruction (Ortlieb, 2012). Government action regarding reading education also formed the National Reading Panel, which made recommendations regarding research in early reading development (National Institute of Child Health and Human Development, 2000).

In 2001, the Bush administration passed the No Child Left Behind Act (NCLB), which was an amendment to Title 1, Part A of the 1965 ESEA. The amendment provided Reading First grants to states who allocated the funds to school districts if they proved their kindergarten through third grade reading programs were structured around science-based reading research (Library of Congress, 2001-2002). The reading research connected to these grants was based on
the recommendations set forth by the *National Reading Panel* (National Institute of Child Health and Human Development, 2000). NCLB also measured success in student achievement based on students’ scores on statewide standardized tests (Ortlieb, 2012; U.S. Department of Education, 2009). In 2002, the Institute of Educational Science (IES), part of the United States Department of Education, created the *What Works Clearinghouse* (WWC) (U.S. Department of Education, 2020a). The WWC is a collection of educational research articles that have been vetted by the IES and evaluated for effectiveness (U.S. Department of Education, 2020b). In 2009, under the Obama administration, another amendment to ESEA was implemented alongside the *Race to the Top* (RTTT) grant program. RTTT was a 25-billion-dollar grant providing funding to states and school districts which had several goals to improve education, including the adoption of more rigorous standards and the turnaround of schools with low performance in reading (U.S. Department of Education, 2009; Weiss, 2013).

In the decade spanning from 2009–2019, the WWC created four iterations of an “Adolescent Literacy Evidence Review Protocol,” which were systematic reviews of the current research on adolescent literacy interventions. (U.S. Department of Education, 2020a). In 2008, WWC released the guide, “Improving Adolescent Literacy: Effective Classroom and Intervention Practices” (U.S. Department of Education, 2008). The guide contained five recommendations for improving adolescent literacy:

1. Provide explicit vocabulary instruction.
2. Provide direct and explicit comprehension strategy instruction.
3. Provide opportunities for extended discussion of text meaning and interpretation.
4. Increase student motivation and engagement in literacy learning.
5. Make available intensive and individualized interventions for struggling readers that can be provided by trained specialists (U.S. Department of Education, 2008).

In 2010, as the research on adolescent literature was curated by the WWC, the Language Arts Florida Standards (LAFS) were implemented under the Florida Common Core Standards (Milton et al., 2013). Following the LAFS implementation, some secondary English teachers were inclined to limit or eliminate reading whole-class novels in favor of reading novel excerpts (O’Connor, 2013). The shift away from whole-class novels by some secondary English teachers became a pedagogical debate between two interpretations of how to optimize English instruction. On one side, teachers opted to teach rigorous text excerpts and shorter works to meet the expectations of Common Core Standards instead of teaching reading using entire novels (Greene, 2018; Milton et al., 2013; Sacks, 2019). These teachers focused on the skills students practiced while reading the novels and advocated skills could be effectively taught using short stories and excerpts from longer works (Sacks, 2019; Shanahan, 2019). On the other side, teachers continued to teach whole novels in effort to engage students and challenge them to think more deeply (Gallagher, 2009; O’Connor, 2013; Sacks, 2019; Shanahan, 2019). The emphasis for these teachers was on the content of the novel itself and the value of literature as works of art (Greene, 2018; Sacks, 2019). Proponents of this view claimed reading entire novels created reading stamina and pushed students to work in their zone of proximal development (Gallagher, 2009; Sacks, 2019, Shanahan, 2019). Though this pedagogical debate takes place in English classrooms, it is also relevant in intensive reading classes since there is an increased urgency to provide the most effective curriculum to remediate struggling readers.
To further understand how reading interventions impacted America, and in particular Florida, an understanding of the standardized tests which identify students in need of reading intervention is necessary. At the international level, one prominent standardized reading test is the Programme for International Student Assessment (PISA). PISA assesses student performance in mathematics, reading and science. It is administered to fifteen-year-old students every three years (U.S. Department of Education, 2020). In the 2018 PISA, reading literacy was defined as, “students’ capacity to understand, use, evaluate, reflect on, and engage with texts in order to achieve one’s goals; develop one’s knowledge and potential; and participate in society” (U.S. Department of Education, 2020, par. 2). In the 2018 administration of the PISA, only 19% of fifteen-year-old students tested in the United States were considered low performers in reading literacy (U.S. Department of Education, 2020). The 2018 average reading literacy score of students in the United States was only lower than eight of the other 76 countries (U.S. Department of Education, 2020).

In the United States, the National Assessment of Educational Progress (NAEP) Reading Assessment is administered to fourth, eighth, and twelfth grader students (U.S. Department of Education, 2019a). Average NAEP scores of the reading assessment for eighth grade students in 2019 decreased by three points from 2017 (U.S. Department of Education, 2019a). In Florida in 2019 the eighth grade NAEP reading assessment scores also decreased from 2017 (U.S. Department of Education, 2019a). Additionally, the 2019 eighth grade NAEP reading assessment scores were lower for the lowest performing group from 2009, but higher for the higher scoring group from 2009. While 15-year-old students in the United States had a low non-proficiency
In Florida, students must demonstrate reading proficiency to graduate. Florida students must pass a statewide, standardized English and reading test. This test is the Grade 10 Florida Standards Assessment of English Language Arts (FSA ELA) (Florida Department of Education, 2020b). Students must have a proficient score of a Level 3 or above on a five-level scale to pass the Grade 10 FSA ELA. Students who fail to meet proficiency on the Grade 10 FSA ELA are placed in an intensive reading class and must retake the Grade 10 FSA ELA, or a concordant national reading tests, until they reach proficiency (Florida Department of Education, 2019c). Despite the fact that Florida spent a total of $130,000,000 on reading instruction from preschool through twelfth grades in the 2018-2019 academic school year, 47% of students tested did not achieve proficiency (Florida Department of Education, 2019d).

**Statement of the Problem**

During students’ academic career, they are expected to read at or above grade level. Yet, fourth and eighth grade students’ scores on the NAEP Reading Assessment decreased from 2017 to 2019, with eighth grade scores decreasing by three points (U.S. Department of Education, 2019a). Further, 47% of students who took the Grade 10 FSA ELA statewide did not achieve a proficient score of a Level 3 or above on a five-level scale (Florida Department of Education, 2019c). The Florida Department of Education delegated the responsibility of creating reading curriculum and student progression plan to individual school districts. The autonomy given to
school districts resulted in the implementation of a multitude of research-based reading practices throughout the state. To that end, this study examined the relationship between teaching secondary reading using entire novels and student language arts skills as measured by their performance on the Grade 10 FSA ELA (Florida Department of Education, 2019c; Florida Department of Education, 2019d).

**Purpose of Study**

The purpose of this quasi-experimental study was to examine the effect of the following on students’ language arts skills:

- the Reading Treatment to which they were assigned,
- whether they were taught secondary intensive reading using entire novels as texts,
- whether they were taught by teachers with differing levels of implementation of research-based teaching strategies,
- student demographics of race or ethnicity, gender, and socioeconomic status, and
- teacher qualifications of certification type, CAR credential status, and reading endorsement status.
Significance of the Study

The significance of this research is the results may influence the curriculum requirements in secondary intensive reading classes at school and district levels. Researching the impact of using entire novels to teach secondary reading on language arts skills may indicate whether novels should be incorporated in future reading classes. Since using entire novels to teach secondary reading was optional, it was important to determine whether learning using entire novels affected students’ language arts skills. Further, this study addressed a gap in the literature regarding the relationship between the use of entire novels to teach secondary reading and students’ language arts skills, as measured by their Grade 10 FSA ELA scores. This study also yielded a new survey tool which may be used in the field of adolescent literature. The data yielded from this study may inform curriculum decisions regarding use of entire novels to teach adolescent readers in future generations.

Definition of Terms

In this study, the following terms were operationalized:

Entire novels/Entire novels as texts: In this research the use of entire novels as texts in the secondary reading classroom does not mean the novel was the sole source of texts used, but that it was one of the main texts used in the classroom. The use of an entire novel as a text to teach
secondary reading was contrasted with the use of text extracts, or excerpts of novels or shorter works (Gallagher, 2009).

Reading Treatment 1: Students in this Reading Treatment used an online reading program to remediate their reading fluency. Students who had a Grade 9 FSA ELA Level 1 and read ≤ 115 words per minute (wpm) were assigned to this Reading Treatment (Florida Department of Education, 2020a). Students who read exactly 115 words per minute (wpm) were either assigned to Reading Treatment 1 or 2, based on the discretion of the school administrator over reading (Florida Department of Education, 2020a).

Reading Treatment 2: Students in this Reading Treatment used a different online reading program from those in Reading Treatment 1. This online program focused on reading comprehension. Students who had a Grade 9 FSA ELA Level 1 and read ≥ 115 words (wpm) or students who had a Grade 9 FSA ELA Level 2 Developmental Scale Score (DSS) of 328–336 were placed in this Reading Treatment (Florida Department of Education, 2020a). Students who read exactly 115 words per minute (wpm) were either assigned to Reading Treatment 1 or 2, based on the discretion of the school administrator over reading (Florida Department of Education, 2020a).

Reading Treatment 3: Students in this Reading Treatment used the same online reading program as those in Reading Treatment 2, which focused on reading comprehension. However, this Reading Treatment was taught by Content Area Reading (CAR) teachers who were trained to infuse reading instruction in English, history, or science curriculum instead of a traditional reading curriculum (Florida Department of Education, 2020a). In this study, history and science classes were excluded, as they did not lend themselves to teaching with novels as core texts.
Students who had a Grade 9 FSA ELA Level 2 DSS of 336–342 were assigned to this Reading Treatment (Florida Department of Education, 2020a).

**Striving Readers:** Research refers to students who have difficulty learning to read as struggling readers and reluctant readers (Alvermann, 2002; Heron-Hruby et al., 2018; Sarroub, & Pernicek, 2016). Instead, this study uses the term striving reader (Hurst, 2009; Reninger, & Wilkinson, 2009) to portray reading students not as having a deficit, but instead as working towards becoming better readers. In this research, a striving reader is a student who has not shown grade-level proficiency on state assessment of reading comprehension (Reninger, B. & Wilkinson, 2009).

In this study, the following terms were defined:

**Grade 10 Florida Standards Assessment of English Language Arts (Grade 10 FSA ELA):** A state standardized test administered in grade ten in Florida, intended to measure educational gains and progress in English and reading. The test consists of two days of reading comprehension questions and one day of a text-based writing synthesis assessment (Florida Department of Education, 2019e).

**Intensive Reading Class/Secondary Reading:** In this course, students who have previously failed to show proficiency on state-standardized reading assessments learn reading skills and apply them to a variety of text after the teacher models the strategies through gradual release (Florida Department of Education, 2020a). The purpose of this course is to provide remediation to striving readers, so they learn the skills needed to become proficient readers and thereby pass the FSA ELA. In the state of Florida students who have not passed the Florida Standards
Assessment of English Language Arts (FSA ELA) with a proficiency Level 3 or higher out of a five-level scale are placed in reading classes (Florida Department of Education, 2020a).

**Reading Literacy:** “Understanding, using, evaluating, reflecting on and engaging with texts in order to achieve one’s goals, to develop one’s knowledge and potential and to participate in society” (Organisation for Economic Co-operation and Development, 2018, p. 11).

**Research-based teaching strategies (RBTS):** Five research-based teaching strategies were identified in the literature as crucial for success of teaching secondary reading, and they were:

- **collaboration:** Working together in pairs, small groups, or as a whole class interpreting texts and having text-based discussions in those settings. Specific examples of collaboration are Socratic circles and reciprocal teaching (Fall et al., 2000; Langer, 2001, Murphy et al., 2018; Reznitskaya et al., 2001),

- **explicit teaching of specific reading strategies:** Teacher led modeling of a specific reading strategy, including but not limited to the following: Think Alouds, Retelling, Summarizing, Predicting, Questioning, and Graphic Organizers. These strategies are implemented with scaffolded, which includes the following steps:
  - the teacher demonstrates the strategy,
  - students practice the strategy together in whole-class setting,
  - students practice the same strategy by working in pairs or small groups, and
  - students use the strategy on their own (Alfassi, 2004; Block, 1993; Guthrie et al., 2000),

- **student choice:** Providing students choice in their reading selections, reading comprehension assignments, writing assignments, choice of where or when they
A choice in what order they complete reading assignments (Guthrie, & Humenick, 2004; Moje, 2006),

- **explicit teaching of vocabulary**: Combining teacher-led and student-centered opportunities to learn new vocabulary through teaching which includes but is not limited to the following: (a) context clues, (b) morphology, (c) academic vocabulary, (d) multiple meanings of words, (e) conceptual connections, and (f) multiple exposures to the word through three or more instances (Cunningham & Stanovich, 1998; Hattie, 2012; Schatschneider et al., 2004; Sobolak, 2011), and

- **standards-based lesson design and implementation**: Preparing and delivering instruction using methods that include, but are not limited to the following methods: (a) planning lessons using backwards design, (b) reviewing the standard(s) being taught with students at the beginning of the lesson, (c) analyzing word meanings of academic vocabulary used in the standard(s) being taught with students, (d) posting and using scales for understanding with students, (e) having students self-score their understanding of the standard(s) with scales, (f) providing mastery-based assessments to students, and (g) providing remediation and extension activities to students (Florida Department of Education, 2021a; Marzano, 2018; Wiggins & McTighe, 2005).

**Research Questions**

The following six questions were used to guide this research.
1. Does Reading Treatment and whether novels are included in reading classes affect students’ language arts skills?

2. Does Reading Treatment, whether novels are included in reading classes, and students’ gender affect students’ language arts skills?

3. Does Reading Treatment, whether novels are included in reading classes, and students’ race or ethnicity affect students’ language arts skills?

4. Does Reading Treatment, whether novels are included in reading classes, and students’ socioeconomic status affect students’ language arts skills?

5. Among students in reading classes in which novels were included, does Reading Treatment and teacher self-reported fidelity to implementing research-based teaching strategies affect students’ language arts skills?

6. Among students in reading classes in which novels were included, does Reading Treatment and teachers’ certification type, reading endorsement status, or Content Area Reading credential status affect students’ language arts skills?

These six research questions guided the researcher in the study of students’ Grade 10 FSA ELA scores in relation to whether they were taught secondary reading using entire novels. Five strategies were identified in the literature as critical for successful teaching of adolescent literacy. These strategies were the basis of determining the levels of self-reported fidelity of teaching reading using research-based teaching strategies in research question five. They were:

- collaboration (Fall et al., 2000; Langer, 2001, Murphy et al., 2018; Reznitskaya et al., 2001),
• explicit teaching of specific reading strategies (Alfassi, 2004; Block, 1993; Guthrie et al., 2000),
• student choice (Guthrie, & Humenick, 2004; Moje, 2006),
• explicit teaching of vocabulary (Cunningham & Stanovich, 1998; Hattie, 2012; Schatschneider et al., 2004; Sobolak, 2011), and
• standards-based lesson design and implementation (Florida Department of Education, 2021a; Marzano, 2018; Wiggins & McTighe, 2005).

Survey questions were created based on these five strategies and administered to reading teachers to determine their self-reported level of fidelity to teaching research-based teaching strategies.

**Delimitations**

Delimitations are boundaries the researcher sets to focus the scope and the purpose of the study (Lunenburg & Irby, 2008). One delimitation this study had were that only Grade 10 FSA ELA scores were used because that is the year students were required to pass the FSA ELA to graduate (Florida Department of Education, 2020b). Another delimitation was Reading Treatment 3 classes in history and science courses were excluded from this study, as they did not lend themselves to use of novels as core texts.
Limitations

Limitations are factors beyond the control of the researcher that may affect the generalizability of results or on the interpretation of the study results (Lunenburg & Irby, 2008). This study had the following limitations:

- self-reported survey responses were collected to determine teachers’ fidelity to implementing research-based teaching strategies. Validity of self-reported survey data is difficult to ascertain (Fraenkel & Wallen, 2009),
- student characteristics of prior Grade Point Average (GPA), the number of years students have been in a reading class, and student retention could have lessened students’ engagement and learning while being taught secondary reading using an entire novel,
- novel characteristics of length, genre, and Lexile level could have lessened students’ engagement and learning while being taught secondary reading using an entire novel,
- only the students of teachers who completed the survey were included in the data set,
- grade 10 FSA ELA proficiency level scores included a writing component score as part of the Developmental Scale Score (DSS),
- as a quasi-experimental design, participants were already assigned to Reading Treatments according to district procedure, eliminating the option of random assignment (Lunenburg & Irby, 2008),
- students were assigned to 2019 Reading Treatments based on their 2018 FSA ELA scores (Florida Department of Education, 2020),
• the final sample of student data resulted from a 36.111% survey response rate and consisted of only 28.321% of the possible sample size, which was 484 students out of the 1,709 possible students,

• data regarding how teacher-centered or student centered implementation of entire novels as texts in secondary reading were not captured by the survey tool, and

• nesting of independent variables occurred in two instances (American Psychological Association, 2020). First, it occurred because novel use was the same for all participants in any given classroom, because since it was a classroom level decision whether to teach intensive reading using entire novels as texts. Nesting also occurred because the qualifications of teacher certification type, CAR credential status, and reading endorsement status are based on teachers, so all students in any given classroom were taught by a teacher with the same qualifications.

Assumptions

Assumptions are premises, postulates, and propositions accepted as operational for the purpose of the study (Lunenburg & Irby, 2008). This study was conducted with the following assumptions:

• the school district studied was representative of the larger population of secondary reading students statewide,

• the survey respondents answered questions truthfully, and

• the original survey instrument yielded accurate data.
Organization of the Study

This research study is organized into five chapters. Chapter one consists of the background of the study, the statement of the problem, the purpose of the study, the significance of the study, definitions of terms, limitations, delimitations, assumptions, the organization of the study, and a summary. Chapter two reviews the literature, which includes an introduction, the conceptual and theoretical frameworks employed in this study, an overview of national policies impacting reading interventions, factors impacting adolescent striving readers, and a summary. Chapter three describes the methodology of this study, which includes an introduction, participants, instrumentation, treatments, data collection, research designs and data analysis, and a summary. In chapter four results of the study are presented, including an introduction, statistical assumptions, the testing of the research questions, and a summary. Finally, chapter five is a discussion of the findings, limitations, implications for practice, recommendations for further research, and the conclusions.

Summary

Analysis of the data in this study determined whether a relationship existed between students’ abilities in English Language Arts as measured by the Grade 10 FSA ELA scores and whether entire novels were used to teach secondary reading in one Florida school district. To
investigate this relationship, the researcher invited all secondary reading teachers who taught students who took the FSA ELA in the district in the 2018-2019 school year and were accessible to the researcher to participate in an online survey. The data the survey yielded allowed the researcher to classify the Grade 10 FSA ELA scores into groups of students who were taught secondary reading using entire novels and groups who were not. Further, the data were analyzed based on student demographic data, teacher qualifications, and self-reported teacher fidelity of using RBTS. The results of this study may be used to inform school districts when considering whether to include the use of entire novels to in adolescent reading classes.
CHAPTER 2: LITERATURE REVIEW

Introduction

This chapter contains the rationale for investigating the relationship between whether entire novels were used as texts in secondary reading classes and students’ language arts skills. Interventions for striving readers have evolved greatly over the last century (Scammacca et al., 2016). While progress has been made in understanding which interventions work best for striving readers (Ortlieb, 2012; Scammacca et al., 2016), an achievement gap still exists between those who read well at an early age and those who did not (Stanovich, 1986). This achievement gap is called the Matthew Effect in reading, and it persists and expands throughout students’ academic careers (Stanovich, 1986). The theoretical framework used in this study was the Matthew Effect in reading, as described by Stanovich (1986). The interactive model of reading is the conceptual framework for this study (Rumelhart, 1985). This chapter analyzes literature relevant to this study. Specifically, it contains the following sections: introduction, conceptual framework, theoretical framework, overview of national policies impacting reading interventions, factors impacting adolescent striving readers, and a summary.
The interactive model of reading was used as a conceptual framework in this study. The interactive model combined previous models that grouped reading processes into distinct, sequential steps (Stanovich, 1980). To understand the interactive model of reading a brief chronological synopsis of the preceding models of reading are explored in this section. First the simple view of reading is discussed, followed by the bottom-up model of reading, and then a discussion of how elements from the two theories were combined to create the interactive model of reading.

The understanding of the process of reading has shifted over the past six decades (Scammacca et al., 2016). In the sixties and seventies, the widely accepted view of reading was a bottom-up model called the simple view (Hoover & Gough, 1990). There were only two components in the simple view of reading, decoding and linguistics, and there was no separate aspect of reading known as reading comprehension (Hoover & Gough, 1990). This model of reading focused heavily on the inherent meaning of text and did not acknowledge any understanding the reader brought to the text. The simple view of reading was also known as the bottom-up reading process (Stanovich, 1980). This theory demanded that higher-level functioning, such as the testing of hypothesis when reading, only occurred after all lower-level functions, such as decoding, linguistics, and comprehension occurred (Stanovich, 1980).

In the late seventies and eighties, a new model of reading was popularized (Stanovich, 1980). In seeking to explain how higher functions could impact lower functions, the bottom-up model was inverted, creating the top-down model, which assumed higher-level functioning drove
understanding of more basic processes (Stanovich, 1980). The top-down model of reading sought to explain how semantic context may affect how a reader understands the meaning of a word in the text (Stanovich, 1980). In this view of reading, attention focused more heavily on the reader and the skills and processes the reader engages in to make meaning of the text (Goodman, 1967). Thus, the focus shifted to the reader, what the reader brought to the text, and how the reader’s experiences shaped their understanding of the text.

The interactive model of reading combined both the bottom-up model, which focused upon decoding and linguistics comprehension and the top-down model, which focused more heavily on the reader’s perception of the text (Goodman, 1967; Hoover & Gough, 1990; Rumelhart, 1985). In the interactive model, both bottom-up and top-down processes happen *simultaneously* to allow the reader to comprehend the text (Rumelhart, 1985). The interactive model acknowledged that perception of letters would seem to be the first step in the reading process, but sometimes, those perceptions are made in relation to the perception of other factors such as the context of the words around the letter in question (Rumelhart, 1985). In fact, Rumelhart (1985, p. 732) argued syntactical knowledge, semantic knowledge, lexical knowledge, and orthographic knowledge could all impact a reader’s pattern synthesizer, wherein they made sense of the graphemic input they have read. It is important to note the interactive model of reading not only combined bottom-up and top-down reading models, but it also eliminated the discrete stages each model previously held (Stanovich, 1980).

In addition to combining the simple and complex reading processes, the interactive model of reading combined the focus of the inherent meaning of the text from the simple view of reading with the focus of what the reader brought to the meaning of the text from the top-down view.
model (Goodman, 1967; Hoover & Gough, 1990; Stanovich, 1980). The interactive model of reading acknowledged readers drew from many knowledge sources simultaneously to comprehend and interact with texts (Walker, 1989). Readers drew from mechanical sources, such as definitions or text and sentence organization, and interpretive sources which drew on the reader’s background knowledge (Walker, 1989). The conceptual framework of the interactive model of reading informed this study in the development of the survey instrument.

Theoretical Framework

The theoretical framework used in this study was the Matthew Effect, originally described by Robert Merton in 1968. Merton (1968) proposed the Matthew effect was exemplified by the uneven recognition given to the work of highly esteemed scientist when compared to similar work conducted by lesser-known scientist, which received less recognition. According to Stanovich, (1986) in simplest terms, the Matthew Effect is the idea that the rich get richer, and the poor get poorer. The Matthew Effect in reading is evident in the dichotomy between struggling readers and their more successful peers. More specifically, Stanovich (1986) explained the Matthew Effect in reading by illustrating how students who struggle to acquire vocabulary and reading comprehension in their formative years continuously struggle in reading throughout their academic careers. Likewise, the Matthew Effect in reading was apparent when it was observed that students who excelled at vocabulary and reading comprehension in their formative years will continued to read more and to excel in reading, widening the achievement gap (Stanovich, 1986). Further, Stanovich (1986) postulated a large part of the Matthew Effect
for students who read well occurred due to vocabulary acquisition through reading new words in context.

An additional component of the Matthew Effect in reading was background knowledge (Stanovich, 1986). Students who came from households with exposure to a wider vocabulary excelled at vocabulary-related tasks (Stanovich, 1986). Further, Stanovich (1986) claimed good readers gravitated to other good readers for friendship, just as children who enjoy video games formed friendships over common interests. These interactions steepened the degree to which good readers created an environment which encouraged them to view reading positively (Stanovich, 1986).

Another facet of the Matthew Effect theory in reading is the impact it has on a student’s perceived self-efficacy (Bandura, 1993; Stanovich, 1986). Prior to Stanovich’s seminal work on the Matthew Effect, Walberg et al. (1984) theorized children who read more successfully in the early years received more praise, which increased both the student’s intelligence and motivation. Conversely, Bandura (1993) claimed students receiving reading interventions typically had lower self-perceived efficacy, which led to lower actual self-efficacy. Essentially, when a student performs poorly, they see themselves as ineffective at the task they are undertaking. When the student is again faced with a similar task, in this case reading, they perform poorly, in part, because they believe they will perform poorly before they even begin. Later work by Carol Dweck (2006) regarding mindset shared common underlying beliefs about self-efficacy with Bandura (1993) and Walberg et al. (1984). The premise of the mindset theory was that those who saw failure as a challenge to rise to a task were operating with what Dweck (2006) termed a growth mindset, while those who saw failure as a confirmation of their own shortcomings were
operating in a fixed mindset. Those who function with a fixed mindset believe intelligence is a static feature of themselves that cannot be significantly increased or decreased (Dweck, 2006).

There are case studies which exemplify the Matthew Effect in reading are regarding vocabulary acquisition and the achievement gap (Stanovich, 1986). An example is a study by Nagy et al. (1985), which tested 57 eighth-grade students in vocabulary after reading 1,000 words. The study found a considerable amount of incidental learning of new vocabulary words occurred from reading the words in context (Nagy et al., 1985). Since striving readers regularly read fewer words than their proficient reading peers (Stanovich 1086; Walker 1989), the results of the Nagy et al. (1985) study suggest proficient readers will continue to excel and striving readers will have limited growth, increasing the achievement gap. Likewise, a study of two classes of New Zealand kindergarteners by Penno et al. (2002) found all students’ vocabulary knowledge increased after being read to aloud, but vocabulary scores of the higher performing students increased more than scores of the lower performing students. Thus, striving readers still underperformed their peers despite making learning gains.

Further evidence of the Matthew Effect was observed through the trends of standardized test scores which indicated the achievement gap in English language arts (ELA) persisted. The achievement gaps in ELA have had profound effects on students’ futures. For instance, a longitudinal study of over 4,000 students over ten years found third graders who struggled to read were four times more likely to drop out of school before graduating (Hernandez, 2011). Further, the National Center for Education Statistics (NCES) determined in 2017 in the 25- to 34-year-old age bracket, the highest employment rate of 86% was held by those who held a bachelor’s degree or higher (McFarland et al., 2018). Moreover, in the same age bracket,
students who dropped out of high school earned $6,400 less than those who graduated, and high school dropouts earned $24,600 less than those with bachelor’s degrees (McFarland et al., 2018).

Another instance of the Matthew Effect evidenced by standardized test scores is the achievement gap exemplified by National Assessment of Education Progress (NAEP) reading scores. In the 2019 administration of the NAEP, reading scores were divided into five percentile groups (U.S. Department of Education, 2019a). The lower performing students were either in the bottom tenth percentile or the twenty-fifth percentile (U.S. Department of Education, 2019a). The middle-performing students were in the fiftieth percentile, and the higher scoring students were in either the seventy-fifth or ninetieth percentiles (U.S. Department of Education, 2019a). The 2019 fourth grade scores decreased from 2017 in all four of the lower percentile groups, but not in the ninetieth percentile group (U.S. Department of Education, 2019a). While the 2019 scores of all five percentile groups fell for eight grade students, those of the lowest performing percentile group fell much more than those in the highest performing percentile group (U.S. Department of Education, 2019a). Additionally, twelfth grade students had lower scores in reading on the 2019 NAEP than in 2015 (U.S. Department of Education, 2019a). The tenth percentile group of twelfth grade reading scores were lower than in 2015 by four points, and the twenty-fifth percentile group scores were lower by three points (U.S. Department of Education, 2019a). When twelfth grade reading scores were compared to those from 1992, only the ninetieth percentile group of students had a score increase; and score decreases were largest for the tenth percentile students (U.S. Department of Education, 2019a). These trends in NAEP reading scores exhibit students who have shown high abilities in English language arts continue to excel,
while their struggling peers either excel at much slower rates, or show declines, as is indicative of the Matthew Effect in reading.

While Stanovich (1986) claimed a rise in absolute levels of achievement would not lessen the achievement gap caused by the Matthew Effect, Blankstein and Noguera (2015, p. 5) argued providing equity to students acted as “a rising tide [that] lifts all boats.” Stanovich (1986, p. 396) indicated, “In short, a major problem for future research will be to determine whether instructional differences are a factor in generating Matthew Effect." The Matthew Effect informed the design of this study, wherein the researcher sought to evaluate the effectiveness of using entire novels as texts as an intervention in secondary reading classes.

Overview of National Policies Impacting Reading Interventions

In the United States, reading interventions transitioned from individual case studies to group focused, school-based interventions in the 1960s (Collier & Richardson, 1971). Simultaneously, there was a paradigm shift in the way educational research understood the process of reading. In the decade following 1965, reading research shifted from understanding reading as a mechanical skill which could be mastered through repetitive practice to viewing it as a natural process (Alexander & Fox, 2019). To that end, reading interventions at the time were focused on errors in holistic understanding as opposed to the previous emphasis on identifying deficient reading skills and remediating them with skill-based drills in isolation (Clay, 1967; Clay, 1976). The implementation of reading interventions was also shaped by several policy changes enacted by United States government pertaining to reading education in the 1960s and
throughout the next six decades (Scammacca et al., 2016). Many of these policies directed funding for reading programs (Ortlieb, 2012).

One such early policy implemented was the Elementary and Secondary School Act (ESEA) of 1965. Every five years the government has reauthorized ESEA, often with revisions and amendments. Part of ESEA is Title I, which provides funding to schools with high population of students from households with low socioeconomic status (SES) in effort to close the achievement gap between them and their peers (Jeffrey, 1978). The funding provided by Title I includes money for schools to purchase learning materials for students, and funding to provide professional development for teachers (Ortlieb, 2012).

In the decade spanning from 1976-1985, reading research centered on the individual reader (Alexander & Fox, 2019). Specifically, research at the time expressed the importance of readers’ use of prior knowledge, how the individual reader interpreted texts, and the role their environment played in their understanding. (Alexander, 1998; Alexander & Murphy, 1998; Samuels & Kamil, 1984). The attention to the environment of the learner was also evident in the 1983 report, A Nation at Risk: The Imperative for Educational Reform (United States). The report stressed the inequities in the American education system and proposed solutions to improve underachieving schools and teachers (United States, 1983). Thirty-eight recommendations were made in the report, across five areas: content, standards and expectations, time, teaching, and leadership and fiscal support (United States, 1983). Although not all recommendations were implemented, such as the recommendation in the time section to extend the school year from 200 to 220 days, many of the suggestions were applied to education at the national, state, and local levels (United States, 1983).
An implemented recommendation was the adoption of more rigorous standards and graduation requirements, which included four years of English, three years of mathematics, three years of science, three years of social studies, and a half year of computer science (United States, 1983). Additionally, *A Nation at Risk* recommended schools administer standardized tests at transitional schooling points, with an emphasis on the transition from high school to college (United States, 1983). These recommendations would reverberate throughout educational reform policies and had a lasting effect on education. Another recommendation was for schools to provide an immediate path to teacher candidates with science and mathematics degrees lacking backgrounds or degrees in teaching (United States, 1983). The goal of this recommendation was to address the teacher shortage in those areas (United States, 1983). In the same suggestion, the report briefly mentioned English teacher shortages should be addressed too, although no specific ideas were presented as to how (United States, 1983).

In the decade spanning from 1986 - 1995, reading research shifted to a more collaborative focus, while still maintaining the importance of the role of the individual reader (Alexander, Murphy, et al., 1996; Reynolds et al., 1996). This shift was partially due to the burgeoning field of sociological and anthropological research which began to influence the educational research (Alexander & Fox, 2019). As a result, reading interventions largely focused upon student collaboration with the teacher as a facilitator. Reading instruction was also impacted by the 1997 *Reading Excellence Act*, which emphasized early reading interventions. The Act provided grants for states to disperse to local school districts which used research-based strategies in their early reading programs. These types of grants continued in the 2001 *No Child Left Behind Act* (NCLB) (Library of Congress, 2001-2002). The Act was an amendment to Title
1, Part A of the 1965 ESEA. To qualify as research-based, early reading programs had to implement the recommendations set forth by the National Reading Panel (National Institute of Child Health and Human Development, 2000).

The National Reading Panel report was a meta-analysis of existing research in five areas of reading: (a) alphabetics, which included phonics and phonemic awareness, (b) fluency, (c) comprehension, which included vocabulary instruction and text instruction, (d) teacher education of reading instruction, and (e) computer technology and reading instruction (National Institute of Child Health and Human Development, 2000). The report indicated phonemic awareness training for teachers had a significant effect on improving children’s ability to read, as did explicit phonics instruction. Additionally, the National Reading Panel found although guided reading and repeated reading were beneficial to students’ increased reading fluency, they were most beneficial as part of a more holistic reading program (National Institute of Child Health and Human Development, 2000). The report also indicated students reading fluency increased when the amount they read increased (National Institute of Child Health and Human Development, 2000). The National Reading Panel also stated reading comprehension was comprised of vocabulary knowledge and direct instruction of text comprehension strategies (National Institute of Child Health and Human Development, 2000). Both implicit and explicit vocabulary instruction was found necessary to increase students’ reading comprehension. Direct instruction of comprehension strategies which were more generalizable to multiple text types were found more successful than overly specific comprehension strategies (National Institute of Child Health and Human Development, 2000). At the time the National Reading Panel was released, reading research began studying the emergent digital literacies in addition to the more traditional print-
based reading (Alexander, Bolter, 1991; Kulikowich, & Jetton, 1994; National Institute of Child Health and Human Development, 2000). Additionally, theories of engagement and motivation were also studied in more detail and implemented in reading classrooms (Guthrie & Wigfield, 2000; Oldfather & Wigfield, 1996).

A component of NCLB was the measurement of student success based on student standardized achievement scores (U.S. Department of Education, 2009). To provide a source of vetted research-based reading strategies, the Institute of Educational Science (IES) of the United States Department of Education created the *What Works Clearinghouse* (WWC) in 2002. Educational research articles available through the WWC were evaluated for effectiveness (U.S. Department of Education, 2020b). Also in 2002, the federal budget for reading education tripled from $300,000,000 to $900,000,000 through the Reading First program, which was part of the NCLB Act (Ortlieb, 2012). As funding to reading interventions increased, so did scrutiny of schools and teachers, which were measured by standardized testing results as required by NCLB, and later by *Race to the Top* (RTTT) grant (U.S. Department of Education, 2009).

To encourage teachers, school districts, and states to employ research-based reading strategies, an amendment was made to ESEA in 2009 alongside the RTTT grant program. RTTT was a 25-billion-dollar grant program which provided funds to states and school districts (U.S. Department of Education, 2009). To obtain funding, states and school had to meet several goals, such as adoption of more rigorous standards and turnaround of schools that were low performing in reading (U.S. Department of Education, 2009; Weiss, 2013). As these Acts set new expectations of implementing research-based reading practices, reading interventions at the time predominately focused on increasing critical thinking through text-based discussions (Fall et al.,
2000; Reznitskaya et al., 2001) and specific content area reading skills (Alexander et al., 1996; Ozuru, et al., 2009; Van Sledright, 2002). An additional development in education occurred in 2010, when implementation of the Common Core State Standards began (Milton et al., 2013). Having a national set of common standards proposed and the continuance of teacher and student accountability with standardized testing were both vestiges of the recommendations of the report A Nation at Risk (United States, 1983).

In 2016, reading research and implementation began to revolve around personalization and differentiation (Alexander & Fox, 2019). However, reading interventions were not personalized at the expensive of the collaborative environment fostered in earlier decades of reading interventions. Instead, differentiation called for teachers to deliver whole-class curriculum while differentiating for the needs of individual students (Alexander & Fox, 2019; Reynolds et al., 1996; Tomlinson, 1999). To accomplish such instruction, both the collaborative and the individualistic nature of reading interventions from past decades of reading research were implemented. Differentiation required attention to the individual reader and their interpretation of the text, often in small group settings (Tomlinson, 1999; Heron-Hruby et al., 2018). In small group settings, differentiation allowed for students to engage in extended discussion about texts collaboratively (Fall et al., 2000; Murphy, et al., 2018; Reznitskaya et al., 2001). However, implementation of personalized learning sometimes drew criticism for relying on one teacher to deliver a standardized curriculum to the entire class while simultaneously differentiating instruction to meet the needs of each learner (Hansen, 2012; Ortlieb, 2012).

Throughout the past six decades reading education and interventions have undergone several changes caused by Federal policies. Government policies have raised both funding for
and scrutiny of reading education at the national, state, and local levels. There have also been numerous shifts in the conceptualization of the reading process and reading interventions. The evolution of the understanding of how readers interact with texts led to modern day implementation of reading interventions. Current reading research advocates readers must be taught with a two-pronged approach. On one prong is the acknowledgement of the readers as individuals, situated in a particular environment, with unique background knowledge (Alexander, 1998; Alexander & Murphy, 1998; Alexander, Murphy, et al., 1996; Samuels & Kamil, 1984; Tomlinson, 1999.) The other prong must concurrently recognize readers as members of the sociocultural groups to which they belong (Reynolds et al., 1996; Brown & Campione, 1990). To best learn from texts readers’ needs must be met by attending to the interaction between the reader and the text, as described by the interactive model of reading, and the collaborative environment of the reading process.

Factors Impacting Adolescent Striving Readers

One of the early uses of the phrase striving reader was in the 2006 Striving Reader grant program, which was part of the No Child Left Behind Act. The Striving Reader grant aimed to remediate middle and high school students who read below grade level in Title-1 eligible schools (U.S. Department of Education, 2014). The term striving reader referred to a student who had not shown grade level proficiency on state or national standardized tests of reading comprehension (Reninger, & Wilkinson, 2009). By referring to these students as striving readers, the ability of students to improve is emphasized instead of their deficits (Hurst, 2009). Much of the current
literature refers to these students as struggling readers or reluctant readers (Alvermann, 2002; Heron-Hruby et al., 2018; Sarroub, & Pernicek, 2016).

Adolescent striving readers face many challenges. Many adolescent striving readers begin to struggle with reading upon entry to the school system (Gallagher, 2009; Snow & Biancarosa, 2003; Sobolak, 2011). According to Chall (1967), elementary school striving readers transition from learning to read to reading to learn in fourth grade. Students who have difficulty reading in elementary school often continue to underperform their peers and cannot learn from grade-level textbooks when they reach the secondary school (Hattie, 2012; Snow & Biancarosa, 2003; Stanovich, 1986). By the time adolescents need reading intervention they have often already suffered from reduced perceived and actual self-efficacy in reading (Bandura, 1993; Guthrie & Wigfield, 2000; Linnenbrink, & Pintrich, 2003). Further, many adolescent striving readers are fluent readers but struggle with reading comprehension (Biancarosa & Snow, 2006). The following subsections each detail the available literature on four factors which impact adolescent striving readers: how the reading achievement gap impacts striving adolescent readers, the debate between reading novels or excerpts with striving adolescent readers, how teacher qualifications impact striving adolescent readers, and research-based teaching strategies that work for striving adolescent readers.
How the Reading Achievement Gap Impacts Striving Adolescent Readers

The achievement gap between striving readers and their peers who read at or above grade level has been well researched (Chui & McBride-Chang, 2006; Guthrie, et al., 2012; Kavanagh, 2019; Roigers et al., 2020; Sarroub & Pernicek, 2016; Snow & Biancarosa, 2003; Stanovich, 1986; U.S. Department of Education, 2019b). This subsection explores the literature regarding the reading achievement gap in three groups which are overrepresented in the striving reader population: students who are minorities, male students, and students from low socioeconomic status (SES) households. Analyses of evidence of each reading gap are included, as well as possible explanations and strategies to best mitigate the reading achievement gaps experienced by each group of striving readers.

Students who are minorities are overrepresented in students who meet all graduation requirements except for passing their state standardized reading test, as well as in high school dropout rates (Snow & Biancarosa, 2003). In 2017, students who dropped out of high school made $7,400 less per year than those who graduated with a high school diploma (McFarland et al., 2018). Table 1 illustrates 2019 scores of twelfth grade students on the reading section of the National Assessment of Educational Progress (NAEP). Black, Hispanic, and American Indian/Native Alaskan student groups all had NAEP score averages of between 21 to 32 points below those of White students (U.S. Department of Education, 2019b). The only minority group which achieved the same average reading score as their White counterparts were students who were Multiracial. Students who were in the Asian/Pacific Islanders group were the only minority group to outperform White students. Despite the high performance of the Multiracial and
Asian/Pacific Islander groups, the range of differences between minorities and White students on the NAEP reading test has been between four and 19 points since 1992 (U.S. Department of Education, 2019b).

Table 1 Twelfth grade National Assessment of Education (NAEP) Reading Assessment Scores Achievement Gap Between Minority & White Students

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>2019 – 2015 score difference</th>
<th>Highest score difference and year</th>
<th>Lowest score difference and year</th>
<th>Score range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>32</td>
<td>32 2019</td>
<td>24 1992</td>
<td>8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>21</td>
<td>23 1994</td>
<td>19 1992</td>
<td>4</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>- 4</td>
<td>15 1994</td>
<td>- 4 2019</td>
<td>19</td>
</tr>
<tr>
<td>American Indian/Native Alaskan</td>
<td>23</td>
<td>23 2019</td>
<td>13 2009</td>
<td>10</td>
</tr>
<tr>
<td>Multiracial</td>
<td>0</td>
<td>10 2005</td>
<td>- 2 2009</td>
<td>12</td>
</tr>
</tbody>
</table>

Source: U.S. Department of Education, 2019b

When the achievement gap between White and Black secondary students was analyzed in one large public urban school district, Fantuzzo et al. (2012) found academic engagement was one of the best strategies to mitigates family risks of living in poverty, in violent neighborhoods, or low maternal education. Likewise, research also found an increase in the amount of reading, as contributed to increased student engagement and motivation, was indicative of higher academic achievement in reading (Guthrie, et al., 2012; Stanovich, 1986). Gloria Ladson-Billings (1995) also recognized the roles teachers had in creating environments for all students to succeed. She posited to mitigating the achievement gap experienced by minorities teachers must engage in culturally relevant teaching (Ladson-Billings, 1995). To teach in a culturally responsive way goes beyond recognizing students’ cultural differences by incorporating
students’ cultural experiences in the classroom. A study by Ladson-Billings (1995) of a low-achieving, predominately African American elementary school found culturally responsive teachers had more students on or above grade level on standardized tests than teachers who did not implement culturally relevant teaching.

While it is important to recognize the impact students’ sociocultural experiences have on them it is also important to acknowledge how teachers influence students’ academic achievement. Teachers who engaged striving readers, provided them access more texts, and incorporated their students’ culture in the classroom had students who performed better on standardized tests (Fantuzzo et al., 2012; Graves, 2011; Ladson-Billings, 1995). Additionally, research indicated how well students believe they will do on a given task, or perceived self-efficacy, impacts their actual self-efficacy (Bandura 1993; Guthrie & Wigfield, 2000; Linnenbrink, & Pintrich, 2003). Moreover, the perceived and actual self-efficacy of students can be positively impacted by teachers’ high expectation of students (Good, 1987; Good & Brophy, 2002; Taylor et al., 2003). When educators refuse to hold striving readers to high expectations, it creates an environment where they choose to opt out of the work. As Ladson-Billings (2011) explained, many African American male students engaged in a silent deal with their teachers, that if teachers ignored their disengagement in the class, then they would not be a disruption. Conversely, when teachers communicate high literacy expectations to students, it allows students to engage in a productive struggle, which results in growth. For example, Taylor et al. (2003) found teachers who asked a higher percentage of high-level comprehension questions had students who experienced more growth in reading comprehension than teachers who did not. In another study, Applebee et al. (2003) found both high and low achieving students had higher
literacy growth when their teachers conveyed high literacy expectations by emphasizing the importance of revision, homework, and writing assignments.

Another student group which is disproportionately represented in striving readers are male students. Studies show male students routinely score lower than female students on standardized literacy tests (Chiu & McBride-Chang, 2006; Sarroub & Pernicek, 2016; U.S. Department of Education 2019). For example, Table 2 shows the average NAEP reading score of twelfth grade male students decreased three points from 2019 to 2015 (U.S. Department of Education, 2019b). Additionally, NAEP reading scores for males have remained below their female counterparts each year the test was administered, since 1992, with a score range difference of seven points (U.S. Department of Education, 2019b). Further evidence of this discrepancy in scores was exhibited by a study in which Chiu and McBride-Chang (2006) found female students outperformed male students on a reading comprehension test in all 43 countries which participated in the study.

Table 2 Twelfth Grade National Assessment of Education (NAEP) Reading Assessment Achievement Gap Between Male and Female Students

<table>
<thead>
<tr>
<th>Gender</th>
<th>2019 -2015 score difference</th>
<th>Highest score difference and year</th>
<th>Lowest score difference and year</th>
<th>Score range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>13</td>
<td>16 2002</td>
<td>9 2013</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: U.S. Department of Education, 2019b

Reading engagement corresponds to higher reading achievement (Fantuzzo et al., 2012; Linnenbrink, & Pintrich, 2003). Female students who scored higher on reading comprehension tests than their male counterparts also scored higher on reading enjoyment surveys (Rogiers et
al., 2020) and experienced higher levels of intrinsic motivate to read (Kavanagh, 2019). Sarroub & Pernicek (2016) proposed the gender-based achievement gap is a result of how the highly structured nature of school is more aligned to the predominate learning styles of female students than that of male students. The literature indicates increasing engagement is a key strategy to address the race and ethnicity reading achievement gap and to address the gender reading achievement gap (Fantuzzo et al., 2012; Linnenbrink, & Pintrich, 2003; Smith, & Wilhelm, 2004). Engagement is especially important for male adolescents because they prefer to project an image of competence in the subject they are reading about (Smith, & Wilhelm, 2004). However, research has also found while male students avoided academic literacy tasks, they excelled in literacy tasks outside of school when they were motivated by the content of the task (Ladson Billings 2011; Smith, & Wilhelm, 2004). In addition to engagement, the importance of student choice (Langer, 2001; Murphy et al., 2018; Reznitskaya et al., 2001), motivation, and self-efficacy are also seen as key to re-engage striving readers (Bandura 1993; Guthrie and Wigfield, 2000; Linnenbrink, & Pintrich, 2003; Sarroub & Pernicek, 2016).

Achievement gaps in reading also exist between students who were from lower socioeconomic status (SES) households and those who were not (Snow & Biancarosa, 2003; Sobolak, 2011; Van Steensel et al., 2019). Table 3 shows the 23-point gap in NAEP scores of twelfth grade students who were eligible for free and reduced-price lunch (FRL) because of their low SES in 2019 compared to their peers who were ineligible (U.S. Department of Education, 2019b). The largest score difference between students who were FRL eligible and those who were not was 23 points, which occurred in 1998, 2015, and again in 2019. The range of the score differences since 1992 was seven points (U.S. Department of Education, 2019b).
Table 3 Twelfth grade National Assessment of Education (NAEP) Reading Assessment Scores Achievement Gap Between Students eligible for Free and Reduced-Price Lunch (FRL) and Ineligible Students

<table>
<thead>
<tr>
<th>FRL eligibility</th>
<th>2019-2015 score difference</th>
<th>Highest score difference and year</th>
<th>Lowest score difference and year</th>
<th>Score range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible</td>
<td>23</td>
<td>23</td>
<td>16</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: U.S. Department of Education, 2019b

Research has shown reading is a socially constructed process (Alexander & Fox, 2019; Fall, Webb & Chudowsky, 2000; Langer, 2001; Murphy et al., 2018; Reznitskaya et al., 2001; Roigers et al., 2020). The home learning environment plays a role in students’ academic achievement. For example, research suggests the number of books present in a student’s home is related to how well they perform academically in reading (Chui & McBride-Chang, 2006; Evans et al., 2015). Additionally, students from low SES households have been found to have less reading motivation, enjoy reading less, and perform lower on reading comprehension tests (Chui & McBride-Chang, 2006; Kavanagh, 2019; Roigers et al., 2020). However, it is important to note the performance on academic reading tasks of students from low SES households are not solely shaped by home environments, but also by their school experience (Gallagher 2009; Roigers et al., 2020; Stanovich 1986). Often striving readers are not given the opportunity to read a larger number of texts which, in conjunction with other reading interventions can lessen the achievement gap (Gallagher 2009; Sobolak, 2011). Another factor found effective at mitigating the achievement gap experienced by striving readers from low SES households is the increasing the expectations teachers set for student performance. If teachers express low expectations striving readers will not be challenged, will not increase reading enjoyment, and thereby will not
increase their reading comprehension. (Applebee et al., 2003; Chui & McBride-Chang, 2006; Roigers et al., 2020; Taylor et al., 2003).

Another cause of the reading achievement gap between students from high and low SES households is that their levels of vocabulary knowledge are significantly different, even before entering school (Cunningham & Stanovich, 1998; Schatschneider et al., 2004; Sobolak, 2011). Gallagher (2009) claimed not only do striving readers enter school knowing millions of words less than their peers, but also by the time they enter sixth grade they read three grade levels behind their peers. Further, research by Sobolak (2011) indicated the type, quality of, and amount of time dedicated to implicit vocabulary instruction can help close the vocabulary gap between students from varying SES levels.

There is a persisting reading achievement gap persists when scores of striving readers are analyzed by race or ethnicity, gender, and SES (Chui & McBride-Chang, 2006; Guthrie, et al., 2012; Kavanagh, 2019; Roigers et al., 2020; Sarroub & Pernicek, 2016; Snow & Biancarosa, 2003; Stanovich, 1986; U.S. Department of Education, 2019b). While each of the populations negatively affected by the reading achievement gap are unique, many times the proposed solutions are overlapping. For example, drawing upon a students’ culture can lessen the achievement gap between students of differing races and ethnicities (Ladson-Billings, 1995) and it can lessen the achievement gap between students from different SES (Sarroub & Pernicek, 2016). Increasing student engagement is another strategy which occurs throughout the literature addressing achievement gaps in groups based on race or ethnicity, gender, and SES (Fantuzzo et al., 2012; Graves, 2011; Landson-Billings, 1995; Linnenbrink, & Pintrich, 2003; Smith, & Wilhelm, 2004). To increase student engagement with texts, teachers can communicate high
literacy expectations to their students, which increases students’ motivation (Applebee et al.,
2003; Chui & McBride-Chang, 2006; Kavanagh, 2019; Roigers et al., 2020; Sarroub & Pernicek,
2016; Taylor et al., 2003). Increased student motivation leads to an increase in perceived and
actual self-efficacy of students (Bandura 1993; Guthrie and Wigfield, 2000; Linnenbrink, &
Pintrich, 2003). When students experience higher perceived and actual self-efficacy in reading it
results in increased reading enjoyment and higher reading achievement scores (Applebee et al.,
2003; Good, 1987; Good & Brophy, 2002; Rogiers et al., 2020; Taylor et al., 2003). Though
students from low SES households may have less vocabulary knowledge and less access to
books their school experience can overcome negative effects caused by these disadvantages
(Chui & McBride-Chang, 2006; Cunningham & Stanovich, 1998; Evans et al., 2015; Gallagher
2009; Roigers et al., 2020; Schatschneider et al., 2004; Sobolak, 2011; Stanovich 1986).
Overcoming the reading achievement gap for students from different backgrounds of race or
ethnicity, gender, and SES requires educators to acknowledge both the unique needs of the
respective groups to which they belong as well as the overlapping recommendations clearly
identified in the research.

The Debate Between Reading Whole Novels or Extract Texts with Striving Adolescent
Readers

Educators in secondary English and reading classes are presented two schools of thought
regarding use of entire novels in their curriculum (Gallagher, 2009; Sacks, 2012; Sacks, 2019).
As an English teacher and literacy coach Sacks (2019, para. 1) expressed, there is “an odd friction between two significant, growing movements that touch our work.” One on side are educators who advocate the reading of entire novels while the other side stresses the need to read extract texts, or excerpts, in place of novels (Sacks, 2019). According to Milton et al. (2013), the reasoning for replacing reading entire novels with reading excerpts is often traced back to teachers’ need to meet the more demanding Common Core Standards.

The Center for Education Reform (2021) claimed one change the Common Core Standards ushered in was the idea that teachers should increase the percentage of nonfiction texts students read. Common Core Standards recommended high school students should read 70% nonfiction texts and 30% fiction texts (Center for Educational Reform, 2021). This recommendation referred to the total amount of texts students read across all classes daily, including informational texts in history and science classes (Center for Educational Reform, 2021). However, according to McCarthy (2015) many English teachers saw the increase in nonfiction texts as an affront to the literature they were so well-versed in teaching. While teachers prepared to implement the Common Core Standards, some English teachers struggled with the idea of replacing entire novels with excerpts (O’Connor, 2013). Some educators expressed fear that striving readers might not develop deep and meaningful understanding of texts if they were reading several short excerpts in place of entire novels (Gallagher, 2009; O’Connor, 2013).

In addition to conflicting views over whether entire novels or excerpts should be read in class, educators in both groups disagree upon the goal of reading literature. For example, Greene, (2018) viewed reading excerpts as an opportunity to practice a reading skill on the text. Those
who advocated reading entire novels in class disagreed and claimed reading only excerpts pandered to teaching to the test, and viewed the goal of reading literature as appreciating the work as a piece of art, and developing reading stamina (Greene, 2018; Sacks, 2019). In fact, Sacks, (2019) compared reading excerpts of classic work to showing students only a corner of a famous painting and expecting them to have the same understanding and appreciation of it as those who had studied it in its entirety. Additionally, proponents of teaching secondary reading using entire novels in class claimed reading novels engaged students when taught with proper teacher scaffolding to assist in background knowledge and vocabulary comprehension (Gallagher 2009; Ward, 2017). However, those who opposed reading entire novels in class argued it can be disengaging for some students who might not be interested in the novel (Brownlie et al., 2006; Ivy & Broaddus, 2001). One argument made against teaching class novels is that required reading is often outdated and thereby it is difficult for students to make meaningful connections to the literature. (Ivy & Broaddus, 2001). A proposed solution to these divergent schools of thought is to give students choice reading novels, as independent reading or in small groups, so they can choose more relatable novels (Westbrook, 2013). In a study by Westbrook (2013) a school incorporated 15 minutes of choice reading a day, and students gained an additional 47.5 hours of reading per year. As a result, the number of students schoolwide who were reading below average decreased by ten percent (Westbrook, 2013). Another proposed solution though, is not to view the whole class novel versus student choice novel as an either-or debate, but rather to implement both (Sacks, 2012; Shanahan, 2019; Ward, 2017).

Proponents of reading entire novels in class cited the sense of community the shared experience of reading the same novel can bring to a classroom (Sacks, 2015; Ward, 2017).
Additionally, Gallagher (2009) affirmed striving readers enter school knowing millions of words less than their peers and claimed they will never surmount the deficiency without reading large amounts of texts. Another facet of the argument to read entire novels in class made in the literature is not whether teachers should teach using entire novels, but how the novels should be taught (Brownlie et al., 2006; Gallagher, 2009; Sacks 2019). Often, when entire novels are read in classrooms with striving readers, implementation consists of the whole class reading each chapter aloud, with heavy teacher guidance (Sacks, 2019). Some practitioners and researchers claimed this method does not allow for students to develop deeper learning and does not push them to grow in their zone of proximal development (Gallagher, 2009; Roberts, 2018; Sacks 2019). Instead of these teacher-focused scenarios, advocates of the whole class novel suggest the study of a novel should give students an opportunity to do most of the reading, take place over a shorter time span, have less teacher-led activities focused on chapter-by-chapter comprehension questions, and should rely more heavily on collaborative, student-centered, text-based discussions (Brownlie et al., 2006; Heron-Hruby et al., 2018; Mason & Giovanelli, 2017; Roberts, 2018). Additionally, some research advocated the skills taught to students when reading a whole-class novel should be duplicated when they read their choice-novels, to give students opportunities to learn to implement the same skills independently on literature which they can connect to meaningfully (Brownlie et al., 2006; Roberts, 2018; Sacks, 2019).

While the debate over whether to use novels in the classroom persists, there are studies which support the use of entire novels with striving adolescent readers. For example, in England, when 20 teachers used novels to teach students labeled “low-attaining readers” all of them improved their reading comprehension (Westbrook et al., 2019, p. 42). In fact, after reading two
challenging novels within 12 weeks as a class, the students previously referred to as “low-attaining readers” showed 16 months of progress on reading achievement, compared to their more proficient peers who made eight and a half months of progress (Westbrook et al., 2019, p. 42). In another study, after reading an entire novel in class ninth grade students labeled at risk of dropping out comprehended the challenging novel and performed as well as their more proficient peers on comprehension tests (Alvermann et al., 1996). These studies refute the argument that striving readers cannot learn from the same challenging texts as their peers who are more proficient readers (Alvermann et al., 1996; Westbrook et al., 2019). Further, these results indicated reading entire novels in class with striving readers could contribute to closing the achievement gap caused by the Matthew Effect (Alvermann et al., 1996; Westbrook et al., 2019).

How Teacher Qualifications Impact Striving Adolescent Readers

Many striving readers enter their academic careers at a disadvantage due to limited access to vocabulary and texts (Chui & McBride-Chang, 2006; Cunningham & Stanovich, 1998; Evans et al., 2015; Schatschneider et al., 2004; Sobolak, 2011). Despite the initial disparity striving readers experienced when entering school, teacher certification has been shown to be one of the strongest correlated indicators of students’ achievements in reading, even when poverty levels of the student were controlled (Darling-Hammond, 2000; Graves, 2011). In 2001, part of the No Child Left Behind (NCLB) Act required every core subject area classroom teacher to be highly qualified. NCLB defined highly qualified teachers as those who had a bachelor’s degree or
higher, had state certification or licensure, and had proven their mastery of the subject area they taught. The highly qualified teacher mandate of NCLB gave many in the education field hope that more equity would be provided to striving readers (Darling-Hammond 2000; Graves 2011).

Non-certified teachers are disproportionately assigned to teach minority students and students affected by poverty (Betts et al., 2000; Darling-Hammond 2000; Graves, 2011; Hoffman, 2004; Kumar & Waymack, 2014). Further, high-poverty schools also have less effective and less experienced teachers overall (Hoffman, 2004; Rice, 2010). For example, a study by Graves, (2011) found in the 1999-2000 school year 17% of African American kindergarten students were taught by teachers with non-standard qualifications. Teachers who are not highly qualified often lack the ability to deliver effective instruction to striving readers. Teachers without certifications had lower rates of student proficiency on state-standardized reading assessments when compared students taught by certified teachers (Betts et al., 2000; Hoffman, 2004). In addition to negatively impacting striving readers’ academic achievement in a single year, research by Darling-Hammond (2000) found when students are served by teachers who are not highly qualified in multiple years in a row, they performed more poorly academically than students who repeatedly had highly qualified teachers. When striving readers experience a lack of consistent access to highly qualified teachers the achievement gap between them and their peers continues to grow, contributing to the Matthew Effect (Westbrook et al., 2019). As a result of being placed with less qualified teachers, striving readers often have less access to complex texts and are given less rigorous assignments which focus on repetition of discrete skills rather than development of critical thinking skills (Applebee et al., 2003; Gamoran et al., 1995; Westbrook et al., 2019). Conversely, providing highly qualified teachers to striving
readers had a positive impact on the academic performance of striving readers. According to a study by Graves (2011), students taught by teachers with state certification were one and a half times more likely to perform on grade level in reading achievement than their peers who were not.

Research has shown striving readers are greatly impacted by the quality of their teacher as measured by teacher qualifications (Betts et al., 2000; Darling-Hammond 2000; Graves 2011; Westbrook et al., 2019). When striving readers are provided with less qualified teachers it increases the achievement gap (Applebee et al., 2003; Gamoran et al., 1995; Stanovich, 1986; Westbrook et al., 2019). Striving readers who had highly qualified teachers performed better on reading achievement assessments (Applebee et al., 2003; Gamoran et al., 1995). One proposal to increase the amount of highly qualified teachers of striving readers, particularly for minorities and those affected by poverty, is to increase professional development for veteran teachers (Hoffman, 2004; Rice, 2010). Another approach to increasing the quality of teachers of striving readers, specifically at the secondary level, is to train content area teachers in reading strategies (Savitz, 2020; Shuman, 2006). Research has shown teachers who have participated in Content Area Reading (CAR) professional development provided more engaging, student-centered instruction with more emphasis on strategies which enable text interpretation than teachers who did not have the same training (Lupo et al., 2020; Oliveira, 2015; Toste et al., 2018).
Research-based Teaching Strategies that Work for Striving Adolescent Readers

Interventions designed to lessen the achievement gap between striving readers and their peers have changed drastically over the last two centuries (Alexander & Fox, 2019; Collier & Richardson, 1971; Scammacca, et al., 2016). Initial efforts to alleviate adolescent reading difficulties in the late 1800s began with attempts to locate and remediate perceived physical ineptitudes (Gates, 1927; Ortlieb, 2012). However, the focus on reading remediation shifted to cognitive abilities by 1917, according to research by Thorndike, which analyzed student mistakes while reading paragraphs aloud. Modern research has focused on the background knowledge the reader as an individual brings to the reading process and how the socially constructed nature of reading is impacted by the collaborative environment of the learner (Alexander, 1998; Alexander & Murphy, 1998; Alexander, Murphy, et al., 1996; Reynolds et al., 1996; Samuels & Kamil, 1984). Based on the literature, there were five research-based teaching strategies identified as crucial for success of teaching secondary reading, and they were:

- collaboration (Fall, Webb & Chudowsky, 2000; Langer, 2001; Murphy et al., 2018; Reznitskaya et al., 2001),
- explicit teaching of specific reading strategies (Alfassi, 2004; Block, 1993; Guthrie, et al., 2000),
- student choice (Guthrie, & Humenick, 2004; Moje, 2006),
- explicit teaching of vocabulary (Cunningham & Stanovich, 1998; Hattie, 2012; Schatschneider et al., 2004; Sobolak, 2011), and
standards-based lesson design and implementation (Florida Department of Education, 2021a; Marzano, 2018; Wiggins & McTighe, 2005).

The literature regarding each of these research-based teaching strategies (RBTS) is detailed in this section.

One of the literature-based recommended strategies for use with striving adolescent readers is collaboration. Collaboration as a literacy strategy refers not only to working together in pairs, small groups, or as a whole class, but also to having text-based discussions in those settings. Text-based discussions have improved students’ reading comprehension from elementary school through high school (Fall et al., 2000; Murphy, et al., 2018; Reznitskaya et al., 2001). In fact, Langer (2001) found 96% of middle and high school teachers at higher performing schools created environments which encouraged extensive text-based discussion. Both short, collaborative discussions of only ten minutes (Fall et al., 2000) and scheduled, repeated discussions of up to twenty minutes, biweekly, for five weeks (Reznitskaya et al., 2001) have been found successful in raising students’ reading comprehension scores when compared to a control group. Additionally, Reznitskaya et al. (2001) documented that collaborative, text-based discussions are transferable to improve writing skills, including writing with more arguments, counterarguments, rebuttals, and use of more text-based evidence, in comparison to the writing of students who did not participate in discussions.

Reciprocal teaching is another type of collaboration (Palincsar et al., 1987). According to Alfassi (2004), reciprocal teaching helped students who could successfully decode, or read fluently, but had difficulty with reading comprehension. In a study of reciprocal teaching by Alfassi (2004), the teacher guided students in the practice of a new reading strategy, and then
students worked in small groups, where each one took turns facilitating the same strategy. When applied to high school reading classes, Alfassi (2004) discovered students who participated in reciprocal teaching outperformed their peers in the control group by over one standard deviation.

Another literature-based teaching strategy which contributes to the success of teaching adolescent striving readers is the explicit teaching of specific reading strategies. In both high school and elementary school studies, students who participated in explicit teaching of reading strategies over the course of several weeks outperformed students in control groups on standardized reading comprehension tests (Alfassi, 2004; Block, 1993). The high school study by Alfassi (2004) focused on four reading strategies and took place over twenty days. The elementary study by Block (1993) focused on six strategies over thirty-two weeks. Both studies show a slower pacing of teaching strategies to students and teaching one new strategy every one to five weeks worked best to improve student achievement (Alfassi, 2004; Block, 1993). Further, Guthrie et al. (2000) found students who were explicitly taught specific reading strategies reported using the strategies more frequently than students in a control group.

Providing striving readers with choice is another strategy recommended by research. A study by Guthrie, and Humenick (2004) showed when students exercised autonomy and choice in their reading selections and assignments their motivation and engagement in reading increased. Further, Guthrie, and Humenick (2004) found striving readers of all reading levels were best served when teachers have interesting texts about the same topic available in multiple levels of difficulty. Moje (2006) found the texts adolescents must read in school could be motivating or demotivating. Both text difficulty and lack of student choice in selecting texts often affected reader motivation (Moje, 2006). Guthrie and Humenick (2004) also found student
choice should not be limited to what students read but should also be exercised in the types of activities students completed along with their reading.

Explicit vocabulary instruction is an additional research-based teaching strategy suggested for use with adolescent striving readers. Vocabulary acquisition is an important part of learning to read; and an equally important component of teaching adolescent literacy (Schatschneider et al., 2004; Sobolak, 2011). To effectively teach vocabulary requires both explicit vocabulary teaching (Hattie, 2012) and exposure to new words through reading (Cunningham & Stanovich, 1998). Research by Sobolak (2011) found increasing dedicated time to explicitly teach vocabulary increases all students’ vocabulary knowledge and increases the probability of closing the vocabulary gap between students from high and low socioeconomic statuses. According to Schatschneider et al. (2004) as students matriculate from elementary to secondary school vocabulary plays an increasing role in aiding their understanding of texts as they grow in complexity.

An additional research-based teaching strategy recommended to use with striving adolescent readers is the planning and implementation of standards-based lesson plans. Standards-based lesson should be created using backwards design (Wiggins & McTighe, 2005). Backwards design is a method of lesson planning in which the goal of the student learning is identified first, and then the goal is deconstructed into smaller steps which students must master to meet the final learning goal (Wiggins & McTighe, 2005). By beginning with the end in mind, teachers clarify the goal of learning for students at the start of the learning experience. Further, backwards design helps students understand what they should be learning by the end of each lesson, and how it relates to larger learning goals. In backwards design the assessment is
designed beforehand so instruction aligns to the assessment (Wiggins & McTighe, 2005). To implement standards-based reading lessons, teachers must explicitly teach students the meaning of the language of the standards and have them track their proficiency of the standards using scales and rubrics (Marzano, 2018). Having students self-reflect on their abilities and tracking how they learn ensures they learn the standard being taught and aides in improving their perceived, and thus their actual, self-efficacy (Bandura, 1993; Marzano, 2018).

While numerous reading interventions exist, this study focused on five which recur throughout the literature regarding striving adolescent readers: collaboration (Fall, Webb & Chudowsky, 2000; Langer, 2001; Murphy et al., 2018; Reznitskaya et al., 2001), explicit teaching of specific reading strategies (Alfassi, 2004; Block, 1993; Guthrie, et al., 2000), student choice (Guthrie, & Humenick, 2004; Moje, 2006), explicit teaching of vocabulary (Cunningham & Stanovich, 1998; Hattie, 2012; Schatschneider et al., 2004; Sobolak, 2011), and Standards-based lesson design and implementation (Florida Department of Education, 2021a; Marzano, 2018; Wiggins & McTighe, 2005). By implementing these research-based reading strategies, educators can help mitigate the factors that lead to achievement gaps for adolescent striving readers.

Summary

Striving readers who enter school behind their peers in literacy continue to fall behind while their counterparts continue to excel, creating an achievement gap (Gallagher, 2009; Snow & Biancarosa, 2003; Sobolak, 2011). This achievement gap is known as the Matthew Effect in
reading, which was used as the theoretical framework of this study (Stanovich, 1986). The expanding nature of this achievement gap renders it necessary to understand how readers interact with the text, so remediation is possible. The understanding of the process of reading this study employs as a conceptual framework is the interactive model of reading. The interactive model of reading explains how complex and simple processes occur simultaneously when reading, and that the reader brings unique background knowledge to interpret the text (Rumelhart, 1985; Stanovich, 1980).

National policies have greatly impacted the implementation of reading interventions and how funding for reading is obtained (Collier & Richardson, 1971; National Reading Panel, U.S., 2000; U.S. Department of Education, 2009; United States, 1983). Additionally, the understanding of reading research has evolved throughout the last six decades before arriving at the current understanding of reading as both an occurrence unique to each individual reader and as a collaborative process that occurs in the shared environment of the learners (Alexander, 1998; Alexander & Fox, 2019; Alexander & Murphy, 1998; Alexander, Murphy, et al., 1996; Clay, 1967; Clay, 1976; Reynolds et al., 1996; Samuels & Kamil, 1984). Although the current understanding of the process of reading and how it occurs is much more developed, an achievement gap persists between striving readers and their peers. Groups which are overrepresented in striving readers are minorities, males, and students from low SES households (Chui & McBride-Chang, 2006; Guthrie, et al., 2012; Kavanagh, 2019; Roigers et al., 2020; Sarroub & Pernicek, 2016; Snow & Biancarosa, 2003; Stanovich, 1986; U.S. Department of Education, 2019b). Though these achievement gaps persist, research has provided a wealth of strategies to address the achievement gaps, including culturally responsive teaching, (Landson-
Billings, 1995), increasing student engagement with texts (Fantuzzo et al., 2012; Graves, 2011; Landson-Billings, 1995), and increasing students perceived and actual self-efficacy by communicating high literacy expectations to students (Bandura 1993; Good, 1987; Good & Brophy, 2002; Guthrie and Wigfield, 2000; Linnenbrink, & Pintrich, 2003; Taylor et al., 2003).

Conflicting research exists regarding whether entire novels should be read in intensive reading classes with adolescent striving readers. Some researchers claim if striving readers do not have the opportunity to engage with entire novels in class they are denied the ability to develop reading stamina by analyzing long, complex works (Gallagher, 2009; Greene, 2018; Sacks, 2012; Sacks, 2019). Still, other researchers claim striving readers’ needs can be met by reading excerpts in place of entire novels (Greene, 2018; Sacks, 2019). One way striving readers can be best served is by being placed with qualified teachers. Striving readers who had qualified teachers performed better on reading achievement assessments than those who were placed with unqualified teachers (Darling-Hammond, 2000; Graves, 2011). However, striving readers, especially those who were minorities and affected by poverty, were still often placed with non-certified teachers (Betts et al., 2000; Darling-Hammond 2000; Graves, 2011; Hoffman, 2004; Kumar & Waymack, 2014). Being placed with less qualified teachers contributed to an increase in the achievement gap between striving readers and their peers (Westbrook et al., 2019).

Although many reading interventions exist, this study focused on five research-based teaching strategies for adolescent striving readers which recurred throughout the literature. Implementation of these research-based reading strategies has been proven as effective to lessen the achievement gap experienced by adolescent striving readers.
CHAPTER 3: METHODOLOGY

Introduction

The primary objective of this research was to analyze the relationship between teaching placement in one of three Reading Treatments, whether students were taught with entire novels, and students’ language arts skills as measured by their Grade 10 Florida Standards Assessment English Language Arts scores (FSA ELA). This quantitative research was conducted using a posttest only quasi-experimental design (Lunenburg & Ibry, 2008; NCEE, 2008). Although students were not randomly assigned to either intervention, the methods of assignment were different for each. Participants were assigned to Reading Treatments using cut-off scores, which were determined by the district based on 2018 FSA ELA scores (Florida Department of Education, 2020a). Whether students were taught with entire novels as texts was a decision implemented at the classroom level. Students in the same class were either all taught with entire novels, or all taught without entire novels. Data regarding the secondary reading teachers were collected from a sample of teachers in one Florida school district using an online questionnaire. Measures of students’ academic performance in ELA and demographic traits were provided by the school district in which this study was conducted.
Participants

This research included both student and teacher participants. The school district provided the contact information of 52 secondary reading teachers who taught students who took the Grade 10 FSA ELA in the Spring of 2019. The researcher was unable to reach 16 of the teachers, two were substitute teachers and 14 were no longer employed by the school district. Out of the remaining 36 teachers invited to participate in the survey, 13 completed the survey, which was a response rate was 36.111%. However, data from five of the teacher surveys were unusable because their students did not have FSA ELA scores, reducing the sample to eight teachers. Of those, two teachers taught without the use of entire novels and six teachers taught using entire novels.

As for student participants, the target population of this study was secondary reading students. This study was conducted using student participants from one suburban Florida public school district, from the 2018-2019 school year. Cluster sampling occurred because student participants were chosen based on enrollment in one of the three Reading Treatments, so entire classes of students were chosen (Fraenkel & Wallen, 2009). All student participants were taught by the eight teachers who completed the survey. Participants were largely comprised of tenth grade students, but some were eleventh or twelfth grade reading students in 2018-2019. Eleventh and twelfth student participants had not previously passed the Grade 10 FSA ELA. Tenth grade participants did not show proficiency on the Grade 9 FSA ELA. These students were chosen because they had to pass the Grade 10 FSA ELA with a Level 3 or higher on a five-level scale as a graduation requirement (Florida Department of Education, 2020b). Participants with Individual
Education Plans (IEPs) whom the state deemed their "abilities cannot be accurately measured by the assessments” were exempt from this graduation requirement (Florida Department of Education, 2020b, p. 3). Student participants were not included if they attended the alternative high school, virtual school, the Juvenile Delinquency school, and the hospital and homebound school in the school district. Students from the Juvenile Delinquency and the hospital and homebound schools were not included due to the transient nature of their student enrollment.

Instrumentation

Two instruments were used in this study, the original survey, Teaching Secondary Reading Using Novels (TSRUNS), and the Grade 10 FSA ELA. This section also includes how participants were grouped for data analysis.

Survey

TSRUNS was collaboratively developed by the researcher with input from experts in reading and psychometrics to measure approaches to teaching secondary reading and teacher qualifications. TSRUNS is available for review in APPENDIX A. TSRUNS included questions about (a) whether students were taught secondary reading using entire novels, (b) the extent to which research-based teaching strategies were implemented when using entire novels, (c) teacher
certification type, (d) teacher reading endorsement status, and (e) teacher Content Area Reading (CAR) credential status.

The questionnaire was refined through three phases of development. In Phase One of the survey development, the researcher identified four best practices to teach adolescent striving readers based on the current literature:

- collaboration (Fall et al., 2000; Langer, 2001; Murphy et al., 2018; Reznitskaya et al., 2001),
- explicit teaching and modeling of specific reading strategies (Alfassi, 2004; Block, 1993; Guthrie et al., 2000),
- student choice (Guthrie, & Humenick, 2004; Moje, 2006), and
- communicating high literacy goals to students (Good, 1987; Good & Brophy, 2002; Guthrie & Humenick, 2004).

In Phase One, the survey had one multiple-choice question pertaining to three of the four best practices: collaboration, explicit teaching and modeling of specific reading strategies, and student choice. The question regarding communicating high literacy goals to students was formatted as an open-ended question to gather data intended for use in the discussion section of the findings. Feedback from literacy and psychometric experts was incorporated to improve the content of the survey and the design of the survey. Feedback from the literacy experts in Phase One of the survey was used to establish content validity of the survey tool (Lunenburg & Irby, 2008). One result of implementing feedback was the language in the survey was changed from “novel study” to “using at least one complete novel in your reading class.” The change in language better reflected that student focus was on studying reading strategies through use of
novels, instead of solely studying the content of the novels. Additionally, the researcher expanded the list of four research-based teaching strategies to include a fifth and sixth component:

- Explicit teaching of vocabulary (Cunningham & Stanovich, 1998; Hattie, 2012; Schatschneider et al., 2004; Sobolak, 2011), and
- Standards-based lesson design and implementation (Florida Department of Education, 2021a; Marzano, 2018; Wiggins & McTighe, 2005).

An additional change implemented based on feedback in Phase One of the survey development was the addition of ranking questions regarding collaboration, explicit teaching and modeling of specific reading strategies, student choice, explicit teaching of vocabulary, and standards-based lesson design and implementation. These questions were intended to provide a larger data set from which to draw conclusions for the Research-Based Teaching Strategies (RBTS). Further, additional answer choices were added to each RBTS question pertaining to extended text-based discussions, which expanded the answer choices from five to seven.

In Phase Two of development the survey was piloted. The pilot was distributed via a weblink to an online survey to educators from the district in which the study took place and from surrounding school districts. To avoid diluting the population for the final survey the pilot was not distributed to those employed in the district being studied if they taught secondary reading during the 2018-2019 school year. Participants of the pilot included 12 educators. Of those surveyed, seven were current or former secondary reading teachers in the school district being studied. Five participants were colleagues in the field of education. Feedback provided by the
pilot in Phase Two of the survey development also contributed to content validity (Lunenburg & Irby, 2008).

In the Phase Three of development the researcher amended TSRUNS based on participant feedback from the pilot study. In this Phase of development, the questions regarding self-reported fidelity to implementing RBTS was determined by 11 survey questions. The questions consisted of one open-ended question regarding communicating high expectations of literacy to students, and two questions for each of the remaining five components, which included one ranking question and one multiple choice question for each teaching strategy. The six research-based teaching strategies were as follows:

- Collaboration (Fall et al., 2000; Langer, 2001; Murphy et al., 2018; Reznitskaya et al., 2001),
- Explicit teaching and modeling of specific reading strategies (Alfassi, 2004; Block, 1993; Guthrie et al., 2000),
- Student choice (Guthrie, & Humenick, 2004; Moje, 2006),
- Communicating high literacy goals to students (Good, 1987; Good & Brophy, 2002; Guthrie & Humenick, 2004),
- Explicit teaching of vocabulary (Cunningham & Stanovich, 1998; Hattie, 2012; Schatschneider et al., 2004; Sobolak, 2011), and
- Standards-based lesson design and implementation (Florida Department of Education, 2021a; Marzano, 2018; Wiggins & McTighe, 2005).
The final draft of TSRUNS was submitted to the Internal Review Board (IRB) on October 1\textsuperscript{st}, 2020, and was approved on October 14\textsuperscript{th}, 2020. The IRB approval letter is available for review in APPENDIX B.

After further consultation of research experts to improve the psychometric design of the survey it was determined the ranking questions were not an accurate measure of whether teachers implemented RBTS. It was also determined that the open-ended question regarding teachers communicating high literacy goals to students did not yield pertinent data to measure teacher implementation of the strategy. Therefore, the open-ended question and the ranking questions were not used to determine teacher fidelity to implementing RBTS. Choosing not to use the data collected from these questions reduced the number of RBTS to five, removing the strategy of communicating high literacy goals to students.

Survey question 1 of TSRUNS was used to answer all six research questions because it revealed which students were taught with and without entire novels. Questions 7, 11, and 15 collected data regarding teacher certification type, CAR credential status, and reading endorsement status. Questions 8, 12, 13, 16, and 17 of TSRUNS were the closed-ended questions regarding RBTS. Each of the questions listed seven strategies. Teachers were instructed to check each of the strategies they used when teaching secondary reading using entire novels. There was one question for each of the five constructs of RBTS being measured, (a) collaboration (b) explicit teaching and modeling of specific reading strategies (c) student choice (d) explicit teaching of vocabulary and e) standards-based lesson design and implementation. The five questions were scored from zero to seven points each, on a continuous scale of 0–35. Therefore, the self-reported fidelity to teaching secondary reading using RBTS section of the survey
consisted of a total of 35 points. Scores were then treated as interval data and divided into three 
groups with equal distance between them (Fraenkel & Wallen, 2009). Scores ranging from 0–11 
were classified as low fidelity, scores from 12–23 were classified as moderate fidelity, and scores 
of 24–35 were classified as high fidelity.

Internal consistency of the five RBTS questions was determined by conducting a Kuder-
Richardson-20 test (KR-20) (Lunenburg & Irby, 2008). To enable use of a KR-20, the data from 
the RBTS survey questions which asked participants to check all the teaching strategies they 
implemented was converted into dichotomous answers. The KR-20 was .988, which indicated 
excellent internal consistency reliability for the questions regarding RBTS (Heidel, 2021).

Florida Standards Assessment of English Language Arts

The second instrument used in this research was the Grade 10 FSA ELA. The FSA ELA 
is a summative test comprised of a reading assessment and a writing assessment to measure 
student mastery of the Florida Language Arts Standards (LAFS) (Florida Department of 
Education, 2019). The scores from the two assessments are combined to create the 
Developmental Scale Score (DSS), which is divided into five Achievement Levels (Florida 
Department of Education, 2019e). This study analyzed Grade 10 FSA ELA DSS as an indication 
of students’ language arts skills. The 2018-2019 Grade 10 FSA ELA used several measurements 
of reliability and validity. Reliability measures of how consistent scores are on the same 
instrument (Lunenburg & Irby, 2008). The Grade 10 FSA ELA used internal consistency to
measure reliability. Validity measures the degree to which the test instrument measures what is intended to measure (Lunenburg & Irby, 2008). The Grade 10 FSA ELA was measured for validity using content validity.

The reliability of the Grade 10 FSA ELA was demonstrated by internal consistency and marginal reliability. Three alpha measurements were used to measure internal consistency, because there are three question types on the Grade 10 FSA ELA, (a) multiple-choice, (b) short-response, (c) extended-response. First, the Cronbach alpha was measured at a .92. To account for the mixed item types on the test the stratified alpha and Feldt-Raju alpha were also measured. The stratified alpha was a .92 and the Feldt-Raju was a .91. Marginal reliability measures the overall reliability of a test using average conditional standard errors. The marginal reliability for grade 10 FSA ELA was .88.

Content validity of the Grade 10 FSA ELA was demonstrated by alignment of each test question to one of the five reporting categories which comprised the LAFS which were: (a) key ideas and details, (b) craft and structure, (c) integration of knowledge and ideas, (d) language and editing, and (e) task text-based writing (Florida Department of Education, 2019). Further, the Grade 10 FSA ELA demonstrated content validity by including, “curricular, psychometric, and policy experts” to evaluate the alignment of test items to the standards. (Florida Department of Education, 2019, p. 43). The FSA ELA validity was also confirmed by a third party independent study which found the test items were aligned to the standards (Florida Department of Education, 2019).
Demographics

Student demographic data of gender, race or ethnicity, and socioeconomic status (SES) were collected from the school district studied. At the high school level, race and ethnicity can be identified by parents or by the student themselves (Florida Department of Education, 2009). If the parent or student refuses to identify an ethnicity or race then, “the school or district may rely on previous records or make a visual determination” (Florida Department of Education, 2009). Participants race or ethnicity were coded in the data as Native American, Pacific Islander/Native Hawaiian, Asian, Multi-racial, White, or Black. For this study, racial categories of Native American, Pacific Islander/Native Hawaiian, Asian and Multi-racial, were combined into one category labeled Other because there were too few participants in each category. Students who were Black, Hispanic, and White remained categorized as such in this study. Socioeconomic status was determined by student eligibility for Free or Reduced-price Lunch (FRL). Participants eligible for FRL were classified as low SES in this study.

Treatments

Student participants in this study were assigned to one of three Reading Treatments. All three Reading Treatments were comprised of students who had not previously passed the FSA ELA and used an online reading program (Florida Department of Education, 2020a). Only
students in Reading Treatment 1 used an online reading program which focused on increasing their reading fluency (Florida Department of Education, 2020a). Reading Treatment 1 was the most intensive remediation class. Students in Reading Treatment 2 used a different online reading program from those in Reading Treatment 1. The online program in Reading Treatment 2 focused on improving reading comprehension, as these students were not disfluent readers (Florida Department of Education, 2020a). Students in Reading Treatment 3 used the same online reading program as those in Reading Treatment 2, which focused on reading comprehension. However, students in Reading Treatment 3 were taught by Content Area Reading (CAR) credentialed teachers who were trained to infuse reading instruction a content area class (Florida Department of Education, 2020a).

Students were part of one of two novel use conditions. Either they were taught using entire novels as texts or they were not. Students who did not use entire novels used extract texts, or text excerpts. The choice of whether to teach reading using entire novels as texts was implemented at the classroom level. Therefore, all students in a given classroom were either all taught using entire novels or all taught without the use of entire novels.

Data Collection

Data were collected after receiving written approval to proceed with the research from the Internal Review Board (IRB) on October 14, 2020, which is available for review in APPENDIX B. After IRB approval was received, the researcher submitted a completed Request for Permission to Research form and accompanying requested documentation to the Florida
school district in which the study was conducted. The Request for Permission to Research is available in APPENDIX C. The Request for Permission to Research was approved by the school district on December 11, 2020. The approval letter is available in APPENDIX D for review.

After approval was granted by the school district, the researcher worked closely with one district employee to obtain the approved data. The Grade 10 FSA ELA scores, student demographic data of race or ethnicity, gender, socioeconomic status, and teacher contact information were provided by the school district. The school district employee who obtained the de-identified data created a unique personal identification number (PIN) for each teacher so they could respond to the survey anonymously. The teacher was represented in the data only by the PIN, and students were associated to the teachers using the same PIN. The surveys were distributed through one-page letters, which included a web-based link to the survey tool, as well as a Quick Response (QR) code to the same link (Fraenkel & Wallen, 2009). The one-page survey invitation letter is available in APPENDIX E for review.

To disseminate the surveys, the researcher provided the school district employee with printed copies of the one-page survey invitation which included a blank for the district employee to write each teacher’s PIN. The school district employee wrote in the PIN and then sealed the letters in envelopes which were labeled by the teacher’s first and last names and current schools. The researcher delivered the sealed envelopes to the teachers’ physical mailboxes at each school. This process was repeated in two weeks, to ensure each participant received an initial invitation and a reminder to participate. Teacher’s PINs were collected from the surveys in place of identifiable data such as names. A total of 52 teachers were identified through PINs in the data provided to the researcher. Of those, 16 were unreachable. Fourteen of those who were
unreachable were no longer working with the school district and the remaining two were substitute teachers no longer serving in those roles. Respondents were given one month from date of the first survey distribution to complete the online survey.

The IRB Closure letter was received on June 15, 2020, and is available for review in APPENDIX F. All data are stored on a flash drive at the principal investigator’s residence and are locked in a filing cabinet when not in use. All student data was provided to the researcher by the district already de-identified. The district was kept anonymous in the study. Data from this study will be safeguarded for five years and then destroyed.

Research Designs and Data Analysis

This quantitative research was conducted using a posttest only quasi-experimental design (Lunenburg & Ibry, 2008; NCEE, 2008). Student participants were assigned to one of three Reading Treatments as determined by the school district based on their 2018 FSA ELA scores (Florida Department of Education, 2020). Students were assigned to one of two novel use conditions, determined by whether they were taught using entire novels. The choice of whether to teach reading using entire novels as texts was implemented at the classroom level. The relationship between whether novels were included in secondary reading classes and student language arts skills were analyzed by the following student-based independent variables: (a) Reading Treatment, (b) race or ethnicity, (c) gender, and (d) SES. Measures of students’ academic performance in language arts and demographic traits were provided by the school district in which this study was conducted. Student gender type was male or female, and student
SES level was either low or not low. Student race or ethnicity were either Other, Black, Hispanic, or White.

The relationship between whether novels were included in secondary reading classes and student language arts skills was analyzed for the following teacher-based independent variables; (a) RBTS, (b) certification type, (c) CAR credential status, and (d) reading endorsement status. All teacher qualification data were self-reported on the survey tool TSRUNS. Teacher certification was either temporary or professional. Teacher implementation of RBTS were classified as either low, moderate, or high. Teachers were either CAR credentialed, or they were not. Teachers were also either reading endorsed or they were not.

The dependent variable for all research questions were Grade 10 FSA ELA scores. A series of factorial ANOVAs and post hoc Kruskal-Wallis tests were conducted to answer the six research questions. The variables and statistical analyses used to answer each question are in Table 4.

Table 4 Variables and Statistical Tests

<table>
<thead>
<tr>
<th>Research Question #</th>
<th>Independent variables</th>
<th>Statistical test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reading Treatment</td>
<td>Two-way ANOVA</td>
</tr>
<tr>
<td></td>
<td>Novel use</td>
<td>Kruskal Wallis</td>
</tr>
<tr>
<td>2</td>
<td>Reading Treatment</td>
<td>Three-way ANOVA</td>
</tr>
<tr>
<td></td>
<td>Novel use</td>
<td>Kruskal Wallis</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Reading Treatment</td>
<td>Three-way ANOVA</td>
</tr>
<tr>
<td></td>
<td>Novel use</td>
<td>Kruskal Wallis</td>
</tr>
<tr>
<td></td>
<td>Race or ethnicity</td>
<td></td>
</tr>
</tbody>
</table>
### Research Question #

<table>
<thead>
<tr>
<th>Research Question #</th>
<th>Independent variables</th>
<th>Statistical test</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Reading Treatment</td>
<td>Three-way ANOVA</td>
</tr>
<tr>
<td></td>
<td>Novel use</td>
<td>Kruskal Wallis</td>
</tr>
<tr>
<td></td>
<td>SES</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Reading Treatment</td>
<td>Two-way ANOVA</td>
</tr>
<tr>
<td></td>
<td>Teacher strategy use</td>
<td>Kruskal Wallis</td>
</tr>
<tr>
<td>6</td>
<td>Reading Treatment</td>
<td>A series of two-way ANOVAs</td>
</tr>
<tr>
<td></td>
<td>Certification type</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CAR credentials</td>
<td>Kruskal Wallis</td>
</tr>
<tr>
<td></td>
<td>Reading Endorsement</td>
<td></td>
</tr>
</tbody>
</table>

*Note: The dependent variable for all research questions were Florida Standards Assessment of English Language Arts Developmental Scale Scores*

## Summary

Participants in this study were teachers who taught one of three different Reading Treatments for the 2018-2019 school year and their students. The teachers completed a survey which was created collaboratively by the research, reading, and psychometric experts. The survey collected data regarding teacher qualifications, whether students were taught secondary reading using entire novels, and self-reported fidelity of implementation of research-based teaching strategies. Grade 10 FSA ELA scores from the 2019 administration and student demographic data were obtained from the school district. Data were analyzed using factorial ANOVAs and post hoc Kruskal-Wallis tests to compare groups.
CHAPTER 4: RESULTS

Introduction

This quantitative, quasi-experimental study was conducted to analyze the relationship between students’ language arts skills and the use of entire novels in secondary reading classes. A series of factorial Analysis of Variances (ANOVAs) were used to identify interactions in the six research questions listed in Table 5. Kruskal-Wallis post hoc tests were used to analyze the significance of any interactions, simple effects and main effects. This chapter contains the following sections: introduction, statistical assumptions, results of each research questions, and a summary.

Table 5 Research Questions, Variables, and Statistical Tests

<table>
<thead>
<tr>
<th>Research question</th>
<th>Independent variable</th>
<th>Statistical test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Does Reading Treatment and whether novels are included in reading classes affect students’ language arts skills?</td>
<td>Reading Treatment, Novel use</td>
<td>Two-way ANOVA, Kruskal-Wallis</td>
</tr>
<tr>
<td>2 Does Reading Treatment, whether novels are included in reading classes, and students’ gender affect students’ language arts skills?</td>
<td>Reading Treatment, Novel use, Gender</td>
<td>Three-way ANOVA, Kruskal-Wallis</td>
</tr>
<tr>
<td>3 Does Reading Treatment, whether novels are included in reading classes, and students’ race or ethnicity affect students’ language arts skills?</td>
<td>Reading Treatment, Novel use, Race or ethnicity</td>
<td>Three-way ANOVA, Kruskal-Wallis</td>
</tr>
</tbody>
</table>
Research question | Independent variable | Statistical test
--- | --- | ---
4 Does Reading Treatment, whether novels are included in reading classes, and students’ socioeconomic status (SES) affect students’ language arts skills? | Reading Treatment, Novel use, SES | Three-way ANOVA, Kruskal-Wallis

5 Among students in reading classes in which novels were included, does Reading Treatment and teacher self-reported fidelity to implementing research-based teaching strategies affect students’ language arts skills? | Reading Treatment, Teacher strategy use | Two-way ANOVA, Kruskal-Wallis

6 Among students in reading classes in which novels were included, does Reading Treatment and teachers’ certification type, Content Area Reading (CAR) credential status, and reading endorsement status affect students’ language arts skills? | Reading Treatment, Certification type, CAR credentials, Reading endorsement | A series of two-way ANOVAs, Kruskal-Wallis

Note: The dependent variable for all research questions were Florida Standards Assessment of English Language Arts Developmental Scale Scores

Statistical Assumptions

Data should meet the following statistical assumptions to conduct factorial ANOVAs with valid results: independent observations, no outliers, normality, and homogeneity. When data have independent observations the value of one observation is not influenced by the value of other observations (Statistics Solutions, 2020). There is not a statistical test to account for the assumption of independence of observations. The independent observations assumption was likely violated for all six research questions. Three reasons the assumption of independent observations was likely violated were cluster sampling, nested independent variables, and selection bias. Cluster sampling occurs when participants are chosen as groups, not individuals.
In this research, cluster sampling occurred because students were chosen based on their placement in secondary reading classes. Nesting of independent variables occurs when one variable appears only within a single level of another variable (American Psychological Association, 2020). For example, in this study, novel use was the same for all participants in any given classroom, because it was a classroom level decision whether to use entire novels as texts. Selection bias occurs when participants’ selection of a treatment condition may unintentionally result in individual or group differences which are related to the variables of the study (Lund Research Limited, 2012). At the teacher level, selection bias may have occurred because teachers were not randomly assigned to novel condition, it was a school or teacher-based decision. At the student level, selection bias may have occurred in this study because students were placed in each Reading Treatment according to homogenous grouping based on their prior year’s FSA ELA scores.

The assumption of no outliers means there are not extremely high or low scores in the distributions of the dependent variables (Statistics Solutions, 2020). In this study, the assumption of no outliers was tested by an analysis of boxplots which were created using Statistical Package for the Social Sciences (SPSS). Data points 1.5 times below the first interquartile range and 1.5 times above the above the third interquartile were considered outliers (International Business Machines, 2016). The assumption of normality means data are distributed in a normal curve in each condition of the design (Statistics Solutions, 2020). This study conducted Shapiro-Wilk’s tests to assess the assumption of normality. The assumption of homogeneity of variances means the variances of the dependent variables must be approximately equal across all samples (Statistics Solutions, 2020). This research was conducted using Levene’s test of equality of error
variances to test the assumption of homogeneity. The assumptions of no outliers, normality, and homogeneity are unique to each research question, and are discussed in each research question results section of this chapter.

The researcher chose to proceed with the factorial ANOVAs despite any violations of assumptions both because ANOVAs are fairly robust to minor violations of assumptions and because there are no nonparametric equivalent tests which would address the violations of the assumptions. When the assumptions of normality or no outliers were violated, Kruskal-Wallis tests were conducted to interpret interactions and to identify the main effects or the simple main effects. Medians and interquartile ranges (IQR) were reported instead of means because of the outliers in the data.

**Research Question 1**

Research question 1: Does Reading Treatment and whether novels are included in reading classes affect students’ language arts skills?

A two-way ANOVA was conducted to assess whether there was an interaction effect between Reading Treatment and inclusion of entire novels on students’ language arts skills. Since all participants in Reading Treatment 2 were taught with entire novels, there is no comparison group for Reading Treatment 2. The two-way interaction only included groups from Reading Treatments 1 and 3. Descriptive statistics and the results of tests conducted for statistical assumptions for the remaining five groups are shown in Table 6.
Table 6 Assumption Tests Results and Descriptive statistics for Research Question 1

<table>
<thead>
<tr>
<th>Reading Treatment</th>
<th>Entire novels used</th>
<th>n</th>
<th>Outliers</th>
<th>Shapiro-Wilk’s p</th>
<th>Mdn</th>
<th>Interquartile range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No</td>
<td>15</td>
<td>None</td>
<td>.796</td>
<td>346.000</td>
<td>18.000</td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
<td>21</td>
<td>1 outlier &gt; Mdn</td>
<td>.199</td>
<td>322.000</td>
<td>20.500</td>
</tr>
<tr>
<td>2</td>
<td>Yes</td>
<td>210</td>
<td>4 outliers &lt; Mdn</td>
<td>&lt; .001</td>
<td>336.000</td>
<td>20.250</td>
</tr>
<tr>
<td>3</td>
<td>No</td>
<td>71</td>
<td>2 outliers</td>
<td>.484</td>
<td>346.000</td>
<td>20.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 outlier &gt; Mdn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 outlier &lt; Mdn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Yes</td>
<td>167</td>
<td>4 outliers</td>
<td>.113</td>
<td>339.569</td>
<td>12.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 outlier &gt; Mdn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 outliers &lt; Mdn</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a. There were no participants in Reading Treatment 2 taught without the use of entire novels.*

The violation of the assumption of independent observations was addressed at the beginning of this chapter. Four of the five distributions of ELA FSA scores had between one and four outliers, which violated the assumption of no outliers. The Shapiro-Wilk's tests indicated that the assumption of normality was met for all but one distribution. The Grade 10 FSA ELA scores were not normally distributed for Reading Treatment 2 when students were taught with entire novels, \( p < .001 \). The assumption of homogeneity of variances was also violated, \( F(4, 479) = 4.471, p = .001 \).

The two-way ANOVA indicated there was a statistically significant interaction between Reading Treatment and condition of novel use on students’ language arts skills, \( F(1, 479) = 13.475, \) partial \( \eta^2 = .027, p < .001 \). Since there was a statistically significant two-way interaction and most of the statistical assumptions were violated, the researcher conducted tests of simple main effects using the Kruskal-Wallis.

The Kruskal-Wallis indicated there was a statistically significant interaction between Reading Treatment and novel use condition on language arts skills in Reading Treatment 1, \( H(1) \)
In Reading Treatment 1, the median for students taught with entire novels was 322.000, with an interquartile range (IQR) of 20.500. The median for students taught without entire novels in Reading Treatment 1 was 346.000, with an IQR of 18.000. These results indicated in Reading Treatment 1 students taught using entire novels had significantly lower language arts skills than students who were taught without entire novels.

Among students in Reading Treatment 3, students taught with entire novels had significantly lower FSA ELA scores ($Mdn = 339.569$), with an IQR of 12.000, than students who were taught without entire novels ($Mdn = 346.000$), with an IQR of 20.000. These results indicated among students in Reading Treatment 3, students taught with entire novels had a lower level of language arts skills than students taught without entire novels.

Since the comparison group taught with text extracts in both Reading Treatments 1 and 3 performed better on the FSA ELA than students taught with entire novels, these results indicated that Reading Treatment interacted with novel use condition to effect FSA ELA scores. Although students taught without entire novels demonstrated better language arts skills than those taught with entire novels for both Reading Treatments, there was a greater difference among students in Reading Treatment 1 than 3 as illustrated in Figure 1.
Research Question 2

Research question 2: Does Reading Treatment, whether novels are included in reading classes, and students’ gender affect students’ language arts skills?

A three-way ANOVA was conducted to assess whether there was an interaction effect between Reading Treatment, novel use condition, and student’s gender on students’ language arts skills. Since there were no students in Reading Treatment 2 taught without entire novels, only eight of the 10 conditions could be tested in the three-way interaction.
The violation of the assumption of independent observations was addressed at the beginning of this chapter. Seven of the 10 distributions of ELA FSA scores had between one and four outliers, which violated the assumption of no outliers. The assumption of normality was met for all but two distributions. The assumption of homogeneity of variances was also violated, $F(9, 474) = 3.035, p = .002$. The descriptive data and results of the assumptions tests are shown in Table 7. Data could not be calculated for the Shapiro-Wilk’s test or IQR of female students in Reading Treatment 1 taught with text extracts due to small group size.

<table>
<thead>
<tr>
<th>Reading Treatmenta</th>
<th>Entire novels used</th>
<th>Gender</th>
<th>n</th>
<th>Outliers</th>
<th>Shapiro-Wilk’s p</th>
<th>Mdn</th>
<th>IQR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 No Male</td>
<td>2</td>
<td>None</td>
<td>-</td>
<td>335.000</td>
<td>.698</td>
<td>346.000</td>
<td>18.000</td>
</tr>
<tr>
<td>1 Yes Female</td>
<td>10</td>
<td>None</td>
<td>.963</td>
<td>319.000</td>
<td>26.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Yes Male</td>
<td>11</td>
<td>2 outliers &lt; Mdn</td>
<td>.031</td>
<td>322.000</td>
<td>21.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Yes Female</td>
<td>83</td>
<td>2 outliers &lt; Mdn</td>
<td>.072</td>
<td>341.000</td>
<td>17.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Yes Male</td>
<td>127</td>
<td>4 outliers &lt; Mdn</td>
<td>.010</td>
<td>334.000</td>
<td>20.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 No Female</td>
<td>39</td>
<td>1 outlier &lt; Mdn</td>
<td>.885</td>
<td>345.000</td>
<td>17.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 No Male</td>
<td>32</td>
<td>1 outlier &gt; Mdn</td>
<td>.401</td>
<td>346.500</td>
<td>9.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Yes Female</td>
<td>79</td>
<td>1 outlier &lt; Mdn</td>
<td>.949</td>
<td>343.000</td>
<td>19.000</td>
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<td></td>
</tr>
<tr>
<td>3 Yes Male</td>
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<td>.146</td>
<td>340.500</td>
<td>21.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: A – indicates data could not be calculated due to small group size.
a. No participants in Reading Treatment 2 were taught without the use of entire novels.

The ANOVA indicated there was not a three-way interaction between Reading Treatment, novel use condition, and gender, on students’ language arts skills, $F(1, 474) = .258$, partial $\eta^2 = .001, p = .611$. Only one of the three two-way interactions were statistically significant, which was the interaction between Reading Treatment and novel use condition as discussed in Research Question 1. There was not a statistically significant two-way interaction
on students’ language arts skills between Reading Treatment and gender, $F(2, 474) = .638$, partial $\eta^2 = .003$, $p = .529$, or between novel use condition and gender, $F(1, 474) = 473.510$, partial $\eta^2 = .004$, $p = 1.941$. Since there were no interactions with gender and most of the statistical assumptions were violated, the researcher examined the main effect of gender on ELA using the Kruskal-Wallis.

The Kruskal-Wallis indicated there was a significant effect of gender on students’ language arts scores, $H(1) = 10.367$, $p = .001$. Figure 2 shows male students had lower FSA ELA scores than female students. The median for male students was 337.000, with an interquartile range (IQR) of 21. The median for female students was 343.000, with an IQR of 18. These data indicated female students had higher levels of language arts skills than male students. The two-way interaction between Reading Treatment and novel use condition on students’ language arts skills was statistically significant as discussed earlier in this chapter.

Figure 2  Kruskal-Wallis Gender Boxplot, Research Question 2
Research Question 3

Research question 3: Does Reading Treatment, whether novels are included in reading classes, and students’ race or ethnicity affect students’ language arts skills?

A three-way ANOVA was conducted to assess whether there was an interaction effect between Reading Treatment, condition of novel use, and student’s race or ethnicity on students’ language arts skills. Since all participants in Reading Treatment 2 were taught with entire novels there is no comparison groups for Reading Treatment 2. Descriptive statistics and assumption results for the remaining 20 groups are displayed in Table 8. The three-way interaction was only included for groups other than Reading Treatment 2. Student racial categories of Native American, Pacific Islander/Native Hawaiian, Asian, and Multi-racial were collapsed one category labeled “Other” because there were too few participants in each respective group to conduct inferential tests. In cases where participants reported both race and ethnicity, only ethnicity was used. For example, if a participant identified as both Hispanic and White that student was classified as only Hispanic.

Table 8 Assumption Tests Results and Descriptive statistics for Research Question 3

<table>
<thead>
<tr>
<th>Reading Treatmenta</th>
<th>Entire novels used</th>
<th>Race or Ethnicitybc</th>
<th>n</th>
<th>Outliers</th>
<th>Shapiro-Wilk’s p</th>
<th>Mdn</th>
<th>IQR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No</td>
<td>Black</td>
<td>3</td>
<td>None</td>
<td>.288</td>
<td>340.000</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>No</td>
<td>Hispanic</td>
<td>4</td>
<td>None</td>
<td>.404</td>
<td>348.500</td>
<td>8</td>
</tr>
<tr>
<td>1</td>
<td>No</td>
<td>Other</td>
<td>5</td>
<td>None</td>
<td>.822</td>
<td>338.000</td>
<td>30</td>
</tr>
<tr>
<td>1</td>
<td>No</td>
<td>White</td>
<td>3</td>
<td>None</td>
<td>.661</td>
<td>346.000</td>
<td>-</td>
</tr>
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<td>Yes</td>
<td>Black</td>
<td>5</td>
<td>None</td>
<td>.944</td>
<td>325.000</td>
<td>48</td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
<td>Hispanic</td>
<td>7</td>
<td>None</td>
<td>.920</td>
<td>316.000</td>
<td>30</td>
</tr>
<tr>
<td>Reading Treatmenta</td>
<td>Entire novels used</td>
<td>Race or Ethnicitybc</td>
<td>n</td>
<td>Outliers</td>
<td>Shapiro-Wilk’s p</td>
<td>Mdn</td>
<td>IQR</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>---</td>
<td>----------</td>
<td>------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
<td>Other</td>
<td>2</td>
<td>None</td>
<td>-</td>
<td>326.500</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
<td>White</td>
<td>7</td>
<td>1 outlier &lt; Mdn</td>
<td>.562</td>
<td>320.000</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>Yes</td>
<td>Black</td>
<td>32</td>
<td>None</td>
<td>.513</td>
<td>330.000</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>Yes</td>
<td>Hispanic</td>
<td>72</td>
<td>4 outliers &lt; Mdn</td>
<td>.007</td>
<td>338.000</td>
<td>17</td>
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<tr>
<td>2</td>
<td>Yes</td>
<td>Other</td>
<td>7</td>
<td>None</td>
<td>.244</td>
<td>332.000</td>
<td>43</td>
</tr>
<tr>
<td>2</td>
<td>Yes</td>
<td>White</td>
<td>99</td>
<td>2 outliers &lt; Mdn</td>
<td>.009</td>
<td>339.000</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
<td>No</td>
<td>Black</td>
<td>7</td>
<td>1 outlier &lt; Mdn</td>
<td>.010</td>
<td>350.000</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>No</td>
<td>Hispanic</td>
<td>20</td>
<td>None</td>
<td>.415</td>
<td>346.000</td>
<td>13</td>
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<tr>
<td>3</td>
<td>No</td>
<td>Other</td>
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<td>.517</td>
<td>346.000</td>
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<td>3</td>
<td>No</td>
<td>White</td>
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<td>346.000</td>
<td>14</td>
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<td>3</td>
<td>Yes</td>
<td>Black</td>
<td>39</td>
<td>2 outliers &lt; Mdn</td>
<td>.177</td>
<td>341.000</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 outliers &gt; Mdn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Yes</td>
<td>Hispanic</td>
<td>45</td>
<td>None</td>
<td>.251</td>
<td>341.000</td>
<td>27</td>
</tr>
<tr>
<td>3</td>
<td>Yes</td>
<td>Other</td>
<td>6</td>
<td>None</td>
<td>.189</td>
<td>344.000</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>Yes</td>
<td>White</td>
<td>77</td>
<td>1 outlier &gt; Mdn</td>
<td>.383</td>
<td>341.000</td>
<td>20</td>
</tr>
</tbody>
</table>

Note: A – indicates data could not be calculated due to small group size.

a. No participants in Reading Treatment 2 were taught without the use of entire novels.
b. Other category includes: Native American, Pacific Islander/Native Hawaiian, Asian, and Multi-racial.
c. Participants’ classification of ethnicity as Hispanic is reported in place of race.

The violation of the assumption of independent observations was addressed at the beginning of this chapter. Six out of the 20 distributions of FSA ELA scores had between one and four outliers, which violated the assumption of no outliers. The Shapiro-Wilk's test indicated the assumption of normality was met for 16 out of 20 distributions as shown in Table 8. One group did not have a sufficient sample size to conduct a Shapiro-Wilks test, as shown in Table 8. FSA ELA scores were not normally distributed for (a) Hispanic students taught with entire novels in Treatment 2, (b) White students taught with entire novels in Reading Treatment 2, and (c) Black students taught without entire novels in Reading Treatment 3. The assumption of homogeneity was violated, as assessed by Levene’s test for equal variances, $F(19, 464) = 2.043$, $p = .006$. IQR could not be calculated for students in the following three distributions because
they had too few participants: (a) Black students in Reading Treatment 1 taught with text extracts, (b) White students in Reading Treatment 1 taught without novels, and (c) students in Other racial category taught with entire novels.

The ANOVA indicated there was not a statistically significant three-way interaction between Reading Treatment, novel use condition, and race or ethnicity, on students’ language arts skills, $F(3, 464) = .696$, partial $\eta^2 = .004, p = .555$. There was not a statistically significant two-way interaction between Reading Treatment and race or ethnicity on students’ language arts skills, $F(6, 464) = 1.404$, partial $\eta^2 = .018, p = .211$, or between novel use condition and race or ethnicity on students’ language arts skills, $F(3, 464) = 1.050$, partial $\eta^2 = .007, p = .370$. The two-way interaction between Reading Treatment and novel use condition was statistically significant as discussed earlier in this chapter.

Since there were no interactions with race or ethnicity and most of the statistical assumptions were violated, the researcher examined the main effect for race or ethnicity on FSA ELA scores using the Kruskal-Wallis. There was not a significant effect of race or ethnicity of students’ language arts skills, $H(3) = 4.202, p = .240$. These results indicated students’ language arts skills were not affected by their race or ethnicity, regardless of Reading Treatment or novel use condition.

**Research Question 4**

Research question 4: Does Reading Treatment, whether novels are included in reading classes, and students’ socioeconomic status affect students’ language arts skills?
A three-way ANOVA was conducted to assess whether there was an interaction effect between Reading Treatment, novel use condition, and student socioeconomic status (SES) on students’ language arts skills. Since all participants in Reading Treatment 2 were taught with entire novels there is no comparison group for Reading Treatment 2. Descriptive statistics and assumption results for the remaining 10 groups are shown in Table 9.

Table 9 Assumption Tests Results and Descriptive statistics for Research Question 4

<table>
<thead>
<tr>
<th>Reading Treatment(^a)</th>
<th>Entire novels used</th>
<th>Low SES</th>
<th>n</th>
<th>Outliers</th>
<th>Shapiro-Wilk’s p</th>
<th>Mdn</th>
<th>IQR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No</td>
<td>No</td>
<td>8</td>
<td>None</td>
<td>.960</td>
<td>342.500</td>
<td>26</td>
</tr>
<tr>
<td>1</td>
<td>No</td>
<td>Yes</td>
<td>7</td>
<td>1 outlier &gt; Mdn</td>
<td>.491</td>
<td>346.000</td>
<td>16</td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
<td>No</td>
<td>5</td>
<td>None</td>
<td>.503</td>
<td>322.000</td>
<td>15</td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
<td>Yes</td>
<td>16</td>
<td>None</td>
<td>.370</td>
<td>320.000</td>
<td>29</td>
</tr>
<tr>
<td>2</td>
<td>Yes</td>
<td>No</td>
<td>86</td>
<td>1 outlier &lt; Mdn</td>
<td>.022</td>
<td>342.000</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>Yes</td>
<td>Yes</td>
<td>124</td>
<td>3 outliers &lt; Mdn</td>
<td>&lt;.001</td>
<td>334.000</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>No</td>
<td>No</td>
<td>29</td>
<td>None</td>
<td>.673</td>
<td>346.000</td>
<td>13</td>
</tr>
</tbody>
</table>
| 3                       | Yes               | Yes    | 42 | 2 outliers
  1 outlier < Mdn | .495 | 347.000 | 12  |
| 3                       | Yes               | No     | 58 | None     | .173             | 343.500 | 19  |
| 3                       | Yes               | Yes    | 109| None     | .008             | 341.000 | 22  |

\(^a\) No participants in Reading Treatment 2 were taught without the use of entire novels.

The violation of the assumption of independent observations was addressed at the beginning of this chapter. Four of the 10 distributions of FSA ELA scores had between one and three outliers, which violated the assumption of no outliers. The Shapiro-Wilk’s tests indicated the assumption of normality was met for all but three distributions as shown in Table 9. FSA ELA scores were not normally distributed for (a) Reading Treatment 2 when students were not low SES and taught with entire novels, (b) Reading Treatment 2 when students were low SES and taught with entire novels, and (c) Reading Treatment 3 when students were low SES and
taught using entire novels. The assumption of homogeneity of variances was also violated, as assessed by Levene's test for equality of variances, $F(9, 474) = 2.59, p = .003$.

The three-way ANOVA indicated there was not a statistically significant three-way interaction between Reading Treatment, novel use condition, and SES on students’ language arts skills, $F(1, 474) = .258$, partial $\eta^2 = .001$, $p = .612$. There was not a statistically significant two-way interaction between Reading Treatment and SES on students’ language arts skills, $F(2, 474) = .181$, partial $\eta^2 = .001$, $p = .834$, or between novel use condition and SES on students’ language arts skills, $F(1, 474) = 2.767$, partial $\eta^2 = .006$, $p = .097$. The two-way interaction between Reading Treatment and novel use condition was statistically significant as discussed in the beginning of this chapter.

Since there were no interactions with SES and most of the statistical assumptions were violated, the researcher examined the main effect of SES on FSA ELA scores using the Kruskal-Wallis. There was a significant effect of SES on language arts skills, $H(1) = 14.149, p < .001$. The median score of students from low SES households was 335.000, with an IQR of 21. The median score of students from households which were not low SES was 340.000 with an IQR of 20. These results indicated students from low SES households had a lower level of language arts skills than their peers who were less economically disadvantaged, as shown in figure 3. Novel use condition and Reading Treatment did not impact the score differences of students from low SES households.
Research Question 5

Research question 5: Among students in reading classes in which novels were included, does Reading Treatment and teacher self-reported fidelity to implementing research-based teaching strategies affect students’ language arts skills?

A two-way ANOVA was conducted to assess whether there was an interaction between Reading Treatment and teacher self-reported fidelity to implementing research-based teaching strategies (RBTS) among students who were taught with entire novels. No teachers reported a low level of fidelity, therefore, the researcher only compared moderate and high levels of fidelity. Since all teachers implementing Reading Treatment 2 taught RBTS with moderate fidelity, there was no comparison group for Reading Treatment 2. Therefore, the two-way
interaction only included four groups. Table 10 shows the descriptive statistics and assumptions results.

### Table 10 Assumption Tests Results and Descriptive statistics for Research Question 5

<table>
<thead>
<tr>
<th>Reading Treatment(^a)</th>
<th>Fidelity to RBTS(^b)</th>
<th>n</th>
<th>Outliers</th>
<th>Shapiro-Wilk's p</th>
<th>Mdn</th>
<th>IQR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High</td>
<td>6</td>
<td>None</td>
<td>.440</td>
<td>325.000</td>
<td>25</td>
</tr>
<tr>
<td>1</td>
<td>Moderate</td>
<td>15</td>
<td>None</td>
<td>.188</td>
<td>320.000</td>
<td>32</td>
</tr>
<tr>
<td>2</td>
<td>Moderate</td>
<td>210</td>
<td>4 outliers &lt; Mdn</td>
<td>&lt; .001</td>
<td>336.000</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>High</td>
<td>105</td>
<td>3 outliers 1 &gt; Mdn</td>
<td>.405</td>
<td>343.000</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 &lt; Mdn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
<td>62</td>
<td>2 outliers &lt; Mdn</td>
<td>.205</td>
<td>337.000</td>
<td>19</td>
</tr>
</tbody>
</table>

\(a\) No participants from Reading Treatment 2 were taught by teachers with high self-reported fidelity to RBTS

\(b\) Research-Based Teaching Strategies

The violation of the assumption of independent observations was addressed at the beginning of this chapter. Three of the five distributions of ELA FSA scores had between two and four outliers, which violated the assumption of no outliers. The Shapiro-Wilk's test indicated the assumption of normality was met for all but one distribution. ELA scores were not normally distributed for Reading Treatment 2 taught by teachers with a moderate level of fidelity to RBTS. The assumption of homogeneity of variances was not violated, \(F(4, 393) = 1.018, p = .398\).

The two-way ANOVA indicated there was not a statistically significant two-way interaction between Reading Treatment and teacher’s fidelity to RBTS on students’ language arts skills, \(F(1, 393) = .299, \text{ partial } \eta^2 = .001, p = .585\). Since there were no interactions with RBTS
and most of the statistical assumptions were violated, the researcher examined the main effects for both RBTS and Reading Treatment on FSA ELA scores using the Kruskal-Wallis. There was a significant effect of RBTS on students’ language arts skills, H(1) = 9.651, \( p = .002 \). These results indicated students of teachers with high self-reported fidelity to RBTS had lower levels of ELA skills (\( Mdn = 342.000 \)) with an IQR of 18, than students who had teachers with moderate self-reported fidelity to RBTS (\( Mdn = 335.000 \)) with an IQR of 20, as shown in Figure 4.

![Figure 4 Kruskal-Wallis Research Based Teaching Strategies (RBTS) Boxplot, Research Question 5](image)

There was also a significant effect of Reading Treatment on students’ language arts skills, H(2) = 28.200, \( p < .001 \). Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. There were significant differences in
FSA ELA scores between Reading Treatment 1 \((Mdn = 322.000)\) with an IQR of 21, and Reading Treatment 2 \((Mdn = 336.000)\), with an IQR of 20, \(p < .001\). There was also a significant difference between and Reading Treatments 1 and 3 \((Mdn = 341.000)\), with an IQR of 20, \(p > .001\). There was not a significant difference between Reading Treatments 2 and 3. Figure 5 shows students in Reading Treatment 3 had a higher level of ELA skills than those in Reading Treatments 1 and 2; and students in Reading Treatment 2 had higher ELA skills than student in Reading Treatment 1.

*Figure 5* Kruskal-Wallis Reading Treatment Boxplot, Research Question 5
Research Question 6

Research question 6: Among students in reading classes in which novels were included, does Reading Treatment and teachers’ certification type, Content Area Reading credential status, and reading endorsement status affect students’ language arts skills?

To facilitate statistical analysis, research question 6 was broken into three sub-questions.

Research Question 6a

Research question 6a: Among students in reading classes in which novels were included, does Reading Treatment and certification type affect students’ language arts skills?

A two-way ANOVA was conducted to determine whether there was an interaction effect between Reading Treatment and teacher certification type (i.e., professional certification or temporary certification) on students’ language arts skills. Since there were no students in Reading Treatment 3 taught by teachers with temporary certificates, only the four groups that did not use Reading Treatment 3 were tested in the two-way interaction.

The violation of the assumption of independent observations was addressed in the beginning of this chapter. Four out of the five distributions of the design had outliers, which violated the assumption of no outliers. The Shapiro-Wilk’s tests indicated the assumption of normality was met for all but two distributions. The FSA ELA scores were not normally distributed for Reading Treatment 1 when students had professional certified teachers, or for
Reading Treatment 2 when students had temporary certified teachers. The assumption of homogeneity of variances was not violated, $F(4, 393) = 2.160, p = .073$. Descriptive statistics and assumption results for research question 6a is shown in Table 11.

Table 11 Assumption Tests Results and Descriptive statistics for Research Question 6a

<table>
<thead>
<tr>
<th>Reading Treatment type</th>
<th>Certification type</th>
<th>n</th>
<th>Outliers</th>
<th>Shapiro-Wilk’s $p$</th>
<th>Mdn</th>
<th>IQR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Professional</td>
<td>13</td>
<td>None</td>
<td>.014</td>
<td>325.000</td>
<td>33</td>
</tr>
<tr>
<td>1</td>
<td>Temporary</td>
<td>8</td>
<td>1 outlier &gt; $Mdn$</td>
<td>.369</td>
<td>318.000</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>Professional</td>
<td>83</td>
<td>2 outliers &lt; $Mdn$</td>
<td>.041</td>
<td>335.000</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>Temporary</td>
<td>127</td>
<td>2 outliers &lt; $Mdn$</td>
<td>.001</td>
<td>338.000</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>Professional</td>
<td>167</td>
<td>4 outliers</td>
<td>.113</td>
<td>341.000</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1 outlier &gt; $Mdn$</th>
<th>3 outliers &lt; $Mdn$</th>
</tr>
</thead>
</table>
| a. No participants in Reading Treatment 3 were taught by teachers with temporary certification.

The two-way ANOVA indicated there was no two-way interaction between Reading Treatment and teacher certification type on students’ language arts skills, $F(1, 393) = .221$, partial $\eta^2 = .001, p = .638$. Since there were no interactions with certification and most of the statistical assumptions were violated, the researcher examined the main effects for teacher certification on FSA ELA scores using the Kruskal-Wallis. There was not a statistically significant difference in the effect of teacher certification on students’ language arts skills, $H(1) = 1.143, p = 2.85$. These results indicated teacher certification type did not significantly affect students’ language arts skills. The main effect of Reading Treatment was significant as discussed in the analysis of research question 5.
Research Question 6b

Research question 6b: Among students in reading classes in which novels were included, does Reading Treatment and Content Area Reading credential status affect students’ language arts skills?

Another two-way ANOVA was conducted to assess whether there was an interaction between Reading Treatment and teachers’ Content Area Reading (CAR) credential status on students’ language arts skills. Since there were no students in Reading Treatment 3 who were taught by teachers without a CAR credential, only the four groups that did not use Reading Treatment 3 were tested in the two-way interaction.

The violation of the assumption of independent observations was addressed in the beginning of this chapter. Four of the five cells of the design had between one and four outliers, which violated the assumption of no outliers. Descriptive statistics and assumption results are shown in Table 12. The assumption of normality was violated in three out of five distributions. The assumption of homogeneity of variances was not violated, $F(4, 393) = 2.160, p = .073$.

<table>
<thead>
<tr>
<th>Reading Treatment</th>
<th>CAR Credential</th>
<th>n</th>
<th>Outliers</th>
<th>Shapiro-Wilk’s $p$</th>
<th>Mdn</th>
<th>IQR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No</td>
<td>8</td>
<td>1 outlier $Mdn$</td>
<td>.369</td>
<td>318.000</td>
<td>19</td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
<td>13</td>
<td>None</td>
<td>.014</td>
<td>325.000</td>
<td>33</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
<td>127</td>
<td>2 outliers $&lt; Mdn$</td>
<td>.001</td>
<td>338.000</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>Yes</td>
<td>83</td>
<td>2 outliers $&lt; Mdn$</td>
<td>.041</td>
<td>335.000</td>
<td>16</td>
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<tr>
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<td>Yes</td>
<td>167</td>
<td>4 outliers</td>
<td>.113</td>
<td>341.000</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 outlier $&gt; Mdn$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 outliers $&lt; Mdn$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. No participants in Reading Treatment 3 were taught by teachers without CAR credentials.
The two-way ANOVA indicated there was not a statistically significant two-way interaction between Reading Treatment and CAR credentials on students’ language arts skills, \( F(1, 393) = .221 \), partial \( \eta^2 = .001 \), \( p = .638 \). Since there were no interactions with CAR credentials and most of the statistical assumptions were violated, the researcher examined the main effects for CAR credentials on FSA ELA scores using the Kruskal-Wallis. There was not a statistically significant difference in the effect of CAR credentials on students’ language arts skills, \( H(1) = 1.143, p = .285 \). These results indicated teacher qualification of CAR credential status did not effect students’ language arts skills.

Research Question 6c

Research question 6c: Among students in reading classes in which novels were included, does Reading Treatment and reading endorsement status affect students’ language arts skills?

A two-way ANOVA was conducted to assess whether there was an interaction between Reading Treatment and teachers’ reading endorsement status on students’ language arts skills. The violation of the assumption of independent observations was addressed at the beginning of this chapter. Four out of six cells in the design had between one and 3 outliers, which violated the assumption of no outliers. Descriptive statistics and assumption results are shown in Table 13. The assumption of normality was also violated per the Shapiro-Wilk’s tests. The assumption of homogeneity of variances was not violated, \( F(5, 392) = 2.086, p = .066 \).
There was a statistically significant two-way interaction between Reading Treatment and reading endorsement on students’ language arts skills, $F(2, 392) = 4.154$, partial $\eta^2 = .023$, $p = .012$. Since there was a statistically significant two-way interaction and most of the statistical assumptions were violated, the researcher conducted tests of simple main effects using the Kruskal-Wallis.

The Kruskal Wallis indicated there was a significant effect of teacher reading endorsement status on students’ language arts skills among students in Reading Treatment 3, $H(1) = 13.043$, $p < .001$. The effect of teacher reading endorsement status on students’ language arts skills was not significant in Reading Treatment 2, $H(1) = .301$, $p = .583$, or Reading Treatment 1, $H(1) = .159$, $p = .690$. Among students in Reading Treatment 3, students taught by reading endorsed teachers had lower FSA ELA scores ($Mdn = 339.000$) with an IQR of 20, than students taught by non-reading endorsed teachers ($Mdn = 348.000$), with an IQR of 17, $H(2) = 28.200$, $p < .001$. These results indicated among students in Reading Treatment 3, students with reading endorsed teachers had a lower level of ELA skills, as illustrated in Figure 6.
This quasi-experimental study was conducted to determine whether a relationship existed between inclusion of entire novels when teaching secondary intensive reading and students’ language arts skills. The researcher conducted a series of two and three-way factorial ANOVA tests followed by post hoc Kruskal-Wallis tests to examine how Reading Treatment, whether entire novels were used as texts, student demographics, teacher implementation of RBTS and teacher qualifications affected ELA skills. Although ANOVAs are robust against minor violations to statistical assumptions, the data violated several assumptions. Therefore, factorial
ANOVAs were only used to test for interactions. Kruskal-Wallis tests were used to analyze interactions, simple main effects, and main effects. Reading Treatment moderated the effect of novel use condition on language arts skills. Students who did not receive instruction using entire novels had higher ELA skills scores in Reading Treatments 1 and 3. However, students in Reading Treatment 1 were more affected by novel use condition than students in Reading Treatment 3. Reading Treatment also moderated the effect of being taught by a reading endorsed teacher in Reading Treatment 3. Students in Reading Treatment 3 had higher levels of language arts skills when instructed by non-reading endorsed teachers.
CHAPTER 5: DISCUSSION

Introduction

This quasi-experimental study was conducted to inform educational leaders in best practices when determining whether to include the use of entire novels in secondary intensive reading curriculum. This chapter discusses the results of the study using the lenses of the conceptual framework of the interactive model of reading (Rumelhart, 1985) and the theoretical framework of the Matthew Effect (Stanovich, 1986). Chapter five consists of a summary of the study including a brief review of each framework, discussion of the findings, implications for practice, limitations, recommendations for further research, and the conclusions.

Summary of the Study

Concern regarding the state of literacy in the American schooling system has existed for decades as was highlighted by the 1983 report, *A Nation at Risk: The Imperative for Educational Reform* (United States). Efforts to address student difficulty with reading through study and implementation of reading interventions has evolved over the last two centuries (Ortlieb, 2012; Scammacca et al., 2016). In the 1800s, research of reading interventions initially focused on the physical attributes of students who had difficulty learning to read (Gates, 1927; Ortlieb, 2012; Scammacca, et al., 2016). By the 1920s, reading interventions primarily centered on individual
case studies of students who could not read well (Collier & Richardson, 1971). Collier and Richardson (1971) noted interventions were more commonly administered in a school-wide setting during the 1960s. Throughout the next six decades, reading research experienced several shifts in understanding the complex process of reading and acknowledged the unique needs of the adolescent striving reader (Gallagher, 2009; Greene, 2018; Sacks, 2012; Sacks, 2019).

One such shift was evident in the conceptual framework of the interactive model of reading, which gained popularity in the late eighties and is one of the most widely accepted models of reading (Rumelhart, 1985). The interactive model of reading combined previous models that grouped reading processes into distinct, sequential steps (Stanovich, 1980). In the interactive model of reading simple and complex processes happen simultaneously to allow the reader to comprehend the text (Rumelhart, 1985; Stanovich, 1980). The interactive model of reading acknowledged two levels of interaction occurred during reading: interaction between the reader and the text, and interaction with the cognitive skills of identification and interpretation (Rumelhart, 1985).

The conceptual framework of the interactive model of reading informed the development of the questionnaire used in this study, Teaching Secondary Reading Using Novels Survey (TSRUNS). Specifically, survey questions 8, 12, 13, 16, and 17 were designed to measure teachers’ implementation of Research Based Teaching Strategies (RBTS) of collaboration, modeling of reading strategies, student choice, teaching vocabulary, and standards-based teaching. When viewed through the lens of the interactive model of reading, teacher implementation of RBTS illustrated the degree to which teachers cultivated an environment which encouraged readers to engage deeply with novels.
The Matthew Effect in reading is evident in the dichotomy between struggling readers and their more successful peers. Stanovich (1986) explained the Matthew Effect in reading by illustrating how students who struggled to acquire vocabulary and reading comprehension in their formative years continuously struggled in reading throughout their academic careers. Similarly, those who excelled at vocabulary and reading comprehension in their primary school years continued to read more and to excel in reading (Stanovich, 1986). The result is a perpetual widening of the achievement gap (Stanovich, 1986). A significant component of the Matthew Effect for students who read well is the vocabulary acquisition through reading new words in context.

The theoretical framework of the Matthew Effect informed the design of this study (Stanovich, 1986). The increasingly growing reading achievement gap creates an urgent need to understand the impact of various reading interventions on striving readers. This is especially true for secondary intensive reading students, who are often fluent readers but lack the reading comprehension skills to interpret complex texts (Alfassi, 2004; Biancarosa & Snow, 2006). The persistent struggle of the secondary striving reader is evident in low reading assessment scores at the national and state levels (Florida Department of Education, 2019c; U.S. Department of Education, 2019b). Since secondary students must pass standardized reading tests to graduate in Florida (Florida Department of Education, 2019c) before they enter the workforce and become productive members of society, it is essential to identify the effectiveness of current reading instructional practices. As a response to the needs of striving readers as understood through the lens of the Matthew Effect, the researcher sought to evaluate whether the use of entire novels as texts impacted students’ language arts skills.
The literature indicated reading entire novels allowed striving readers to learn more vocabulary in context (Sobolak, 2011; Westbrook, 2013; Westbrook et al., 2019), which is an important component of mitigating the Matthew Effect. However, the literature also expressed the use of novels as texts in isolation was insufficient to remedy the achievement gap (Gallagher, 2009; Roberts, 2018; Sacks, 2019). Rather, the use of novels as text must be implemented alongside of research-based teaching strategies (Cunningham & Stanovich, 1998; Fall et al., 2000; Guthrie, & Humenick, 2004, Langer, 2001; Schatschneider et al., 2004; Sobolak, 2011; Wiggins & McTighe, 2005). Therefore, the purpose of this research was to analyze the relationship between students’ language arts skills and the inclusion of entire novels as texts when teaching secondary intensive reading while also accounting for the impact of teacher implementation of RBTS.

This study was conducted using data from one large Florida public school district. One source of data included Grade 10 FSA ELA scores and student demographic data. These data were comprised of secondary reading students. Students were already grouped into three Reading Treatments by the school district based on prior year FSA ELA scores (Florida Department of Education, 2020a). The school district also provided secondary reading teacher contact information. This information was used to invite teachers to participate in an original online survey, TSRUNS. The survey collected data from eight secondary reading teachers. Survey data indicated whether students across three Reading Treatments were taught using entire novels. The survey also collected data regarding teacher self-reported fidelity to RBTS, as well as teacher qualifications. Data were analyzed to answer six research questions by performing a series of multifactorial Analysis of Variance (ANOVAs) using the Kruskal-Wallis post hoc test.
Discussion of the Findings

Research Question 1

Research question 1: Does Reading Treatment and whether novels are included in reading classes affect students’ language arts skills?

Results of research question 1 indicated there was a statistically significant relationship between Reading Treatment and whether entire novels were included in secondary reading on students’ language arts skills. Students in Reading Treatments 1 and 3 who were taught with entire novels as texts had lower language arts skills than their peers in the same Reading Treatment who were taught without entire novels. These findings were consistent with some research which supported reading text extracts in place of entire novels (Brownlie et al., 2006; Ivy & Broaddus, 2001). However, the results contradicted a larger body of research which claimed reading entire novels engaged students, increased their exposure to vocabulary, and deepened their thinking (Gallagher, 2009; Greene, 2018; O’Connor, 2013; Sacks, 2012; Sacks, 2019; Ward, 2017; Westbrook, 2013; Westbrook et al., 2019).

The conceptual framework of the interactive model of reading, (Rumelhart, 1985; Stanovich, 1980) and the theoretical framework of the Matthew Effect (Stanovich, 1986) were used as lenses through which to view the results of this study. When using these lenses to view the findings questions arose about the implementation of novels as texts. Both frameworks expressed the importance of background knowledge in the reading process (Rumelhart, 1985;
Stanovich, 1980; Stanovich, 1986). The literature regarding striving readers also expressed the importance of activating background knowledge to increase reading comprehension (Alexander, 1998; Alexander & Murphy, 1998; Alexander, Murphy, et al., 1996; Samuels & Kamil, 1984; Scambacca et al., 2016; Tomlinson, 1999; Walker, 1989). One question unanswered by this study is how readers used their background knowledge with texts in both novel use conditions. This study did not account for how, or if, students’ background knowledge was activated prior to the introduction of text. It would be interesting to see if there were similarities or differences in how teachers encouraged students to use their background knowledge in both novel use conditions.

Another question raised when viewing these results through the lens of the interactive model of reading (Rumelhart, 1985) is how readers engaged with texts in both novel conditions. This study did not include data regarding specific tasks students were asked to engage in with novels nor did it include observations of student engagement with texts. As the noted in the literature, teaching with the use of entire novels can be beneficial to students or detrimental, depending on how students are asked to read the novel and apply their knowledge (Brownlie et al., 2006; Gallagher, 2009; Sacks 2019). The literature stated when novel use is teacher-centered students were not challenged to work in their zone of proximal development (Gallagher, 2009; Roberts, 2018; Sacks, 2019, Shanahan, 2019). An example of teacher-centered novel instruction would be when the teacher reads a novel aloud and the class completes chapter by chapter reading comprehension questions (Sacks, 2019). The survey questions regarding RBTS attempted to illustrate how novels were implemented in this study by measuring which strategies
teachers implemented, but the survey tool could be expanded upon to include more data regarding how students engaged with texts.

Research Question 2

Research question 2: Does Reading Treatment, whether novels are included in reading classes, and students’ gender affect students’ language arts skills?

Results for research question 2 did not indicate a statistically significant three-way interaction between Reading Treatment, novels use condition, and gender on language arts skills. There was also no statistically significant interaction between gender and novel use condition on language arts skills. These results indicated using novels as an intervention did not have any different impact on the language arts skills of male or female students. Post hoc tests indicated male students had lower FSA ELA scores than female students. These findings were supported by the literature which highlights the achievement gap between male and female students in reading comprehension on standardized reading tests (Chiu & McBride-Chang, 2006; Sarroub & Pernicek, 2016).

It was interesting there was a score difference between male and female students’ language arts skills as measured by the FSA ELA, but there was no difference in gender and language arts skills when moderated by novel use condition. These results raised questions when viewed through the lens of the Matthew Effect in reading, which claimed those who perform poorly in reading continue to do so (Stanovich, 1986). For instance, was this measurement of one
year of male and female language arts ability part of a larger score trend for these students? Did these male students have lower scores than their female counterparts on the previous FSA ELA? To answer these questions would require a pre and posttest comparison of individual students FSA ELA scores from two or more consecutive years.

When the results of this research question were viewed through the lens of the interactive model of reading (Rumelhart, 1985) questions arose regarding possible differences in the way males and females approached texts in both novel use conditions. For example, if student choice was a factor in the classrooms, did males and females choose different activities to complete with novels? The literature cites the achievement gap in language arts skills between males and females coincides with a lack of engagement for male students (Fantuzzo et al., 2012; Linnenbrink, & Pintrich, 2003; Rogiers et al., 2020; Sarroub & Pernicek, 2016; Smith, & Wilhelm, 2004). Another question which arose when viewing these results through the lens of the interactive model of reading (Rumelhart, 1985) was, did teachers include novels and activities which were more geared towards engaging boys? It would have been interesting to include a student questionnaire about reading enjoyment and engagement with texts and tasks. Comparing this data by gender would answer some of the questions brought up by the results of this research question.
Research Question 3

Research question 3: Does Reading Treatment, whether novels are included in reading classes, and students’ race or ethnicity affect students’ language arts skills?

The results of research question 3 indicated there was not a statistically significant three-way interactions between Reading Treatment, novel use condition, and race or ethnicity on language arts skills. In addition, there were no statistically significant interactions between Reading Treatment and race or ethnicity; novel use condition and race or ethnicity; and no significant main effects of race or ethnicity on language arts skills. Since there were no interactions or main effects of race or ethnicity on language arts skills it indicated neither Reading Treatment nor novel use condition moderated the effect of race or ethnicity on students’ language arts skills. These findings are contrary to the literature which indicated an achievement gap existed on standardized reading assessments for minority students (Snow & Biancarosa, 2003; Fantuzzo et al., 2012; Graves, 2011; Landson-Billings, 1995).

When these results were examined through the lenses of the Matthew Effect and the interactive model of reading, questions arose regarding students’ background knowledge (Rumelhart, 1985; Stanovich, 1980; Stanovich, 1986). Specifically, as Ladson-Billings (1995) claimed, an important step in closing the achievement gap between minorities and their peers is culturally responsive teaching. Ladson-Billings (1995) described culturally responsive teaching as inviting students to relate to texts and academic tasks using their cultural experiences. Questions which arose because of these results were, did teachers expose students to culturally relevant texts? Did students feel encouraged by their teacher to bring their cultural experiences
Research Question 4

Research question 4: Does Reading Treatment, whether novels are included in reading classes, and students’ socioeconomic status (SES) affect students’ language arts skills?

The results of research question 4 indicated there was not a statistically significant three-way interaction between Reading Treatment, novel use condition, and students’ SES on language arts skills. There were also no two-way interactions between Reading Treatment and SES or between novel use and SES on language arts skills. The two-way interaction between Reading Treatment and novel use condition on language arts skills was statistically significant as discussed in the beginning of this chapter. There was a significant effect of SES on language arts skills. Students from low SES households had a lower level of language arts skills than their non-economically disadvantaged peers. This result is supported by the literature which found an achievement gap between those from low SES households and their peers (Snow & Biancarosa, 2003; Sobolak, 2011; Van Steensel et al., 2019).

When these results were analyzed through the lens of the interactive model of reading (Rumelhart, 1985), questions arose about how readers engaged with the texts. The literature regarding low SES striving readers explained low SES students often experience less motivation to read and less reading enjoyment (Chui & McBride-Chang, 2006; Kavanagh, 2019; Roigers et
al., 2020). It would be interesting to know if the low SES students in this study felt this way about reading. A student questionnaire could assist in gathering this data in any future studies. Another question that is brought up by using the interactive theory as a lens is, did the low SES students have lower scores in the vocabulary category of the FSA ELA. Students from low SES households often begin their academic career with much less exposure vocabulary and often stay behind their peers in their vocabulary knowledge (Cunningham & Stanovich, 1998; Gallagher, 2009; Schatschneider et al., 2004; Sobolak, 2011). It would be interesting to see if this were a component of the lower scores for students from low SES households.

Research Question 5

Research question 5: Among students in reading classes in which novels were included, does Reading Treatment and teacher self-reported fidelity to implementing research-based teaching strategies (RBTS) affect students’ language arts skills?

Among students taught with entire novels there was no statistically significant interaction between Reading Treatment and fidelity to RBTS on language arts skills. There was a significant main effect of RBTS on language arts skills which indicated students of teachers with moderate implementation of RBTS had higher language arts skills than students of teachers with high implementation of RBTS. These results are contrary to the literature which supports the use of these teaching strategies in secondary reading classes to improve students’ language arts skills (Alfassi, 2004; Block, 1993; Cunningham & Stanovich, 1998; Fall et al., 2000; Guthrie et al.,
2000; Guthrie, & Humenick, 2004; Hattie, 2012; Langer, 2001; Marzano, 2018; Moje, 2006; Murphy et al., 2018; Reznitskaya et al., 2001; Schatschneider et al., 2004; Sobolak, 2011; Wiggins & McTighe, 2005).

When examined through the lens of the interactive model of reading, (Rumelhart, 1985) these results raised questions regarding the survey instrument, TSRUNS. Teacher implementation of RBTS was measured in effort to illustrate the degree to which teachers cultivated an environment which encouraged readers to engage deeply with entire novels. However, there were multiple issues with the collection of this data. For example, TSRUNS was intended to measure teacher fidelity to RBTS, but there were no data points measuring RBTS which were not self-reported, and it is difficult to ascertain the validity of self-reported data (Fraenkel & Wallen, 2009). As data were self-reported, it was not surprising that no teacher reported a low level of fidelity. All teachers who taught Reading Treatment 2 implemented RBTS with moderate fidelity, so there was no comparison group for Reading Treatment 2. Consequently, the two-way interaction only included groups from Reading Treatments 1 and 3. Further, each construct of RBTS was measured by one question, which asked teachers to check all the strategies they used in their classroom when teaching using entire novels.

Research question 5 had a statistically significant main effect for Reading Treatment which indicated students in Reading Treatment 3 had higher levels of language arts skills than students in Reading Treatments 1 and 2. It also indicated students in Reading Treatment 2 had higher levels of language arts skills than students in Reading Treatment 1. Unfortunately, this was confounded by the assignment into Reading Treatments. Students were placed in Reading Treatments based on their previous performance on the FSA ELA. Therefore, it is not possible to
determine if the main effect of Reading Treatment on language arts skills was caused by the Reading Treatment or by students’ previous language arts skill levels.

Research Question 6

Research question 6: Among students in reading classes in which novels were included, does Reading Treatment and teachers’ certification type, Content Area Reading credential status, and reading endorsement status affect students’ language arts skills?

Results indicated among students taught with entire novels there were no statistically significant interactions between Reading Treatment and teacher certificate type on language arts skills. There were also no statistically significant interactions between Reading Treatment and teachers’ CAR credentials on language arts scores. However, since all students in Reading Treatment 3 were taught by teachers who were CAR credentialed there was no comparison group, so the two-way interaction test could not be completed using students from Reading Treatment 3.

There was a significant interaction between Reading Treatment and whether students were taught by a reading endorsed teacher. Among students in Reading Treatment 3 taught using entire novels, those who had non-reading endorsed teachers had higher levels of language arts skills than students who had reading endorsed teachers. This is contrary to the literature, which found teacher qualifications were one of the strongest correlated indicators of students’ achievements in reading (Darling-Hammond, 2000; Graves, 2011).
Results of research question 6 indicated neither teacher certification status nor teacher CAR credential status impacted students’ language arts skills. Having a teacher who was not reading endorsed was associated with higher language arts skills. However, nested sampling meant students in one classroom shared the same teacher with the same teacher qualifications. Therefore, it is not possible to determine whether teacher qualifications were the determining factor for score differences, or whether it was due to an aspect of the teachers practices or rapport with the students which was not measured by TSRUNS.

Limitations

This study had threats to both internal and external validity. Internal validity is the extent to which the researcher can be confident cause and effect relationships observed in the study are not caused by other factors (Lund Research Limited, 2012). External validity is the degree to which the findings from the sample of the study can be generalized to the larger population (Lund Research Limited, 2012). The threats to validity encountered in this study were selection bias and sampling bias.

Selection bias occurs when the groups studied are not comparable at the beginning of the study (Lund Research Limited, 2012). Selection bias threatens internal validity because if the groups are not comparable at the commencement of the study, then the study may not be accurately measuring what it intends to measure. In this study there were multiple instances of selection bias.
Nesting of independent variables caused selection bias. Nesting occurs when one variable appears only within a single level of another variable (American Psychological Association, 2020). For example, in this study, novel use was the same for all participants in any given classroom, because students were nested in the same classroom, and inclusion of entire novels was a classroom level decision. Nesting also occurred because students in the same classroom shared the same teacher, with the same level of implementation of RBTS and the same teacher qualifications of certification type, CAR credential status, and reading endorsement status. Nesting of students inside a classroom setting threatened internal validity because the student participants in the group shared the classroom environment and were all taught by the same teacher, who may have impacted their language arts skills through rapport or teaching practices not measured in the study. Since confounding occurred, which means it was not possible to determine if the measured factors of teacher qualifications or RBTS caused the score effects observed or if they were caused by another factor, it lessened the internal validity of this study.

The characteristics of the novels being studied were also unaccounted for in this study, causing more selection bias. Novel characteristics this study neglected to collect data for included novel length, genre, Lexile level, number of novels read, and time spent reading each novel. Since this information was not collected, there could be differences within the group of students taught with entire novels.

Further, this study did not collect data on how novels were implemented in secondary reading classes. Literature shows more-teacher centered approaches to using entire novels as texts results in less student engagement and less learning (Gallagher, 2009; Roberts, 2018; Sacks, 2019, Shanahan, 2019). This study did not gather specific data about the types of tasks students
were asked to complete in the two novel conditions. Further, this study did not collect data regarding student exposure to culturally relevant texts, which according to Ladson-Billings (1995) is an important part of creating an environment of inclusivity for students of all backgrounds. All these factors were unaccounted for and may have changed characteristics of the groups of students being compared, which lessened internal validity.

An important aspect of reading not measured in this study is how or if teachers activated students’ background knowledge in both novel use conditions. Background knowledge is an important aspect of both the Matthew Effect theory and the interactive model of reading (Rumelhart, 1985; Stanovich, 1980; Stanovich, 1986). The literature also highlights how important activating background knowledge is to increase reading comprehension (Alexander, 1998; Alexander & Murphy, 1998; Alexander, Murphy, et al., 1996; Samuels & Kamil, 1984; Scammacca et al., 2016; Tomlinson, 1999; Walker, 1989). If there were different degrees to which teachers activated students’ background knowledge it could have created differences in the groups being compared, which is another example of selection bias.

Selection bias also occurred because data were not gathered regarding student characteristics of students’ prior Grade Point Average (GPA), the number of years students had been in a reading class, and student retention rates. These factors could have lessened student engagement as well as their perceived and actual self-efficacy (Bandura 1993; Guthrie & Wigfield, 2000; Linnenbrink, & Pintrich, 2003). Another instance of selection bias occurred because participants were already assigned to Reading Treatments according to district procedure, based on their 2018 FSA ELA scores (Florida Department of Education, 2020a). This
lessened internal validity because the level of students’ language arts skills may have been influenced by their prior level of language arts skills.

Another instance of selection bias occurred because of lack of teacher participation in the survey. Only students whose teachers completed survey were included in the study, because the survey was the only data source which identified whether students were taught using entire novels. This eliminated 1,225 students’ data from the study, which could have impacted the findings. Although the survey response rate was 36.111%, only eight of the total 52 teachers who taught secondary reading in the district during the 2018-2019 school year completed the survey, which is only 15.385%. Additionally, 16 of the 52 teachers were unable to be reached by the researcher. Further, only two teachers taught without the use of entire novels while six teachers taught using entire novels. For the research questions regarding RBTS and teacher qualifications only responses of teachers who taught with entire novels were included, which was only 11.539% of all reading teachers.

The partial block design of this study also caused selection bias. For example, all students in Reading Treatment 2 were taught reading with entire novels, so there was no group of students in Reading Treatment 2 taught without entire novels that could be compared to the group. This occurred again because all teachers in Reading Treatment 2 implemented RBTS with moderate fidelity, so there was no comparison group. This was also the case because all students in Reading Treatment 3 were taught by teachers who were CAR credentialed, so there was no comparison group. These are examples of selection bias in this study, which lessened the internal validity because they caused differences in the two groups being compared; in these cases, by eliminated comparison groups.
Sampling bias was a threat to external validity in this study. Sampling bias occurs when the sample does not represent the population (Lund Research Limited, 2012). When the sample is not representative of the population the results cannot be generalized to the population, which threatens external validity. An instance of sampling bias occurred because of how the FSA ELA instrument measured Developmental Scale Scores (DSSs). The DSSs were aggregate scores of the reading and writing assessments. This makes it difficult to generalize the results to states other than Florida which may have standardized language arts test which do not combine the reading and writing scores. Sampling bias also occurred because the racial categories of Native American, Pacific Islander/Native Hawaiian, Asian, and Multi-racial had to be condensed into one category labeled “Other” because of the small numbers of students in each of those racial categories.

This study had limitations which consisted of threats to both internal and external validity. Selection bias threatened internal validity. In this study, selection bias included the nesting of independent variables, confounding, the limited number of teachers participants, partial block designs, and lack of data regarding (a) the types of novels used in class, (b) how teachers implemented the use of novels, (c) how students interacted with novels (d) student characteristics of retention rates, (e) prior student assignment to reading classes, and (f) prior student GPA. Sampling bias threatened the external validity of this study. Instances of sampling bias were the collapsing of multiple race categories into one “Other” category and the amalgamation of the writing and reading scores in the DSSs on the FSA ELA. The researcher cautions against generalizing of these findings across the larger population of secondary intensive reading students due to the limitations of this study.
This study analyzed the relationship between adolescent striving readers’ language arts skills and whether they were taught secondary intensive reading using entire novels as texts. There were no significant differences in language arts skills when novel condition and Reading Treatment were analyzed by gender. However, males did significantly underperform females overall in language arts skills. These results are supported by the literature, which has shown there is a reading achievement gap wherein males underperform females (Chiu & McBride-Chang, 2006; Sarroub & Pernicek, 2016). When data for low SES students were analyzed, there was a similar result. There were no significant differences in language arts skills when novel condition and Reading Treatment were analyzed by SES. Low SES students did underperform their peers in language arts skills overall. These results are also supported by the literature, which documented the reading achievement gap wherein students from low SES households underperform their peers (Snow & Biancarosa, 2003; Sobolak, 2011; Van Steensel et al., 2019).

These findings suggest males and students from low SES households need more support in literacy than they are receiving from their reading classes. The literature suggests there are some teaching strategies which benefit both males and low SES students. One such strategy is having reading teachers communicate high literacy goals to students, which challenges them to rise to high expectations (Applebee et al., 2003; Chui & McBride-Chang, 2006; Roigers et al., 2020; Taylor et al., 2003).

Another teaching strategy found to have increased reading achievement in males and low SES students is increasing engagement during reading (Chui & McBride-Chang, 2006; Fantuzzo
et al., 2012; Graves, 2011; Kavanagh, 2019; Landson-Billings, 1995; Linnenbrink, & Pintrich, 2003; Roigers et al., 2020; Smith, & Wilhelm, 2004). Smith and Wilhelm (2004) explained engagement for males is largely dependent upon how familiar they are with the subject they are reading about, because they prefer to project an image of competence. Both males and students from low SES are more motivated to read when they are more engaged and when teachers communicate high literacy goals to them (Applebee et al., 2003; Chui & McBride-Chang, 2006; Kavanagh, 2019; Roigers et al., 2020; Sarroub & Pernicek, 2016; Taylor et al., 2003). Increasing student motivation to read also leads to higher reading achievement scores (Applebee et al., 2003; Good, 1987; Good & Brophy, 2002; Taylor et al., 2003).

In addition to the teaching strategies which serve both males and low SES students well, there are strategies which are recommended expressly for low-SES students. For example, many students from low SES households have lower levels of exposure to vocabulary (Cunningham & Stanovich, 1998; Gallagher, 2009; Schatschneider et al., 2004; Sobolak, 2011). These deficits can be overcome by increasing the duration of vocabulary instruction for these students (Gallagher 2009; Roigers et al., 2020; Sobolak, 2011; Stanovich 1986). According to Sarroub and Pernicek (2016), another teaching strategy which improves low SES students’ reading achievement is when teachers ask students to bring in their cultural background knowledge, because it acknowledges the social capital students from all SES bring to their school experience.

Increasing the language arts skills of males and low SES students demands educators acknowledge both the unique needs of the respective groups to which they belong as well as the overlapping recommendations clearly identified in the research. Secondary reading classes need to implement these strategies to better serve males and students from low SES households. This
may require additional professional development for reading teachers which would inform them of these needs and then instruct how to implement these strategies successfully.

**Recommendations for Further Research**

The importance of adolescent literacy has been well documented, especially as it relates to striving readers (Chui & McBride-Chang, 2006; Gallagher, 2009; Guthrie, et al., 2012; Guthrie & Wigfield, 2000; Hattie, 2012; Kavanagh, 2019; Linnenbrink, & Pintrich, 2003; Roigers et al., 2020; Sarroub & Pernicek, 2016; Snow & Biancarosa, 2003; Sobolak, 2011). However, the study of the impact of using novels as texts when teaching secondary striving readers is in nascent stages. This study analyzed the relationship between teaching secondary reading using entire novels and students’ language arts skills as measured by the Grade 10 FSA ELA. Suggestions for further research to contribute to the literature pertaining to use of novels in the secondary reading classroom include replication of this research with refinement of the instrument TSRUNS as well as replication with changes to the study design.

As a result of lessons learned when analyzing the findings of this study through the frameworks of the Matthew Effect (Stanovich, 1986) and the interactive model of reading (Rumelhart, 1985), it is clear the survey tool needs to be refined before replication studies can be conducted. Suggestions to refine the instrument include adding components to RBTS, improving validity of the RBTS scores by adding more questions to each component, and adding novel characteristic questions. Recommended additional elements which could be added to the current RBTS components are communicating high literacy goals to students (Good, 1987; Good &
Brophy, 2002; Guthrie & Humenick, 2004), activating background knowledge (Alexander, 1998; Alexander & Murphy, 1998; Alexander, Murphy, et al., 1996; Samuels & Kamil, 1984; Scammacca et al., 2016; Tomlinson, 1999; Walker, 1989), and the use of culturally responsive pedagogy (Ladson-Billings, 1995; Sarroub & Pernicek, 2016). In addition to adding these three constructs to the RBTS survey questions, the number of questions for each construct needs to be expanded to have more than one response item for each RBTS element to increase internal validity. Further, it may be beneficial for future researchers to gather more data on the survey regarding novel characteristics of length, genre, Lexile level, the number of novels read over the year, and the amount of time spent reading each novel. This data would allow future studies to increase internal validity by accounting for more of the differences in the groups analyzed.

Qualitative research also needs to be conducted to add depth to the body of literature regarding secondary reading and use of entire novels as texts. Qualitative research could include observation of reading classes. If each aspect of RBTS was observed, it would lessen the threat to internal validity of the self-reported data. Observation would be ideal if paired with a walk-through tool which could measure the components of RBTS. Additionally, these observations could collect data regarding how teachers implemented entire novels in the reading classroom and how students engaged with texts. Gathering more detailed data about the implementation of entire novels and how students interacted with them is a crucial next step in advancing the body of literature regarding secondary reading and use of entire novels as texts.

In addition to observational research, future research could include the creation and administration of a survey tool for the students in the reading classes. Such a tool would enable future researchers to gather data regarding students’ reading enjoyment, reading motivation,
engagement with texts, and engagement with tasks they completed with the texts. This data could enhance the conversation regarding the effects of gender, race or ethnicity, and SES on students’ reading experiences.

Further research regarding secondary reading and the use of entire novels as texts is needed before results are generalizable to the larger population of secondary striving readers. Additional components could be added to the strategies in RBTS to result in a more complete picture of the teaching strategies implemented by secondary reading teachers. Including qualitative research wherein the reading classrooms could be observed would assist in clarifying the nature of the activities and the degree of student-centered teaching implemented with entire novels as texts. Research could also be expanded to include a walkthrough tool for classroom observations as well as a student questionnaire.

Conclusions

It is still widely debated whether striving readers are best served by reading entire novels or excerpts of longer works (Gallagher, 2009; Greene, 2018; Sacks, 2012; Sacks, 2019). Results of this study showed students in Reading Treatments 1 and 3 who were taught without entire novels had higher levels of language arts skills in comparison to students taught with entire novels in the same Reading Treatments. Though the literature indicated qualified teachers can positively impact students’ reading comprehension achievement (Darling-Hammond, 2000; Graves, 2011), the results of this study did not show increased performance of students with reading endorsed teachers. Conversely, this study found teachers’ certification status nor
teachers’ CAR credential status affected language arts skills of students taught reading using entire novels. Results of this study indicated students taught with entire novels by reading endorsed teachers underperformed their peers taught by non-reading endorsed teachers. However, the researcher cautions against generalizing these results because of the limitations of this study.

Study results also indicated there were significant differences in students’ language arts skills for males and students from low SES households. Males had lower language arts skill levels than females, and low SES student underperformed their peers. The literature supports these findings, as these groups are disproportionately represented within the striving reader community (Chui & McBride-Chang, 2006; Guthrie, et al., 2012; Kavanagh, 2019; Roigers et al., 2020; Sarroub & Pernicek, 2016; Stanovich, 1986).

The results of this study may be a catalyst to continue conversations on how to best meet the needs of secondary adolescent striving readers. Additional research is required to inform secondary reading curriculum decisions regarding entire novel use. The choice to include or eliminate entire novels from secondary intensive reading classes must be made deliberately, as it will indubitably impact striving readers for generations to come.
APPENDIX A
TEACHING SECONDARY READING USING NOVELS SURVEY
(TSRUNS)
Teaching Secondary Reading Using Novels Survey (TSRUNS)

EXPLANATION OF RESEARCH

Informed Consent

Title of Project: A Post Hoc Causal Comparative Analysis of the Effects of Teaching Intensive Reading Using Novels on Student Achievement on the Grade 10 Florida Standards Assessment of English Language Arts

Principal Investigator: Sarah Brevoort
Faculty Supervisor: Dr. Thomas Vitale

You are being invited to take part in a research study. Whether you take part is up to you. The purpose of this study is to explore whether a relationship exists between use of entire novels to teach reading in three different Reading Treatments and student achievement as measured by the 2019 spring administration of the Grade 10 Florida Standards Assessment of English Language Arts (FSA ELA) in one large suburban Florida public school district.

I ask you to complete this 17-question survey, which should take no more than ten minutes. There will not be any follow up contact.

I anticipate that your participation in this survey presents no greater risk than everyday use of the Internet. This survey is anonymous. Your name will not be collected in the survey. If the data is published, no individual information will be disclosed. The unique identification number provided to you will be used to link which teachers taught using novel studies to which groups of students. **Only the Principal Investigator will have access to this information.** It will be stored on a thumb drive, in a locked file cabinet at the principal investigator’s residence when not in use. The data will be deleted after the minimum 5 years after the study closure, per University of Central Florida policy. Identification numbers will be substituted with pseudonyms in the Principal Investigator’s research.

There are no direct benefits associated with completion of this survey. A possible indirect benefit may be increased reflection on pedagogy. The expected benefits to society and scientific knowledge this study may benefit reading teachers and curriculum designers in the future. There will not be compensation for completion of this survey. You must be 18 years of age or older to take part in this research study.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints contact Principal Investigator, Sarah Brevoort, Graduate Student, Educational Leadership Program, College of Community Innovation and Education at (352) 363-0047 or sbrevoort@knights.ucf.edu or Dr. Thomas Vitale, Faculty Supervisor, Department of Education Leadership and Higher Education by email at thomas.vitale@ucf.edu

IRB contact about your rights in this study or to report a complaint: If you have questions about your rights as a research participant, or have concerns about the conduct of this study,
please contact Institutional Review Board (IRB), University of Central Florida, Office of Research, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901, or email irb@ucf.edu.

Yes, I give consent to participate in the research
No, I do not give my permission to participate in this research
(Only proceed if answer to 1 is Yes)

What is your Unique Identification Number, provided to you in the invitation to participate in this survey?

1. Did you teach reading using at least one complete novel in your reading class in the 2018-2019 school year?
   Yes
   No
   (Only proceed if answer to 1 is Yes)

2. Which choice below best describes the students who were in your reading class in the 2018-2019 school year? Select all that apply.
   Students who scored a level 1 on the previous FSA ELA
   Students who scored a level 2 on the previous FSA ELA
   Content Area Reading students

3. Drag and drop the items below to rank the following methods of teaching standards-based reading lessons in order of importance, with 1 being the most important and 7 being the least important.
   Planning lessons using backwards design
   Reviewing the standard(s) being taught with students at the beginning of the lesson
   Analyzing word meanings of academic vocabulary used in the standard(s) being taught with students
   Posting and using scales for understanding with students
   Having students self-score their understanding of the standard(s) with scales
   Providing mastery-based assessments to students
   Providing remediation and extension activities to students

4. Drag and drop the items below to rank the following student choice options in order of importance, with 1 being the most important and 7 being the least important.
   Choice in which novel-based reading comprehension assignments to complete
   Choice in how to complete the novel-based reading comprehension assignments
   Choice in which novel-based writing assignment to complete
   Choice in how to complete novel-based writing assignments
   Choice of what novel the class would read
   Choice of where they read
   Choice of when they read
5. How did you communicate high literacy goals to your reading students in the 2018-2019 school year?

6. Drag and drop the items below to rank how important it is to teach the following reading comprehension strategies, with 1 being the most important and 7 being the least important.
   - Think Alouds
   - Retelling
   - Summarizing
   - Predicting
   - Questioning
   - Graphic Organizers
   - Extended text-based discussion

7. At the beginning of the 2018 - 2019 school year, which of these applied to you?
   - I had a professional certification
   - I had an alternative certification
   - I had a temporary certification and was working towards a professional certification
   - I had a temporary certification and was working towards an alternative certification

8. What forms of student collaboration did you use when teaching reading using a novel in the 2018-2019 school year? Select all that apply.
   - Reciprocal teaching
   - Socratic circles
   - Paired text-based discussions
   - Small group text-based discussion
   - Whole class text-based discussion
   - School Reform Initiative (SRI) text-based discussions protocols
   - Other: __________________

9a. Drag and drop the items below to rank the following vocabulary teaching strategies in order of importance, with 1 being the most important and 7 being the least important.
   - Teach context clues
   - Teach morphology
   - Teach academic vocabulary
   - Teach multiple meanings of words
   - Teach conceptual connections
   - Multiple exposures to the word (3 or more)

9b. Is there an additional vocabulary strategy that is important to use that was not listed in the previous question?

10. As of the beginning of the 2018-2019 school year, how many years had you taught a reading class?
11. As the beginning of the 2018-2019 school year, did you hold either a reading degree or a reading endorsement/certificate?
   Yes
   No

12. Which of the following reading strategies did you explicitly teach/model when teaching reading using a novel in the 2018-2019 school year? Select all that apply.
   Think Alouds
   Summarizing
   Predicting
   Questioning
   Graphic Organizers
   Extended text-based discussion
   Other: ______________

13. When you taught reading in the 2018-2019 school year using an entire novel, which of the following ways did you incorporate student choice? Select all that apply.
   Choice in which novel-based reading comprehension assignments to complete
   Choice in how to complete the novel-based reading comprehension assignments
   Choice in which novel-based writing assignment to complete
   Choice in how to complete novel-based writing assignments
   Choice of what novel the class would read
   Choice of where they read
   Choice of when they read

14. Drag and drop the items below to rank the following forms of collaboration in order of importance, with 1 being the most important and 7 being the least important.
   Reciprocal teaching
   Socratic circles
   Paired text-based discussions
   Small group-text based discussion
   Whole group text-based discussion
   School Reform Initiative (SRI) text-based discussion protocols

14b. Is there an additional form of student collaboration that is important to use that was not listed in the previous question?

15. Were you certified in content area reading at the beginning of the 2018-2019 school year?
16. Which of the following strategies did you use to teach vocabulary encountered in novels in the 2018 - 2019 school year? Select all that apply.
   - Teaching context clues
   - Teaching morphology
   - Teaching academic vocabulary
   - Teaching multiple meanings of words
   - Teaching conceptual connections
   - Multiple exposures to the word (3 or more)
   Other: ______________

17. When you taught reading in the 2018-2019 school year using an entire novel, which of the following ways did you teach standards-based reading lessons? Select all that apply.
   - Planning lessons using backwards design
   - Reviewing the standard(s) being taught with students at the beginning of the lesson
   - Analyzing word meanings of academic vocabulary used in the standard(s) being taught with students
   - Posting and using scales for understanding with students
   - Having students self-score their understanding of the standard(s) with scales
   - Providing mastery-based assessments to students
   - Providing remediation and extension activities to students
Internal Review Board Approval Letter

EXEMPTION DETERMINATION

October 14, 2020

Dear Sarah Brevoort:

On 10/14/2020, the IRB determined the following submission to be human subjects research that is exempt from regulation:

<table>
<thead>
<tr>
<th>Type of Review:</th>
<th>Initial Study, Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>A POST HOC CAUSAL COMPARATIVE ANALYSIS OF THE EFFECTS OF TEACHING INTENSIVE READING USING NOVELS ON STUDENT ACHIEVEMENT ON THE GRADE 10 FLORIDA STANDARDS ASSESSMENT OF ENGLISH LANGUAGE ARTS</td>
</tr>
<tr>
<td>Investigator:</td>
<td>Sarah Brevoort</td>
</tr>
<tr>
<td>IRB ID:</td>
<td>STUDY00002324</td>
</tr>
<tr>
<td>Funding:</td>
<td>None</td>
</tr>
<tr>
<td>Grant ID:</td>
<td>None</td>
</tr>
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</table>
| Documents Reviewed: | • HRP 251 FINAL COPY FOR IRB, Category: Faculty Research Approval;  
                          • 10.1 Brevoort TSRUNS, Category: Survey / Questionnaire;  
                          • HRP-254-FORM Explanation of Research Brevoort FINAL FOR IRB, Category: Consent Form;  
                          • HRP-255-FORM - Final for IRB 2, Category: IRB Protocol;  
                          • Survey Email for IRB FINAL, Category: Recruitment Materials; |
This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or [redacted]. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Racine Jacques, Ph.D.
Designated Reviewer
APPENDIX C
REQUEST FOR PERMISSION FOR RESEARCH
Request for Permission for Research

<table>
<thead>
<tr>
<th>Researcher:</th>
<th>Date:</th>
<th>Phone #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarah Brevoort</td>
<td>10/15/20</td>
<td>[Redacted]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sponsor (University/Agency):</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Central Florida</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professor:</th>
<th>Email:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Thomas Vitale</td>
<td>[Redacted]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposed date for start of on-site operations:</th>
<th>Expected date of termination of on-site operations:</th>
<th>Target date for receipt of your results/discussion to this office:</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/2/20</td>
<td>11/13/20</td>
<td>06/30/20</td>
</tr>
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</table>

**Title of Research (topic):**
A POST HOC CAUSAL COMPARATIVE ANALYSIS OF THE EFFECTS OF TEACHING INTENSIVE READING USING NOVELS ON STUDENT ACHIEVEMENT ON THE GRADE 10 FLORIDA STANDARDS ASSESSMENT OF ENGLISH LANGUAGE ARTS

**Statement of Problem or need to be addressed:**
Although it is a high school graduation requirement to earning a passing proficiency score of a level three or higher on the Grade 10 FSA ELA, in the spring 2019 administration of the Grade 10 FSA ELA 47% of students tested statewide did not pass with proficiency. Since almost half of Florida sophomores failed to meet proficiency, and since FLDOE allows each county to create their own reading curriculum and student progression plan. It is beneficial to study whether a relationship exists between teaching secondary reading using entire novels and student performance on the Grade 10 FSA ELA. Further, this research will address is a gap in the literature by analyzing the relationship between teaching secondary reading using entire novels and students' Grade 10 FSA ELA achievement scores.

**Briefly describe what you would like to do:**
I would like to compare Grade 10 FSA ELA proficiency scores of students in 10th grade reading and CAR classes based on whether they were taught reading using entire novels.

**Briefly list measures to be taken and instruments to be used (include a copy of those instruments not in common use and any available technical support on these instruments):**
I would like to obtain from the county email addresses of tenth grade reading/CAR teachers of 2018-2019 students to survey them. The survey will obtain information about which students were taught secondary reading using entire novels, what research-based teaching strategies they implemented, and teacher characteristics of years of experience and certification type. I would also like to obtain de-identified student Grade 10 FSA ELA proficiency scores from the spring 2019 test and de-identified student data of race/ethnicity, gender, and socioeconomic status (free or reduced price lunch or not). I would like to have the data include which reading teacher the student had, so the students can be grouped by whether they were taught reading using entire novels.

**Briefly describe subject groups participating in the research:**

<table>
<thead>
<tr>
<th>Grade level</th>
<th>Total #</th>
<th>Relevant Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>20</td>
<td>Teachers of 10th grade reading and CAR students in the 2018-2019 school year.</td>
</tr>
<tr>
<td>10</td>
<td>2,000</td>
<td>Historical Grade 10 FSA ELA and demographic student data of approximately 2,000 reading and CAR students from the 2018-2019 school year (no contact needed).</td>
</tr>
</tbody>
</table>
How are participating subjects selected (randomly, matched, etc.)?
The historic reading data will be gathered from the entire population of 10th grade reading and CAR students from the district, as a convenience sample of the statewide 2018-2019 reading student population of Florida.
The reading teacher survey will be given to the entire population of 10th grade reading teachers for the 2018-2019 school year, as a convenience sample of the reading teachers of the state of Florida.

ENCLOSURE CHECKLIST
(One copy of each of the following must accompany this request)

<table>
<thead>
<tr>
<th></th>
<th>Completed research permission request form.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>An abstract of the research (3 page limit)</td>
</tr>
<tr>
<td></td>
<td>Evidence of a review of the relevant literature and previous research.</td>
</tr>
<tr>
<td></td>
<td>Instruments to be used.</td>
</tr>
<tr>
<td></td>
<td>Procedures to be used to ensure confidentiality of subjects.</td>
</tr>
<tr>
<td></td>
<td>Parental permission form and/or subject permission form.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># of each school level</th>
<th>School or Department Name</th>
<th>Type of Personnel</th>
<th># Time Required</th>
<th>Activity Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>Each high school</td>
<td>Reading Teacher</td>
<td>1-2</td>
<td>10-15 minutes</td>
</tr>
<tr>
<td>1</td>
<td>Assessment &amp; Accountability</td>
<td>Data Analysis</td>
<td>1</td>
<td>Data Collection and de-identification</td>
</tr>
</tbody>
</table>

School facilitites needed (briefly list space, materials, equipment, etc. necessary for the proposed research—also list the purpose or use intended for each item listed)

<table>
<thead>
<tr>
<th>Item</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>No additional materials needed</td>
<td></td>
</tr>
</tbody>
</table>

Please be advised, the principal has the authority to decide if he/she wishes to participate in your study. Your research should not interfere with staff duties or instructional time of students. Please do not use email or courier mail to disseminate your research information.
<table>
<thead>
<tr>
<th>Signature of Researcher: [Signature]</th>
<th>Signature of Sponsor: [Signature]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please Print Name: Sarah Brevoort</td>
<td>(University/Agency)</td>
</tr>
<tr>
<td>Date: 10/15/20</td>
<td>Please Print Name: Thomas Viale</td>
</tr>
<tr>
<td></td>
<td>Date: 10/15/20</td>
</tr>
</tbody>
</table>

131
APPENDIX D
REQUEST TO CONDUCT RESEARCH: SCHOOL DISTRICT APPROVAL LETTER
December 11, 2020

Mr. Sarah Bravoort

Delivered via electronic message to sbravoort@knights.ucf.edu

Dear Mr. Bravoort:

I am in receipt of the proposal and supplemental materials that you submitted for permission to conduct research in [redacted]. You are granted permission to conduct the study you proposed, A Post Hoc Causal Comparative Analysis of the Effects of Teaching Intensive Reading Using Novels on Student Achievement on the Grade 10 Florida Standards Assessments of English Language Arts. Your approval includes the specific subject groups and instruments you identified in your formal proposal to [redacted]. If you wish to make changes to your target group or other significant components of your proposal, please contact me to determine whether an updated request form and approval letter is necessary.

Please note that this approval to conduct research is subject to the following conditions:

1) For access to the teacher and student data you may need to conduct your study, please contact [redacted], Director of Research & Accountability, to secure the services of a data analyst at your expense. Data analysts complete work on approved research requests at their discretion outside of their contracted time and at their requested rate of pay.

2) As we discussed during our phone conference yesterday, we do not typically release personally identifiable teacher or student data to researchers. When you contact [redacted] and subsequently speak with a data analyst who agrees to work on this project, please discuss a methodology that anonymizes both student and teacher data using a coding system that provides the data links you will need for your study, or another method that meets your needs without identifying students and teachers.

3) The principal of each high school whose teachers are included in your study must be contacted to secure their permission to conduct research on their campuses. Additionally, the participation of classroom teachers in your study must take place outside of their contracted hours.

4) Use of the school district’s email and courier systems for research studies is not permitted. Additionally, please be reminded that, conducting research outside your scope of employment, all your efforts on this project must be performed outside of your contracted time.

If you have any questions regarding these conditions, please contact me for clarification.

Your study is of interest to the school district. Upon completion of your study, please provide a summary or copy of your findings to my office. I wish you all the best for a successful study and dissertation!

Respectfully,

[redacted]
Hello (teacher first and last name),

Due to your role as a tenth-grade reading or Content Area Reading (CAR) teacher in the 2018-2019 school year you are being invited to complete a 17-question survey for research. Completion of the survey should take approximately ten minutes and is voluntary.

This survey is anonymous. Your name will not be collected in the survey. Instead, please use the unique identification number listed below.

Unique Identification Number: __________________________

No one will be able to identify you or your answers, and no one will know whether you participated in the survey. If the data is published, no individual information will be disclosed.

If you choose to participate, please complete the survey by Friday, January 29th, 2021.

To participate in the research, please access the survey using one of the three options below.

1. Scan the QR code below with your cellphone to easily access the survey.

2. Type the link below into any browser:

   https://tinyurl.com/Reading10Research

3. Text me at (352) 363-0047 or email me at sbrevoort@knights.ucf.edu and I will provide a hyperlink you can use to access the survey.

If you have questions about this research, you may contact me at the above email or phone number, or contact Dr. Thomas Vitale, Faculty Supervisor, Department of Education Leadership and Higher Education by email at thomas.vitale@ucf.edu

Regards,

Sarah Brevoort

Sarah Brevoort, Ed. S.
sbrevoort@knights.ucf.edu
(352) 363-0047
June 15, 2021

Dear Sarah Brevoort:

On 6/15/2021, the IRB reviewed the following protocol:

<table>
<thead>
<tr>
<th>Type of Review:</th>
<th>Continuing Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>A POST HOC CAUSAL COMPARATIVE ANALYSIS OF THE EFFECTS OF TEACHING INTENSIVE READING USING NOVELS ON STUDENT ACHIEVEMENT ON THE GRADE 10 FLORIDA STANDARDS ASSESSMENT OF ENGLISH LANGUAGE ARTS</td>
</tr>
<tr>
<td>Investigator:</td>
<td>Sarah Brevoort</td>
</tr>
<tr>
<td>IRB ID:</td>
<td>CR00001130</td>
</tr>
<tr>
<td>Funding:</td>
<td>None</td>
</tr>
<tr>
<td>Grant ID:</td>
<td>None</td>
</tr>
<tr>
<td>IND, IDE, or HDE:</td>
<td>None</td>
</tr>
</tbody>
</table>

The IRB acknowledges your request for closure of the protocol effective as of 6/15/2021. As part of this action:

- The protocol is permanently closed to enrollment.
- All subjects have completed all protocol-related interventions.
- Collection of private identifiable information is completed.
- Analysis of private identifiable information is completed.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Gillian Bernal Designated Reviewer
REFERENCES


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Center for Education Reform. (2021). *What’s wrong with common core ELA standards?*


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Every Student Succeeds Act, 20 U.S.C.


http://www.fldoe.org/core/fileparse.php/7539/urlt/6a-5-090.pdf


https://doi.org/10.1598/RRQ.39.1.8


https://doi.org/10.1007/BF00401799


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