The Effect of Florida Assessments for Instruction in Reading Programs on Florida Standards Assessments Test Scores

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Abstract

The United States public school system has annual reporting measures that have been set up to hold local school districts and teachers accountable to the U.S. Department of Education for students' academic success. In particular, reading comprehension and literacy skills have been a focal point for public schools across the nation. The Florida Department of Education adopted the Florida Standards Assessments (FSA) in 2014 as its annual standardized testing instrument and provided schools with the Florida Assessments for Instruction in Reading-Florida Standards (FAIR-FS) diagnostic program to prepare students for success on the FSA. The specific problem addressed in this study was the predictive qualities of the FAIR-FS program on the FSA-ELA (English language arts). To test the null hypothesis in this study, a linear regression analysis of archival data examined the relationship between a random sample of third-grade students' FSA-ELA test scores and the FAIR-FS. This study also evaluated the potential correlation between student ethnicity and successful reading test scores from the FAIR-FS and FSA-ELA. The data supported the hypothesis of a significant correlation [$F(2,97) = 37.40$, $p < .001$, with an adjusted R squared value of .42] between the FAIR-FS as a predictor of students' achievement scores on the FSA-ELA. Contrariwise, the data showed no relationship between student ethnicity and passing FSA-ELA test scores with the FAIR-FS as a predictive tool. Recommendations for future research include exploring the effects of the FAIR-FS and the FSA-ELA from other school years, incorporate additional categories of student ethnicity beyond the scope of this study, expand this analysis in other Florida school districts, include the ELL and ESE student populations, and other grade-levels such as middle and high school.

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Chapter 1: Introduction

To foster stronger accountability standards in public schools, the Adequate Yearly Progress (AYP) accountability system was initiated as a subpart of the No Child Left Behind (NCLB) legislation (FDOE, 2014). The primary objective of the AYP requires school districts to provide an annual accountability report to the U.S. Department of Education (USDOE). This report shows if each state has made adequate yearly progress and if the annual measurable student achievement goals on standardized test scores have been met under the NCLB accountability for AYP legislation (FDOE, 2014; USDOE, 2015).

As student achievement ranks high on the accountability list in public education (Spilt, Hughes, Wu, & Kwok, 2012; Weingarten, 2014), local school districts are encouraged to develop academic values in each State that would promote reforms to help increase student academic performance (Master, Loeb & Wyckoff, 2017; Plecki, Elfers, & Nakamura, 2012). The impact of the NCLB compelled school districts to provide an annual student performance review. This review was centrally important for accountability, but it also produced controversial concerns if it would help increase student achievement on standardized test scores (FDOE, 2014; IES, 2012).

Improving student reading comprehension has been an ongoing focus in education (Lai, Wilson, McNaughton & Hsiao, 2014; McCullough, 2013; Yi-Chin, Yu-Ling & Ying-Shao, 2014). For more than a decade, The Florida Department of Education (FDOE) has made it a statewide priority to support programs that would help increase student literacy proficiency in schools (FDOE, 2014a). Frey and Fisher (2012) believe that a solid foundation in reading comprehension and literacy skills are needed during the

learning process and an essential part of demonstrating critical thinking skills in all academic content areas (Thonney & Montgomery, 2015). Florida utilizes an annual norm-referenced test to measure student achievement on the Next Generation Sunshine State Standards (NGSSS) benchmarks. The objective of these benchmarks outlined specific content, knowledge, and skills students in Florida public schools were expected to acquire (FDOE, 2014b). Students that score poorly on this high-stakes standardized test could be retained on grade level impacting their future potential for high school graduation (FDOE, 2014e; FDEO, 2015c; Lai et al., 2014).

The Florida Standards Assessments in English Language Arts (FSA-ELA) is the State's current standardized test for reading comprehension (FDOE, 2014d; FDEO, 2014g). To ensure student success on the FSA-ELA, educators utilize tools and progress monitoring systems to help them diagnose and identify academically at-risk students (Rowe, Witmer, Cook, & daCruz, 2014; Stockall, Dennis, & Rueter, 2014). The Florida Assessments for Instruction in Reading-Florida Standards (FAIR-FS) is a broad screening assessment tool the FLDOE has implemented to help teachers identify students who are on or above grade level in reading comprehension (FDOE, 2014c). The FAIR-FS provides teachers with student score profiles and allows teachers to evaluate the effectiveness of their pedagogy and make informed decisions to help close the reading deficiency gaps (FDOE, 2014c). To date, there is no comprehensive FAIR-FS data to support the assumption of its ability to prepare students for success on the FSA-ELA. Examining the relationship between the FAIR-FS and the FSA-ELA, while controlling for race/ethnicity, will provide evidence if the FAIR-FS program will produce an accurate predictive probability of literacy success for students on the FSA reading

component of English Language Arts (Foorman, Kershaw, & Petscher, 2013; Jones, Yssel, & Grant, 2012).

Background

The successful development of reading comprehension is considered paramount for achieving academic success in literacy skills among elementary grade students (FCRR, 2015; Frey & Fisher, 2012; FDOE, 2015e). During the emergent developmental stages of reading comprehension, research shows that students will encounter various operational factors that are challenging such as drawing meaning from text without assistance, making accurate analytical decisions through contextual clues, and developing inferential proficiency in reading skills (Lee & Schmitt, 2014; Priebe, Keenan, & Miller, 2012; Silva & Cain, 2015). In addition, for students to make metacognitive connections with the text during reading instruction, the ability to recall information from background knowledge is paramount to reading success (Geva & Farnia, 2012; Malik, Sarudin, Muhamad, & Ibrahim, 2013). These challenging factors of recalling background information are further multiplied if students are already behind grade level when entering the classroom (Silva & Cain, 2015). In the economic global marketplace, these young learners will need the foundation of proficient reading comprehension and literacy skills to compete in a post-modern day society (Holdren & Lander, 2012; USDOC, 2015).

The state of Florida expects all students enrolled in its public school system to meet grade-level proficiency criteria on the annual end-of-year (EOY) official standardized test (FDOE, 2014a). Failure to meet these state proficiency standards would result in students placed in mandated intensive reading intervention programs during the

following school year (Foorman et al., 2013). The Florida Comprehensive Achievement Test (FCAT) was launched in 2000, and later was transitioned to the FCAT 2.0 in 2010 (FDOE, 2014c). The FCAT was the official standardized testing instrument utilized from 1995 to 2014 as the state's end-of-year [EOY] assessment tool, but the administration of that testing instrument ended after the 2013-2014 school year (FDOE, 2014c).

Since the launch of standardized testing, various test-preparation materials primarily drove classroom pedagogy in many Florida schools rather than a focus placed on responsive content instruction alongside these formative assessment programs (Ebert & Scott, 2014; Jennings & Bearak, 2014). As test scores are released to the public, schools continue to review and analyze the published results (Jones et al., 2012; Mendoza-Denton, 2014). An emphasis is then placed to adopt modified test-taking curricula to help close the deficiency gaps and to increase student performance on test scores the following year (FDOE, 2014a). These approaches are designed to modify instruction to foster better responses on test questions followed by remediation to correct student errors. In addition, the objective with improved FCAT test scores is to reflect mastery on the Next Generation Sunshine State Standards (NGSSS) benchmarks (FDOE, 2014a; FDEO, 2014b). However, the effects of "teaching to the test" became the quasi-instructional norm for teachers rather than an approach to help students acquire the content material for academic traction resulting in improved test scores (Frey & Fisher, 2012; Scherer, 2014).

In 2014, the Florida State Board of Education approved the Florida Standards in English Language Arts and Mathematics and the FDOE contracted with the American Institutes for Research (AIR) to develop the new Florida Standards Assessments (FDOE,

2014d). The FSA subsequently replaced the FCAT 2.0 and implementation for grades K-12 began during the 2014-2015 academic school year. This shift in genre focus from the FCAT to the FSA (FDOE, 2014e) was primarily due to the increased emphasis placed on informational text (McCown & Thomason, 2014; Roberts, 2012; Witmer, Duke, Billman, & Betts, 2014) that resulted from the launch of the Common Core State Standards in English Language Arts (ELA) initiative in 2010 (Common Core State Standards Initiative, 2015a). The efficacies of the Florida school system have been and are still currently based upon student achievement on these mandated standardized assessments to increase academic excellence in reading comprehension and literacy skills (FDOE, 2014e).

A comprehensive reading program would help improve a student's reading proficiency level and close the literacy deficiency gaps. (Carretti, Caldarola, Tencati, & Cornoldi, 2014; Jones et al., 2012; Lai et al., 2014; Petrill, Logan, Sawyer, & Justice, 2014). Therefore, the results from closing the deficiency gaps in reading and literacy skills would show improvements in academic aptitude during the progress monitoring stages (Rowe et al., 2014). Consequently, the impact of these improvements will reflect higher test scores on standardized assessments (Carretti et al., 2014; Nelson, Perfetti, Liben, & Liben, 2012; Plecki et al., 2012).

In 2009, the Florida Center for Reading Research (FCRR) developed an assessment-for-learning reading program called the Florida Assessments for Instruction in Reading (FAIR) for the Florida Department of Education (FDOE, 2014i). This program was offered as a free support system for school-based administrators and educators, in public and private schools in Florida, to guide literacy instruction in the

classroom (FDOE, 2014c). In particular, FAIR was designed to assist students who are struggling to meet grade level requirements based on the Florida standards benchmarks. The FAIR program is a web-based data management system and is part of Florida's progress monitoring and reporting network (PMRN) tool (FCRR, 2016). The various reading components within the FAIR program are also referred to as the Web-Based Assessment Module (WAM) and have been widely used statewide as an indication instrument of students' performance on annual standardized test, as well as to help teachers better prepare students for those high-stake assessments (FDOE, 2015h).

Statement of the Problem

The area of reading comprehension continues to be an ongoing interest for researchers in education (Carretti et al., 2014; Lai et al., 2014; McCullough, 2013; Yi-Chin et al., 2014). Proficiency in reading comprehension and literacy skills are important factors for effective learning in the classroom, and deficiencies in these skills can undermine a student's success in other academic content areas (Frey & Fisher, 2012; IES, 2012; Seifert & Espin, 2012; Spilt et al., 2012). Successful reading performance is important in schools, but it is also an essential factor for students' success in the workforce (Brown, Yasukawa, & Black, 2014). Low proficiency levels in reading will become a barrier for competencies necessary for success in job-related fields (Jacobson, Hund, & Soto-Mas, 2016; McKoon & Ratcliff, 2016).

Currently, successful academic scores on standardized assessments in U.S. public schools are not meeting the Title 1 legislation goals of the NCLB (IES, 2012; NCLB, 2001b). The 2012 retrospective report released by the National Center for Education Statistics (NCES) showed that students in 4th grade schools across the U.S. reside in the

bottom quartile for reading comprehension and 60% of students in 8th grade do not have proficiency in reading. These troubling results represent the academic trend in reading and literacy skills over a period of 40-years (IES, 2012).

Florida students taking the high-stakes FSA-ELA are not adequately prepared, which remains a critical concern (FDOE, 2014d). The general problem is the FAIR assessment system has only been previously augmented with indication tools to help teachers prepare students for the former FCAT 2.0 standardized test (FDOE, 2014e). The specific problem addressed in this study is that the predictive qualities of the FAIR program on the newly instituted 2015 FSA-ELA, while controlling for race/ethnicity, have yet to be evaluated. This study will also contribute essential information to help students succeed in Florida public schools (Foorman et al., 2013; Jones et al., 2012).

Purpose of the Study

The purpose of this quantitative study was to examine the relationship between third-graders' 2014-2015 FSA-ELA passing standardized test scores and the FAIR-FS reading achievement test scores. The resulting aggregated data was from amongst the 87 public elementary schools of which 54 schools are Title 1 sites in Polk County, Florida. The target population represented district-wide data, and a purposive random sample of third-grade students' test score data, while controlling for race/ethnicity, were used in this study. Third grade was selected because it is the primary promotion and retention grade-level for Florida public schools as students are required to pass the FSA-ELA to be promoted to the fourth-grade (FDOE, 2014a, 2014b, 2014d, 2014e, 2015c). The standardized testing data and statistics in Florida are public domain documents and available from the Florida Department of Education (FDOE, 2015c). The Assessment,

Accountability, and Evaluation (AAE) department at the Polk County School Board (PCSB), Florida will compile the FAIR-FS and FSA-ELA data reports. The *G*Power3* program produced a sample size of 55 for conducting the statistical power analyses and a predictor variable equation was used as a baseline. The recommended medium effect size used for this assessment was ($f^2 = .15$). The alpha level used for this analysis was $p < .05$. The number of predictors entered into the *a priori* power analysis was one. Also, an approximately equal distribution of the predictor (FAIR-FS) and outcome (FSA-ELA) variables was needed. There was more than adequate power (i.e., power * .80) at the moderate to large effect size level, but less than adequate statistical power at the small effect size level (Faul, Erdfelder, Buchner, & Lang, 2014). Finally, a linear regression analysis was used with R^2 measuring the distance of the data result produced in the regression line. This statistical model was the most efficient analysis for this study to determine the relationships between the collected data and the variables to test the null hypothesis.

Research Questions

The objective of this research was to determine whether utilizing the FAIR-FS diagnostic reading program, as an indicator of success in elementary school, will contribute to a higher percentage of students successfully passing the FSA standardized test in English language arts. The anticipation of the proposed study focused on the following research questions.

Q1. What is the relationship between reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida?

Hypothesis

$H1_0$. There is no relationship between reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida.

$H1_a$. There is a significant relationship between reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida.

Q2. What is the relationship between ethnicity and reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida?

Hypothesis

$H2_0$. There is no relationship between ethnicity and reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida.

$H2_a$. There is a significant relationship between ethnicity and reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida.

Nature of the Study

The seminal work of Black (2005) compels researchers to be cautious when attempting to identify isolated phenomena when deciding the research method design. This is due to the complex and multivariate nature of many situations that makes the process challenging. Therefore, the quantitative method used in this study examined the Pearson product moment coefficient correlations, or Pearson *r*, between students'

academic performance on the Florida Assessments for Instruction in Reading-Florida Standards (FAIR-FS) program, and test score results on the Florida Standards Assessments English in Language Arts (FSA-ELA). The quantitative differences in this study was measurable and helped produce statistical data to test the theory that the independent variable (FAIR-FS) was a supportable tool (Arghode, 2012; Yilmaz, 2013) that helped to diagnose and forecast student academic outcomes on the FSA standardized assessment (i.e., dependent variable). Also, this correlational approach was quantifiable when comparing a large amount of data that extensively stemmed from within an identified population and significantly influenced the validity of the conclusion in this study.

Sustainable research methodology originates from a design method that provides meaningful information, which will best serve to answer each research question presented (Vogt, Gardner, & Haeffele, 2012). The research questions and associated hypotheses in this study were progressively constructed to examine between test preparation best practices and student academic performance on standardized tests based on current research information and literature. Fowler (2014) mentioned that more than in previous years, researchers today evaluate research questions for clarity and if the results were meaningful. Sufficient scope were produced when research questions were utilized as a means of measurement and became an essential part of the survey process itself (Black, 2005).

Significance of the Study

Every year the U.S. Department of Education (USDOE) utilizes standardized testing as a public policy tool for students in U.S. public schools from kindergarten

through grade 12 (IES, 2012, USDOE, 2015). These assessments range across various areas of disciplines that include the content areas of mathematics, science, reading, and writing. The primary objectives of these standardized assessments are necessary instruments to promote critical-thinking skills (Gobert, Kim, Sao Pedro, Kennedy, & Betts, 2015) and to help establish stronger accountability measures for public education (NAEP, 2011: NAEP 2015). In complying with the mandate from the USDOE, local public educational institutions are expected to enhance educational opportunities and equity by improving the academic achievements of American students in public schools (USDOE, 2016). The Florida Department of Education (FDOE) adopted the Florida Standards Assessments (FSA) as its barometer for measuring student academic success through these end-of-year standardized tests (FDOE, 2014d; 2014g; 2015d). In particular, the reading and writing components of the annual FSA assessment scores have become a primary focal point for Florida school districts because Grade 3 students are required to pass the FSA in English language arts as a criterion for promotion to the fourth grade (FDOE, 2014a, 2014b, 2014d, 2014e, 2015c).

In conjunction with the administration of the FSA, the FDOE has also provided local school districts with the Florida Assessments for Instruction in Reading (FAIR) diagnostic tool, which can help educators prepare students for the annual FSA in English language arts (FCRR, 2016; FDOE, 2014c, 2014d, 2014i). Given the statistical realities of low reading scores the past four decades in elementary education (CEP, 2012; FCRR, 2015, 2016; FDOE, 2015, 2015g; IES, 2012; NIL, 2012), it remains imperious and urgent for teachers to understand the negative repercussions and impact this dilemma will have on students' academic success in the future (Anton et al., 2014; Carretti et al., 2014;

Hashemi & Kendeou, 2014; Silva & Cain, 2015) if intervention is absent. Mediation with more efficient instruction in reading comprehension and literacy skills are needed to mitigate the low academic performance in current student trends (Plecki et al., 2012; Shaw & Holmes, 2014).

The significance of this quantitative study was to quantify test-taking strategies on standardized assessments through comprehensive reading instructional platforms that helped to secure stronger academic scores for elementary grade students. Validated research is needed before sound curriculum decisions for a robust inclusion reading program can be built to promote meaningful learning (Hosp & Suchey, 2014; McElhone, 2015) and foster higher academic success on standardized assessments at low-performing schools (Flum & Kaplan, 2012; Jeon & Yamashita, 2014; Jones et al., 2012; McCown & Thomason, 2014; Scherer, 2014). Conversely, the findings from this study helped determine if the FAIR program was a viable diagnostic tool (FCRR, 2016; Jennings & Bearak, 2014; Rosman et al., 2015) for preparing students for success on the FSA-ELA. Furthermore, the findings from this study helped create recommendations on effective classroom instructional practices, and provided teachers with an avenue to build higher reading comprehension benchmarks with efficacy within the Polk County School District. Also, the findings from this study potentially helped other Florida public school districts that are struggling to meet annual measurable academic achievement goals to focus more effectively when adopting reading comprehension instructional strategies for its schools.

Definition of Key Terms

For the purpose of this quantitative study the following terms were defined:

Annual measurable achievement objectives (AMAO). As part of the implementation of the No Child Left Behind Act (NCLB) under Title III, Part A, the annual measurable objectives are the achievement goals students make on academic performance. These student goals from each local education agency are annually used to compare against the performance of all students collectively across the state of Florida. For each local education agency to receive Title III funding from the U.S. Department of Education (USDOE), annual measurable objectives must be met (FDOE, 2014).

Assessment, accountability & evaluation (AAE). The AAE department of the Polk County School Board in Florida is the district's student testing and evaluation division under Teaching and Learning Services. The AAE office provides the data dashboard that houses all State assessment results that include the Florida Standards Assessments, end-of-course assessments, and the FCAT 2.0. Also, the AAE department complies the district's FAIR-FS test score data (PCSB, 2015).

Adequate yearly progress (AYP). The AYP is a subpart of the NCLB legislation that is designed as an equal standard for all students in U.S. public schools. Every school is required to provide an annual accountability report to the U.S. Department of Education on all substantiated academic improvement initiatives and measurement of academic progress that is based on the NCLB standards. Each educational institution is required to show its annual subgroup progress that includes racial, ethnic, economic and developmental as reflected in the NCLB Act of 2001 (NCLB, 2001b; NCLB, 2012).

Analysis. In the context of reading comprehension and literacy skills, analysis is the crucial stage where the development of critical thinking skills begins. The application

stage of analysis is where the reader is able to formalize generalizations from the content and form personal opinions. According to the Bloom's Taxonomy of Higher Order Cognitive Development, analysis is considered to be one of the higher-order domains in literacy skills (Bagchi & Sharma, 2014; Shaw & Holmes, 2014; Bloom, Engelhart, Furst, Hill & Krathwohl, 1956; Thonney & Montgomery, 2015).

Center on education policy (CEP). The CEP office serves at the national, state, and local levels producing reports such as state testing data and student achievement through various publication media and distribution of meeting notes relating to the field of education. Some examples would include Common Core State Standards, federal education programs, high school exit exams, and public school facts, history, and education related issues. In addition, the CEP is also available to make educational presentations when requested. The CEP jointly collaborates alongside various business and educational organizations at the state and civic levels (CEP, 2012).

Consolidated state performance report (CSPR). The Consolidated State Performance Reports are mandated reporting tools under Section 9303 of the Elementary and Secondary Education Act (ESEA). All 50 States including the District of Columbia and Puerto Rico are required to submit the CSPR annually to the U.S. Department of Education (USDOE). The CSPR contains five ESEA annual performance goals: (1) All students will reach high academic standards with proficiency in English language arts (ELA) and mathematics, (2) All limited English proficient (LEP) students will attain proficiency in English and attain high academic standards in ELA and mathematics, (3) All students will receive education by highly qualified teachers, (4) All students will receive education in environments that are safe, drug-free, and conducive to learning, and

(5) All students will complete their education and graduate from high school (USDOE, 2015).

Decoding. As it relates to reading (text), decoding utilizes basic and visual skills to process, translate, and understand syntactic signals. These signals are used to formulate words into comprehensible meaning. This process becomes adapted into the formation of sentences gained from semantic cues. Whereby, words are converted to construct groups of letters (Luque, López-Zamora, Alvarez & Bordoy, 2013).

English language arts (ELA). ELA is part of the Common Core (CC) Standards for literacy that includes the academic content areas of History, Social Studies, Science, and Technical Subjects. The CC framework for ELA and literacy is designed to prepare K-12 students for success in college and career upon graduation from high school. ELA Standards helps to establish a foundation that requires students to read, write, speak, listen, and proficiently use language in the content areas. ELA promotes literacy, critical thinking, problem-solving, and analytical skills to prepare pupils for success in college and the workforce (Common Core State Standards Initiative, 2015; FDOE, 2015d).

Evaluation. In the operation of reading and literacy skills, evaluation is the ability to identify and separate the importance of information read. This is attribute is considered the highest form of cognitive judgment and provide the ability to recall information and form decisions that are simplified and comprehensible (Hashemi & Borhani, 2014; Poole, 2014).

Florida Center for Reading Research (FCRR). The Florida Center for Reading Research is part of Florida State University and it is a multidisciplinary research center. The FCRR focuses on literacy-related research and develops programs that help

struggling students become successful with reading comprehension skills. The work of the FCRR also includes the development of new interventional programs along with psychometrical studies on effective formative reading assessments (FCRR, 2015).

Florida 2.0 comprehensive assessment test (FCAT 2.0). The FCAT 2.0 was implemented in the state of Florida from 2011-2014. This was the State's annual standardized test for reading, writing, mathematics, and science. The FCAT 2.0 was primarily used to measure Grades 3-12 student achievement based on the Next Generation Sunshine State Standards (NGSSS) benchmarks. In the spring of 2015, the FCAT 2.0 was discontinued and was replaced by the Florida Standards Assessments (FSA) in English language arts and mathematics. This new standardized test is currently used to measure student achievement of the Florida Standards (FDOE, 2014f).

Florida assessments for instruction in reading-Florida standards (FAIR-FS). This is Florida's new diagnostic assessment system in reading comprehension and was developed by the Florida Center for Reading Research in collaboration with Just Read, Florida. The FAIR-FS program provides teachers with the ability to screen, diagnose, and progress monitor students' abilities in reading comprehension throughout the year and is administered three times a year in Florida public schools. The FAIR-FS program is an essential tool to help guide classroom teachers with instruction (FDOE, 2014c).

Florida Department of Education (FLDOE). The FDOE is the education agency for the state of Florida. The primary role of the FDOE is to provide governance in public school education and the management of state funding and testing for local school districts. The FDOE is also the primary responsibility of the Governor of Florida (FDOE, 2014a; FLDOE.org)

Florida standards assessments (FSA). The FSA replaced the FCAT 2.0 in the spring of 2015 and has become the state's primary statewide-standardized test. This new assessment program is designed to help Florida students succeed and demonstrate proficiency to meet the Florida standards' benchmarks. The FSA includes the annual standardized test in English language arts (ELA) and mathematics. It also includes standardized tests for the end-of-year (EOC) subjects in algebra 1, algebra 2, and geometry (FDOE, 2014g).

Fluency. In the context of reading, fluency is defined as the basic reading comprehension skill and a demonstrated ability to decode text accurately. Demonstrated fluency includes the ability to read and decipher text effortlessly, with expression, and could be through the forms of silent and oral reading (Padeliadu & Antoniou, 2014; What Works Clearinghouse, 2013).

Institute of Educational Sciences (IES). The office of the IES is an extension of the U.S. Department of Education (USDOE) from which research is conducted. The research-based data serves as evidentiary support for educational policies and reforms. The primary objective of the IES is to help improve academic success for all students (IES, 2012).

Literacy skills. Within the context of reading comprehension, literacy skills envelop the domains and progression of reading in the content areas. This includes the processes of phonemic awareness, decoding of text, morphology, phonology, and fluency. Literacy skills follow Bloom's taxonomy criteria starting at the lower domain (basic background knowledge) and progressing to higher-order thinking stages of

application, analysis, synthesis, and evaluation (Bloom et al., 1956; Gerde, Bingham & Wasik, 2012).

National Assessment of Educational Progress (NAEP). The National Assessment of Educational Progress is a congressionally authorized project and a national representative of reading assessment reports in literacy and informational text. These annual publications cover the major findings of student performances in reading comprehension over the past 20 years in the U.S. public school system and serves under the National Center for Educational Statistics (NCES). The NAEP is considered the nation's report card and the collection of data includes student performance at the national, state, and local levels (NAEP, 2011).

National Center for Education Statistics (NCES). The NCES is a federal entity that serves the U.S. Department of Education (USDOE) and is housed within the office of the Institute of Education Sciences (IES). The work of the NCES is to research and collect viable data in relation to education in the U.S. and other foreign nations. In addition, the office of the NCES fulfills the Congressional legislation to provide research-based statistics for publication on behalf of American education and activities (NCES, 2015).

National Institute for Literacy (NIFL). In 1991, the National Literacy Act legislation established the office of the NIFL. The NIFL is a federal registry that provides opportunities for U.S. citizens to be successful and literate. The primary objective of the NIFL includes working in collaboration with other U.S. federal agencies such as the Department of Labor, the Secretaries of Education, and the Department of Health and

Human Services. In addition, the NIFL (under the NCLB legislation) also serves to help children become literate through evidence-based research in reading (NIFL, 2012).

Next generation sunshine state standards (NGSSS). Prior to the transition to the Florida Standards Assessments (FSA), the NGSSS was the Florida Department of Education's benchmark outline for reading, writing, mathematics, and science in Florida public schools K-12. In addition, the NGSSS provides content foci assessed and the number of possible earnable points on the FCAT 2.0 Reading test (FDOE, 2014b).

No child left behind act (NCLB). The NCLB was legislated under U.S. Public Law 107-110 and 20 U.S.C. § 6319 in 2001 by Congress and is a reauthorization of the Elementary and Secondary Education Act of 1965. The NCLB Act contains updated statutes that specifically provide aid for disadvantaged students in the U.S. The provisions of NCLB reform supports a standards-based educational program operating under the premise that by setting measurable goals, improved outcomes in education will have a positive impact on teaching and learning. For public schools to receive federal funding and grants, the Adequate Yearly Progress (AYP) accountability system was launched under NCLB law in conjunction with requiring higher standards for annual academic progress. In addition, higher qualifications for teacher certification were required (NCLB, 2001b; NCLB, 2012).

Norm-referenced test. A norm-referenced test is a standardized assessment designed and used to make comparison analysis between test-takers. It provides test reports to show if the test-taker displayed competency on the benchmarks used in the evaluation. Test scores are also used to determine if the performance results showed deviation from standard mean scores and ranked accordingly. This statistical data could

be used by test developers to form norming groups and are often reported as generic percentage scores (Ebert & Scott, 2014).

Reading comprehension. Reading comprehension is having the ability to read and decode text, process the information for understanding, demonstrate vocabulary background knowledge, and provide an explanation of its meaning. For the individual to show evidence of the comprehended text, the individual must also have the ability to make inferences. Reading comprehension is an important foundation for writing and is paramount to literacy skills. Comprehension is considered a lower learning-domain within Bloom's cognitive dimension process. As proficiency in reading comprehension is acquired, higher-order cognitive levels to reorganize elements will lead to the individual's literacy development. (Bloom et al., 1956; Bradfield, Besner, Wackerle-Hollman, Albano, Rodriguez & McConnell, 2014).

Regional educational laboratory (REL) southeast. The Regional Educational Laboratory (REL) Southeast is located at Florida State University under the direction of the Florida Center for Reading Research (FCRR). The objectives of the REL Southeast provide critical elements that serve the needs and helps educational systems in the region become successful. This includes applied research in education, development of educational projects and studies, and provides technical assistance support for school improvement (REL-SE, 2015).

Summary

Student achievement is considered a high priority in public education (Spilt, Hughes, Wu, & Kwok, 2012; Weingarten, 2014) and as a subpart of the NCLB legislation, the USDOE requires all school districts to provide an annual accountability

report by meeting AYP goals. These annual reports are measurable accounts as they reflect student academic growth on standardized assessments (NCLB, 2012). The FDOE has mandated a statewide policy (FDOE, 2014) for more than a decade to better support and help local school districts increase student proficiency in reading and literacy skills (FDOE, 2014a).

On an annual basis, Florida continues to use high-stakes norm-referenced assessments to measure student performance on the state's academic benchmarks (FDOE, 2014b). Consequently, when students score poorly on these annual standardized tests, retention on the same grade level the following year could occur (FDOE, 2014e, 2015c) and potentially impact students' high school graduation in the future (FDOE, 2014e, 2015c; Lai et al., 2014).

The current annual standardized test Florida uses is the recently adopted FSA-ELA for reading comprehension based on the framework of the Common Core Standards (CCS, 2015; FLDOE, 2014d, 2014g). To provide support for teachers to prepare students for the annual FSA-ELA, Florida schools continue to use the FAIR program, which was developed by the FCRR, as its comprehensive diagnostic indicator for reading and progress-monitoring (FDOE, 2014c, 2015e).

The current problem today showed that successful academic test scores are not meeting the Title 1 academic objectives in the U.S. public school system (IES, 2012; NCLB, 2001b). The academic trend in the past 40-years for reading comprehension proficiency and literacy skills remains at a deficit in schools across the U.S. and continue to reside in the bottom quartile according to the National Center for Education Statistics

(IES, 2012). In Florida, students are also not adequately prepared for taking the high-stakes EOY tests and remain a critical concern for the state (FDOE, 2014d).

The purpose for this study was to examine the relationships between the FAIR-FS (recently updated to meet the benchmarks of the new Florida Standards) achievement scores, and students' 2014-15 FSA-ELA passing test scores. The significance of this quantitative study also helped to quantify test-taking strategies for students taking these Florida's EOY assessments. Invariably, this would help teachers better identify at-risk students in reading comprehension earlier on in the school year so that student performance scores on the FSA would increase.

Chapter 2: Literature Review

"Until recently, reading instruction for early grades has focused on fiction…the Common Core State Standards emphasize the reading of nonfiction texts to gain specific skill sets for analyzing information" (Job & Coleman, 2016, p. 154). At the elementary grade level, it remains especially imperative that a solid foundation in core reading instruction be taught to children early due to the ongoing mandates and pressures of performing well on annual standardized tests in U.S. public schools. Providing viable strategies to help young learners learn to read accurately, fluently, apply critical thinking skills, and have meaningful interaction with the text has been a primary objective in early childhood education (Lee & Schmitt, 2014). The prognosis that reminds us of the critical importance of having sound reading comprehension and literacy skills is essential because formal educational requirements depend greatly on the reader's ability to read with comprehensible understanding. The problem is that the predictive qualities of the FAIR-FS program on the FSA-ELA, while controlling for ethnicity, have yet to be evaluated.

The purpose of this study was to determine what influence the FAIR-FS reading program provided by the FDOE for elementary schools would have on students' passing scores on the FSA-ELA standardized test. The FAIR-FS program was designed to deliver teachers with diagnostic tools that would help students improve in reading comprehension and literacy proficiency in schools (FDOE, 2014a). The primary objective of FAIR-FS is to identify struggling students in reading and provide them with concrete and individualized intervention instructions during the progress monitoring stages (Rowe et al., 2014; Stockall et al., 2014). As students' proficiency in reading comprehension and

literacy skills improve, they would be able to become better learners and develop higher critical thinking skills. As a result of closing the deficiency gaps for these academically at-risk students, the percentage of their ability to sustain passing scores on the high-stakes FSA-ELA would increase.

A brief critical analysis of current scholarly research was provided in the literature review relating to the focus of this study. It will include the following topics, (a) Adequate Yearly Progress (AYP) legislation, (b) reading comprehension and literacy skills, (c) complexity of comprehension, (d) literal comprehension, (e) inferential comprehension, (f) evaluative comprehension, (g) critical thinking proficiency, and (h) standardized testing.

Documentation

The literature search for this study began before the start of the dissertation process in 2013. There were observable concerns that eventually led to the research pursuit of information that would help address current student learning deficiencies in reading comprehension and how to close those gaps. In addition, elementary school students are required to perform well on annual standardized assessments in English language arts. In as much, the research conducted at the time was not done in sequential order per se; however, the information gathered was collected in response to specific and observable concerns evidenced by the low and declining reading test scores in Polk schools. As this correlational study was being organized and formed, the pertinent literature reviews were arranged sequentially and topically listed. Moving forward, the impetus that initially provided direction began with reviewing childhood development publications by the *American Journal of Education (AJE)*. The AJE bibliographies and

references were very extensive and provided a solid foundation to successfully build the support needed for this study. As the research progressed, many of the scholarly and peer-review journal articles were primarily identified using the Roadrunner Search Discovery Service through the vast library database of Northcentral University, and the ProQuest and Ebscohost search engines. In accessing NCU's Academic Success Center, search topics began with utilizing key words such *as elementary education, reading comprehension, literacy skills, writing skills, standardized testing, Florida Standards Assessments, deficiency gaps in English language arts*, and various Bloom's Taxonomy (1956) terms in the search fields. The plethora of listed references within References provided a segue that led to additional searches such as, *exceptional student education, differentiated instruction, learning focused strategies, supplemental intervention, problem-solving strategies,* and the conceptual framework for *multi-tiered system of supports*. The book publications were identified through journal citations, as well as, borrowed from the local Southeastern University, Florida Southern College, and Polk State College libraries in Polk County, Florida.

Adequately Yearly Progress (AYP)

Since 2001, the Adequate Yearly Progress (AYP), a statewide requirement under the Title I legislation of the No Child Left Behind Act (NCLB), was initiated to help school-based and district level administrators foster stronger accountability standards. This annual accountability report allowed the USDOE to monitor student annual learning gains through standardized test scores within each local school district (NCLB, 2001b). The fundamental goal of the AYP mandate is to help schools make progress toward meeting state standards. The annual administration on each states' standardized test must

include the three specific content areas in reading, mathematics, and science. Furthermore, students in public schools are expected to reach proficiency levels on these standardized assessments by 2014 (Aske, Connolly, & Corman, 2013; CEP, 2012; NCLB, 2001b). This would also include the sub-demographic populations of minority students, students from low-income families, English language learners (ELL), and special education students (ESE) (NCLB, 2001b). AYP academic levels were also expected to show annual growth as each local school district are held accountable for specific federal consequences such as corrective action and restructuring if student performance on standardized tests were not successfully met (USDOE, 2015). In addition, more severe effects such as loss of federal funding to local school districts, federal takeovers of schools, or a complete reorganization of local schools' sites would occur should failure to meet AYP mandates continues (USDOE, 2015). Though the NCLB was passed in 2001, full implementation of this federal bill did not reach all public schools across the U.S. until 2006 with the AYP serving as the linchpin of the NCLB legislation (Aske et al., 2013). In conjunction to make adequate yearly progress, U.S. public schools are also required to meet annual measurable achievement objectives (AMAOs). These yearly targets are individually set by each state as performance indicators, and the AMAOs must include the percentages of students required to attain proficiency on state standardized tests. Failure to meet AYP would subject a given school district to mandated NCLB interventions. These interventions are intended to help school districts improve upon its AYP achievement goals (CEP, 2012; NCLB, 2001b; USDOE, 2015).

Each year the Center on Education Policy (CEP) office requires Consolidated State Performance Reports (CSPR) from all 50 states including the District of Columbia and the AYP collected data are sent to the U.S. Department of Education. All reported AYP performance data compiled by the CEP office are considered official and represent each school year in the U.S. According to the last published 2012-updated CEP report, an estimated 48% of public schools across the U.S. failed to make AYP in 2011 reflecting an increase from 39% in 2010. These findings indicated the highest percentage since the launch of the NCLB legislation in 2001. The percentage of Florida public schools that did not make AYP in 2011 was about 91% (CEP, 2012). The CEP report also indicated that each state would vary in content and rigor with its adopted standardized assessments utilized to measure academic achievement, and cautioned not to compare AYP results amongst other states. In addition, if a given state reflects a higher percentage of AYP failing schools, it should not be assumed that the reasons lie with an ineffective educational system. Other factors such as cut scores that define academic proficiency on standardized tests, the level of difficulty, demographic student population, and AMAOs might also contribute to the percentage of schools not meeting its AYP.

As part of the Elementary and Secondary Education Act (ESEA) provision, Title 1 federal funding is of vital importance for public school operations in Florida as local school districts depend largely on this annual resource (FDOE, 2014h). These grants and funding allocated to each local educational agency require public schools to focus Title 1 services on students who are receiving failing academic grades, classified as at-risk students, and schools that have difficulty in meeting AYP state academic standards (FDOE, 2014h). Also, all local educational agencies are required to facilitate Title 1

funds to K-12 public schools and provide academic enrichment services to eligible students matriculating at private schools (FDOE, 2014h). Consequently, schools that fail to meet AYP consecutively for two years in a row are identified as schools "in need of improvement" (Jennings & Bearak, 2014). AYP sanctions require such schools to provide an alternative option for its students by setting aside 20 percent of its annual Title 1 federal funding to support a school-choice options program (FLDOE, 2014h). Students at these AYP failing schools would have the ability to select a different school choice to matriculate the following school year. Additionally, AYP failing schools for two consecutive years are also subject to a federal school-improvement plan along with potential increasing financial sanctions from the U.S. Department of Education (FDOE, 2014h; NCLB, 2001).

Student achievement continues to rank high on the accountability list in public education (Spilt, Hughes, Wu, & Kwok, 2012; Weingarten, 2014) and local school districts are continuously encouraged to develop higher academic values within each individual state to promote reforms to increase student academic performance (Plecki, Elfers, & Nakamura, 2012). The NCLB initiative was the very first attempt by the U.S. Department of Education to nationally apply the logic of utilizing standards-based education in K-12 public schools (Gregory-Harman, Boden, Karpenski, & Muchowicz, 2016). While the impact of the NCLB legislation compelling school districts to comply with AYP standards, meet AMAO goals, and provide higher annual student performance review may be centrally important, it also produced controversial concerns if it would help increase student achievement on standardized test scores alone (Gregory-Harman et al., 2016). One concern addresses the student performance gaps on standardized

assessments and the academic achievement goals expected between White and students from minority backgrounds (Mendoza-Denton, 2014). According to Mendoza-Denton (2014), students' academic achievements are influenced by the way each person processes cognitive information they are exposed to on standardized tests. The reason for this is because it is considered a relational process within the mind. As a result, Mendoza-Denton (2014) warns this could produce thought variances of discrimination that may generate concerns on the part of the student while taking standardized assessments and assume potentially that they are being the targets of prejudice. Also, this would undermine student performances in addition to the toxic environmental messages it produces regarding abilities to perform well could force students from underprivileged backgrounds to adopt negative self-preservation modes to cope with the peer pressures (McCullough, 2013; Mendoza-Denton, 2014).

Another concern that resulted from the mandated compliance standards under the NCLB legislation labeled Title 1 schools that did not meet AYP goals as 'failing' schools for two consecutive years (Bogin & Nguyen-Hoang, 2014; NCLB, 2001b). These schools that are 'in need of improvement' (Jennings & Bearak, 2014; NCLB, 2001b) become performance-oriented targets that are closely monitored by the USDOE to close student learning-deficiency gaps so that its standardized test scores will improve in the following consecutive years. While these policies are principled, and the remediation efforts are good-willed, yet the labeling of a school as 'failing' (while trying to recover low standardized test scores) produces negative and unintended effects on the low-income neighborhoods and communities where those students reside. These are the same low-income neighborhoods the NCLB was originally designed to help and support (Bogin &

Nguyen-Hoang, 2014). Also, as a result of schools labeled as 'needs improvement' and now re-branded as 'failing' schools, home and property values in these communities begins to decline and sets a negative impact into motion that these 'failing' schools become perceived as poor-quality institutions that are surrounded by the social stigma of a 'failing' school designation (Bogin & Nguyen-Hoang, 2014). As a result, families from non-lower socioeconomic communities in which successful students that may have originally matriculated at such schools (depending on the extent of school choices available) may seek to relocate their children to a non-designated 'failing' school because of the implied stigma (Baron, 2012; Brasington & Hite, 2012). This creates (over time) a loss of academically proficient students and the remediation process to obtain higher standardized test scores with a steeper uphill battle for the 'failing' schools to follow up with the students that are left behind (Bogin & Nguyen-Hoand, 2014; Brasington & Hite, 2012).

Reading Comprehension and Literacy Skills

An ongoing challenge for reading researchers in recent years is defining the meaning of literacy. In the public-school system, literacy is often generalized and defined as one's ability to simply read and write. However, research shows that having an ability to read and write alone is neither comprehensive enough nor sufficient because wider ranges of reading, fluency, and language skills are needed for literacy success (Frey & Fisher, 2012; Hosp & Suchey, 2014; Kim, 2015; Nelson et al., 2012). Literacy in the context of reading comprehension is very complex as competency in literacy skills is foundational for success in oral-written language (Foorman et al., 2014). The National Assessment of Educational Progress (NAEP) is congressionally authorized as a

representative to provide statistical data on student performance over time in the major content areas of reading, writing, and mathematics in the U.S. public school system. The NAEP described literacy skills as the foundation for building reading comprehension and these skills are measured across two platforms of texts: literacy and informational. The NAEP reported the 213,000 fourth-grade students in U.S. public schools taking the literacy and informational text reading assessments in 2011 showed an average reading score of 4 points higher compared to 1992 but remained unchanged from 2009. The average reading scores for the 168,000 eight-grade students taking the same reading assessment in 2011 showed a slight 5-point increase in 1992 but only reflected 1 point higher in 1992 (NAEP, 2011). The results from the 2011 NAEP report indicated there has been a very low reading comprehension growth in student performance over the past 19 years. With the daunting complexity of reading comprehension and literacy skill requirements placed on students today, it is paramount that classroom pedagogy must include explicit instruction in core reading programs with the foundational practice of phonemic awareness. In addition, elementary grade students need to be exposed to a wider range of vocabulary fluency to build literacy skills in critical thinking. The deficit in these interdependent areas will hinder student performance growth in the oral-written structures of language acquisition and volubility (Barr, Eslami, & Joshi, 2012; Hashemi & Borhani, 2014; Reutzel, Child, Jones, & Clark, 2014).

Research shows that part of the dilemmas facing students in obtaining reading comprehension aptitude falls to within the communities of low-income minority parents that have low reading skills and the lack of interest for reading itself from children in these homes contributes to the problem (Bogin & Nguyen-Hoang, 2014; Dalton, 2013;

Malin, Cabrera & Rowe, 2014). The 2014 study of Churcher, Downs, and Tewksbury indicated Vygotsky's 1978 theoretical framework on social constructivism suggested that the learning development of children is a socially mediated process that requires the involvement of parents. The primary factor surrounding this theory has to do with the importance of the reading interactions between the parent-child relationships during the child's language emergent stages (Bradfield et al., 2014). This is an important foundational building-block process for setting up successful literacy skills in young readers. When this element is lacking due to the low-reading competencies of low-income minority parents, it becomes difficult to establish a regular and robust reading environment in the home. Without establishing a strong baseline for young emergent readers to build with parents at home—by the time these children enter the lower elementary-grade classrooms (grades K-2), reading becomes an uphill fight for these children because they do not have the needed vocabulary. In addition, these particular children have not had the opportunity to foster an interest in reading (Malin et al., 2014). Furthermore, the study of Malin et al. (2014) stated that parents are in the place to create and provide unique contributions to the language skills of children. Dalton (2013) encourages parents and caregivers to begin providing high-quality literacy experiences at home during the formidable years of early childhood as this will help build the foundational blocks necessary for the child's language growth and development that could yield high outcomes in the long-term. As a result, these early experiences at home can help children to successfully develop the reading comprehension and literacy skills they will need to become successful in school (Dalton, 2013; Geva & Farnia, 2012; Malin et al., 2014).

Complexity of Comprehension

The subject of comprehension complexity in reading research is not a new concept. Over the past few decades, seminal studies have shown the various levels of cognitive requirements placed on students and the emphasis on ability to know how to interact with the text is perplexing and especially for struggling younger readers (Lewis, 1983; Meyer & Cohen, 1975; Patrick, 1981; Scarcelli & Morgan, 1999). The first question that should be asked is how do children learn to read? The actual ability to read is a special aptitude, and often it is considered a very difficult challenge to overcome (Frishkoff et al., 2011; Lee & Schmitt, 2014). According to Chomsky's (1955) seminal study, when a person learns how to read is not the same entity as learning to speak because the steps leading up to the ability to speak precedes the ability to read by several years. Chomsky's logical-structure linguistic theory concluded that the human brain is naturally equipped for language acquisition. However, Chomsky cautioned for language acquisition (the ability to speak and converse) to materialize, children need to receive models of languages during the early childhood developmental stages in much the same way a child's motor-skills are developed (Chomsky, 1955). This process needs to be nurtured through contact and exposure through the guidance of an adult using language models as examples. If children are not exposed to these language models during their early childhood, these children will invariably encounter varying deficiencies in their language skills later in life (Chomsky, 1955; Hudson et al., 2012; Kim, 2015; Malin et al., 2014).

The maturity of spoken language is subconsciously developed within children and this step eventually will lead to help the child transition into the reading comprehension stage (Ebert & Scott, 2014). For example, it would be difficult to teach a 2-year old child

sentence structures and grammatical rules at that point no matter how much effort is exerted. However, when language models are employed with the 2-year old, the child begins to move into the language acquisition process when supposedly no one is able to teach the child anything during its early childhood stage. While children are absorbing complex information during this process, it is only absorbed on the subconscious level, but the child will eventually understand these complex stages of comprehension later down the road and with maturity (Bogin & Nguyen-Hoang, 2014; Dalton, 2013; Malin, Cabrera & Rowe, 2014).

> Montessori's (2012) work on scientific pedagogy quantified the following: Children from birth to six years have a power that we no longer have, for they are at the age of creation. Adults cannot produce even one tooth, while little children grow a whole set—an example of the physical power exclusive to their age. The same is true within the context of psychological development. There are periods in psychological development in which children have capacities that cannot be attributed to any method. This was the discovery of the sensitive periods—periods in psychological development during which the child has powerful capacities. (p. 11)

Reading is a different process because it requires active instruction and it must be consciously absorbed. Lillard (2012) and Malik et al. (2013) indicated that if reading is not actively taught it will not help an illiterate person learn how to read even though a lifetime is spent surrounding the printed text. Montessori (2014) observed that children in their development emergent stages (ages 2-4) have and interest in written letters and concluded that once the foundations of basic phonetic sounds have been acquired through

language models, the reading process for children will begin and becomes easier as they mature.

Reading comprehension is considered difficult and is a very complex process because of the multi-step progressions that requires active learning and instruction. Recent studies have opened up discussions on previously unknown elements of how the brain absorbs (learns) the process of reading (Barr et al., 2012; Bradfield et al., 2014; Carretti et al., 2014; Frey & Fisher, 2012; Hosp & Suchey, 2014; Seifert & Espin, 2012). These studies showed that emergent readers only utilize one section of the brain during the process of reading to connect phonetic sounds and associating them with appropriate letters while the other section of the brain converts (translates) these sounds into comprehensible words (text). The progression the brain encounters during the reading interval process requires time to formulate and this is why when children learn to read that it is a very slow and arduous progression (Silva & Cain, 2015). As comprehensible input begins to take place, children starts to construct (build) a permanent registry of these familiar words that eventually will become recognizable to them on sight (Frishkoff et al., 2011). These recognition processes will help and enable them to begin learning how to recognize the word instead of taking the time to sound it out internally when coming in contact with sight vocabulary. As children grow in this area, reading comprehension will eventually become increasingly effortless. However, Montessori (2014) indicated that children suffering from dyslexia or have other learning disabilities are unable to make the same transition smoothly because these children are unable to perceive words and identify them as individual sounds—they see them only as completed words that prevents the child from making the fluid transition to sight recognition. As a

result, this confusion adds to the complexity of reading comprehension for these children as they mature. Also, Montessori (2012) acknowledged that children at the emergent stages of learning to read (ages 2-4) have a deep-seated interest in letters in the written form. Montessori's "sandpaper letters" (letters that have been cut out of sandpaper so that it could be traced) were part of her developmental research that took advantage of the sensitive period of emergent readers. With Montessori being an Italian educator who started her teaching career in Italy, she discovered that the Italian language was mostly phonetic. This phonetic advantage helped emergent readers (once the basic foundational phonetic sounds were learned); the reading process became easier for children. Furthermore, Montessori's research on the absorbent mind discovered that the writing process for children normally helps to advance (assist) the complex stages of reading comprehension (Montessori, 2014). When children begin to learn how to write, they begin converting phonetic sounds into letters. When they read, children learn how to pull apart letters, convert those letters back into phonetic sounds, and reconstruct them back to form a word. This is a very complicated and complex process and the complexities are multiplied exponentially when children at the emergent stages of reading are not exposed to a strong foundation of language models (Montessori, 2014). Children attending Montessori schools are provided the opportunity to write (compose) stories by using their movable alphabet approach long before they are able to read based on the conclusion that children must explicitly be instructed with phonetic sounds as a prerequisite to learning how to read (Montessori, 2012, 2014).

Research has also been conducted to examine the general complexities of the instructional process and compared varied forms of teaching with direct instruction to

help students increase vocabulary fluency levels. This approach helps to move classroom instruction towards a more fluid and effective learning experience for the learner (Bradfield et al., 2014; McElhone, 2015; Wallot, O'Brien, Haussmann, Kloos, & Lyby, 2014). These concepts are syntactically challenging because it involves multiple cognitive domains such as decoding, vocabulary background knowledge, listening and speaking skills, and the synthesis of grammatical applications for the learner (Bloom et al., 1956; Bradfield et al., 2014; Luque et al., 2013). As a result, differentiated pedagogical concepts and varied instructional strategies were developed in conjunction with varied reading approaches that are more systematic to help close these forms of deficiency gaps students face in the complexities of developing literacy skills (Frishkoff et al., 2011; Jeon & Yamashita, 2014; Zhang & Koda, 2012). According to Dalton (2013), a reader needs prior reading comprehension dexterity while engaging new text to progress in a steady flow during this initial phase. As the reader becomes exposed to new textual content, having previous reading comprehension experiences will help to build new literal (identifying facts that are stated directly from the passage) comprehension skills and deepen the reader's interaction with the text during the exploration phase. However, for this process to occur fluidly, the reader will also need to have an independent ability to retrieve and decode the new information presented in the text at this learning phase. Anton, Gould, and Borowsky's (2014) study on the thought process effects when lexical and semantic representations of words were activated in readers, showed that major internal cognitive complexities took place. These particular elements occurred when the participants were exposed to different sets of familiar, unfamiliar, exceptional, and non-words located within the text. According to this study, the authors

stated that inferential comprehension would be needed at this point for the reader to make relationship connections between the concepts and words presented in the text (Anton et al., 2014). As the reader begins to analyze cognitively and interpret the text, critical thinking skills are needed at that point to evaluate the new content for literal comprehension (Anton et al., 2014, Lee & Schmitt, 2014). Reading comprehension is complex and it is important for educators and parents to have a working-knowledge of the mechanics that resides behind the skills and propensity that is needed when children how to read and learn a written language (Lilard, 2012; Zhang & Koda, 2012).

Literal Comprehension Skills

Literal comprehension in the context of reading requires redaction skills where the reader will need to connect (draw up) suitable meaning from the information presented in the text. However, having an ability to annotate (redact) textual information does not refer to conducting simple recall from background knowledge alone. It also requires the reader to demonstrate competency in forming (creating) new meaning through word combinations that are exhibited in the phrases and sentences found in the text. This process is done in conjunction with decoding specific information from the passages (Frey & Fisher, 2012; McCown & Thomason, 2014). The study of Anton et al. (2014) determined that the complexities of reading comprehension are astounding by the amount of cognition required for thought processing. One area that could potentially generate doubt is when trying to determine if the reader's interpretation (response) was based on actual evidence reflected in the text, or if it originated from the reader's personal experience or background knowledge of the subject matter. In addition, building a solid foundation for literacy in the context of reading comprehension is a foundational platform

and paramount for students' success in oral-written language (Foorman et al., 2014). Reading and literacy complexities are very often the pivotal skills teachers are required to include in classroom instruction and specifically elementary grade students are amongst the first to be introduced to these critical and complexing elements. Literal comprehension is a vital part of the overall development, infrastructure, and the building block in the reading process cycle. As readers progress through these learning cycles, more multifaceted and broader literal skills will be exposed to the reader that will segue into building the foundations for inferential and evaluative reading comprehension skills (Anton et al., 2014; Bautista, 2012; Luque et al., 2013; Padeliadu & Antoniou, 2014).

According to the study of Seigneuric, Megherbi, Bueno, Lebahar and Bianco (2015), the global elaboration model indicated that for figurative language to become understandable and to make sense for the reader, background knowledge of the content area is required for literal language to occur. The study also investigated the relationship between the comprehension skill of children (ages 8-10) and their ability to understand referential nominal metaphors. The children with poor backgrounds in comprehension skills showed a substantial decrease in their ability to identify and recognize metaphoric situations (Seigneuric et al., 2015). Their literal comprehension skills were limited and their performance ability to classify between semantic incongruences and the terms of the nominal metaphor revealed difficulties in utilizing contextual information with semantic processing. According to Prat, Mason, and Just (2012), a child does not work to merely become intelligent because children work to adapt to their environment. Therefore, it remains essential that children be exposed to many different and positive experiences in their environments if they were to excel in literal comprehension (Basaraba et al., 2013).

The development of metaphoric understanding is a complex issue and a key ingredient to accomplishing this necessitates certain degrees of cognitive and language proficiencies (Kendeou et al., 2014; Meyer & Cohen, 1975; Seigneuric et al., 2015). According to Lee and Schmitt (2014), for the development of a child's ability for metaphoric understanding in the text to occur, a combination of cognitive functioning and intelligence is needed at the core for literal comprehension to become fluid. In addition, when people are learning how to read or write a language, the actual process of this comprehension development requires an active choice on the part of the learner to decide if the content is interesting to them (Seigneuric et al., 2015). After the decision on the content has been established, student motivation and drive occurs to help move the literal comprehension learning process forward. The literal comprehension stage is part of literacy development, and Geva and Farnia (2012) affirm that literacy is the overall language development progression that includes writing, speaking, and listening. Literacy is best developed through using a variety of rich contexts and by including enriched content materials. As elementary grade children are exposed to language dialogue in the classroom, instruction must include opportunities for the learners to maintain more successful moments than encountering frustrating outcomes due to the lack of literal comprehension skills (Barr et al., 2012). The need for this principle becomes even more pronounced for English language learners (ELLs). For ELLs to be successful in school, literal comprehension is a vital part of their language development process because if they are not proficient enough to be successful with their academic assignments, frustration roadblocks will set in and hinder the ELLs from developing to their full academic potential (Barr et al., 2012; Jacobson et al., 2016; Zhang & Koda, 2012). As a

result, some ELLs have been incorrectly placed two, three, or more years behind their appropriate grade-levels because these students were not considered to be English proficient at the time when they were enrolled (Barr et al., 2012; Lee-Swanson et al., 2015).

In recent years, several states across the U.S. have initiated growth models as part of their local accountability systems for educational projections, planning, and pedagogical best practices (Lai, Wilson, McNaughton, & Hsiao, 2014). The demographical changes in the United States over the past few decades have also seen classrooms in U.S. public schools with a growing rate of culturally and linguistically diverse (CLD) students. However, Lai et al. (2014) indicated that while growth-based accountability systems have been assessed for the general mainstream student population, the resulting impact of these projected models for the ELL communities have not received sufficient attention. As the academic landscape continues to evolve, the development of literal comprehension skills for learners (especially ELLs) continues to be an ongoing challenge for teachers and school-based administrators (Malik, 2013; McMaster, 2015). The 2016 report released by the National Center for Education Statistics (NCES) indicated that the percentage of ELLs that matriculated in public schools across the United States were higher during the 2013-14 school year (9.3 percent, or an estimated 4.5 million students) than during the 2003-04 school year (8.8 percent, or an estimated 4.2 million students). The NCES report also indicated that five of the six states that housed the highest ELL percentages were in the western region of the U.S. (NCES, 2016). In addition, many urban school districts have seen a growth with incoming CLD students in their local schools. The growth of these CLD student

communities is also increasingly present in small town schools and rural school districts, as well (Burke, 2015; Lee-Swanson, Orosco, & Lussier, 2015). According to the NCES, by the year 2025, an estimated one out of every four students enrolled in PreK-12 public schools will be an English language learner (Lai et al., 2014; NCES, 2016). Therefore, public school teachers need to be well prepared to meet the reading skill (in particular, the redaction ability) needs of these mainstream students and also kept current with differentiated strategies in their instructional practices. This will help promote the literacy comprehension skills in their learners at their local schools and further promote the reading competencies of the growing ELL community. In the context of reading, mastery in literal comprehension will help students better annotate and connect to the text, draw up suitable meaning from the information presented, improve on the overall reading programs offered at each school site, and illustrate the interactive nature of these elements more clearly (Frey & Fisher, 2012; McCown & Thomason, 2014).

Inferential Comprehension Skills

Inferential comprehension in the context of the reading cycle and literacy skills development provides a measurable extension of word recognition abilities as readers associate and apply literal comprehension to the text. This cognitive action requires the engagement of readers to interact with the meaning of the content that may not be precisely defined or available within the text itself (Hashemi & Borhani, 2014; Hosp & Suchey, 2014). According to the McMaster et al. (2015) study on the comprehensive model of cognitive comprehension, when readers reach this stage in the reading comprehension development cycle, it is insufficient to state simply and understand the author's point-of-view in the text. Readers would need to move beyond that level and can

interact with the contextual information to differentiate between main ideas and the relationship details defined in the passages. Central to seminal research in the cognitive development of reading comprehension theories laid the assumption that the successful understanding of text relies upon a reader's level of coherent recognition of text based on background memory (Kintsch, 1998; McNamara & Magliano, 2009). This coherent recognition of text enables the reader to make inferences by deciphering out relevant information and, therefore, allowing readers to engage in meaningful interactions with the text (McMaster et al., 2015). However, struggling readers (such as ELLs) may encounter difficulties with making coherent inferences with the text if relevant background knowledge is absent, or if the reader is unable to efficiently access appropriate background information. In such situations, and to successfully create meaningful connections with certain sections of the text, a reader will need to proceed towards identifying the causal and logical associations amongst the incidents stated in the text (McMaster et al., 2015). Van den Broek and Espin (2012) stated that by identifying the causal and logical connections of events outlined in the text, readers would be enabled to establish how certain conditions or actualities are connected by applying coherent inferential comprehension skills. For example, to understand the importance of making inferences on the following causal situation: “Penni accidentally spilled liquid soap on the bathroom floor last night. The plumber fell on his back.” To determine and apply causal logic, the reader would need to infer that the plumber slipped on the liquid soap that Penni accidently spilled the night before. This example requires readers to have some form of prior text-based background knowledge to make an inference of what transpired in the bathroom (Van den Broek & Espin, 2012). Consequently, this

supposition (inference) acknowledges that the plumber could have slipped for many other reasons, however, because the text indicated that Penni spilled some liquid soap on the floor, it would make logical sense for the reader to infer that it was Penni's action that caused the plumber to slip and fall. Also, this example illustrated the importance for readers to have background knowledge because liquid soap spilled on floors is known to be particularly slippery and potentially hazardous. Therefore, it would be the plumber may have slipped because of stepping on the spilled soap. In as much, when utilizing full text, Van den Broek and Espin (2012) noted that making causal inferences with complete texts are commonly more complex in nature. However, for readers that are not proficient in English or familiar with basic American cultural norms, this process can become a difficult and challenging task to comprehend and complete (McCown & Thomason, 2014). General background knowledge is contingent upon a reader's prior interactive exposure to a given situation or experience and is needed in the inferential process to successfully align with norms that are associated with curriculum taught in U.S. public schools (Barr et al., 2012; Witmer et al., 2014).

Completed forms of texts that require casual inferential skills are often found in extended reading passages in many public elementary schools in the U.S. that require readers to also coordinate between multiple sections of organized background knowledge and information (Hosp & Suchey, 2014). These reading strategies are a vital component when preparing students for annual state standardized assessments at the end of each school year. Therefore, school-based and district-level administrators widely encourage classroom teachers to included casual inferential strategies in their reading curriculum instruction (McKoon & Ratcliff, 2016; Mendoza-Denton, 2014; Zhang & Koda, 2012).

Also, Kendeou, Broek, Helder, and Karlzzon (2014) added, when readers interact (e.g., from prior background knowledge and memory) and apply inferential comprehension skills with text while engaging with new content information, readers will be operating at a higher cognitive processing level. As higher order thinking proficiencies are applied, readers will be able to build on their reading comprehension skills and begin to understand their roles when making more concrete inferences (predictions) from the text (Silva & Cain, 2015).

From the point of birth, Sikiö, Siekkinen, and Holopainen (2016) indicated that the child begins the literacy development journey. The surrounding community, home, and family will influence the foundation of literacy development in the child's life. Therefore, the inferential comprehension skill that pertains to literacy is primarily and foremost biographical in nature as it contributes to building the principal constructs of knowledge, vocabulary, word reading, strategies, inference, and reading comprehension in the child (Ahmed, York, Fletcher, Barnes, & Kulesz, 2016). Also, a strong foundation in the child's literacy development will become an asset down the road when attempting to make inferences that require resilient lexical knowledge that is included in the many reading passages found in standardized assessments (McKoon & Ratcliff, 2016). Ebert & Scott (2014) pointed out that it is nearly impossible to design a meaningful academic assessment tool that is void of language support in literacy in some way or another. Solano-Flores and Milbourn (2015) also stated that when it pertains to standardized assessments, most of the time no matter what the content area (subject) may be, the assessment tool depends upon language literacy in both the administration of the test itself and the way students provide their responses to the assessment. At that point,

inferential comprehension will function in conjunction with problem-solving abilities (Hosp & Suchey, 2014), and this means that the learner will need to know how to navigate through the text and follow directions (orally or through written form) correctly on the assessment (Solano-Flores & Milbourn, 2015). To accomplish this process, students inevitably will utilize language.

As children in U.S. public elementary schools are introduced to the varying degrees of difficulties found in reading passages throughout their K-5 years in English language arts, they will be given opportunities to interact with the text (Deane, Sabatini, Feng, Sparks, Song, Fowles & Foley, 2015). Knowledge about language factors and how to apply inferential skills in reading comprehension will be essential to their successful learning. Students will also require competencies in word-decoding proficiency, repetition in reading practice, and can draw from their background memories (experiences) in this process (Ahmed et al., 2016; Carretti et al., 2014). According to Solano-Flores and Milbourn (2015), human reasoning and learning depends upon the use of language literacy and there is no way around this especially when pertaining to classroom instruction and assessments. Furthermore, when instruction requires students to demonstrate advanced language skills, higher-order thinking is associated with the ability to produce high-level responses to thought-provoking essay related questions that are often included in standardized assessments (Kendeou et al., 2014; McKoon & Ratcliff, 2016; Silva & Cain, 2015). Test writers and teachers need to be provided with the conceptual tools that will help students prepare for discussion on the inferential characteristics of test-item specifications and assessment tasks (Zhang & Koda, 2012).

The instruction of inferential comprehension skill building is also and important literacy element in ELL reading instruction when preparing for standardized assessments in English language arts. For many ELLs, large-scale assessments are distal from what takes place (central point) in the classroom and in the daily lives of ELLs (Geva & Farnia, 2012; Liton, 2016). The atmosphere of classroom assessments is normally considered more proximal for learners and provides opportunities for asking directions as ELLs are able to request additional clarification when needed (Liton, 2016). These features play a key role for ELLs because the dependence on their ability to navigate through the language of assessment that is in their L_2 (second language) successfully requires both language literacy and the feeling of security in the testing environment (Barr et al., 2012). For an ELL to match the language of assessment (L_2) to the student's own language (L_1), the ELL will need to make connections with the vocabulary, syntax, and discourse reflected on the assessment (Silva & Cain, 2015; Tous et al., 2015). One literacy assessment program formerly used by the Polk County School Board (PCSB), Florida prior to the implementation of the Florida Assessments for Instruction in Reading (FAIR) in 2009 (Foorman et al., 2013) was the Fast ForWord program. The Fast ForWord program was used in conjunction with the Dynamic Indicators of Basic Early Literacy Skills Reading Assessment (DIBELS) as its subtest to predict student responsiveness to Fast ForWord. The PCSB utilized Fast ForWord/DIBELS as the district's former subtest predictors for reading literacy and it was part of the district's school wide student improvement plan until the FAIR predictor tool replaced it. As part the county's reading improvement program, Polk schools incorporated a daily, uninterrupted, 90-minute reading block that includes instructional focus on five reading

components with emphasis placed on fluency, comprehension, vocabulary, phonics, and phonemic awareness (PCSB, 2016d). Fast ForWord/DIBELS were primarily used to help predict student success on measured sections of reading comprehension in preparation for Florida's standardized assessments and to evaluate if these predictor utilities were consistent for both native and L_2 English language learners. The district felt these reading predictor utilities would also help build inferential comprehension skills in students. To help close the reading comprehension achievement gap in Polk schools, the district used Fast ForWord/DIBELS prior to 2009 to primarily target elementary grade students and found that these tools better predicted students who were identified as "at low" risk in reading than those "at high" risk (PCSB, 2006). In addition, the district discovered that the DIBELS program was more beneficial with the county's ELL population than with its native English-speaking students. Interestingly, the research of Scheffel, Lefly & Houser (2016) also discovered that the predictive ability of the DIBELS reading assessment program when used among third grade ELLs and native English-speaking learners more accurately classified those students as "low risk" in reading comprehension than those identified as "high risk". Scheffel et al. (2016) also concluded that their study found DIBELS's results better classified ELL as "at risk" students than the other non-ELLs in third grade.

A strong foundation in language and reading comprehension skills are critical for all learners and especially for those at the elementary grade levels when core literacy foundations are introduced (Reutzel et al., 2014; Van den Broek & Espin, 2012). Without a strong foundation and competency in language and reading skills, it will invariably have a negative impact on a student's ability to fully benefit from classroom instruction,

following oral and written directions, and will hinder the learner from participating in classroom discussions (Seifert et al., 2012; Silva & Cain, 2015). Furthermore, Priebe et al. (2012) stated that all students must have reading readiness skills because these elements will help provide the critical building blocks for writing. Having a working knowledge about these language factors will provide the support educators need as they plan for literacy instruction with students.

Evaluative Comprehension Skill

Having a sustainable understanding of what we read is a good indicator of strong literacy skills. Consequently, deficiencies in this area will have a negative impact on an individual's literacy development and on a wider scope, could impede potential future economic success for the individual in college and career (Silva & Cain, 2015). However, having a definitive perception of the skills required to support the development and growth of reading comprehension would foster productive and syntactic knowledge that contributes to the precursors of building reading proficiency (Hashemi & Borhani, 2014).

A seminal study conducted by the National Reading Panel (National Institute of Child Health and Human Development [NICHD]) identified phonological awareness, alphabetic understanding, and fluency with connected test, vocabulary, and reading comprehension as the five critical components of reading (NICHD, 2000). In 2001, the No Child Left Behind legislation (Reading First) required all U.S. public schools to focus on the following reading components: phonemes, graphemes, decoding of unfamiliar words, build fluency, build background knowledge, and construct meaning from text (NCLB, 2008). According to Basaraba, Yovanoff, Alonzo, and Tindal (2013), review of formative assessment and response to intervention reading programs such as the DIBELS

data system, AIMSweb (universal screening and progress monitoring), and easyCBM Reading (measurement for assessing early literacy skills K-6), only provided indicators on the first three previously mentioned critical components (phonemes, graphemes, and decoding unfamiliar words) of early literacy. However, the NICHD (2000) study and the NCLB's Reading First (2008) legislation has since served as a catalyst for positive changes in the types of reading materials adopted by researchers and educators in subsequent years and has helped reform best practices in the framework of reading instruction (Barone, 2013; Basaraba et al., 2013; Bean, Dole, Nelson, Belcastro, & Zigmond, 2015). The five critical components of reading help teachers determine students' early literacy acquisition skills based on the educational policies that drive the focal point of classroom reading instruction. Basaraba et al.'s (2013) study was conducted to examine the relative difficulty of item-specifications that were used to assess fifth grade students' literal, inferential, and evaluative comprehension in reading. The researchers' findings indicated that literal comprehension was significantly less challenging in terms of the relative difficulty of the elements (items) used and concluded that the students had a more difficult time applying inferential and evaluative comprehension skills in the experiment (Basaraba et al., 2013).

The critical levels in the understanding of reading comprehension and the formative applications of text are a requirement for evaluative comprehension proficiency. The building blocks of the interpretive process require readers to understand written contextual information (literal comprehension skills). Inferential comprehension skills require readers to have the ability to explain an author's intended purpose and identify main ideas with supporting details associated with the text. To sustain

proficiency, readers would need to interpret the writer's intent of the components presented in the text significantly and have the ability to draw conclusions. Additionally, a 2015 study on cognitive and metacognitive learning strategies in elementary grade students indicated that a vital component in teaching and learning in education lies with teachers providing adequate support for students by showing them the needed skills of how to also individually learn on their own (Bass, Castelijns, Vermeulen, Martens, & Segers, 2015). The primary reason for helping students with this skill is because the evaluative comprehension level is the highest form of reading perception, and often it is the most difficult stage to become proficient. To evaluate contextual content or provide analysis that identifies superfluous information, readers will need to rely on prior background knowledge and experiences to decipher through the presented information to find correlational connections to obtain better clarity (Poulsen, Juul, & Elbro, 2015). The study of Poulsen et al. (2015) determined that background knowledge and exposure to prior reading correlational experiences also produced indirect phonological awareness for readers. This phonological realization produces advantages that will help readers build their evaluative comprehension skills. Basaraba et al. (2013) tells us, "Just as careful examination of student performance on a measure of alphabetic understanding, such as whether students are reading pseudo-words sound-by-sound or as whole words can help teachers target instruction" (p. 376).

Developing evaluative comprehension skills from an early age in children is a vital component for literacy success and should be part of every educator's goal and objective. Primarily when students are exposed to text and are taught how to evaluate concepts in the correct context, students will be empowered to analyze influences the text

produces (Bennett, 2012). This is important because these influences will invariably help shape the thoughts and ideas in the learner as they progress towards higher order (critical) thinking. As students build upon their critical thinking skills they will learn how to question and challenge attitudes, determine intrinsic values, discern the author's intended message, and uncover hidden beliefs that are below the surface of text (Bennett, 2012). To help students develop evaluative comprehension skills is a challenge for teachers because often, reflective tools of communication requires a good foundation in having the ability to make inferences and understand the literal meaning of the text (Lee-Swanson et al., 2015). As McMaster et al. (2015) pointed out; when readers have coherent recognition of what is being read it will enable them to make inferences that will result in meaningful interactions with the text. This is done through deciphering out information that is relevant so that the reader is able to unlock the mysteries hidden under the author's intended purpose (McCown et al., 2013). For the teacher, when working with children to build evaluative comprehension skills through the curriculum, the process is essentially the same whether utilizing content from several curriculum areas (reading, writing, social studies, math, science, etc.) in the mainstream classroom with primary and secondary school aged children or with English language learners (Bradfield et al., 2014; Dalton, 2013). In essence, the process objectives each child will need include learning how to build, analysis, and integrate the content categories from the curriculum into evaluative comprehension conclusions (Poulsen et al., 2015). In doing so, students will learn how to inquire into the topics found in the text, master important concepts, synthesis the information across the curriculum, and move towards critical thinking proficiency. Bennett (2012) stated that this is the progression that will provide readers with the critical

literacy skills needed to comprehend text more deeply and enable them to critique it for its genuine meaning.

Critical Thinking Proficiency

In the past few decades, different empirical studies on pragmatic classroom instruction with an emphasis placed on reading comprehension have been explored. Content areas such as problem-solving strategies and evaluative techniques to foster a better understanding of strategic critical thought and its applications have been researched (Bennett, 2012; Frey & Fisher, 2012; McElhone, 2013; Scarcelli & Morgan, 1999). Earlier seminal theories have also demonstrated the need for ongoing research in best practices to help students improve abilities in identifying areas in need of academic improvement and specifically through using critical thinking skills (Meyer & Cohen, 1975; Stancato, 2000; Waters, 2000). The use of analysis, synthesis, evaluations, and inductive reasoning are considered a critical thinking domain that requires individuals to engage in higher order thinking. When these critical thinking skills are creatively applied to defend or support various areas of background knowledge, experiences, personal beliefs, conventions, and data, critical thought will help the individual to better express and comprehend the significance (with credibility) when interpreting core information (Tous, Tahriri & Haghighi, 2015). In the context of reading comprehension, when learners apply critical thought to their reading practices, a better understanding of how knowledge and literacy skills continue to progress and develop (over repeated opportunities) will become evident. The study of Tous et al. (2015) showed that these (critical thoughts) best practices in reading comprehension are essential to understanding literal comprehension. Also, having strong critical-thinking skills will explicitly helps

learners to achieve higher order thinking acumen when articulating knowledge and drawing conclusions in various subject matters (Tous et al., 2015).

Teachers are given the authority and important responsibility to create an atmosphere in the classroom that would be conducive to learning. When students feel they are in a setting that enables curiosity, promotes eagerness to learn, and facilitates a safe learning environment, Harvey (2013) stated that students would become more proactive learners and avid readers. Furthermore, students in elementary schools need to have more opportunities to be exposed to a greater diverse range of vocabulary instruction because in building vocabulary fluency will also foster stronger literacy skills in critical thinking. These areas (vocabulary range and fluency instruction) are interdependent areas that could potentially hinder students' academic growth in the oral-written language if deficits occur (Barr, Eslami, & Joshi, 2012; Hashemi & Borhani, 2014; Reutzel, Child, Jones, & Clark, 2014).

Enhancing student achievement through professional development each year has been on the rise and it has become a fundamental requirement for teachers in many public school districts across the U.S. (McElhone, 2015; Skrla, 2011; Witmer, 2014). Various domains of instructional designs in lesson planning, collaborative planning, and the administration of ongoing assessments (formative and summative) compel teachers to continuously provide evidence as part of accomplished practices requirements. Harvey's (2013) study to teach students how to become stronger readers and forward-thinkers in reading comprehension showed that at the core of the students' abilities to utilize the knowledge they have gained from reading and to apply the information in writing, lies the need for critical thinking proficiency. This concept aligns with the study Silva and

Cain (2015) completed in showing that a good indication of an individual demonstrating strong literacy skills is when the individual has a sustainable understanding of the content read. Research also indicated that the application stage of analysis requires readers to formulate and apply an overview of the content presented from the text and have the ability to formulate personal opinions (Ahmed et al., 2016; Harvey & Goudvis, 2013; Luque et al., 2013; Poole, 2014). Therefore, according to Bloom's Taxonomy, analysis is measurable as a higher-order thinking domain characteristic in which critical thinking is a requirement to sustain deeper levels of understanding in reading comprehension and literacy development (Bloom, Engelhart, Furst, Hill & Krathwohl, 1956).

According to Gelerstein, Río, Nussbaum, Chiuminatto and López (2016), the importance of developing critical thinking skills in children has been emphasized in teaching and learning through decades of different theoretical frameworks (Butera, Friesen, Palmer, Lieber, Horn, Hanson, & Czaja, 2014; Jawoniyi, 2015; Murphy, Rowe, Ramani, & Silverman, 2014; Wu, 2016). With research showing how high-stakes standardized assessments are on the rise and have impacted schools across the U.S. (Alsobaie, 2015; Burlison & Chave, 2014; Cho & Eberhard, 2013; White, Stepney, Hatchimonji, Moceri, Linsky, Reyes-Portillo, & Elias, 2016), it is vital that children from an early age be taught the skills of how to analytically think and draw conclusions from the text when taking standardized assessments (Kao, 2014; Roth, Becker, Romeyke, Schäfer, Domnick, & Spinath, 2015).

As part of information processing, students are natural conceptualizers because people conceptualize regularly as they apply comparison and contrasting skills to objects and events encountered daily (Kao, 2014). To capitalize on this natural tendency,

teachers should arrange the learning environments of their students in such a way that it would promote critical thinking that would help increase students' effectiveness when forming and using hypotheses to solve problems (Plecki et al., 2014; Stockall et al., 2014). When students can apply critical thinking on a regular basis at school (and at home), it will help them consciously develop their skills for shaping the environment around them and create learning that will facilitate growth in their concept formations (Harvey, 2013). Also, when students learn how to think inductively, they will begin to learn the importance of concentrating on specific domains (areas of inquiry) in which mastery will occur and help them develop their full potential to generate new thought and ideas (Roth et al., 2015). One practical example of this concept is to present an emergent literacy student (pre-kindergarten to first-grade) with flash cards that contain some assorted letters of the alphabet and ask the child to examine the letters and describe the characteristics of each letter observed. The alphabets (letters) and its names is the area of inquiry (domain) presented to the student. This example can also be implemented with an upper-elementary level student (fifth- or sixth-grader) by using a data set that contains statistical information on specific countries from a pre-selected region of the world (for example, Hong Kong in Southeast Asia) and asking the student to carefully examine the data provided on each individual country. In this second example, the domain is Hong Kong with the added statistical data as the subdomain. These two examples will help students to develop conceptual mastery of the domains presented (Harvey, 2013; Kao, 2014). In the first example, when using the alphabet as the area of inquiry, literacy emergent students will learn how to distinguish between letters (and their names), discern attribute differences and similarities by grouping them accordingly, and have an

opportunity to see the shape differences amongst the letters. Engaging in analytic activities such as this example will foster critical thinking and is an essential element for knowledge construction (Murphy et al., 2014). In the case of the Southeast Asian countries, the upper-elementary students will have the opportunity to classify the countries according to the demographic information (data) provided in the set. This can be accomplished through the observation of single categorical attributes (e.g. population per capita income) to more challenging categories (multiple attributes) such as learning how to determine if variables like education levels, income, and socioeconomic backgrounds are interconnected (related). When exposed to these types of case scenarios, students will have the opportunity to observe the people in Southeast Asian countries more effectively in terms of the aforementioned categorical examples (Bennett, 2012; McElhone, 2015). Murphy et al. (2014) believes this is a step toward the conceptual control of students and growth will emerge as additional information (advanced categories) is added to the data set. Montessori (2014) calls this the development of hierarchal concept that helps students to further master new domains and teachers should make it an essential goal to help students practice these critical thinking skills, and not just lead them through the process.

In the context of improving reading comprehension and building stronger literacy aptitudes, the analysis domain remains a crucial stage for developing the critical thinking skills that every child will need to become successful in school (Bagchi & Sharma, 2014; Bloom et al., 1956; Shaw & Holmes, 2014; Thonney & Montgomery, 2015; Tous et al., 2015). Today, the content areas of English language arts (reading and writing) are widely promoted and encouraged across most U.S. public elementary schools because the

success of other content areas such as math, science, and social studies, etc., hinges upon (Butera et al., 2014; Thonney & Montgomery, 2015) students' abilities to examine text for information, draw meaning from it without assistance, and use contextual clues to make accurate analytic decisions. Attaining proficiency in these areas is paramount and will help students develop their literal, inferential, and evaluative competencies in reading and writing (Basaraba et al., 2013; Burlison & Chave, 2014; Frey & Fisher, 2012; Hashemi & Kendeou, 2014; Hudson et al., 2012; Lai et al., 2014; Reutzel et al., 2014; Spilt, 2012). At the elementary grade level, when a solid foundation of reading strategies is instilled into young readers (Lee & Schmitt, 2014), the children at this early stage may encounter less anxieties towards the pressures from mandated standardized assessments that lie ahead of their academic journey (Sung, Chao & Tseng, 2016; Yeo, Goh & Liem, 2016). Also, as these vital fundamentals takes form in the lives of young learners, students will learn how to cope with the demands of academic rigor and build the confidence needed to successfully navigate through assessments (Woodard, Pozzan & Trueswell, 2016).

The primary objective for promoting support for developing analytical proficiency intervention is to build and sustain literacy skills, encourage critical thinking, problem-solving, and foster analytical competencies that will prepare students for high school graduation, and have successful careers in college and eventually the workforce (Common Core State Standards Initiative, 2015; FLDOE, 2015d).

Standardized Testing

The National Assessment of Educational Progress (NAEP) operates under the administration of the Institute of Education Services (IES), and it is part of the U.S.

Department of Education (IES, 2012; NAEP, 2011; USDOE, 2015). Test score data for reading and literacy skills in recent years published by the NAEP have not been encouraging. Current academic scores from U.S. public schools on standardized tests are not meeting the goals of the Title 1 No Child Left Behind (NCLB) legislation, either (IES, 2012; NCLB, 2001b). The office of the NAEP has periodically administered standardized assessments in various content areas including reading comprehension to fourth-grade and eight-grade students across U.S. public schools. The 2012 IES report revealed that fourth-grade students are in the bottom quartile for reading comprehension and about 60% of eight-grade students did not demonstrate proficiency in reading. These reports are daunting because the test results represent the academic trend across U.S. schools in reading comprehension and literacy skills over the past 40-years (IES, 2012). In as much, the students in Florida public schools taking the annual standardized tests in reading comprehension also continue to reflect low scores on high-stakes assessments (FDOE, 2014d).

The research of Hudson, Torgesen, Lane, and Turner (2012) indicated that deficiency gaps would become more evident between pupils that have proficient reading comprehension and literacy skills and those that lack these crucial components as they progress from elementary through the high school years. If left unchecked and without intervention to remediate low reading comprehension skills, the effect on students' eventual standardized test scores will be negatively impacted. Hudson et al. (2012) concluded with the heavy academic mandates to reflect annual student performance growth on standardized tests, public schools continue to wrestle with meeting these high-stakes achievement expectations. At every level and in every state across the U.S.,

educators and school-based administrators must shoulder the responsibilities of meeting NCLB directives that also includes differentiated accountability to the U.S. Department of Education. The consequences of low performing schools with low standardized test scores are penalized with reduced federal funding, grants, and other restrictions the following school year (NCLB, 2001b, 2012). Many teachers and administrators at local schools continue to strive to provide sound education in doing what would be in the best interest of students, but often those efforts appear to be inadequate under the Adequate Yearly Progress (AYP) accountability system. The challenges are great to introduced strategies and best practices that would help a student to succeed, or to help turn a low performing school around that is under corrective action to becoming an "A" school because of consistency in meeting federal annual measurable achievement objectives (AMAO). Each individual state is required to set these yearly performance indicators that must include student proficiency performance percentages on state standardized assessments (CEP, 2012; NCLB, 2001b; USDOE, 2015).

As local school districts research and pool resources together, best practices and strategy options to help increase student academic performance through professional development opportunities, there is no one-size-fits-all formula because of the vast socioeconomic and demographical differences between one geographical location and another (White et al., 2016). In addition, when preparing students for success on standardized tests at the end of the school year, classroom instruction must have measurable outcomes when implementing strategies to foster student academic growth (Jez & Wassmer, 2015).

According to the Florida Administrative Code (FAC), all public schools that have sustained a grade of D or F, or with a grade of F within the prior two years on state standardized tests are classified under Differentiated Accountability State System of School Improvement and are otherwise known as DA Turnaround schools (FAC, 2016). These DA Turnaround schools are required to submit assurances to the Florida Department of Education at the start of each school year that their SIP goals and objectives meet Florida statutory and Annual Measurable Achievement Objectives (AMAO) requirements the following year (FDOE, 2014). During the 2013-2014 school year, Oscar J. Pope Elementary, a Title 1 school in Polk County, Florida, sustained a school performance grade D (FDOE, 2014j). One option for DA Turnaround schools is to adopt an extended learning time (adding additional time to the school day) program as part of the school's instructional delivery and facilitation during the following school year. Amongst several Polk schools in Florida, Oscar J. Pope Elementary adopted the extended learning time program as part of the district's School Improvement Plan (SIP) to help guide instruction throughout the year. These extended learning time and strategies were set in place to help students make learning gains, support literacy development, preschool transition, improve student standardized test scores, and prepare students for college and career readiness (PCSB, 2016e). During the following 2014-15 school year, Oscar J. Pope Elementary saw academic learning gains with their students that resulted with an increased number of passing standardized test scores. The school sustained a school performance grade of C that year (FDOE, 2015j).

Jez and Wassmer (2015) performed a regression analysis using data from California elementary schools that have also adopted an extended learning program to see

if there were any statistical significance between the extended instructional time (fifteen additional minutes of instruction per day) given to students and each school site and their standardized test scores. The study showed students at schools that had the extended instructional time produced significant and positive outcomes between the added fifteen minutes and standardized test results. However, while general expectations may warrant a positive impact between extended instructional time in classrooms resulting with increased student performance on standardized assessments, Jez and Wassmer (2015) cautioned there is currently no empirical research data to show extensive evidence that extended learning time increases student scores on standardized tests.

Another factor to consider with standardized testing is low performing students (students with lower levels of literacy skills) would be subjected to added difficulties because the questions found in the test design. According to Bergqvist, Dyrold, and Osterholm (2012), students with lower reading comprehension and literacy skills will encounter a higher rate in producing incorrect answers (responses) if there were many questions on the standardized test. In addition, these situations could also foster an increase in test anxiety (Sung et al., 2016). These challenges are compounded yearly with the increase of reading comprehension requirements associated with standardized testing. Students that have high academic self-confidence but have low intelligence could also prove to be counterproductive when exposed to standardized tests (Rosman, Mayer, & Krampen, 2015). Reading comprehension tests come in a wide variety of forms and evaluate a broad spectrum of reading activities. These assessments ranges from pre-reading elements with focus placed on assessing basal reading skills embedded in the questions itself and students' ability to "retell" what they have read (Zhang & Koda,

2012) to the heart of reading evaluation. Reading evaluation on most standardized tests require students to synthesize the text, make inferences, draw conclusions, and demonstrate understanding of what was read by producing accurate responses to the questions (Basaraba et al., 2013; Silva & Cain, 2015). Therefore, identifying at-risk students early in the school year (prior to taking standardized assessments) is critically important because it will provide valuable information for teachers to know how to develop individual intervention plans for these at-risk reading learners (Geva & Farnia, 2012; Kendeou et al., 2014). Furthermore, another purpose of pre-standardized test screening is to help teachers identify the at-risk students and hopefully prevent a life-long reading deficit for them. As previously mentioned, the Fast ForWord/Dibels, AIMSweb, and easyCBM assessments are great universal screening and progress monitoring tools that have been utilized by U.S. public schools (including the Polk district). These screening tools help predict student responsiveness to reading literacy because these programs are designed for different grade levels and can help identify student deficits in reading fluency, comprehension, vocabulary knowledge, phonics, and phonemic understanding (PCSB, 2016d; Scheffel et al., 2016).

Summary

This literature review was performed to examine the essential foundations of reading comprehension and literacy skills surrounding public school education today. Included, this review also observed reading comprehension proficiency and its effect on students' performance on standardized tests. Elementary grade students must have a solid foundation in core reading instruction because it will help children lay a solid foundation in literacy skills that would help students improve on standardized test scores. A primary

objective in early childhood education is to provide classroom strategies that would help build competency in reading accurately, fluently, apply critical thinking, and enable young learners to engage in meaningful interaction with the text (Lee & Schmitt, 2014). Formal education should include sound instruction in reading comprehension because it affects the reader's ability to have comprehensible understanding throughout the student's academic journey from elementary to high school and into college. Foorman et al. (2014) indicated that within the contextual framework of reading comprehension, literacy is a very complex skill to obtain proficiency, but a very important foundation for success in oral-written language. Considering difficult state and federal requirements in the public educational system in the U.S., students continue to face the heavy demands and pressure to perform well on today's standardized assessments in the English language arts. Therefore, it is paramount that schools provide explicit instruction in core reading programs to build the foundation for phonemic awareness in students from an early age (Barr et al., 2012; Gerde, 2012; Jennings et al., 2014). The U.S. Department of Education requires teachers and school-based administrators at every level and in every state to shoulder the daunting responsibilities to maintain NCLB directives and promote the content areas of English language arts. Failure to meet the federal annual measurable achievement objectives (AMAO) in standardized test scores; schools will be penalized through the reduction of federal funding, grants, and other consequences in the following school year (NCLB, 2001b; NCLB, 2012). The challenges are great for turn-around schools (low performance and failing institutions) that are under corrective action from the USDOE to improve on standardized test scores.

Rowe et al. (2014) affirms that by implementing regular progressing-monitoring, teachers will be able to track student performance during the school year in preparation for standardized assessments. This is great practice for maintaining updated intervention plans as it will allow teachers to determine if students are making progress throughout the year, and know which support system is needed for the individual learner. If teachers will align their classroom instruction, incorporate activities that are similar in nature, teach test-taking strategies, reduce students' stress and anxieties, and implement practice assessments during the school year, it will help students improve in their basic skills and specifically also on content area topics (Bennett, 2012; Frey & Fisher, 2012; Gelerstein et al., 2016; Hashemi & Kendeou, 2014; Jennings & Bearak, 2014; Nelson et al., 2012; Sung et al., 2016; Yeo et al., 2016).

Chapter 3: Research Method

Researchers in education continue to show interest and concern with reading comprehension, as related to the field of teaching and learning (Lai et al., 2014; McCullough, 2013; Yi-Chin et al., 2014). Proficiency in reading comprehension and literacy skills are crucial factors for effective learning in the classroom, and deficiencies in these skills can undermine a student's success in other academic content areas (Frey & Fisher, 2012; IES, 2012; Seifert & Espin, 2012; Spilt et al., 2012). Achievement in reading performance helps students lay a solid foundation in comprehension skills, prepare for standardized assessments, and provide the essential dynamics for literacy growth in schools (Bennet, 2012; Lai et al., 2014). A deficiency in reading comprehension skills will also result in a loss of the needed competencies that are essential for success in perspective future job-related fields (Brown et al., 2014; Jacobson et al., 2016; McKoon & Ratcliff, 2016). The purpose of this quantitative study was to examine the relationship between third-graders' 2014-2015 FSA-ELA passing standardized test scores and the 2014-15 FAIR-FS reading achievement test scores.

Research Method and Design

The quantitative methodology was the preferred focus and the best fit for this research, alternatively employing a qualitative study or an expo-facto quasi-experimental design method. In seeking the data results from Polk's aggregated test scores, the quantitative method was a better way for this research to tell whether or not a sustainable answer to the research questions could be extended (Vogt, 2007; Vogt et al., 2012). The research questions of what are the relationships between reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade Polk

elementary students, and between ethnicity and test scores, are researchable questions, and specifically when utilizing the quantitative method design also produced a measurable yield for analysis (Vogt, 2007). A quasi ex-post facto design would not have been suitable because the objective of this study was not to investigate how the predictor variable (FAIR-FS test scores) presented prior to the study would affect the outcome variable (FSA-ELA test scores). A qualitative design (though may be frequently used in social science research) would not have applied to the collected data from the FAIR-FS and FSA-ELA because the resulting tests scores was measurable (Black, 2005). Furthermore, the scope of this study was not to seek causal hypotheses between whether the FAIR-FS instrument will produce a number of plausible alternative interpretations of test score results to correlate with the FSA-ELA assessment scores (Cook & Campbell, 1979). A quasi ex-post facto design would not have been appropriate for this study because participants were not going to be randomly assigned as in a normal quasi-experiment (Black, 2005). A correlational design produced measurable statistics to test the theory that the predictor variable was a viable tool to predict student performance on standardized tests. Also, the correlational method was quantifiable for comparing a large amount of information that was extensively from within a specified population. As the third-grade population test score samples in this study was randomly assigned, prevention of selection bias and safeguard against any accidental bias was secured. By using the quantitative method design greatly influenced the validity of the conclusion in this study (Vogt, 2007; Vogt et al., 2012).

Research Questions

The objective of this research was to determine whether utilizing the FAIR-FS diagnostic reading program, as an indicator in Polk elementary schools would contribute to a higher percentage of students successfully passing the FSA standardized test in English language arts. Specific content information that included test results selected from third-grade students regarding the FAIR-FS program and the elementary schools representing those students were collected. The test score data for the FSA-ELA was also compiled. The anticipation of the study focused on the following research questions.

Q1. What is the relationship between reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida?

Hypothesis

$H1_0$. There is no relationship between reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida.

$H1_a$. There is a significant relationship between reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida.

Q2. What is the relationship between ethnicity and reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida?

Hypothesis

$H2_0$. There is no relationship between ethnicity and reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida.

$H2_a$. There is a significant relationship between ethnicity and reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida.

Population

The target population of this quantitative study were third-grade elementary students enrolled in Polk County, Florida public schools during the 2015 academic year. There are 47,935 students enrolled in the 87 elementary public schools out of more than 96,000 total K-12 students matriculating across the Polk County school district (PCSB, 2016; 2016a; Public Schools K-12, 2016). In 2015, the district's K-12 student population diversity consisted of 43.9% Caucasian, 20.7% African American, 30.2% Hispanic, 1.6% Asian, 0.5% American Indians and Alaskan natives, 3% with multiple heritage backgrounds, and 0.1% were native Hawaiian and Pacific Islanders (PCSB, 2016b).

The Polk County third-grade elementary student population's FSA-ELA standardized tests scores between Levels 1-5 and the FAIR-FS achievement results of students scoring between 1-100% were the desired population of study. The Florida statutory requirements (FLDOE, 2015c), for the third-grade student population make up a large fraction of promotion and retention learners in the district annually (PCSB, 2016c). However, the factors of the FAIR-FS diagnostic program that influence the probability of literacy success (PLS), for these third-graders on the FSA-ELA assessment at Polk

schools have not been extensively studied. Previous relationship-comparison reports for this specific population have only been tracked with the defunct FCAT and FCAT 2.0 standardized tests (FLDOE, 2014b; 2014f). Prediction rates on students' success on the district's End-of-Year (EOY) assessments utilizing the FAIR system, in general, have only been structured to meet FCAT and FCAT 2.0 mandates (FDOE, 2014c). The factors that regulate the updated FAIF-FS program for English language arts learning in reading comprehension and literacy skills based on the framework of the Common Core, have not been examined for the newly adopted Florida Standards Assessments.

Sample

To minimize the possibility of selection bias such as favoritism (by the sampler), or self-selection (by the respondent), a chance selection was employed. A Simple Random Sample (SRS) of N=100 individuals (third-grade student test-scores) were taken from the population in the Polk County school system and consisted of every fifth person's test scores. This probability sampling was chosen in such as way that every set of n=5 individuals had an equal chance to be in the actual selected control group and eliminate any predispositions that may have occur from the population for this study. Privacy laws also dictated the sensitivity of individual test-score data; therefore, aggregated test scores (FAIR-FS and FSA-ELA) and percentages were utilized in the selection of the represented sample from the population. Brewer and Kuhn (2010) stated that quantitative correlational research is a very viable and sustainable methodology because the variables cannot be manipulated. For the desired power of this quantitative study, a power analysis was done to estimate an appropriate sample size of 55 in *G*Power3* and a predictor variable equation was used as a baseline. A medium effect

size of (f^2 = .15) was used for this assessment. The alpha level used for this analysis was $p < .05$. The number of predictors entered into the *a priori* power analysis was one. Also, an approximately equal distribution of the predictor (FAIR-FS) and outcome (FSA-ELA) variables were needed. There was more than adequate power (i.e., power * .80) at the moderate to large effect size level, but less than adequate statistical power at the small effect size level (Faul, Erdfelder, Buchner & Lang, 2014).

The selection of the study sample was based on three criteria. The first criterion included randomly assigned test score samples from amongst third-grade elementary students enrolled in the Polk County public school system. This helped to prevent selection bias and safeguarded against any accidental bias in the process. Secondly, a random sampling was requested from the Office of Assessment, Accountability, and Evaluation (AAE) at the Polk County School Board, and information that specifically identify individual students in the study population were not taken. This eliminated the violation of privacy and ethical issues of the sample population associated with the aggregate nature of the test score data sought. Finally, authorization from the AAE office was obtained prior to the start of this study and the AAE office determined the random population sample size and selection of schools from the district-wide student data within Polk's elementary schools for this study. This prevented school-site selection bias and safeguarded against any accidental bias during the determining process. The FSA-ELA test score data from all Florida public elementary schools in the state are available from the Florida Department of Education. The FSA-ELA test score data the AAE office utilized were compiled by the FLDOE from the results of the 2014-2015 statewide-standardized FSA-ELA (FDOE, 2015b).

Materials/Instruments

The FDOE conducted a study in 2013 that utilized a psychometric process to validate the reliability of the FSA-ELA student performance data through an officially selected panel. This validation process required professional standards, codes, and guidelines that addressed the ethical practice standards for educational and psychological testing (FDOE, 2014g). The field-testing of the FSA was accomplished through six separate studies in the state of Utah with students from that state. The population was comprised of students in grades 3, 6, and 10 for English language arts, and grades 4 and 7 for mathematics and Algebra I. However, prior to the adoption of the FSA program, educators with significant knowledge of Florida students and the Florida Standards reviewed all aspects of the testing item specifications. Utah students were selected for the field test to safeguard against potential questions pertaining to the motives of the participants in the study. The findings concluded that the overall aspects of the assessment contents, of the FSA, were aligned to the Florida Standards (FDOE, 2015h). The two primary organizations Florida used in the verification process of the psychometric validation of the FSA instruments were conducted by Utah-based Alpine Testing Solutions, Inc., and the Washington, D. C.-based edCount, LLC. In addition, the American Institute for Research (AIR), Data Recognition Corporation (DRC), Human Resource Research Organization (HumRRO), and the Florida School Boards of Volusia, Miami-Dade, Orange, and Leon Counties also participated and contributed to towards the development and validation process of the FSA-ELA testing instruments (FDOE, 2015h). The FSA-ELA measurement level ranges are from Level 1-Level 5.

According to the 2015 legislative summary review published by the Florida Department of Education, all third-grade students are required to score a minimum of a Level 2 and above on the FSA-ELA standardized test to meet the minimum criteria for promotion to the fourth-grade (FDOE, 2015f). Therefore, students with low-test scores (less that a Level 2) would be classified as unsuccessfully passing this high-stakes statewide assessment and considered deficient in reading comprehension according to the Florida State Literacy Plan (FDOE, 2014a). Students scoring at a Level 3 on the FSA-ELA would reflect proficiency, a Level 4 would indicate an above proficiency status, and a Level 5 would fall into the highly proficient category for English language arts (reading comprehension and literacy skills (FDOE, 2014e). The resulting test scores (levels) from the FSA-ELA results would measure and reflect the students' success or failure on the standardized assessment and depending on the test score outcome, would also determine a student's promotion to the fourth grade or retention in third grade the following school year.

The FDOE provides the FAIR program free of cost to all Florida K-12 public schools. The FAIR program is a reading assessment instrument used by Florida educators as a progress-monitoring tool that delivers diagnostic data in reading comprehension essential to strategic classroom instruction in English language arts (FDOE, 2014c). Teachers and school-based administrators use the FAIR program to directly monitor students' ongoing progress throughout the academic year. Florida teachers also use a general feature of the FAIR to help identify students that are at-risk of not reaching grade-level proficiency in reading comprehension and literacy skills by the end of the school year. The FAIR program is used in Florida public schools as a predictor (reading

comprehension screen) instrument to help teachers identify students' previous FCAT Success Probability (FSP) until the administration of the FCAT ended after the 2013-14 school year. Instead, the FAIR instrument is now used as an indicator of students' Probability of Literary Success (PLS) on the new FSA-ELA standardized test (FDOE, 2014e). There is a total of three assessment periods (fall, winter, and spring) during the school year for the FAIR-FS assessment, and the error variance will be the outcome on how well the student performs on these assessments (Foorman, Petscher & Schatschneider, 2014). Though the FAIR-FS is administered three times during the school year, only the spring assessment results would be utilized for the sample population in this study. The data from the third-grade students' FAIR-FS (spring assessment) results were collected as the indicator baseline for predicting the FSA-ELA success scores.

Students took the FAIR-FS assessment on computers at each local school site through the FLDOE's Progress Monitoring and Reporting Network (PMRN) online system and the scores automatically populated the PMRN's servers. The Assessment, Accountability, and Evaluation department at the PCSB had full access to all FAIR-FS scores and were able to download the data to the district's local servers. The identities of all third-grade students and their test scores selected to represent the sample population for this study were kept anonymous and remained confidential. The range for the FAIR-FS assessment was from 0-100. Students with successful FAIR-FS results scoring ≥85% (green zone), were identified as highly proficient in reading with a high potential probability of scoring at a Level 3 and higher at the end of the academic year on the FSA-ELA. Students with low FAIR-FS results scoring <16% (red zone), were considered

deficient with a high possibility of scoring at or below a Level 1 on the FSA-ELA. Students scoring between 16-84% (yellow zone) on the FAIR-FS assessment reflected a medium risk on performing well on the FSA-ELA and fell within the extreme categories of being minimal risk (proficient) and high risk (deficient) in reading comprehension (FDOE, 2014e).

The FAIR-FS testing instrument utilizes an item response approach in the assessment procedure as its method of validation, and the level of error from each student taking the FAIR-FS measures the reliability of this instrument. The reliability coefficient for the FAIR-FS is where each third-grade student district-wide would consistently be tested on the same instrument, and the data will be correlated according to the ability scores of the test-takers during the third (spring) testing period (Foorman et al., 2014). The outcome variable would be students' ability to demonstrate academic proficiency by passing the standardized (FSA-ELA) test. Applying the content learned, and by integrating the knowledge gained throughout the academic school year would help teachers prepare students to accomplish this objective. The successful synthesizing of reading comprehension and literacy skills (based on students' needs as indicated by their individual FAIR-FS scores) would help students reflect a Level 3 and above on the FSA-ELA assessment. Students' FAIR-FS scores and subsequent FSA-ELA test results will provide an analysis if there is a relationship between the two variables.

Measures for reliability and validity. As part of the state's interim assessment system, Florida utilizes the FAIR diagnostic program to help teachers screen for students that may be at risk for reading and literacy deficiencies during the school year (FDOE, 2014c; Foorman et al., 2013). The 2013 Institute of Education Sciences (IES) report

provided research that supported the development and reliability of the FAIR and (sanctioned by the U.S. Department of Education) was validated by the Florida Center for Reading Research (FCRR) working in collaboration with Just Read, Florida through Regional Educational Laboratory (REL) Southeast (Crawford, 2011). The external validity of the FCRR study comprised of approximately 700,000 students with 100,000 representing each level from grades 4-10 across the state of Florida. The stratified random samples from the larger population were extracted from 928,834 total students (Foorman, et al., 2013). The IES report stated that the students from grades 4-10 were specifically selected for the study because the archival 2011 FCAT, 2012 FCAT 2.0, and FAIR data were available. The implications of the findings revealed strong correlations between FAIR performance results and the 2012 FCAT 2.0 standardized test scores. Also, strong correlations existed between FAIR and the 2011 FCAT test scores (Foorman et al., 2013). The FCRR study concluded that the original FAIR literacy-screening instrument may have predictive validity for students preparing for the former FCAT and FCAT 2.0 tests, but no data is currently available to evaluate and measure the predictive validity of the revised FAIR that is aligned to the new Florida Standards and the FSA-ELA standardized exam.

Operational Definition of Variables

Florida standards assessments. In the spring of 2015, the FDOE launched the FSA-ELA as the State's new EOY testing instrument and replaced the Sunshine State Standards FCAT and the Next Generation Sunshine State Standards FCAT 2.0 (FDOE, 2014f). The FSA-ELA testing instrument is based on the theoretical framework of the Common Core Standards (CCS) for English language arts and literacy skills. This

assessment instrument is designed to prepare K-12 students for success in college and career upon graduation from high school (Common Core State Standards Initiative, 2015a). The authorities consulted in the collaborative development of the CCS were based upon scholarly research that included the National Assessment of Educational Progress (NAEP), Trends in International Mathematics and Science (TIMSS), and the Institute of Education Sciences (IES, 2012; NAEP, 2011; TIMSS, 2015).

In 2010, the Florida State Board of Education adopted the Florida Standards (FS) from the Common Core initiative, and full implementation of the Florida Standards Assessments (FSA) was launched statewide in the 2014-15 school year (FDOE, 2015d). The goal of the FDOE in introducing the FS was primarily to help students in Florida public schools continue to succeed and reflect the foundational academic expectations of the state. Florida's academic expectation for proficiency in English language arts requires students to score a Level 3 and above on the FSA-ELA to be consider successful. The new FSA-ELA standardized test (interval-level variable, scores range from 0-100) serves as the new FAIR-FS testing instrument to measure students' annual educational gains and progress (FDOE, 2014g).

Florida assessments for instruction in reading. The predictor variable in this study were third-grade students' ability to exhibit knowledge in reading comprehension, word analysis, phonemic awareness, and academic vocabulary inventories (Bradfield et al., 2014). The progress-monitoring tool (FAIR-FS) measures these literacy elements and provide teachers with instructional resources that are beneficial to help students with deficiency gaps identified through the FAIR-FS assessment program. The FAIR-FS program for grades 3-12 utilizes an indication tool called the Probability of Literacy

Success (PLS). This indicator is employed to predict the likelihood of students that would be at risk in failing to meet their grade-level and literacy expectations by the end of the school year utilizing a color-coded system:

- Green Zone 85%-100%: This indicates that the student is not likely considered to be at-risk of failing to meet grade-level and literacy expectations by the end of the school year. These students would benefit from continued universal instruction.
- Yellow Zone 16%-84%: This indicates that the student is likely to be at-risk in failing to meet grade-level and literacy expectations by the end of the school year. These students would benefit from differentiated and supplemental instruction.
- Red Zone 0%-15%: This indicates that the student is at high risk in failing to meet grade-level and literacy instruction by the end of the school year. These students require immediate supplemental instruction that targets the student's deficiency gaps (FLDOE, 2014c).

The FAIR-FS program offers teachers with a comprehensive assessment system that covers all the key component areas of reading and provides data that serves to efficiently help identify students who will be successful and those who will require further diagnostic testing (FDOE, 2014c; Foorman et al., 2013). The FAIR-FS program's assessment tool benefits students because teachers will be able to tailor instruction and target the individual needs of each student to promote reading success (FDOE, 2014c).

Standardized testing and human diversity. The educational system in Florida utilizes the FSA-ELA as its standardized testing instrument to annually assess students

attending public schools at the end of each school year (FDOE, 2015d). As part of embracing the human diversity element in standardized testing, race and ethnicity were also included as a controlled variable in this study. The significance of upholding equality in the educational system continues to impact racial and economic integration in schools and the ongoing educational development in students (Alsobaie, 2015; Bean et al., 2015; McKoon & Ratcliff, 2016). High-stakes standardized testing in the U.S. has caused problematic stress for many students and particularly since the mandated implementation of the No Child Left Behind Act in 2001 (Baron, 2012). Culturally and linguistically diverse students from various ethnical backgrounds taking these high-stakes standardized tests are affected, and for some, unable to erase the stigma of failing based upon their racial and ethnical diverse backgrounds (Baron, 2012; Bogin & Nguyen-Hoang, 2014). The pressures of performance grades and annual measurable accountability reports that are required by the Florida Department of Education (FDOE, 2014, 2014j) also affect student performance outcomes on standardized assessments (Brasington & Hite, 2012; FDOE, 2015). To obtain equality and a non-biased sample of test score results from the outcome variable (FSA-ELA), race and ethnicity were included as a control variable in this study.

Data Collection, Processing, and Analysis

Data collection. There are 87 public elementary schools amongst the 150 schools (K-12) in Polk County, Florida. These schools are divided into seven school districts across the 28 cities in the county. From within the total population of the 87 elementary schools (K-5) represented in the district, only a sample of the FAIR-FS and FSA-ELA test scores from third-grade students were collected for this quantitative study. Third

grade was selected for this study because it is the primary promotion and retention grade level in Florida based upon students' FSA-ELA tests score results (FDOE, 2015c). This quantitative design helped produce measurable statistics to test the theory that the predictor variable was a sustainable instrument to predict student performance on the annual standardized tests.

Individual teachers or school-based administrators at each of the district-wide elementary school sites locally administered the third-grade FAIR-FS and FSA-ELA tests to students during the third testing window for Polk County schools in the spring. Students identified in the exceptional student education (ESE) program with 504 plans and students identified as English language learners (ELL) were provided with accommodations that included extended testing time and in an alternate testing environment during both assessments, as based upon the requirements set forth by the Florida Department of Education (FAC, 2016; FDOE, 2014g). In addition, the alternate testing environments accommodated ESE and ELL students with the opportunity to test in smaller group settings. The ELL students also were provided with the American Heritage Dictionary during the assessment and the testing directions (if Language Proctors were available) were provided in the native language of the individual ELL student.

Prior permission to use the data from the AAE department was amassed for this research. Upon completion of both assessments, the AAE office was the determining authority to make the decisions on the sample population test-score size and selection of schools from amongst the 74 school sites representing the third-grade data for the FAIR-FS and the FSA-ELA in this study. The testing window for both assessments fell between

March and May. The collected data was compiled and aggregated by the AAE department before the information was released to the researcher for this study. The researcher used the aggregated FAIR-FS Probability of Literacy Success (PLS) test result data (predictive variable) and compared that information with students' FSA-ELA (outcome variable) test scores to determine if correlations exist between both variables.

Data processing. The FAIR-FS test results registered (in real-time) on FLDOE's Progress Monitoring and Reporting Network (PMRN) system as the assessments were completed. Each elementary school in Polk County, Florida had immediate online access to the FAIR-FS test results for their individual schools upon the completion of the assessments. The Assessment, Accountability, and Evaluation (AAE) department collected and download the full countywide FAIR-FS data test results directly from the FDOE's PMRN servers to local servers at the Polk County district office. All FSA-ELA test scores also registered (in real-time) on FDOE's secured servers upon completion. However, unlike having access to FAIR test results, local school districts statewide did not have any access to FSA tests scores until it was officially released by the FDOE. Upon finalization, the Florida Department of Education determined the specific date when FSA test results were published. At that time, all FSA test scores were distributed to each individual Florida school district before the information was made available and released to the public.

Data analysis. A linear regression analysis was used in this study with R^2 measuring the distance of the data result in the regression line. The assumptions that were tested prior to the regression analysis included the following four elements: (1) variables are normally distributed, (2) assumptions of a linear relationship between the independent

and dependent variables, (3) variables are measured without error (reliably), and (4) assumptions of homoscedasticity. This statistical model was the most efficient analysis to help determine the relationships between the collected data and the variables, test the null hypothesis, and show if the FAIR-FS program had predictive qualities as an indicator of students' probability of literacy success (PLS) on the FSA-ELA standardized test. IBM SPSS Statistics v24 was used to perform the data analysis process for this study. The data evaluation began with an analysis of any missing data and outliers.

Assumptions

There are six primary assumptions that predicated the design of this correlational study. First, it was assumed that each third-grade student (district wide) had received prior classroom instruction during kindergarten to second-grade in reading comprehension and had an adequate reading comprehension ability to take the FAIR-FS diagnostic assessment. Second, it was assumed those students taking the FAIR-FS assessment participated and answered each question on the FAIR-FS to the best of the students' working knowledge. Third, it was assumed that the FAIR-FS instrument was an accurate tool to identify students struggling with reading comprehension and literacy skills. This medium helped teachers remediate the students' deficiency gaps before taking the end-of-year FSA-ELA standardized test. Fourth, it was assumed that each third-grade student (district wide) post FAIR-FS taking the FSA-ELA had received adequate and remediated classroom instruction in reading comprehension skills. Fifth, it was assumed that each third-grade student taking the FSA-ELA assessment participated and answered each question on the standardized test to the best of the students' working knowledge. Finally, it was assumed that the data from the dependent variable was normally

distributed showing correlations of variance between students' test scores. This distribution helped to ensure the examination of relationship between the parameters in the analysis.

Limitations

In addition to several limitations associated with this study, there were also potential reliability and validity concerns. Therefore, any potential flaws in the design or methodology in correlational research would create misinterpretation and its effectiveness. First, Arghode (2012) tells us that correlation does not equal causation because research design methods contain limitations that are invariably associated with the correlational designs itself. This correlational study was constrained to results that were numerically utilized to provide descriptions of the relationship between the predictor and outcome variables. Therefore, this did not necessarily mean that the predictor variable caused the changes observed in the outcome variable. Caution was applied when cause-and-effect correlational studies were discussed and analyzed. Secondly, this correlational study wasn't longitudinal because the FAIR-FS and FSA-ELA test scores were only taken from the 2014-15 school year. At that point, there were no prior data to help determine whether the 2014-15 school year test score data would indicate an accurate depiction of the predictor's variable accuracy of students' progress on the FSA-ELA in the long term throughout the state of Florida. Thirdly, Gobert et al. (2016) and Yilmaz (2013) advised that potential limitations of research studies may transpire due to the presuppositions and bias projected by the researcher. Since the researcher conducting this study was from within the Polk district school system, presupposed viewpoints, dispositions, and circumstantial information may have

potentially been introduced into the study. As a precaution against such presuppositions, caution was applied along with safeguards to prevent language bias and unwarranted conjectures projected into the study. Lastly, external validity was needed to sustain legitimacy in the study. A large population of third-grade student test-score data was accessed in lieu of just from a select few school sites from within the school district. Furthermore, the test-score data were from a diverse population sample district-wide. Also, to ensure that future researchers could replicate this study, the variables utilized were defined in this study.

Delimitations

The scope of this research was to identify the relationships between the FAIR-FS and FSA-ELA standardized test-scores in an elementary school population setting and correlating this study to the accuracy of the predictor variable (FAIR-FS) on student academic achievement on the outcome variable (FSA-ELA). There were three delimitations that helped narrow the scope of this quantitative study. First, only third-grade ELA student test-scores were the chosen study population instead of all intermediate elementary grades (grades 3-5) from district-wide Polk schools. The rationale for this decision was done for two reasons: (1) to help keep the study population at a level that would be less than 1,000 for screening, and (2) because third-grade was the primary crucial grade-level for student promotion and retention in Florida at the elementary school level (FDOE, 2014a, 2014b, 2014d, 2014e, 2015c). Second, the outcome variables of successful standardized passing test scores for elementary schools had been identified in the literature as a growing concern that public schools across the U.S. (Bradfield et al., 2014; CEP, 2012; FCRR, 2016; FDOE, 2014a; NCES, 2015) had

continued to see decline in standardized test score results and currently still residing in the bottom quartile (IES, 2012). In addition, these assessment results were not meeting the Title 1 legislative objectives of the NCLB (NCLB, 2001b). Third, these test-score results represented the academic trend in reading, literacy skills, and mathematics in U.S. public schools over a period of 40-years (IES, 2012). While mathematics is considered a core content-area subject, the math standardized test scores were not included in this research because it primarily incorporated the skills of numeric logic, rather than linguistic and reading literacy comprehension competencies. The exclusion of the mathematics data helped eliminate potential distractors in the data analysis for this correlational study.

Ethical Assurances

In adhering to the mandates outlined in the Belmont Report (1979), all ethical standards were obeyed in this research. The standards in this study reflected protection from harm, informed prior consent, and all rights to privacy were followed. The ethical concerns involving the respect for persons such as, for example, the invasion of privacy, vulnerability, insensitivity, and conflicts of interest did not become an issue because this study primarily only revolved around aggregate data-mining practices. Therefore, the risks to human participants in this study were not a factor of concern. Internal reviews to ensure and regulate all ethical standards for this correlational study were sought in advance to collect data and with prior approval from both agencies at Northcentral University's IRB, as well as, from the IRB office of the Assessment, Accountability, and Evaluation (AAE) department at the School Board of Polk County, Florida.

The nature of this study was an analysis of archived data, and all data (e.g., student names, their school sites, and demographics) were securely de-identified and coded by the AAE department before being released to the researcher. The data included the following covariates based upon the consent and prior approval of the AAE department for use as the controlled variables (demographics) from the population database: student gender, ethnicity, age, and Title 1 and non-Title 1 school sites. However, the researcher did not have any access to examine the impact of the demographics in the study.

The student test-scores (FAIR-FS and FSA-ELA) from the study population were in no way vulnerable at any point either by individuals or groups as it pertained to any form of academic difficulties/deficiencies, learning gaps, student compromised success, or any information pertaining to faculty/student relationships during this study. The AAE department coded all student personal information prior to releasing the population data to the researcher for the study.

Summary

This research examined the relationship between third-graders' 2014-15 FSA-ELA standardized test scores, while controlling for race/ethnicity, between Levels 1-5 and the FAIR-FS achievement results of students' scoring between 1-100%. The Assessment, Accountability and Evaluation Department of the School Board of Polk County, Florida aggregated both resulting FAIR-FS and FSA-ELA data and was also the authority that determined the random sample of students' test scores for this quantitative study. The sample population of test-score data stemmed from amongst the 87 public elementary schools in Polk County, Florida during the 2014-15 school year. This sample

represented district-wide data. A linear regression analysis was used for this study because it was the most efficient statistical model to determine the relationship data from the predictor and outcome variables. The linear regression analysis also helped to test the null hypothesis.

The predictor variable (FAIR-FS) in this study utilized the Probability of Literacy Success (PLS) as the measurement indicator to predict students' standardized test scores on the outcome variable (FSA-ELA).

Chapter 4: Findings

The purpose of this study was to determine if the Florida Assessments for Instruction in Reading (FAIR), a reading diagnostic program used as a predictor model, would assist in determining student academic success measured by the Florida Standards Assessments (FSA) standardized test. The specific content area studied was English Language Arts (ELA) and the specific grade level studied were third-grade students in Polk County schools during the 2014-2015 school year. Archived test score data were obtained from the office of Assessment, Accountability, and Evaluation (AAE) at the School Board of Polk County, Florida from district-wide third-grade students. This chapter included the linear regression analysis results for correlation between the FAIR-FS and the FSA-ELA, and between ethnicity and test score results from the FAIR-FS and the FSA-ELA amongst third-grade students. This study was addressed by answering the following research questions with the respective hypotheses.

Q1. What is the relationship between reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County?

Hypotheses

$H1_0$. There is no relationship between reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida.

$H1_a$. There is a significant relationship between reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida.

Q2. What is the relationship between ethnicity and reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida?

$H2_0$. There is no relationship between ethnicity and reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida.

$H2_a$. There is a significant relationship between ethnicity and reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida

Results

Research Question 1 asked: What is the relationship between reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County? The AAE office gathered and de-identified all archived test score data for the FAIR-FS, FSA-ELA, and student ethnicity population before it was released for this quantitative study. The archival data represents third-grade students attending the 87 public elementary schools in Polk County, Florida district-wide that included traditional, Title 1, magnet, and charter schools.

Linear regression was conducted to determine the best linear combination of ethnicity and FAIR-FS test results for predicting FSA-ELA test scores. Assumptions of linearity, normally distributed errors, and uncorrelated errors were checked and met. The means, standard deviations, and intercorrelations can be found in Table 1 below. This combination of variables significantly predicted FSA-ELA test scores, $F(2,97) = 37.40$, $p < .001$, with all two variables significantly contributing to the prediction. The adjusted R

squared value was .42. This indicated that 42% of the variance in FSA-ELA test scores was explained by the model. According to Cohen (1988), this is a medium effect analysis.

Table 1: FSA-ELA Test Score Achievement

Means, Standard Deviations, and Intercorrelations for FSA-ELA Test Score Achievement and Predictor Variables (N = 100)

Variable	*M*
FSA-ELA	1.98
Predictor variable	
1. FAIR-FS	58.6
2. Ethnicity	.71

*$p < .05$; **$p < .01$

Therefore, the findings indicated that we could reject the null hypothesis for *Research Question 1* ($H1_0$) because of the significant relationship between the predictor and the outcome variables.

Research Question 2 asked: What is the relationship between ethnicity and reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida? The beta weights presented in Table 2 below suggested that the passing scores on the FAIR-FS contributed mostly to predicting FSA-ELA test scores that affects promotion of third-grade students to the fourth-grade class and had not correlation between student ethnicity and their test score results on the FAIR-FS and the FSA-ELA. Consequently, the findings indicated that we couldn't reject the null hypothesis for *Research Question 2* ($H2_0$).

Table 2: FAIR-FS and Ethnicity Predicting FSA-ELA Test Score

Linear Regression Analysis Summary for FAIR-FS and Ethnicity Predicting FSA-ELA Test Score Achievement (N = 100)

Variable	*B*	*SEB*	*ß*
FAIR-FS	.022	.003	.668**
Ethnicity	.142	.181	.061
Constant	.578	.229	

Note. R^2 = .42; $F(2,97) = 37.40$, $p < .001$
*p < *.05;* **p < *.01.*

Evaluation of Findings

In brief, the purpose of this quantitative study was to examine the relationship between third-graders' 2014-2015 FSA-ELA passing standardized test scores and the FAIR-FS reading achievement test scores. The results suggested that the null hypothesis for *Research Question 1* ($H1_0$) can be rejected because of the significant relationship between the FAIR-FS as a predictor model and student performance on the FSA-ELA test achievement scores. These results will provide support for teachers, school-based administrators and district-level officials in Polk County, Florida to utilize the FAIR-FS program as a measurable diagnostic tool to help close the reading comprehension and literacy achievement gaps for students (Frey & Fisher, 2012; Hosp & Suchey, 2014; Kim, 2015; Nelson et al., 2012). The 2014 study of Foorman et al. affirmed that acquiring literacy skills (when considered in the context of reading comprehension) is a very complex process for young children to become proficient. When literacy skills are acquired, students will also attain success in the oral-written language modality (Bradfield et al., 2014; Harvey & Goudvis, 2013), which is a key component to

performing well on standardized assessments such as the FSA-ELA. The population of third-grade students makes up a large fraction of the Polk district's promotion and retention student body (PCSB, 2016c).

The null hypothesis for *Research Question 2* ($H2_0$) cannot be rejected because the analysis showed no relationship between ethnicity and reading success test results from the FAIR-FS and the FSA-ELA passing test scores amongst the student population sample. Therefore, the data provided by the AAE office at the Polk County School Board for this study indicated that ethnicity was not a significant variable in the regression model. However, the literature did indicate that it remains important to uphold integrated racial and economic equality in schools to positively impact the educational development in students (Alsobaie, 2015; Baron, 2012; Bean et al., 2015; Bogin & Nguyen-Hoang, 2014; Burlison & Chave, 2014; McKoon & Ratcliff, 2016). The grouping variables of ethnicity provided by the AAE office were only in three categories (Black, White, and Other). Due to the coding from the Polk County School Board, this limited the scope and amount of depth or breath of analysis for the grouping variables.

Summary

The regression analysis results from the data obtained and compiled by the AAE office at the Polk County School Board supported the primary hypothesis that there is a significant relationship between the FAIR-FS diagnostic tool and its correlation to the passing test scores of third-grade students on the FSA-ELA. This indicated that the FAIR program utilized in Polk County's public schools have a positive impact on the district's annual End-of-Year standardized assessment. Furthermore, the indicators used for significance (means, standard deviations, and intercorrelations) in the analysis supports

the FAIR-FS as a viable predictor model for preparing third-grade students for successful promotion to the fourth-grade. However, the results from the regression model do not support the secondary hypothesis that there is any significance or correlation of ethnicity between the FAIR-FS and the FSA-ELA when only grouped into the three variables of Black, White, and Other.

Chapter 5: Implications, Recommendations, and Conclusions

This study addressed the problem of reading comprehension and literacy skills amongst elementary students in Polk County public schools and their effect on academic success. Student proficiency in reading comprehension is an imperative factor for how students learn to identify and decode text for understanding. If the deficiency gaps in reading skills are no closed, it could affect and undermine other content areas in the student's academic progression plan (Frey & Fisher, 2012; IES, 2012; Seifert & Espin, 2012; Spilt et al., 2012). The 2012 National Center for Education Statistics (NCES) report indicated that a 40-year pattern showed fourth-grade students across the U.S. are in the bottom quartile for reading comprehension skills and 60% of eighth-grade students are not reading proficiently at their grade-level (IES, 2012). These statistics signified a disconcerting academic trend for public school students in reading and literacy skills.

The purpose of this quantitative study was to determine how much influence the FAIR-FS (Florida Assessments for Instruction in Reading-Florida Standards) diagnostic program would have on students' success in reading comprehension (when used as a predictor model for passing standardized test scores) as measured by the FSA-ELA (Florida Standards Assessments-English Language Arts) amongst the 87 public elementary Polk schools. A passing score on the FSA-ELA for third-grade students is a state mandate for promotion to the fourth-grade (FDOE, 2014a, 2014b, 2014d, 2014e, 2015c).

Limitations Identified

There were five limitations in this study that may have affected the results: the limitations of correlation, non-longitudinal design, researcher bias, external validity, and student ethnicity.

Limitations of correlation. The first limitation signified that the research design of this study does not equal causation that is associated with the correlational design of the study itself. This correlational study was constrained by the numerical data provided by the AAE office at the Polk County School Board that was used to identify the descriptions of the predictor and outcome variables. As a result, this does not necessarily mean that the predictor variable was the observed cause of the outcome variable. Also, there were limitations to the correlation as there may have been a number of unknown influences (students' mood, state of mind, or the lack of sleep the night before) that could have impacted students' test-taking performance on the day of the FSA-ELA that may or may not be measurable.

Limitations of non-longitudinal. The second limitation was the non-longitudinal design of this study because it only included the aggregated data from the 2014-2015 school year in Polk schools. All the data collected only reflected a snapshot of that particular school year. With no prior data from previous school years, this limits the scope that would help determine if the 2014-2015 data results for test scores was an accurate indication of the predictor variable for student's FSA-ELA progress throughout the state of Florida in the long term. Also, the design of the test score data is not conducive as a longitudinal research study because the FSA-ELA test scores are grade-specific to third-grade only and assigned to those particular students for that given year.

The test-takers for the third-grade FSA-ELA the following school year will not be the same students that will be taking the assessment.

Limitations of researcher bias. The third limitation pertains to the presupposition and bias viewpoints that could potentially be projected into the study because the researcher is from within the system of the Polk County school district. However, as a precautionary measure to safeguard against those elements, attention was applied during the study to avert potential and unwarranted conjectures that would influence the outcomes. Therefore, all data from the population test score samples, individual student identities, and school locations were aggregated, de-identified, and secured by the AAE office at the Polk County School Board before it was released to the researcher for this study. These measures were also done to prevent selection and accidental bias.

Limitations of external validity. The fourth limitation was the need for external validity to sustain legitimacy in the study. A large population of test score samples was needed from within Polk schools district wide in lieu of just a few selected school sites. In addition, a diverse population from the test score samples was needed for external validity beyond the limitations of just one school district.

Limitations of student ethnicity. The fifth limitation was the need for additional categories of student ethnicity for this study. Further categorical breakdown of student ethnic groups (apart from Black, White, and Other) was unavailable from amongst the third-grade student population test score samples.

Implications

The researcher found that two questions concerning reading comprehension as it pertained to student performance on Florida's annual standardized test in English language arts (FSA-ELA) and the impact ethnicity had (if any) on student passing test scores were answered. The first research question was to determine the relationship between reading success test results from the FAIR-FS program and the FSA-ELA passing-test scores amongst third-grade elementary students in Polk County, Florida. The findings from this study indicated that the null hypothesis for *Research Question 1* ($H1_0$) stating that there is no relationship between reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk schools can be rejected. The linear regression analysis indicated that there is a significant correlation between the FAIR-FS (when used as a predictor model for student's probability of literacy success) on the FSA-ELA. Therefore, teachers can rely on the accuracy of the diagnostic features in the FAIR-FS program to help them identify reading deficiency gaps in struggling students and modify curriculum accordingly to differentiate classroom instruction as prescribed in the FAIR-FS student report. The FAIR-FS program also offers teachers a reading analytic plan-of-study that is aligned to Florida's language literacy standards (Foorman et al., 2014) to support differentiated instruction and interpret gaps in reading comprehension for at-risk ELL and ESE students, as well (Harvey & Goudvis, 2013; Hosp & Suchey, 2014). The FAIR-FS program is a vital component (instrument) in Polk public schools for student progress-monitoring in the classroom and provides teachers with the ability to meet measurable accountability benchmarks in critical literacy (Aske et al., 2013; Bennett, 2012).

Furthermore, as students prepare for the annual FSA-ELA, teachers can use the FAIR-FS program diagnostics to help them know if individual students are meeting content objectives for each of the four primary components (word recognition, vocabulary knowledge, reading comprehension, and syntactic knowledge). As part of the progress-monitoring process, teachers will be able to see if students are mastering the Florida Standards in reading and writing throughout the year (FDOE, 2014c: 2015d; Foorman et al., 2013; 2014). Students can follow their individual progress-monitoring strategies to fulfill their prescribed plans-of-study and successfully pass the FSA-ELA at the close of each school year (FDOE, 2015c; 2015h).

Numerous research in the literature indicated that there are reading deficiency gaps amongst mainstream students, as well as, culturally and linguistically diverse students across the U.S. (Barone, 2013; Barr et al., 2012; Gelerstein et al., 2016; Geva & Farnia, 2012; Jones et al., 2012; Kendeou et al., 2014; McCown & Thomason, 2014; NAEP, 2015; NCES, 2015; Roberts, 2012; Silva & Cain, 2015). As an ongoing effort to help close these reading deficiency gaps, all K-12 public schools in Florida are mandated by the Florida Department of Education to set in place annual measurable goals that will help schools make progress (gains) with student academic achievement objectives (Aske et al., 2013; FDOE; 2014; USDOE, 2015). This K-12 accountability decree is accomplished through the state's annual End-of-Year (EOY) standardized testing instruments in mathematics, reading, writing, and science (FDOE, 2014a; 2014b; 2014c; 2014d; 2014e; 2014g). However, an area of limitation that is unclear lies with the effectiveness of the FAIR-FS program when evaluated as a predictor model for passing test scores on the FSA-ELA in other grade levels such as middle school (Grades 6-8) and

high school (Grades 9-10) in Florida. Those grade levels have yet to be evaluated in Polk schools.

The literature review also denoted that reading comprehension and literacy skills continue to be an ongoing challenge for students in public schools and reading researchers have discovered that the gaps of literacy deficiencies is at epidemic levels across the U.S. (CEP, 2012; Frey & Fisher, 2012; Hosp & Suchey, 2014; IES, 2012; Kim, 2015; Lai et al., 2014; Nelson et al., 2012). A major contributing factor to the reading comprehension dilemma lies with the complexities of comprehension because it requires different levels of cognitive abilities in order for students to successfully interact with the text (Scheffel et al., 2016; Tous et al., 2015; Van den Broek & Espin, 2012). This especially holds true for struggling younger readers (Hudson et al., 2012; Silva & Cain, 2015). The FAIR-FS program remarkably implements a steady task flow in the reading content areas from within the program's diagnostic design. This flow of tasks helps teachers to see where individual students may be struggling and includes word recognition, vocabulary knowledge, reading comprehension, and syntactic knowledge as part of the program's oral and written fluency diagnostic tool during the assessment (FDOE, 2014c; Foorman et al., 2013; 2014). When utilized, the FAIR-FS will provide teachers with reliable estimates (probability of literacy success) for the skills needed with third-grade students and will contribute to each individual's reading comprehension level. The FAIR-FS assessment results are quantifiable and measurable that provides teachers with data to help them specifically differentiate instruction for each individual student based on identified EOY outcome measures (FAC, 2016; Foorman et al., 2014; Jones et al., 2012; Van den Broek & Espin, 2012).

The purpose of the second research question was to determine the relationship between ethnicity and reading success test results from the FAIR-FS program and the FSA-ELA passing test scores amongst third-grade elementary students in Polk County, Florida. The findings from this study indicated that the null hypothesis for *Research Question 2* ($H2_0$) showed no relationship between student ethnicity and their reading test results on the FAIR-FS and passing test scores on the FSA-ELA amongst third-grade students in Polk schools. Based upon these findings, the null hypothesis ($H2_0$) cannot be rejected.

The AAE office at the Polk County School Board de-identified all the archived student test-score data (FAIR-FS and FSA-ELA) taken from amongst the third-grade student population before releasing them to the researcher for this study. Also, the AAE office compiled the parameters for ethnicity delineation that was only based upon the three categories of Black, White, and Other. Apart from these three specific categories of ethnicity (race), there were no other broken-down classifications listed in the provided data. The student population for those three ethnic categories was derived from the 87 public K-5 schools in the Polk district representing Title 1, magnet, and charter schools. The linear regression analysis indicated that the FAIR-FS model when utilized as a predictor for FSA-ELA test scores, showed no correlation between student ethnicity (Black, White, and Other) and their achievement test scores on either assessment instruments.

Recommendations

The recommendations for future research are resultant from the limitations that were discussed and the represented discourse (body of research) in the literature.

Recommendation 1. The first recommendation would be to replicate the study design and expanded it to include aggregated data from other school years. When other school years are included, it would help determine if the FAIR-FS program will continue to be an accurate and dependable predictor tool of FSA-ELA tests scores in the long term for Polk schools. This remains an important factor because each year different groups of third-grade students will be participating in the FAIR-FS and the FSA-ELA assessments. The student population across public elementary schools in Polk County and across the state of Florida will continue to evolve based on student needs and learning deficiency gaps in reading comprehension (Jones et al., 2012; Justice, Mashburn & Petscher, 2013; Kendeou et al., 2014; Luque et al., 2013).

Longitudinal study. The educational climate is under constant change through various elements such as societal development, economic crises, technological innovations and advancements, and educational reforms (Geva & Farnia, 2012; Jez & Wassmer, 2015; Malin et al., 2014). A longitudinal study of the FAIR-FS program model is a great tool (when applied across different school years) to help teachers understand how teaching and learning is affected by future changes in the content areas of reading comprehension and literacy skills (Elwér, Gustafson, Byrne, Olson, Keenan & Samuelsson, 2015; Geva & Farnia, 2012; Hashemi & Kendeou, 2014; Kwiatkowska-White, Kirby & Lee, 2016). Reflective longitudinal studies will also measure change over time and confirm the validity and reliability of the predictor model for assessment outcomes on future FSA-ELA results.

The quantitative design method will allow for a replicated study and yield measurable outcomes for evaluation from within the student population from other school years (Vogt, 2007; Vogt et al., 2012).

Recommendation 2. The second recommendation would be to include additional categories of student ethnicity (race) beyond the scope of only Black, White, and Other in future studies. This would provide parity and diversity in the research. Furthermore, by including other categorical breakdown of student race/ethnicity represented in the data, will avoid the exclusion of minorities causing misrepresentation of potential unfairly deprived outcomes.

Equity and diversity management. Polk County public schools have a vast and diverse student population that could be further classified to include other ethnic groups. The Office of Equity and Diversity Management (EDM) at the Polk County School Board showed in the 2016-2017 Student Population Report that the district matriculated a total of 102,967 students in the district's K-12 Title 1, charter, and magnet schools for that school year (PCSB, 2017). The EDM office indicated the following categories (broken down to reflect number of students and percentage) for student race/ethnicity in 2016-2017: White (41,858 / 40.7%), Black (21,328 / 20.7%), Hispanic (34,677 / 33.7%), Asian (1,625 / 1.6%), American Indian / Alaska Native (410 / 0.4%), Multi-Racial (2,915 / 2.8%), and Pacific Islander (154 / 0.1%) (PCSB, 2017).

Student parity. It is important that the body of research evidence reflect student parity in the population diversity that stems beyond only including minorities in the study (Hayes & Doherty, 2017; Puig, Erwin, Evenson & Beresford, 2015). There were limitations in this study because the findings indicated that there was no relationship

between the FAIR-FS program indicator and students passing test scores on the FSA-ELA amongst the three categories of student ethnicity represented only by Black, White, and Other. If additional categories of student race/ethnicity were included in the data sample it may have yield a different outcome in the dependent variable and possibly better supported the constructs of procedural and distributive justice in the research (Downey & Condron, 2016; Ellard, Harvey & Callan, 2016; Gorard, 2012; Kazemi, 2016; Kim, 2016; McVeigh, Beyerlein, Vann & Trivedi, 2014; Sabbagh & Resh, 2016; Strathdee & Cooper, 2017; Vermunt & Steensma, 2016).

A correlational study will allow for measurable statistical analysis to examine the theory of using the FAIR-FS as a predictor variable when controlling for student race/ethnicity to test the null hypothesis of students' performance outcomes on the FSA-ELA.

Recommendation 3. The third recommendation would be to focus on the third-grade student population of Exceptional Student Education (ESE) and English Language Learners (ELLs). This focus would provide sustainable educational research for those populations. Florida legislative mandates include students with disabilities and students with English as a second language in statewide achievement testing and require them to take the annual FSA-ELA along with the mainstream third-grade student population (FDOE, 2014; 2014e; 2014g; 2015c; 2015f). Also, the stipulation for Federal legislation to include ESE and ELL students in educational testing is to maintain accountability for each school district (Chamberlain & Witmer, 2017; Lakin & Young, 2013; Plecki et al., 2012). Depending on the student's 504 and IEP (an individualized education plan for students with special needs), ESE students are provided with accommodations and

special services. These special services may include the student's annual educational goals, help to reach those goals, modification to the curriculum, and extra time allocation when taking standardized tests (FDOE, 2017).

ESE population. In the literature, the ESE population struggles with inferential comprehension of the text in the context of reading decoding and developmental literacy skills. This is evident when ESE students are required to cognitively make connections and interact with the meaning of the text and identify the author's purpose and point-of-view (Chamberlain & Witmer, 2017; Hashemi & Borhani, 2014; Hosp & Suchey, 2014; Poole, 2014; Rudsberg & Öhman, 2015; Seifert & Espin, 2012). The flow of tasks in the FAIR-FS program helps teachers in the ESE classroom identify the deficiency gaps of word recognition, vocabulary and syntactic knowledge, and the reading comprehension struggles ESE students often encounter (FDOE, 2014c; Foorman et al., 2013; 2014).

ELL population. The ELL population is very diversified in the Polk district accounting for more than 10,600 students in Polk schools that speaks a primary language other than English (PCSB, 2017a). As with the ESE and mainstream student population, all ELLs are also subject to annual standardized testing as part of the Florida's annual accountability mandate (FDOE, 2014; 2014e; 2014g; 2015c; 2015f; Lakin & Young, 2013). The literature indicated that struggling ELL readers encounter various difficulties in reading comprehension when making inferences from within the text if the student does not have sustainable background knowledge in each content (topic) area or if the ELL is unable to access prior background information to make the connection in the English language (Geva & Farnia, 2012; Lee-Swanson et al., 2015; Liton, 2016; McMaster et al., 2015; Van den Broek & Espin, 2012). Each ELL needs to have a

supportable background knowledge bank from which to draw from because successful interaction with the text is contingent upon the ELL's ability to process the decoded information and make meaningful connection with the curriculum used in the United States (Barr et al., 2012; Witmer et al., 2014). The FAIR-FS program is a viable progress-monitoring tool that can provide ELL teachers with diagnostic data in reading comprehension to close deficiency gaps (particularly with decoding text) in the ongoing progress of ELLs throughout the academic school year (FDOE, 2014c). The predictive feature of the FAIR-FS assessment tool will also be instrumental to help teachers identify each ELL's Probability of Literacy Success (PLS) on their annual FSA-ELA to meet promotion requirements (FDOE, 2014a; 2014b; 2014d; 2014e; 2015c; Foorman et al., 2014).

A quantitative study can be duplicated with other third-grade student populations (ESE or ELL) because of the high reliability of the FAIR-FS program for predicting future student achievement outcomes on the FSA-ELA.

Recommendation 4. A fourth recommendation would be to expand the study to include other grade levels such as middle school (Grades 6-8) or the first two years of high school (Grades 9-10). Third-grade students that do not achieve a passing score of a Level 2 (minimum) on the FSA-ELA will be classified as unsuccessfully meeting the high-stakes standards of Florida's standardized assessment and subsequently will be considered deficient in reading comprehension as outlined in the Florida State Literacy Plan (FDOE, 2014a). Therefore, the focus of this study was with third-grade students and their achievement outcome on the FSA-ELA to meet promotion requirements to fourth-grade (FDOE, 2014a, 2014b, 2014d, 2014e, 2015c). However, it remains necessary for

students in other grade levels to be proficient in reading because it is fundamentally an essential element to successfully function (academically) in school, and today in the global marketplace (Ahmed et al., 2016; Burlison & Chave, 2014; Poole, 2014; Spilt et al., 2012). Also, stability for early-adolescents (Grades 6-8) in reading comprehension is paramount to their academic success in other content areas such as science and mathematics (Murphy et al., 2014; NAEP, 2015; West & Schwerdt, 2012).

Middle school. The influence of classroom-based linguistic and language instruction for middle school has been on the decline for several years according to a 2012 report by the National Center for Education Statistics (NCES) published by the Institute of Educational Sciences (IES). The NCES report indicated that students in the 8th grade are not reading proficiently on grade-level across the U.S. and furthermore, the report also showed that this academic decline in reading comprehension has been over a 40-year period (IES, 2012). Language arts (reading and writing) play a significant role in reading comprehension of adolescent students (Boardman, Buckley, Lasser, Klingner & Annamma, 2015; Gámez & Lesaux, 2015).

High school. High school students (Grades 9-10) in Florida's public schools are also required to take the FSA-ELA annually (FDOE, 2014g) and this is one of the most vital stages in the students' educational journey in secondary education (Hopwood, Hay & Dyment, 2017). According to the 2015 NCES report published by the Institute of Educational Sciences (IES), the reading scores of twelfth-grade students showed not significance compared with the scores of 2013, however, the 2015 scores were comparatively lower with earlier scores dating back to 1992 (IES, 2015). The transition from middle to high school can see negative impacts on students' academic success if

there are deficits and gaps in their reading comprehension and literacy skills (Hanewald, 2013; West & Schwerdt, 2012). Therefore proficient-reading skills can enhance the transitional process of students in middle to high school with support that will produce effective literacy learning as these students move towards their junior and senior years (Serbin, Stack & Kingdom, 2013). This recommended central study on middle and high schools students utilizing the FAIR-FS program will be beneficial to provide teachers with a reading screening and diagnostic evaluation that measures student progress effectively in preparation for the end-of-the-year FSA-ELA.

The quantitative design method will focus the replicated study with a large amount of information and help emphasize measurable objectives from within the specified population samples of middle and high school student data.

Recommendation 5. A final recommendation would be to replicate this study with the third-grade student population in other Florida public school districts beyond the scope of the School Board of Polk County. This would authenticate and sustain legitimacy of the FAIR-FS and FSA-ELA research in this study, its latitude, and provide external validity. The promotion/retention third-grade policy has been a successful model in Florida's public schools and it is a sustainable educational law that supports holding back (retaining) third-grade students who do not meet reading proficiency requirements on the state's standardized tests due to deficiency gaps in reading comprehension (Balkcom, 2014; FDOE, 2015c).

Reading educational laws. Reading laws associated with retaining third-grade students have been controversial in some states because they require students to pass statewide end-of-year standardized tests as a prerequisite to be promoted to the fourth-

grade. However, third-grade advocates and support groups have argued that by identifying struggling readers, retention will help third-grade students (overall) be better prepared for the fourth-grade because it would be an opportunity to provide intensive reading intervention for those students (Balkcom, 2014; Bradfield et al., 2014; Jones et al., 2012). It is also beneficial for students in the third-grade to read proficiently on grade-level before they are promoted to the fourth-grade because of the heavier workload requirements at that grade-level (Geva & Farnia, 2012; Hosp & Suchey, 2014; Hudson et al., 2012; Little & Hart, 2016). The FAIR-FS program is widely used in other Florida school districts as a predictor tool of student FSA-ELA outcome test scores and it will be beneficial to conduct research by duplicating this study with different third-grade student populations across the state. A comparison study would also produce data and provide important student achievement information to teachers, school-based administrators, district-level officials, parents, the public, policy makers, and stakeholders on student proficiency in the English language arts of reading, writing, speaking, and listening (Deane et al., 2015; Hudson et al., 2012; Kao, 2014). This will serve as an impetus and will contribute towards a wide range of educational reforms to support value-added student learning instruction that increases proficiency in struggling readers (Kendeou et al., 2014; Master et al., 2017; Silva & Cain, 2015; Weingarten, 2014).

A correlational study of third-grade student populations at other Florida school districts when utilizing pre-existing statistical aggregate data will avoid inferring causalities and provide a more focused concept for widely predicting future results of students' successful outcomes on the FSA-ELA.

Conclusions

The reading literacy problem continues to be an ongoing factor as U.S. public schools are not meeting achievement standards set by the National Assessment Governing Board (NAGB) and the legislative goals of the U.S. Department of Education (IES, 2015; NAEP, 2015; USDOE, 2015). The NAGB sets policies and resolutions for the National Assessment of Educational Progress (NAEP) and helps with the development of each NAEP assessment content area (IES, 2017). Reading comprehension and literacy skills has become more prevalent and critical for students' academic success in public schools across the U.S. (IES, 2012; 2015; Frey & Fisher, 2012; USDOE, 2015), and it is particularly imperative for Florida's third-grade elementary students to accomplish this due to strict state promotion and retention educational laws (Balkcom, 2014; FCRR, 2015; FDOE, 2015c). For many students in the instructional reading classroom during their developmental stages, it remains challenging for young readers to make meaningful connections with the text (without assistance), analyze and draw conclusions, and competently make inferences through contextual clues (Lee & Schmitt, 2014; Priebe et al., 2012; Silva & Cain, 2015). Furthermore, students will need to have the ability to recall information from background knowledge during that process to become successful and independent readers (Geva & Farnia, 2012; Malik, Sarudin, Muhamad, & Ibrahim, 2013). These reading qualities are paramount to third-grade student success on Florida's FSA-ELA and if they are below grade-level in reading comprehension when attempting the test, it will become a hindering factor for students to attain a Level 3 (proficiency) or higher on the assessment (FDOE, 2014e; Silva & Cain, 2015). On a wider scope, students will need to have a solid foundation in reading and

literacy skills if they are to compete in a post-modern global marketplace and living beyond wage jobs in the future (Holdren & Lander, 2012; McKoon & Ratcliff, 2016; USDOC, 2015).

The purpose of this study was to examine the relationship between the test score results from the 2014-15 FSA-ELA and the FAIR-FS achievement scores amongst third-grade elementary students in Florida's Polk County public schools. This quantitative study was carried out within the range of limitations, delimitation, and ethical assurances with the archived de-identified data (student test scores) provided by the Assessment, Accountability, and Evaluation (AAE) department at the School Board of Polk County, FL.

The limitations included the constraints of correlation, non-longitudinal design of the study, presupposition bias, lack of external validity, and minimum categorical information (Black, White, and Other only) to classify race/ethnicity. There were three delimitations in this study. The first delimitation included the purposeful selection of district wide third-grade student FAIR-FS and FSA-ELA test score data because it was the primary grade-level that is subjected to Florida's strict educational law for promotion criteria (FDOE, 2014a, 2014b, 2014d, 2014e, 2015c). The second delimitation was based on standardized passing test-scores for elementary students and was identified in the literature as a growing concern in public schools across the U.S. (Bradfield et al., 2014; CEP, 2012; FCRR, 2016; FDOE, 2014a; NCES, 2015). The third delimitation of this study was derived from an academic trend of test-score results in the content areas of reading and linguistic literacy decline over a period of 40-years amongst U.S. public schools (IES, 2012; 2015). Conclusively, the ethical assurances (standards) of this study

were adhered to as outlined in the Belmont Report (1979) for research. All student test-score data were de-identified by the AAE office at the Polk County School Board before it was released for this aggregated data-mining study. Therefore, there was no risk of harm or invasion of privacy to any person as there was no contact with any participant from the third-grade student population sample used in this quantitative research.

This study was designed to determine two factors regarding student test-score results on the FAIR-FS and the FSA-ELA during the 2014-15 academic school year. The first factor was to ascertain if student diagnostic results on the FAIR-FS (when used as a predictor tool) had any correlation with the test-score results of the FSA-ELA amongst the third-grade student population in Polk County public schools. The findings indicated that there was a significant relationship between the diagnostic instrument (FAIR-FS) and student passing test scores on the FSA-ELA during that school year. Subsequently, this study confirmed that the FAIR-FS program is an accurate predictor instrument of students' Probability of Literacy Success (PLS) on the FSA-ELA standardized test. The second factor in this study was to determine if there were any correlation between student ethnicity (race) and passing test scores on the FAIR-FS and FSA-ELA amongst third-grade students in Polk schools. The analysis showed that there was no relationship between ethnicity and students' successful achievement test-scores on the FAIR-FS and the FSA-ELA amongst the third-grade student population data sample.

Based on the literature (Jones et al., 2012; Kendeou et al., 2014; Kwiatkowska-White, 2016; Lee & Schmitt, 2014; Master et al., 2017; Mendoza-Denton , 2014; NAEP, 2015; Nelson et al., 2012; Reutzel et al., 2014; Scheffel et al., 2016; White et al., 2016) and the findings in this study, various recommendations were provided for future

research that will help produce additional data regarding the FAIR-FS program, its reliability as a diagnostic tool and accuracy to predict student outcomes on standardized tests (FSA-ELA).

The conclusions reached, and additional research recommendations extended will remain current until future studies uncover new findings that refine and update the presented knowledge beyond the scope of this study. As an example, for highlight, there were no correlations found in this study to support student ethnicity (race) and their related outcomes on the FAIR-FS predictor model and test-score results on standardized tests. Future research may discover that there is a measurable relationship between the predictor and outcome variables when additional categorical information is provided to include other ethnicities beyond the range of the three (Black, White, Other) that were used in this study.

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Appendix A: Non-Disclosure Agreement for De-Identified Student Data

Non-Disclosure Agreement for De-Identified Student Data

1. I agree that Florida law shall govern this Agreement and venue for any actions arising out of this Agreement shall be in the state courts of Polk County, Florida, or in the United States District Court for the Middle District of Florida, Tampa Division.

2. I agree not to release records to other third parties.

3. I agree to act as official custodian of data, and shall be responsible for the maintenance, care and security of data records provided under this Agreement.

4. In accepting data records from **Polk County Public Schools**, I agree to the following conditions:

   a. I agree that data records provided under this Agreement will be used exclusively for the purposes relating to my research request.

   b. I agree to limit access to records by not disclosing them to third parties.

   c. I agree to receive, store, and use data records provided under this Agreement in a manner that is compliant with: (1) any and all federal regulations including but not limited to those pertaining to protection of human subjects (45 CFR 46) and the Family Education Rights and Privacy Act, (2) any applicable state laws, and (3) all **Polk County Public Schools'** rules, procedures and policies.

   d. I agree that **Polk County Public Schools** may monitor, audit, and review project activities at mutually agreeable times, to ensure compliance with the requirements of this Agreement.

   e. I agree to store data records in a secure and password-protected location known only to myself.

   f. I agree to refrain from copying the data records.

   g. If I detect a breach or possible breach in the security processes adopted in support of this agreement, I agree to notify the **Polk County Public Schools** within one business day of discovering the breach and outline the actions being taken to ameliorate the cause and effects of the breach. I agree to bear financial and legal responsibility for any breaches.

   h. I understand that I have the right, consistent with academic standards, to publish the results of research performed under this Agreement, provided such publication does not disclose the data provided. I agree that, prior to submission of a manuscript describing the results for publication, shall forward to **Polk County Public Schools** a copy of the manuscript to be submitted. Upon **Polk County Public Schools'** receipt of same it shall have thirty (30) business days to review manuscript and provide comments before publication. I agree to consider all comments by **Polk County Public Schools** in good faith.

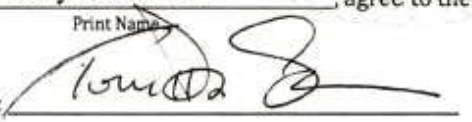
i. I agree that any report citing data analysis conducted pursuant to this Agreement, whether published or unpublished, shall include a disclaimer by of the analysis as well as the conclusions derived as follows: *"Points of view or opinions contained within this document are those of the author and do not necessarily represent the official position or policies of* ***Polk County Public Schools.***"

j. Except to the extent prohibited by law, I agree to assume all liability for any claims for damages against it by third parties, losses, expenses and damages, including reasonable attorney's fees arising out of my use, receipt, handling or storage of data.

k. I agree that data provided must be properly **destroyed** when no longer needed or by the end of **three years** following the date of execution of this Agreement. I agree to be responsible for the destruction of all data, digital and hardcopy, provided by **Polk County Public Schools** from all storage units. I agree to clear and purge digital data from online repositories and hard-drives so that data is rendered unrecoverable.

l. I agree that simple deletion of files is not a satisfactory practice of media sanitation. Digital data must be encrypted and subjected to additional software-based techniques for proper sanitation. Printed hardcopies of data must be cross-cut shredded in a secure and private shredding location. Through a written statement, I agree to notify the **Office of Assessment, Accountability and Evaluation** at **Polk County Public Schools** of the destruction of data and procedures enacted.

I, Tony De Souza, agree to the conditions specified in this Agreement.
Print Name

Signature: 

Date: June 12, 2017

Appendix B: Polk County School Board (AAE Approval Letter)

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Our Mission:
to provide a high quality education for all students

ASSESSMENT, ACCOUNTABILITY AND EVALUATION
SCHOOL BOARD OF POLK COUNTY
1915 SOUTH FLORAL AVENUE
BARTOW, FLORIDA 33830
PHONE (863) 534-0688
FAX (863) 534-0770

May 19, 2017

Tony De Souza
[redacted]
FL[redacted]

Re: *The Effect of Florida Assessments for Instruction in Reading Programs on Florida Standards Assessment Scores*

Dear Mr. De Souza:

The *Office of Assessment, Accountability, and Evaluation* has **approved** your request for anonymized third grade FAIR and FSA scores. Data will be released to you upon the successful execution of a non-disclosure agreement.

In the interest of continued research benefits and the coordination of research interests, we ask that you mail one copy of your finalized research product at the conclusion of your study. This information, and any other relevant information you may have, will be filed in our research library and added to the annotated listing of research projects. We look forward to reading the results of your study.

If you have any questions, or if I can be of any further assistance, please contact me or David Bustos.

Best wishes on your research endeavors.

Brandon Craig
Director of Measurement, Evaluation, & Research
Polk County Public Schools
1915 South Floral Avenue
Bartow, FL 33831
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Fax: (863) 534-0770

Appendix C: Linear Regression Analysis: FAIR-FS and FSA-ELA Test Scores

Table 4.1

Means, Standard Deviations, and Intercorrelations for FSA-ELA Test Score Achievement and Predictor Variables (N = 100)

Variable	*M*	*SD*	1	2
FSA-ELA	1.98	1.063	.66**	– .054
Predictor variable				
1. FAIR-FS	58.6	31.96	-	– .172*
2. Ethnicity	.71	.46		-

*$p < .05$; **$p < .01$

Table 4.2

Linear Regression Analysis Summary for FAIR-FS and Ethnicity Predicting FSA-ELA Test Score Achievement (N = 100)

Variable	*B*	*SEB*	*β*
FAIR-FS	.022	.003	.668**
Ethnicity	.142	.181	.061
Constant	.578	.229	

Note. $R^2 = .42$; $F(2,97) = 37.40$, $p < .001$
*p < .05; **p < .01.