BUILDING COMPREHENSION: A CAUSAL COMPARATIVE STUDY OF FACTORS CONTRIBUTING TO THE ORAL READING FLUENCY OF FIRST GRADERS

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BUILDING COMPREHENSION: A CAUSAL COMPARATIVE STUDY

OF FACTORS CONTRIBUTING TO THE ORAL READING

FLUENCY OF FIRST GRADERS

by

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STATEMENT OF DISSERTATION APPROVAL

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Abstract

Teachers are charged with the task of reaching all students academically in hopes all students will become proficient readers by third grade. Oral reading fluency is a predictor in academic success since fluency reflects comprehension. Students often come to school unprepared in their earliest years due to a lack of opportunity and/or early literacy experiences, creating an achievement gap, a disparity in academic performance between groups of students. This study identifies the correlation between socioeconomic status, race, gender, and preschool enrollment and the oral reading fluency of first-grade readers as indicated by the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) 8 composite score, Dynamic Indicators of Basic Early Literacy Skills (DIBELS) 8 Oral Reading Fluency words read correctly (ORF-WRC) and Dynamic Indicators of Basic Early Literacy Skills (DIBELS) 8 Oral Reading Fluency accuracy (ORF-ACC) score. Key findings show that socioeconomic status, race, gender, and preschool enrollment are predictors of oral reading fluency.

Keywords: oral reading fluency, DIBELS 8, socioeconomic status, race, gender, opportunity gap, achievement gap, preschool education

Dedication

The completion of my doctoral degree is essentially the result of the outstanding level of support that I have received from many different areas of my life. To my husband, you have been my rock, the person who has kept our household together for the past three and a half years. You have become everything that the Kylie, Kevin, and I have needed without one ounce of hesitation. I could not have done this without you. To my children, Kylie and Kevin, over the last three years, you both have shown resiliency and understanding when mommy seemed unavailable. My hope for you both is that earning this degree will always remind you to preserve when times seem tough and to show you the benefits of being a life-long learner. I will always support you in chasing your dreams as you have allowed me to chase mine.

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Chapter One: Introduction

Reading achievement is described by the United Nations International Children's Emergency Fund (2012) as a stage of development where a child is prepared mentally, physically, and social-emotionally for reading experience has considerable implications on the future success for all students. Addressing reading deficits early, inclusively, and diagnostically should be at the forefront of educators' attention (Telesman et al., 2019). Reading skills have been associated to different aspects of students' lives other than academic success in the kindergarten through twelfth grade system. These aspects include postsecondary success, the ability to compete in the labor market, and the health of the American democracy (American Diploma Project, 2004; Chudowsky et al., 2007; National Reading Panal, 2000). Several factors that impact reading success for all students include oral reading fluency, socioeconomic status, gender, race, and enrollment in preschool education (LaBerge & Samuels, 1974; Wanzel et al., 2014; Wei et al., 2011; Schwabe & Trendtel, 2015; Southern Education Foundation, 2010).

A critical element for students, as they approach large quantities of texts at challenging levels, is to read fluently with adequate speed, accuracy, and understanding (Grima-Farrell, 2014). Fuchs, Fuchs, Hosp, and Jenkins (2001), spotlights the importance of oral reading fluency and shares it is a critical component which is utilized to measure reading competence and reading comprehension. Oral reading fluency is made up of two components, word recognition accuracy and automaticity and prosodic reading (Laberge & Samuels, 1974). Incorporated in the definition of fluency is prosody. Prosody refers to expression, pacing, phrasing, inflection, and intonation (Hudson et al., 2009). Students must become automatic in their word recognition so they can use their cognitive resources to construct meaning and comprehend the text. The reader will be able to relate the comprehended text to his or her amount of previously known knowledge

(Laberge & Samuels, 1974). Reading comprehension has a direct parallel to the number of words students can read per minute (Fuchs at el., 2001). A student is reading fluently when they can shift from decoding words on a word-by-word basis to reading words rapidly, accurately, and expressively (LaBerge & Samuels, 1974). Fluent readers emerge between first and third grade (Schwanenflugel, 2006).

According to Wanzek, Otaiba, Petscher (2014), and Wei, Blackorby, and Schiller (2011), the outcome for students who come from a family who has a low socioeconomic status (lower educational achievement, poverty, and poor health), diverse races or ethnicities, or are disabled is unpromising (Wanzel et al., 2014; Wei et al., 2011). First-grade students who struggle in word reading as compared to their same-aged peers, rarely achieve grade level academic expectations. Once the achievement gap between strong and weak readers widens, it is probable the gap will be too difficult to close (Wanzel et al., 2014, as cited in Juel, 1988; Cunningham & Stanovich, 1997; Fletcher & Foorman, 1994). Since there is a higher representation of students of minority and students who come from a lower SES having reading deficits or receiving special education services, those topics have become important in research and policy debates (Wei et al., 2011).

Educational researchers have brought light to gender gaps in academic achievement since the early 1960s. Males have shown to have lower achievement in reading. The lower performance of males is a crucial issue in educational research because reading is a fundamental prerequisite for success in academic achievement and in society (Schwabe & Trendtel, 2015). Closing the gender gap in reading is a vital task because a key predictor of appropriate literacy, educational achievement, and socioeconomic status in adulthood is reading ability (Daly & Corcoran, 2019).

Research and data collected amongst educators and researchers showcase the greatest way to ensure reading readiness, achievement, and reduce student retention is investing in high-quality preschool education prior to kindergarten (Southern Education Foundation, 2010). Reading readiness is described as a stage of development where a child is prepared mentally, physically, and social-emotionally for reading experiences (UNICEF, 2012). As illustrated in the literature review, Former President Barack Obama, South Carolina Superintendent, Molly Spearman, the National Institute for Early Education Research (NIEER), and the Southern Regional Education Board, (SREB), have all emphasized the importance of preschool education and early intervention at the forefront of their education agendas (Gagne and Lord, 2018; Klein, 2013; National Institute for Early Education Research, n.d; Samuels, 2013; The South Carolina State Department of Education, n.d.). NIEER is a respected institute that communicates knowledge that transforms policy and practice (National Institute for Early Education Research, n.d.). The SREB is a governing board that works with states to improve public education at every level, from early childhood through doctoral education (Southern Regional Education Board, n.d.). Parents, stakeholders, policymakers, business leaders, and the greater community are becoming more aware of the importance to increase school readiness, the possession of the skills needs to be successful, and how it impacts early literacy for the youngest learners. South Carolina lawmakers proposed an Education Reform Bill which included a section where submission of a plan to the state which increased the number of enrolled students into government-funded preschool programs was one of the requirements (Education Reform Bill, 2019). NIEER's State of Preschool Yearbook 2020, a report that annually tracks state-funded preschool program funding, access, and policies since the 2001-2002 school year, shares that the number of 4-year-olds in state funded preschools has declined for the second time since 2002.

Preschool progress has remained uneven among states and only five states (D.C., NJ, NC, OK, WV) are spending enough to pay for high-quality full day pre-K. As a nation, $12 billion dollars is needed to improve the quality of existing state and federally funded preschools and $30 billion dollars in needed for all low income 4-year-olds access to high-quality full day pre-K. An addition $2 billion dollars is needed for all 4-year-olds to have access to universal, high-quality full day pre-K (Friedman-Krauss, 2021).

Problem Statement

The research problem investigated in this study is to address whether factors such as gender, race, socioeconomic status and/or the enrollment in preschool education impact the oral reading fluency success of first-grade students in a school district in north eastern portion of South Carolina. The bulk of research conducted concerning the development in oral reading fluency ensues in grade three or beyond (Speech and Ritchey, 2005). Students must be able to decode fluently to possess better word recognition and comprehension (Chall, 1989). Beginning readers must first become familiar with sound-symbol correspondence. Once this skill is obtained, students can then gain comfort with the print, secure their automaticity in their decoding ability, and transition from learning to read to reading to learn (Chall et al., 1991). The ultimate goal of reading is to construct meaning, to comprehend. Researchers, educators and policymakers must consider the prerequisites to reading comprehension. Fluency is the component designated as the connection among word reading and comprehension (Hosp & Suchey, 2014). It is important to conduct research to assess the role of oral reading fluency (Kuhn & Stahl, 2003) There is a gap of literature pertaining to oral reading fluency of students in primary grades.

According to the SREB's South Carolina State Progress Report, (2020), more than half of the SREB states were farther away from meeting the performance goals as indicated in the Challenge to Lead 2020 Goals for Education, goals created to help SREB state leaders connect measures of student achievement to essential state policies, in 2019 than in 2009 Southern Regional Education Board, 2016). Closing the National Assessment of Educational Progress' (NAEP) achievement gaps between students of racial and ethnic groups and between students from low SES households and higher SES households as shown on the Nation's Report Card was another goal emphasized for the early grades by the 2020 Challenge to Lead Goals for Education. The achievement gaps between both groups are still too wide and indicate states are poorly supporting students who face these barriers. In addition, high quality pre-K programs are not available to the children who desperately need them (Southern Regional Education Board, 2020).

When considering early literacy experiences, the nature of what a child learns prior to beginning school is vastly reliant on their participation of the sociolinguistics community and culture surrounding them (Kuhn & Stahl, 2003). The goal of the Challenge to Lead 2020 Goals for Education are to narrow the achievement gaps between racial or ethnic groups. As of 2020, in South Carolina, the gap has widened in reading between white students and their black and Hispanic peers. This outcome was based on the analysis of the percentage of students meeting the proficient benchmark on the Nations Report Card (Southern Regional Education Board, 2020). The most prevalent achievement gaps which occur across the SREB states transpires between academic achievement related to household income. The achievement gap is presently immense between students from a low SES and students from families with higher incomes (Southern Regional Education Board, 2020).

High-quality early learning programs experienced by our youngest learners will foster greater chances for academic success of our first-grade students (Southern Regional Education Board, 2020). According to the SREB (2018), 52% of four-year-old children are enrolled in prekindergarten programs in South Carolina (Southern Region Education Board, 2018). The SREB (2020), showcased the percentage of four-year-old children enrolled in prekindergarten programs in South Carolina has increased to 53%, which is an increase of nine percentage points since 2008-2009 (Southern Regional Education Board, 2020).

Even though the southern states, defined by the SREB, are leading in the nation in the area of preschool education, adequate progress towards the early grades goal of meeting the set performance targets for fourth graders in both reading and math by 2020, are not occurring (Southern Regional Education Board, 2018; Southern Regional Education Board, 2020). Emphasis was placed on teacher qualifications and continuing professional development for teachers of early learning programs by the 2020 Challenge to Lead Goal for Education, as specified by the ten NIEER standards of quality. In 2018-2019, South Carolina has complied with seven out of the ten standards of quality, including meeting only two out of the four teacher standards (Southern Regional Education Board, 2020). A knowledge gap exists in the understanding of why elementary students are not preforming to set standards in reading and math while the southern states are leading in prekindergarten implementation.

Nature of the Study

Research questions for causal-comparative research should attempt to determine the cause for existing differences in groups of individuals. Each question will include the grouping variable and a dependent variable, attempting to establish a cause-and-effect relationship among groups (Mills & Gay, 2019).

RQ1: How does the oral reading fluency of first grade students differ based on socioeconomic status?

RQ 2: How does the oral reading fluency of first grade students differ based on gender?

RQ3: What relationship is there between race and the oral reading fluency of first grade students?

RQ4: How does preschool enrollment influence oral reading fluency of first grade students?

RQ5: Which factors influence the oral reading fluency of first grade students?

A quantitative, causal-comparative research study will be conducted to gather data to assistant in filling in the gaps of knowledge of the correlation between socioeconomic status, race, gender, and preschool enrollment and the oral reading fluency of first-grade students at a school district in north eastern portion of South Carolina.

Theoretical Framework

The theoretical approaches chosen for the basis of this study are the social constructivism theory and Chall's Stages of Reading Development. The constructivist theory is a theory which involves the thinking process and how one learns (Liu & Chen, 2010). Students, educators, and researchers have had to encounter the longstanding question of how to begin the process of learning how to read. Our national survival is dependent upon the ability to read well and economists and legislators stand together along with students, educators, and researchers in recognition of this dilemma (Chall, 1989). Both Lev Vygotsky's social constructivist theory and Chall's Stages of Reading Development are intertwined within the research of this study.

Lev Vygotsky was the pioneer of social constructivism (Liu & Chen, 2010). The educational perspective of social constructivism shares that knowledge is shared and is a result of social interaction and language use (Lynch, 2016). Vygotsky believed psychological phenomena

emerge from social interaction and children learned best when they were able to construct, create, invent, and discover on their own (Liu & Chen, 2010). Different aspects of Vygotsky's approach can pertain to high-quality preschool. According to his approach, a high-quality preschool amplifies the child's learning with developmentally appropriate activities, the leading activity included dramatic play, promotes interaction between teacher and child, uses standards as guidelines, and prepares children for later grades by helping children become school ready (Bodrova & Leong, 2005).

Jeanne Chall, an immigrant from Poland, prided herself on being intrinsically inspired to become not just a researcher, but an educational researcher. Through her own experience of being a second-language learner, a worry was created. The worry led to her passion of serving children, especially children who come from a low socioeconomic status, in learning how to read. Throughout her involvement in many research endeavors, her motivation and compassion for helping struggling students learn to read never vanished (Stahl, 2000). Grounded in her research of the effectiveness of phonics instruction, she concluded higher reading achievement could be attained by involvement in an early and systematic instruction of phonics. The findings of this educational research can be found in Chall's 1967 book titled, *Learning to Read: The Great Debate* (Stahl, 2000). Chall (1996), established six stages of reading development which will be explored further in the literature review. These stages were partially developed to explain how instruction of reading should be differentiated at each stage of development (Stahl, 2000).

Operational Definitions

The following terms are defined to help the reader understand the context of each term in this quantitative research study.

Oral Reading Fluency (ORF): "The speed and accuracy with which text is read orally" (Speece and Ritchey, 2005).

Socioeconomic Status (SES): "Socioeconomic status is the social standing or class of an individual or group. It is often measured as a combination of education, income and occupation." (American Psychological Association, n.d.-b).

Low Socioeconomic Status: "Low socioeconomic status and it correlates, such as lower educational achievement, poverty and poor health, ultimately affect our society." (American Psychological Association, n.d.-a).

Achievement Gap: "The "achievement gap" in education refers to the disparity in academic performance between groups of students." (Ansell, 2004).

Gender Gap: "The school-based gender gap refers to the disparity in achievement between genders in an educational environment. Often, this disparity is influenced by social factors." (Lee, 2018)

Reading Readiness: "A state of development, which prepares the child mentally, physically, and social-emotionally for reading experiences." (UNICEF, 2012)

School Readiness: "children possessing the skills, knowledge, and attitudes necessary for success in school and for later learning and life. Physical, cognitive, social, and emotional development are all essential ingredients of school readiness." (Head Start Early Childhood Learning and Knowledge Center, n.d).

National Institute for Early Education Research (NIEER): An institute which, "improves the learning and development of young children by producing and communicating knowledge that transforms policy and practice. NIEER collaborates with a network of local, state, national, and international leaders to design, conduct, and disseminate rigorous research, evaluation, and

policy analysis. NIEER also helps prepare the next generation of inspirational leaders and researchers in early education (National Institute for Early Education Research, n.d.).

Southern Region Education Board (SREB): "The Board includes the governor and four gubernatorial appointees from each member state, including at least one state legislator and one educator. The Southern Regional Education Board works with states to improve public education at every level, from early childhood through doctoral education. The SREB helps policymakers make informed decisions by providing independent, accurate data and recommendations. They help educators strengthen student learning with professional development, proven practices, and curricula while helping policymakers, institutions and educators share scarce resources to accomplish more together than they could alone" (Southern Regional Education Board, n.d.).

State of Preschool Yearbook: "The State of Preschool Yearbook has annually tracked state-funded preschool program funding, access, and policies since the 2001-2002 school year. The Yearbook seeks to improve the public's knowledge and understanding of state efforts to expand the availability of high-quality education to young children. This valuable report is indispensable for policymakers, advocates, and researchers to make informed decisions on early childhood education." (National Institute for Early Education Research, n.d.).

Challenge to Lead 2020 Goals for Education: "Six critical goals that were designed to help SREB state leaders connect measures of student achievement to essential state policies. Each goal includes background information, and the steps states need to take to meet each goal in the years ahead" (Southern Regional Education Board, 2016).

National Assessment of Educational Progress (NAEP): "the largest nationally representative, continuing evaluation of the condition of education in the United States." (National Assessment Governing Board, n.d.).

Social Constructivism: "Social constructivism teaches that all knowledge develops as a result of social interaction and language use, and is therefore a shared, rather than an individual, experience." (Lynch, 2016).

Dynamic Indicators of Basic Early Literacy Skills 8th Edition (DIBELS 8): "A set of short (one minute) fluency measures that can be used for universal screening, benchmark assessment, and progress monitoring in Kindergarten to 8th grade. DIBELS 8th Edition provides educators with standards for gauging the progress of all students" (University of Oregon, n.d.).

DIBELS 8 Oral Reading Fluency (ORF-WRC): "a standardized, individually administered measure of accuracy and fluency with connected text. ORF is administered to students in the beginning of first grade through the end of eighth grade." (University of Oregon, 2020b).

DIBELS 8 Oral Reading Fluency Accuracy Score (ORF-ACC): "The accuracy percentage is calculated by dividing the sum of words read correctly by the number of total words attempted (including errors) and multiplying by 100." (University of Oregon, 2020b).

DIBELS 8 Composite Score: "The DIBELS Composite Score is a combination of multiple DIBELS 8 subtest scores and provides the best overall estimate of the student's early literacy skills and/or reading proficiency." (University of Oregon, 2020b).

Unconstrained Skills: Skills which are gathered through varied experiences rather than direct instruction (Snow & Matthews, 2016).

South Carolina Teaching Standards (SCTS): A set of standards "designed to assess a teacher's professional practice and is comprised of four domains: Instruction, Environment, Planning and Professionalism – each with indicators and specific descriptors that differentiate levels of performance. The new evaluation model is aligned to professional growth and

development. It is also being implemented in a thorough and thoughtful way. It will measure student growth based on student learning objectives (SLOs) which are designed and assessed at the local level using locally determined metrics." (South Carolina Department of Education, 2018)

National Reading Panel: A panel made up of 14 leading scientists in reading research, college representatives, teachers, educational administrators, and parents, created by Congress in 1997. This panel was tasked with assessing effectiveness of different approaches used to teach children to read (Eunice Kennedy Shriver National Institute of Child Health and Human Development, n.d.).

The Matthew Effects: Regarding academic achievement, the Matthew effect is described as the "rich get richer and the poor get poorer". In other words, children who start well, continue to do well and those who do not, are unlikely to make progress (Stonovich, 1986 & Walberg & Tsai, 1983).

South Carolina Career Opportunity and Access for All Act: "A wide-ranging proposal that includes changes to standardized testing, increasing starting salaries for teachers and consolidating school districts with fewer than 1,000 students." (Huff, 2019)

Opportunity Gap: "the fact that the arbitrary circumstances in which people are born—such as their race, ethnicity, ZIP code, and socioeconomic status—determine their opportunities in life, rather than all people having the chance to achieve to the best of their potential." (Teach for America, 2018).

Zone of Proximal Development (ZPD): "The difference between what a learner can do without help and what he or she can achieve with guidance and encouragement from a skilled partner." (McLeod, 2019).

Code Emphasis: systematic phonics instruction (Stahl 2000).

Meaning Emphasis: a whole language approach to reading (Stahl 2000).

Sublexical Skills: the process where a reader can "sound out" a written word (Pikulski & Chard, 2005).

Constrained Skills: Finite skills, like the 26 letters of the alphabet and their corresponding sounds (Snow & Matthew, 2016).

Universal Preschool: Preschool education available to all children four years of age (Finn, 2010)

Compensatory Education Programs: programs designed to support at-risk children of academic failure (Kamerman, 2006).

The War on Poverty: As a commitment to end poverty declared by former President Lyndon B. Johnson in 1964, legislative framework was proposed to expand economic opportunity through anti-poverty, health, education, and employment policies (Center for American Progress, 2014).

Head Start: "Head Start is a free program for young children from low-income families. Children who participate take part in fun activities which help develop educational and social skills. Children also receive nutritious meals, health care, and play in a supervised setting. Head Start programs strive to deliver quality services to children and their families. Head Start helps all children succeed." (South Carolina State Head Start Association, n.d.).

Compensatory Education Programs: programs designed to support at-risk children of academic failure (Kamerman, 2006).

4K: "A State-funded prekindergarten for four-year-olds that serves children in the most at-risk category" (South Carolina Department of Education, n.d.)

Child Development Education Pilot Program (CDEP): Beginning in 2006, CDEP provided full-day early childhood education for at-risk children who were four years old by September 1 (South Carolina Department of Education, n.d.)

Medicaid: "health coverage to millions of Americans, including eligible low-income adults, children, pregnant women, elderly adults and people with disabilities. Medicaid is administered by states, according to federal requirements. The program is funded jointly by states and the federal government." (Medicaid.gov, n.d.).

Education Improvement Act Child Development Program (EIA 4K): EIA 4K is a child development program "that was initiated in 1984 as part of a one-cent sales tax created to support public education projects." (Friedman-Krauss, 2021).

Child Early Reading Development and Education Program (CERDEP): South Carolina's "second early education initiative, was created as a pilot program in 2006 and codified alongside the state's Read to Succeed legislation (Act 284) in June 2014. Previously, the program was called the Child Development Education Pilot Program (CDEPP)." (Friedman-Krauss, 2021).

South Carolina First Steps to School Readiness (First Steps): The state's school readiness initiative (Friedman-Krauss, 2021).

State(s) of Head Start: "The first report to describe and analyze in detail Head Start enrollment, funding, quality, and duration, state-by-state." (National Institute for Early Education Research, n.d.)

Targeted Preschool: "Programs at federal and state levels has been to offset the disadvantages associated with poverty that contribute to poor developmental outcomes and subsequent school failure." (Barnett & Fuller, 2006).

Read to Succeed Act: "Act 284 (Read to Succeed) requires that a student must be retained in the third grade if the student fails to demonstrate reading proficiency at the end of third grade as indicated by scoring at the lowest achievement level on the state summative reading assessment SC READY." (South Carolina Department of Education, n.d).

Curriculum- Based Measurement (CBM): "Curriculum-based measurement (CBM) is an approach to measuring students' academic growth along with evaluating the effectiveness of instruction in the classroom." (Vanderbilt University, n.d.).

Beginning of the Year DIBELS Assessment Window (BOY): DIBELS assessments given at the beginning of a school year (University of Oregon, 2018-2020).

Title I: "The purpose of Title I, Part A of Public Law 107-110 is to enable schools to provide opportunities for children served to acquire the knowledge and skills contained in the challenging state content standards and to meet the challenging state performance standards developed for all children." (South Carolina State Department of Education, n.d.).

Individualized Education Program (IEP): A plan that "lays out the special education instruction, supports, and services a student with disability needs to thrive in school." (Belsky, n.d).

PowerSchool: "the leading student information system software solution for K-12 educational institutions." (PowerSchool, n.d.).

Confirmatory Factor Analysis: "Confirmatory Factor Analysis is used for verification as long as you have a specific idea about what structure your data is or how many dimensions are in a set of variables." (Statistics How To, n.d.).

mCLASS: "mCLASS® is the gold-standard K–6 assessment and intervention suite for early literacy that helps every child learn to read confidently." (Amplify, n.d.)

Amplify: "A pioneer in K–12 education since 2000, Amplify is a company leading the way in next-generation curriculum and assessment. All of Amplify's programs provide teachers with powerful tools that help them understand and respond to the needs of every student." (Amplify, n.d.).

Assumptions, Limitations, Scope and Delimitations

In this study, it is assumed all government-funded prekindergarten programs were of high-quality and the curriculum provided was aligned to state standards. It is also assumed testing administers of the DIBELS 8 assessment, a universal screener for reading, including the DIBELS 8 Oral Reading Fluency Words Read Correctly (ORF-WRC) and DIBELS 8 Oral Reading Fluency Accuracy (ORF-ACC) assessment followed appropriate testing guidelines and procedures in order to obtain an appropriate DIBELS 8 composite score ensuring the best overall estimate of the student's early literacy skills. The assumption was made that the testing environment was conducive to testing for all first-grade students. The assumption was also made that the parents of the sample of students honestly and accurately completed the early childhood, race, and socioeconomic status portions of student registration in PowerSchool. PowerSchool is a student information system software used by the participating school district. The data pertaining to these categories were extracted from PowerSchool.

This quantitative study did not provide information about each prior teacher and their level of education. It did not determine all students who had preschool experiences were taught by a highly qualified educator. This study did not provide the level of literacy intervention provided to students in their current grade level or prior grade level. Another limitation for this quantitative study is the study did not take into consideration the classroom teacher's evaluation status as designated by the South Carolina Teaching Standards (SCTS).

Significance of Study

Since 2002, the SREB has initiated Challenge to Lead Goals and South Carolina did not meet the requirements intended for the early grades goal. The early grades goal requests for 90% of fourth graders to score at or above the basic level in reading and math on the National Assessment of Educational Progress, (NAEP), the nation's report card, by 2020. This goal also called for the percentage of fourth graders who are at the proficient level to continue to make growth considering the proficient level is closely linked with college and career reediness (Southern Regional Education Board, 2018). According to Chall (1991), the fourth-grade slump is caused by the complexity of reading material. Fourth-grade readers must decipher the intense language and cognition demands and tougher reading skills (Chall 1991). Unconstrained skills are skills which are gathered through varied experiences rather than direct instruction. Vocabulary and background knowledge are examples of unconstrained skills. These skills are crucial for students in advanced elementary grades who encounter materials of wide ranges of topics and complexity (Snow & Matthews, 2016).

It is essential for children to read proficiently by the end of third grade (Southern Regional Education Board, 2018). Having the appropriate rate of oral reading fluency is an important step in achieving reading proficiency. When students learn to make reading imitate language by applying the appropriate expression, accuracy, and the appropriate rate, they can process written text fluently (Stahl & Kuhn, 2002). The National Reading Panel Report (2000) brought insight that fluency was the neglected aspect of reading. The report showcased the direct correlation between fluency and reading comprehension making researchers and practitioners emphasize the importance of developing oral reading fluency skills (National Institute of Child Health and Human Development, 2000; Hasbrouck & Tindal, 2006). Through this national

report, five critical components of reading were identified, with fluency being one of them (Pikulski & Chard, 2005).

According to Stanovich (1986) and Walberg and Tsai (1983), the Matthew effects in academic achievement is described as the "rich get richer and the poor get poorer". These mechanisms are implanted in the social and cognitive contexts of education. In other words, children who start well, continue to do well and those who do not, are unlikely to make progress (Stonovich, 1986 & Walberg & Tsai, 1983). Stanovich (1986) focuses attention to the gap that is created between slow starters and fast starters, students who are exposed to text versus students who are exposed to far less text as their same-aged peers (Stonovich, 1986). Students from a lower socioeconomic status have lower exposure to print-rich environments and literacy experiences (Kuhn & Stahl, 2003). Struggling reader's lack of exposure and practice delays the development of word recognition and automaticity, which leads to dysfluent readers where meaning is hindered (Cunningham & Stanovich, 1997).

Gender disparities are universal and are of severe magnitude. Females outperform males on assessments and show faster growth in reading achievement. Gender gaps in reading persist through elementary school and into the college years making research conducted on gender gaps significant (Daly & Corcoran, 2019). Standardized reading assessments have been composed of multiple choice and constructed-response items. These assessment items require more developed skills in understanding and interpreting texts of high text complexities (Marks, 2008). With recent progression towards an increased composition of constructed response items, and knowing that males, regardless of age, income, race or ethnicity, perform weaker in this area due to lack of productive language skills, the cause of and cure for gender gaps in academic achievement is an educational problem worth investigating (Schwabe & Trendtel, 2015; Nichols-Besel et al.,

2018). The lack of motivation to read and lower academic achievement in reading is an enormous concern for policymakers and practitioners (Schwabe & Trendtel, 2015).

Legislators in South Carolina proposed an Education Reform Bill. This bill, the South Carolina Career Opportunity and Access for All Act, a wide-ranging educational proposal, included a section that requested school districts to submit a plan on how the district will increase the number of government-funded 4K programs (South Carolina Career Opportunity and Access for All Act, 2019). The southern states, defined by the SREB, are leading the nation in prekindergarten enrollment and research has shown children who attend a highly qualified prekindergarten program benefit greatly (Southern Regional Education Board, 2020).

Examining the different types of government-funded prekindergarten programs and the impacts they have on reading readiness could potentially support the need for the increase of highly qualified prekindergarten programs in elementary schools in South Carolina. The research conducted in the study will add to the gap of knowledge as to why South Carolina students are enrolling in prekindergarten programs but are not preforming well on NAEP' assessments in the early grades. Also, with a gap of research conducted on oral reading fluency in the primary grades (Speech and Ritchey, 2005), the findings from this study will aid in filling in the gap of literature concerning oral reading fluency and how it impacts first-grade student's reading success.

Conclusion

This intent of this study is to understand the correlation between socioeconomic status, race, and preschool experience and the oral reading fluency of first-grade students in a school district in northeastern portion of South Carolina. Oral reading fluency has not historically received as much attention as reading comprehension. Research and theory suggest expert

instruction and teacher guidance is essential to some students in assistance to progressing through the stages of reading development, to become a fluent reader (Pikulski & Chard, 2005). There is a gap in research fostering the transition between decoding and fluency (Stahl & Kuhn, 2002).

Achievement, opportunity, and gender gaps exist in the educational world. Closing the achievement and opportunity gap, (arbitrary circumstances which determine opportunities) between students of racial and ethnic groups and student from low SES households will be at the forefront of educators and policymaker's agendas due to the emphasis lead by the 2020 Challenge to Lead Goals for Education (Southern Regional Education Board, 2020). Regardless of socioeconomic status, race or ethnicity, gender gaps exist in reading (Nichols-Besel et al., 2018). Closing the gender gap in reading is an enormous concern for policymakers and practitioners (Schwabe & Trendtel, 2015).

As the southern states, defined by the SREB, are leading the nation regarding government-funded preschool education, our state assessment scores, are not up to standards (Southern Regional Education Board, 2020). Education reform has become a priority of many policy and policy maker's agendas in the recent years, including the announcement of the South Carolina Career Opportunity and Access for All Act in 2019 (South Carolina Career Opportunity and Access for All Act, 2019). Research shows children who attend preschool have a lessened chance of receiving special education services and retention while having a greater chance of graduating high school and attending a four-year college program (Southern Education Foundation, 2010). Preschool education has been a topic of discussion in order to meet goal number one of the SREB's Challenge to Lead 2020 Goals, which all children entering school

will exhibit the knowledge and the social and developmental skills needed for success in first grade (Southern Regional Education Board, 2016; Southern Regional Education Board, 2020).

In chapter two, a literature review was conducted to understand the theoretical framework which supports this research. During chapter two, the history of early child education and reading was examined. Chapter two contains an analysis of literature concerning the topics such as impacting education such as environmental factors, preschool education, and current federal and state legislation while spotlighting the importance of oral reading fluency and access to government-funded preschool programs in South Carolina. Chapter three will discuss the research design, assessment instruments and methodology chosen for this quantitative, causal-comparative research study and showcases the correlation between socioeconomic status, race, gender, and preschool enrollment and the oral reading fluency of the first-grade students. Lastly, chapter three will cover the data collection and data analysis plan conducted for this causal-comparative research study.

Chapter Two: Literature Review

There is a substantial amount of research which outlines educational topics such as socioeconomic status, the achievement and opportunity gap, gender in reading, and the effect of preschool education. There is also research spotlighting the importance of oral reading fluency and how it impacts reading comprehension in the later stages of reading development (Fuchs at el 2001). While previous studies offer valuable insight, there are still gaps in literature providing the correlation between race, socioeconomic status, and preschool enrollment, and the oral reading fluency of students in the primary grades.

Chapter two provides information found in the literature regarding the theoretical frameworks supporting the stages of learning how to read, importance of oral reading fluency, and how children learn best through Vygotsky's theory of social constructivism. This chapter examines the history of early childhood education, while analyzing current federal and state legislation. Also included in this literature review is an analysis of research conducted on the topics such as the history of reading instruction and early childhood education, impacts of oral reading fluency and preschool education, environmental factors impacting education, and an investigation of the current state of government funded preschool programs in South Carolina.

The search strategy for this study included the organization of literature using a literature matrix. The literature matrix helped organize the source, relevancy, and methodology which in turn, led to the guidance of the used key words searched in databases. Keywords used, but not limited to were: *oral reading fluency, preschool education, preschool legislation, elementary school, the achievement gap, the opportunity gap, and DIBELS 8.* These key terms were searched on databases such as ProQuest, ERIC, Education Week, and PsycINFO. Peer-reviewed journal articles, state and federal legislations, and NIEER and SREB annual reports were sources

of information included. Relevant sources were identified dating from 1970's to the present.

Most sources were published within the last 10 years. Relevant, older sources were included to

provide prospective of the history and theory of early childhood education.

<div align="center">**Theoretical Framework**</div>

Vygotsky's Social Constructivism

Lev Vygotsky was a social scientist and practitioner who through educational research in

the classroom setting, devised the social constructivist theory. This theory shaped the

development of the constructivist movement (Jaramillo, 1996). Vygotsky's (1930s) social

constructivist theory showcases how social experiences shape thinking and interpretation of the

world, and how cognition occurs in social settings. (Jaramillo, 1996). His theory spotlights the

revolution of socially collective experiences into internalized processes (John-Steiner & Mahn,

1996). Based on Vygotsky's theory, psychological phenomena develop from social interaction

and is established by social relationships and artifacts (Liu & Chen, 2010).

Children enter school systems at diverse places socially, behaviorally, and academically.

According to Vygotsky (2020), three basic factors create these discrepancies. The factors

combined establish the child's real age. The three basic factors are heredity, environment, and

chronological age. Vygotsky outlines that a child's environment influences development. The

environment can delay or accelerate discrepancies between children's real age and chronological

age (Vygotskiĭ, 2020). The development of the child has been determined by factors that are

heterogeneous and combined into two groups, biological and social factors. Although both

factors are intertwined, the social environment impacts the process of child development and

plays an enormous role of the child's physical development (Vygotskiĭ, 2020). The dependance

of caregivers transmitting experiences is where human development is initiated as prior

knowledge activates the construction of knowledge (John-Steiner & Mahn, 1996 & Liu & Chen, 2010).

Vygotsky was an advocate for early experiences in a classroom setting. Through learning experiences and interactions with hands-on manipulatives, peers, and educators, he sought to determine how students used social experiences to make sense of themselves and their world (Jaramillo, 1996). Vygotsky believed the increase in human cognition was directly associated to social interaction (Nardo, 2021). The learner must interpret their social experiences through active and interesting hands-on activities which are at a level just above their current level of competence, with scaffolds provided by the teacher or peer (Jaramillo, 1996). Classroom collaboration exhibits knowledge transformation (John-Steiner & Mahn, 1996). This is termed the Zone of Proximal Development (ZPD) (Jaramillo, 1996). The ZPD facilitates continued learning and motivation among students and is one of the most well-known educational concepts of Vygotsky (Nardo, 2021).

Literacy acquisition became an essential concern for Vygotsky's theory. He analyzed the relation between literacy and cognitive development and observed the role literacy played in the transformation of school-aged children's learning. He believed teaching of literacy should have a natural progression and should be developed collaboratively in a community of learners, not independently. (John-Steiner & Mahn, 1996). Vygotsky had the perspective that learners construct meaning from creating, inventing, interpreting, analyzing, and developing one's own meaning and knowledge to discover their own learning (Liu & Chen, 2010).

The Vygotsky approach to high-quality preschool programs would include three constructs: Cultural Historical Theory of Development, play, and the concept of amplification. Cultural historical theory includes the history of human development, the complexity between

natural development that is determined biologically and cultural development. Cultural

development is sustained by the interaction with other people. Vygotsky considered interaction

between children and their social environment the basic source of development. Scaffolding

would be established to provide support needed for children to rise to the challenge of new social

situations. Although children must adjust to the new social situations in the moment, attending

preschool would allow for a smoother transition by developing underlying competencies or

developments and providing foundations for future competencies. (Bodrova & Leong, 2005).

The main point Vygotsky was communicating was high-quality preschool programs

promote development rather than learning (Bodrova & Leong, 2005; Nardo, 2021). The

promotion of development transpires by amplifying learning through age-appropriate activities

including play as the leading activity, promotes teacher and student interactions scaffolding

development, implements standards and guidelines, and emphasizes underlying competencies to

help children in the later grades (Bodrova & Leong, 2005). A key component to Vygotsky's

educational implications remained that educational practices should aim to facilitate historical

experiences and collaborative activities (Nardo, 2021).

Chall's Stages of Reading

Upon completion of Jeanne Chall's 1983 book, *Learning to Read: The Great Debate*, and

many years of clinical work with children failing to learn to read, Jeanne Chall initiated an

interest in reading development. After intensive reading of developmental theories, Chall

outlined and proposed six stages of reading development. The six stages begin with stage zero,

the pre-reading stage, occurring from six months old through six years old through stage 5, the

construction and reconstruction stage, which begins at age eighteen years of age and beyond

(Chall, 1996). To view a summary of each stage, please refer to Figure 1. Chall (1996) developed

ten hypotheses used for developing the scheme. She showcases how the stages of reading development resembles Piaget's stages of cognition and language development, how reading is a form of problem solving, how the progression of stages depended on interactions with the environment, and how reaching proposed reading stages would add dimension to standardized and norm-references testing. Chall (1996) also advocated for basic measures of reading efficiency as eye movements, eye-voice span, and rate. She characterized growth by successfully reading more complex texts and the more inferential, critical, response of the reader. To master a stage of reading development the reader must demonstrate the techniques and habits and exhibit the extent of prior knowledge needed to understand the material as characterized by each stage. Lastly, Chall hypothesized the attitude of the reader has a direct connection to the attitude of the reader's family, culture, and school (Chall, 1996).

Figure 1

Chall's Stages of Reading Development

Stage	Approximate Age/Grade	Characteristics and Masteries by End of Stage	How Acquired	Relationship of Reading to Listening
Stage 0: Pre-reading "pseudo reading"	6 months – 6 years Preschool	Child "pretends" to read, retells story when looking at pages of book previously read to him/her, names letters of alphabet; recognizes some signs; prints own name; plays with books, pencils and paper.	Being read to by an adult (or older child) who responds to and warmly appreciates the child's interest in books and reading; being provided with books, paper, pencils, blocks, and letters. Dialogic reading.	Most can understand the children's picture books and stories read to them. They understand thousands of words they hear by age 6 but can read few if any of them.
Stage 1: Initial reading and decoding	6 – 7 years old 1st grade and beginning 2nd	Child learns relation between letters and sounds and between printed and spoken words; child is able to read simple text containing high frequency words and phonically regular words; uses skill and insight to "sound out" new one syllable words.	Direct instruction in letter-sound relations (phonics) and practice in their use. Reading of simple stories using words with phonic elements taught and words of high frequency. Being read to on a level above what a child can read independently to develop more advanced language patterns, vocabulary and concepts.	The level of difficulty of language read by the child is much below the language understood when heard. At the end of Stage 1, most children can understand up to 4000 or more words when heard but can read about 600.
Stage 2: Confirmation and fluency	7 – 8 years old 2nd and 3rd grade	Child reads simple, familiar stories and selections with increasing fluency. This is done by consolidating the basic decoding elements, sight vocabulary, and meaning context in the reading of familiar stories and selections.	Direct instruction in advanced decoding skills; wide reading (instruction and independent levels) of familiar, interesting materials that help promote fluent reading. Being read to at levels above their own independent reading level to develop language, vocabulary and concepts.	At the end of Stage 2, about 3000 words can be read and understood and about 9000 are known when heard. Listening is still more effective than reading.
Stage 3: Reading for learning the new Phase A Phase B	9 - 13 years old 4th – 8th grade Intermediate 4th – 6th Junior high school 7th – 9th	Reading is used to learn new ideas, to gain new knowledge, to experience new feelings, to learn new attitudes, generally from one viewpoint.	Reading and study of textbooks, reference works, trade books, newspapers, and magazines that contain new ideas and values, unfamiliar vocabulary and syntax; systematic study of words and reacting to the text through discussion, answering questions, writing, etc. Reading of increasingly more complex text.	At beginning of Stage 3, listening comprehension of the same material is still more effective than reading comprehension. By the end of Stage 3, reading and listening are about equal for those who read very well, reading may be more efficient.
Stage 4: Multiple viewpoints	15 – 17 years old 10th – 12th grade	Reading widely from a broad range of complex materials, both expository and narrative, with a variety of viewpoints.	Wide reading and study of the physical, biological and social sciences and the humanities, high quality and popular literature, newspapers, and magazines; systematic study of words and word parts.	Reading comprehension is better than listening comprehension of materials of difficult content and readability. For poor readers listening comprehension may be equal to reading comprehension.
Stage 5: Construction and reconstruction	18+ years old College and beyond	Reading is used for one's own needs and purposes (professional and personal); reading serves to integrate one's knowledge with that of others, to synthesize it and to create new knowledge. It is rapid and efficient.	Wide reading of ever more difficult materials, reading beyond one's immediate needs; writing of papers, tests, essays, and other forms that call for integration of varied knowledge and points of view.	Reading is more efficient than listening.

Note: Adapted from Jeanne S. Chall, Stages of Reading Development. N.Y.: McGraw-Hill Book Company. 198

The two stages of reading development pertaining to this study are stage one, the initial reading or decoding stage, and stage two, the confirmation and fluency stage. During stage zero, the initial reading and decoding stage, readers learn the set of letters and associating them with their corresponding sounds and uses. The change than occurs during stage zero is the insight gained about print, and the system of spelling and alphabetic language. This stage emerges between the ages of six and seven. (Chall, 1996).

Stage two, the confirmation and fluency stage, occurs at age seven and eight. This stage consolidates the learning that takes place in stage one. During stage two, not a considerable amount of new information is gained, the reader confirms what they already know by showing concentration on the printed words. The new information gained pertains to advances phonetic patters and generalizations. Throughout this stage, readers gain confidence and become courageous in using the skills they have acquired to gain speed and fluency (Chall, 1996).

Chall (1996) shared students who falter at this stage typically continue to experience failure throughout their school career. Success in this stage requires opportunity and exposure to many familiar books. A greater amount of practice and immersion leads to a better development of fluency. Children of a low socioeconomic status suffer at this stage due to the lack of ability of the parent to financially provide these experiences and materials. The loss of emotionally confirming responses that reading and literature matters is something lost (Chall, 1996).

History of Reading Instruction

The educational pendulum concerning reading instruction has swung back and forth for decades. Reading instruction has swung between code emphasis (systematic phonics instruction), known to Chall as the rational view, and meaning emphasis (whole language), recognized by Chall as the romantic view. The rational view reflects an increase in academic achievement to be

the purpose of teaching and embraces mastery learning, direct and effective instruction. The romantic view echoes the self-actualizing of the child as the purpose of teaching and is infused with love and hope (Stahl 2000).

Reading instruction based on code emphasis can be dated as far back as the colonial period to the early 1900's. It was not until traditional educational practices were questioned in the 1920's, when progressive education begun, and meaning emphasis reading instruction emerged (Chall, 1997). The pendulum swung back to code emphasis for reading instruction after the publication of the first edition of Chall's (1967) book, *Learning to Read: The Great Debate*. This book included a collection of culminating research from 1900-1960 from laboratories, classrooms, and clinics. It stated reading instruction based on code-emphasis yielded better results than meaning-emphasis, especially for at-risk children (Chall, 1997). The publication of the second edition of Chall's (1983) book, *Learning to Read: The Great Debate* compiled educational research from 1967-1983 and concluded research supporting code emphases was even stronger. Despite the results of Chall's (1983) research and the NAEP findings of fourth grade reading improvement, reading instruction swayed back towards meaning-emphasis in 1980's through the middle of the 1990's through the method of whole language. Whole language is tied to the romantic view of educating. The interconnecting of child development and the love of children and reading is merged with problem solving and creativity. The state of California was one of the first followers of the whole language movement. It was not until California's fourth graders fell to nearly the bottom of the ranking in the United States on the NAEP that there was a return to explicit teaching of phonics, while including aspects of whole language (Chall, 1997).

Reading is the first importance of education (Chall, 1997). Subsequently, it attracts diverse viewpoints and individuals desire their viewpoints to be heard. Thus, every ten to fifteen years, the focus of reading instruction can be expected to shift between code emphasis and meaning emphasis. Chall (1997) spotlights code emphasis and meaning emphasis can be tied to liberal and conservative politics. The liberal position tends to side with meaning emphasis while the conservative position sides with code emphasis. Therefore, one can assume with any shift of political power, the educational pendulum will shift as well. Educators must learn the history of reading instruction to avoid repeating previous errors (Chall, 1997).

Oral Reading Fluency

According to the National Reading Panel (2000), a panel made up of 14 leading scientists in reading research, the theory of learning how to read is composed of a five-factor model including phonemic awareness, phonics, fluency, vocabulary, and comprehension (National Reading Panel, 2000). Figure 2 explains each of the five pillars of early literacy. Oral reading fluency is defined as the speed and accuracy of a text read out-loud, as well as the reciprocal nature of the relation between word reading and comprehension (Speece & Ritchey, 2005; Kuhn et al., 2010). There are three components to oral reading fluency. Speed, the rate in which one reads, accuracy, and expression (Piloneita, 2012). Figure 3 describes the three components of oral reading fluency.

Figure 1

Five Pillars of Early Literacy Poster
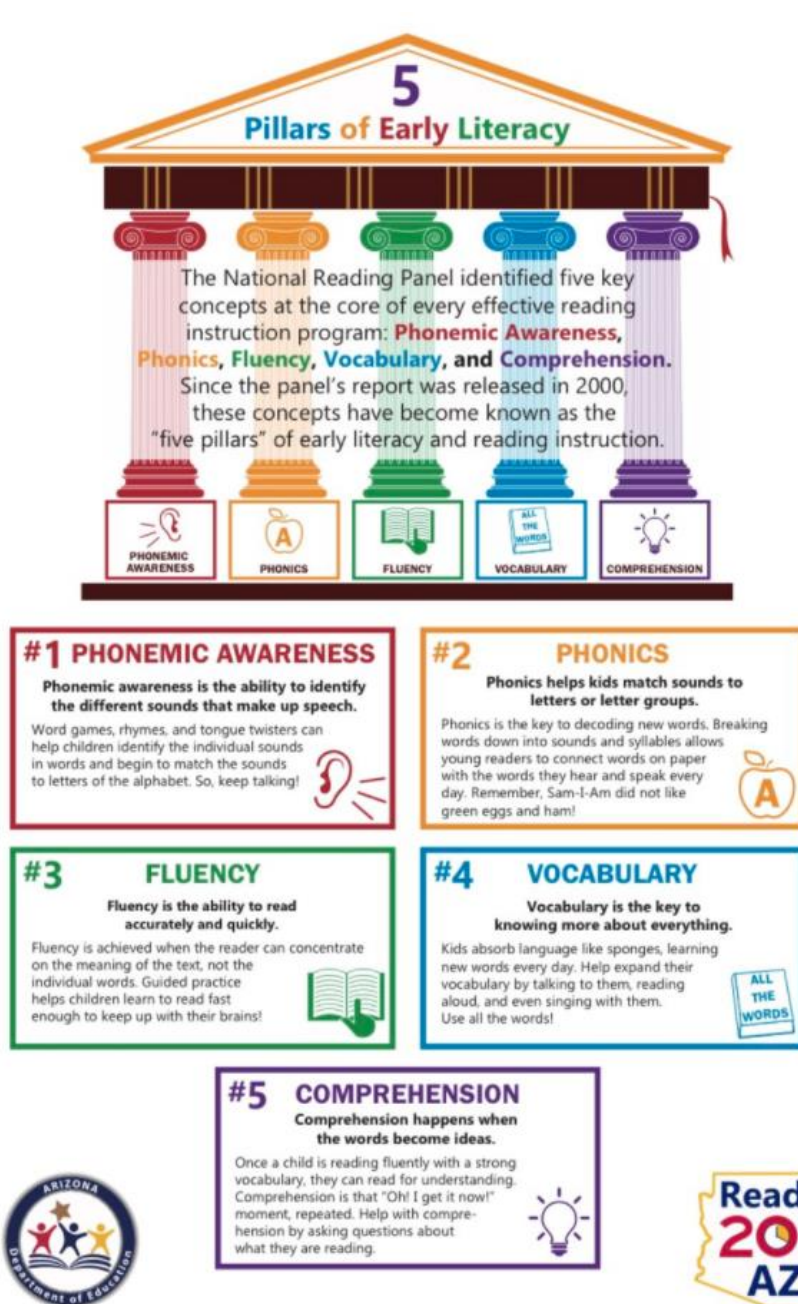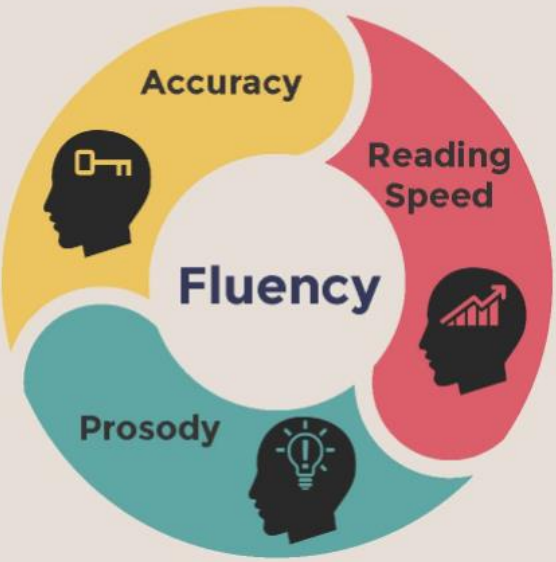
Note: Adapted from National Reading Panel's *Teaching children to read: An evidence based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups*, 2000. From

https://www.nichd.nih.gov/sites/default/files/publications/pubs/nrp/Documents/report.pdf

Figure 2

What is Fluency?

Note: from National Center on Improving Literacy. (n.d.). Fluency with Text. Retrieved November 20, 2021, from https://improvingliteracy.org/brief/fluency-text

The complex process of orally reading includes both linguistic and cognitive challenges. In order to become a competent reader, one must read text effortlessly, with expression and the appropriate rate. Oral reading fluency is a critical skill required to produce proficient and motivated readers (Hadbrouck & Tindal, 2006). According to Pikulski and Chard (2005), the complex interaction of language, sensory perception, memory, and motivation are descriptors for successful reading. Fluent readers must identify words or decode while simultaneously construct meaning of a text. Failure to transition to a fluent reader will result in difficulties in constructing meaning from text (Stahl & Kuhn, 2002).

Children who are considered school age, arrive with a varied understanding of language and early literacy exposure. The wide range of initial reading skills make growth rate in critical reading skills, such as oral reading fluency, an early predictor of reading success in the future grades (Kim et al., 2010). It has been reported that some of the best predictors of oral reading fluency in first grade were phonological awareness and letter-sound fluency (Speece & Ritchey, 2005). Knowledge of sublexical skills (sounding out), letter naming, letter-sound fluency, occurs during early childhood or pre-kindergarten programs. The inclusion of the child's earliest experiences with concepts of print and phonology becomes necessary in the deep view of fluency. Language skills, phonemic awareness, identifying letter forms, and effective decoding skills, are the foundation of oral reading fluency (Pikulski & Chard, 2005). Readers move from the emergent stage where they depend on memory and the context, to slowly decoding accurately, to constructing text to sound like speech (Stahl & Kuhn, 2002). The deep construct of oral reading fluency views fluency as a reciprocal, developmental process which bridges decoding skills and comprehension (Pikulski & Chard, 2005; Klauda & Guthrie, 2008). As word

recognition becomes automatic, the rate of reading orally increases, which fosters reading comprehension (Rasinski, 2017).

The goal of learning how to read is being able to read to learn, to comprehend. A number of theories define comprehension as understanding and making inferences from the text while interpreting vocabulary (Hosp & Suchey, 2014). Comprehension occurs when a reader can decode words automatically and then able to process meaning (Shinn & Good, 1992). A large-scale data analysis was conducted by the National Assessment of Educational Progress in Reading. The result of the data analysis showed a strong correlation between fluency and comprehension (Pinnell, G. S.,1995). Fluency and comprehension foster one another in a reciprocal relationship (Pikulski & Chard, 2005). Comprehension of the text will be impaired for dysfluent students. Dysfluent readers read excessively slow and laborious (Schwanenflugel, 2006).

On the contrary, according to Hadbrouck & Tindal (2006), oral reading should not be the main goal of reading instruction. Although fluency scores can be valuable in making instructional decisions, fluency is only one of the essential skills needs to become a competent reader. Practitioners must see fluency as a deep construct. A surface view of oral reading fluency can lead to inappropriate practices such as urging students to read faster (Pikulski & Chard, 2005). The renewed attention to oral reading fluency suggests an overemphasis on fluency instruction. This results in the focus of speed reading rather than comprehension (Piloneta, 2012). Oral passage reading is one instructional strategy used to measure the oral reading fluency rate of students. While oral reading fluency rate has a direct correlation to comprehension, educators must be careful when using passages as the only measure of the ability to comprehend. Paris et al. (2005) questioned the use of oral passage reading. Oral passage reading can impact

reading deficits other than lack of comprehension and can influence inadequate prior knowledge, poor vocabulary, and motivational issues which all affect a reader's ability to comprehend (Spurious and Genuine Correlates of Children's Reading Comprehension, 2005).

Environmental Factors

Reading in the early grades consists of learning constrained skills and unconstrained skills. Constrained skills are finite, like the 26 letters of the alphabet and their corresponding sounds. Unconstrained skills are skills which gradually are acquired through experiences such as vocabulary and background knowledge. Unconstrained skills are more difficult to teach inside the classroom and are strongly predicted by socioeconomic status, or the children's parents' level of education. Both constrained and unconstrained skills are weaker in children of a low socioeconomic status, with unconstrained skills showing a greater and more persistent deficit (Snow & Matthews, 2016). Figure 4 showcases the constrained and unconstrained early literacy skills.

Figure 3

Constrained and Unconstrained Early Literacy Skills

1(a).

| Highly Constrained ← | Writing Name | Alphabet | High Frequency Word List | Phonics | Phonological Awareness | Oral Reading Fluency | Vocabulary and Comprehension | → Unconstrained |

1(b).

Constrained Skills		Unconstrained Skills	
Print Related	**Sound Related**	**Language**	**Knowledge**
Letter recognition	Reciting the alphabet	Vocabulary	Topic-specific knowledge
Writing one's name	Rhyming	Grammar	Information seeking
Reading environmental print	Segmenting initial phonemes	Story structure	Requesting explanations
Book handling	Invented spelling	Telling narratives	
		Giving descriptions	
		Engaging in pretend play	

Note: Reprinted from "Reading and Language in the Early Grades," by C. E. Snow & T. J. Matthews, 2016, The Future of Children. Copyright 2016 by The Future of Children, a collaboration of the Woodrow Wilson School of Public and International Affairs at Princeton University and the Brookings Institution.

According to many studies, different groups of preschoolers benefit from early child education differently than others. The achievement gap between children of poverty and middle-income children is substantial (Welsh, 2010). Children who come from homes lacking in literacy activities which ground the student in reading success can be significantly helped by participating in a school environment where such experiences are found (Snow & Matthews, 2016). The preschool years are a critical period of the development of processes and children of

low-income families who attend prekindergarten could lessen school readiness disparities (Welsh, 2010). Morgan (2019) shared it would be harder and costlier to close the achievement gap between low and middle-income children after the preschool years and without a universal prekindergarten program, (eligibility for all children), the larger academic achievement gap will occur. Reardon and Portilla (2017) examined gaps by income and found the gaps measured by cognitive skills was very large between low-income, family income at the 10th percentile of the income distribution, and high-income, family income at the 90th percentile, students (Duke University, 2017). Welsh (2010) argues manipulation of phonemes, letter recognition, and knowing letter sounds later predicts reading achievement (Welsh, 2010). Snow and Matthews (2016) spotlight the differences in language and literacy development within socioeconomically diverse early childhood classrooms. Substantial social class differences in literacy-related skill are visible before most children enter the preschool setting (Snow & Matthews, 2016).

Gender and Reading

Gender consists of social and cultural aspects (Nichols-Besel at el., 2018). When researching gender gaps, researchers can take a biological perspective or a sociopsychological perspective. Some attributes revolving around the biological perspective include gender differences to the role of the X chromosome, brain differences in lateralization, and metabolic and hormonal differences. Attributes encompassing the sociopsychological perspective, the perspective taken by educational researchers, include gender differences that pertain to the context of home, school, and within the community (Ma, 2008).

Throughout Unites States history, gender gaps are noticeable in academic achievement. Gender stereotypes, the role of the parent and their beliefs and practices, and the role of the teacher are explained as the contributors to gender gaps in academic achievement (Ma, 2008;

Robinson & Lubienski, 2011). Gender gaps, specifically in reading, have increased over time (Marks, 2008). Other contributors to gender gaps in reading are intrinsic motivation, students' attitudes, self-confidence, and changes in testing material (Marks, 2008; Robinson & Lubienski, 2011; Schwabe & Trendtel, 2015).

School context and school climate are two variables that are classified as factors that contribute to gender gaps. The nature of the relationships between the student and teacher and resources available describes the school context. The school climate pertains to the organization of instruction, academic expectations held by principal and teachers, leadership style of the principal, typical classroom practices, and the decision-making process of the school (Ma, 2008).

Crucial to facilitating teaching and learning is the ability to self-regulate attention and emotion, possessing self- control (Blair & Raver, 2015). A student demonstrating self-control will voluntarily regulate their impulses to accomplish a task or goal. Vital to school readiness, students must be able to accomplish tasks such as sitting still, paying attention, take turns, follow simple directions, and not be disruptive to others (Daly & Corcoran, 2019). Mastery of self-control may foster reading achievement by inhibiting disruptive behavior which will maintain positive student-teacher relations and enabling students to focus on the vocabulary, language instruction, and staying on task (Daly & Corcoran, 2019; Duckworth et al., 2019) Gender differences regarding self-control favor females and may be an answer to the gender gap in reading achievement (Else-Quest et al., 2006).

Research showcases males have fewer positive attitudes towards reading, have poorer intrinsic motivation to read, and place less value on reading (Schwabe & Trendtel, 2015; Hochweber & Vieluf, 2018). Students who are low achievers have a higher dependence on learning within the classroom due to the lack of support and reading stimulation received at

home. Educational processes including the learning that takes place within the classroom serves as a vital role in children's learning to read (Hochweber & Vieluf, 2018).

Three dimensions of teacher quality have been examined which shape gender differences in reading: classroom structure, cognitive activation, and teacher support. Classroom structure is defined as the clarity and pace of a lesson. Low reading achievers benefit from high clarity and adequate pacing. Since an increased number of males fall in the low achieving category in reading, effective classroom structure may help reduce the gender gap in reading. Cognitive activation occurs when hand-on, inquiry-based instructional strategies are incorporated in learning. Although this has not been associated with reading, it has proven to be beneficial for males in other areas of academics and can be related to learning gains in multiple domains (Hochweber & Vieluf, 2018). Teacher support is defined as the establishment of a positive teacher-student relationship. According to Hamre and Pianta (2001), males benefited more in academic outcomes and disciplinary infractions when a positive teacher-student relationship was made as early as kindergarten.

History of Early Childhood Education

In the United States, childcare centers and nursery schools were established in the 1830s. Due to the national interest in early childhood development, a significant expansion of both childcare centers and nursery schools occurred in the mid-1960s through the early 1970s. Compensatory education programs which were developed for at-risk children, were a focus because attention was focused on disadvantaged children during what was called The War on Poverty (Kamerman, 2006). The War on Poverty was a commitment to end poverty given by former President Lyndon B. Johnson in 1964. A proposal of a legislative framework was

specified to expand economic opportunity through anti-poverty, health, education, and employment policies (Center for American Progress, 2014).

The Head Start program was formed in 1965 with a goal to break the failure cycle low-income families faced. Head Start gave disadvantaged children, health care, social services, a place to learn, and it provided entry into school on an equal academic level as their same-aged peers who were considered more affluent. The Head Start program continues to grow through the 1980s and 1990s. The focus then transitioned from social competence to quality and school readiness. During this time, performance standards were developed, and teacher qualifications were raised. Most recently, research showed how quality and duration of services made a difference in 2016 (Barnett & Friedman-Krauss, 2016).

In 1984, Half-Day Child Development Program called 4K, was initiated in South Carolina. This was an educational program offered to high-risk 4-year-olds who met a specific criterion from a list of risk factors determined by the state. Some of these risk factors were history of foster care, homelessness, and low-income. In 2006, The Child Development Education Pilot Program was established. The eligibility for this program which was designed for at-risk four-year-old children consisted of receiving free and reduced lunch, recipient of Medicaid, (Government assisted health coverage), or having a documented developmental delay (National Institute for Early Childhood Research, n.d.).

Current State of State and Federal Funded Preschool Education in South Carolina

In order to qualify as a state preschool program, program funding must be controlled and directed by the state. The program must serve children of preschool age and must reach at least 1% of the state's 4-year-old population. The primary focus of a state funded preschool must be early childhood education and must be offered to children for a minimum of two days per week.

Although state-funded preschools may offer services to students with special needs, the programs are not primarily designed for this purpose (Friedman-Krauss, 2021).

The state of South Carolina has two state-funded preschool programs, the Education Improvement Act Child Development Program (EIA 4K), and the public/private Child Early Reading Development and Education Program (CERDEP). CERDEP is co-administered in private and public settings by South Carolina's state school readiness initiative, South Carolina First Steps to School Readiness (Friedman-Krauss, 2021). South Carolina honors one federally funded preschool program, Head Start. (National Institute for Early Education Research, n.d.). Age and income are two qualifying factors for eligibility in participating in a state or federally funded pre-K. In South Carolina, other eligibility policies include:

- Child with a disability or developmental delay

- Low parent education

- History of abuse, neglect, or family violence

- Homelessness or unstable housing

- Home language other than English

- Parental substance abuse

- Risk that child will not be ready for kindergarten

- Teen parent

- Low birth weight or other child health risk

- Child history of foster care

- Parent on active military duty (Friedman-Krauss, 2021).

Due to access to state-funded preschool programs, resources, and quality, disparities in access to high-quality state-funded preschool has grown. As compared from 2002 to 2017,

NIEER's State Preschool Yearbook, (2017), highlights access and resources have improved, while quality has declined. In 2016-17, and noted in Figure 5, the percentage of four-year-old children enrolled in a state-funded preschool was 40.6%. South Carolina had met six out of the ten current quality standards and seven out of ten new quality standards (Bennett & Friedman-Krauss, 2017).

Figure 4

Enrollment in Publicly Funded Pre-K Programs

Enrollment in Publicly Funded Pre-K Programs
4-Year-Olds in South Carolina, 2016-17

41% State Pre-K

7%

Special Education 4%

Head Start
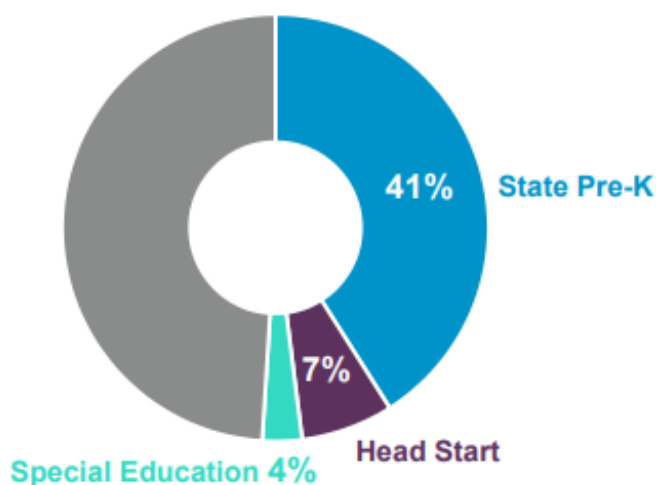
Source: National Institute for Early Education Research

Note: From the National Institute for Early Education Research's "The State of Preschool Yearbook 2017," by W. S. Barnett & A. H. Friedman-Krauss, 2017.

NIEER later released their most recent comprehensive report, The State of Preschool 2020. On a national level, NIEER presented five facts about preschool. The five facts showcased in their report were:

1. Growth in state-funded preschool had slowed, even before the pandemic.

2. The pandemic imposed huge setbacks on pre-K, reversing recent progress.

3. Progress among states has been uneven. Some states have moved forward, some have stagnated, and some have declined in access, standards, and funding.

4. Most states spend too little per child to support high-quality, full day pre-K. Few states are reaching all their children

5. Now is the time for a renewed commitment to high-quality pre-K for all beginning with those in the lowest income families (Friedman-Krauss, 2021)

According to NIEER's preschool yearbook (2020), South Carolina has a pre-K enrollment of 29,007 students with 100% of school districts offering state funded per-K programs. The percent of South Carolina's 4-year-old population enrolled in pre-K is 47% and 6% of the state's 4-year-old population is enrolled in Head Start, South Carolina's federally funded pre-K. South Carolina met seven out of the 10 quality standard benchmarks. The three standards that are not yet met are teacher degree, assistant teacher degree, and screening and referral. In order to meet the quality standards benchmark for the three areas that South Carolina is lacking, classroom teachers must hold a bachelor's degree, assistant teachers must hold a CDA or an equivalency, and vision, hearing, health screenings and a referral are needed for each student (Friedman-Krauss, 2021). To view the 2020 preschool profile for South Carolina, please refer to Figure 6.

Figure 5

Preschool Profile of the State of South Carolina

South Carolina

PERCENT OF STATE POPULATION ENROLLED

3-year-olds: 1% (2002), 1% (2005), 4% (2008), 4% (2011), 7% (2014), 0% (2017), 0% (2019), .4% (2020)
4-year-olds: 29% (2002), 30% (2005), 35% (2008), 41% (2011), 39% (2014), 41% (2017), 47% (2019), 47% (2020)

■ 3-year-olds ■ 4-year-olds

STATE SPENDING PER CHILD ENROLLED (2020 DOLLARS)

$2,489 (2002), $2,060 (2005), $2,216 (2008), $1,625 (2011), $2,018 (2014), $3,228 (2017), $2,930 (2019), $2,964 (2020)

OVERVIEW

South Carolina preschool enrolled 29,007 children in 2019-2020, an increase of 385 children from the prior year. State funding totaled $85,962,509, up $2,107,546 (3%), adjusted for inflation, since last year. State spending per child equaled $2,964 in 2019-2020, up $34 from 2018-2019, adjusted for inflation. South Carolina met 7 of 10 quality standards benchmarks.

WHAT'S NEW

South Carolina was one of 23 states awarded a three-year PDG B-5 renewal grant for $11,146,654 designed to implement the strategic plan developed with the 2018 PDG B-5 planning grant. In 2020, South Carolina also received funding for a state longitudinal data system that will allow the state to maintain child-level data for both public and private programs. In March 2020, all state-funded preschool programs physically closed due to the COVID-19 pandemic. All programs were required to offer remote instruction.

BACKGROUND

South Carolina funds two preschool programs: the Education Improvement Act Child Development Program (EIA 4K) and the public/private Child Early Reading Development and Education Program (CERDEP). Both programs are delivered in public school settings via the South Carolina Department of Education's Office of Early Learning and Literacy (OELL). CERDEP is co-administered in private preschool settings by South Carolina First Steps to School Readiness (First Steps), the state's school readiness initiative.

EIA 4K, initiated in 1984, is funded as part of a one-cent sales tax supporting public education projects. Eligibility for EIA 4K is prioritized by law for children qualifying for free or reduced-price lunch or Medicaid; and allows for consideration of children with documented developmental delays. After income and developmental eligibility, EIA 4K districts may set their own eligibility criteria from a state-specified list of risk factors including low parent education, history of foster care, homelessness, and teen parents. State funding is allocated to districts by OELL using a formula according to the number of kindergarten students who qualify for free or reduced-price lunch in each district. Participating school districts are required to offer, at minimum, a half-day pre-K program. Most school districts now provide full-day programs, with a few continuing to offer half-day programs.

CERDEP, originally called the Child Development Education Pilot Program (CDEPP), is the state's other early education initiative. Created as a pilot program in 2006 in response to Abbeville County School District, et. al. v. South Carolina, a school equity funding lawsuit brought by rural school districts, the program was codified in 2014 along with the state's Read to Succeed legislation (Act 284). Children who qualify for Medicaid, SNAP, TANF, or are homeless, transient, or in foster care are eligible to participate CERDEP.

To monitor quality, OELL conducts visits including an evaluation based on the ELLCO checklist used to provide feedback and support to ensure all classrooms are language- and literacy-rich. Some programs receive an additional level of monitoring which includes a fidelity verification measuring curriculum implementation. Feedback is provided to the teacher, school administrator, and/or the CERDEP district liaison/reading coach to provide post-observation feedback and set future goals.

First Steps' 4K Coaches make announced and unannounced monitoring and technical assistance visits twice monthly to CERDEP classrooms in private settings. These visits include unannounced evaluative monitoring using the ECERS-3, as well as measures of curricular fidelity with reflecting, goal-setting and action plans for programs.

ACCESS RANKINGS		RESOURCE RANKINGS		TOTAL BENCHMARKS MET
4-YEAR-OLDS	3-YEAR-OLDS	STATE SPENDING	ALL REPORTED SPENDING	
11	31	39	40	7

THE STATE OF PRESCHOOL 2020 - STATE PRESCHOOL YEARBOOK - NATIONAL INSTITUTE FOR EARLY EDUCATION RESEARCH - WWW.NIEER.ORG

SOUTH CAROLINA CHILD EARLY READING DEVELOPMENT AND EDUCATION PROGRAM AND EIA/4K

ACCESS

Total state pre-K enrollment 29,007
School districts that offer state program 100%
Income requirement .... 185% FPL
Minimum hours of operation .... 4 hours/day; 5 days/week
Operating schedule .... School or academic year
Special education enrollment, ages 3 and 4 5,541
Federally funded Head Start enrollment, ages 3 and 4 9,923
State-funded Head Start enrollment, ages 3 and 4 0

PERCENT OF POPULATION ENROLLED IN PUBLIC ECE

3-YEAR-OLDS
.4%
10%
3%
86.6%

4-YEAR-OLDS
47%
6%
47%

■ Pre-K   ■ Head Start†   ■ Special Ed††   ■ Other/None
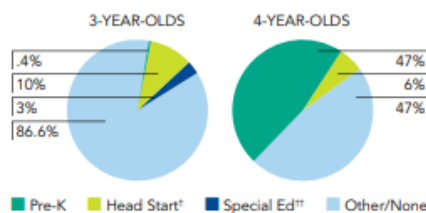
† Estimates children in Head Start not also enrolled in state pre-K.
†† Estimates children in special education not also enrolled in state pre-K or Head Start.

QUALITY STANDARDS CHECKLIST

POLICY	SC PRE-K REQUIREMENT	BENCHMARK	REQUIREMENT MEETS BENCHMARK?
Early learning & development standards	Comprehensive, aligned, supported, culturally sensitive	Comprehensive, aligned, supported, culturally sensitive	☑
Curriculum supports	Approval process & supports	Approval process & supports	☑
Teacher degree	BA (public); AA (nonpublic)	BA	☐
Teacher specialized training	ECE	Specializing in pre-K	☑
Assistant teacher degree	HSD	CDA or equivalent	☐
Staff professional development	15 hours/year; PD plans; Coaching	For teachers & assistants: At least 15 hours/year; individual PD plans; coaching	☑
Maximum class size	20 (4-year-olds)	20 or lower	☑
Staff-child ratio	1:10 (4-year-olds)	1:10 or better	☑
Screening & referral	Immunizations, developmental; Referrals	Vision, hearing & health screenings; & referral	☐
Continuous quality improvement system	Structured classroom observations; Data used for program improvement	Structured classroom observations; data used for program improvement	☑

For more information about the benchmarks, see the Executive Summary and Roadmap to State Profile Pages.

7

RESOURCES

Total state pre-K spending $85,962,509
Local match required? .... No
State Head Start spending $0
State spending per child enrolled $2,964
All reported spending per child enrolled* $3,216
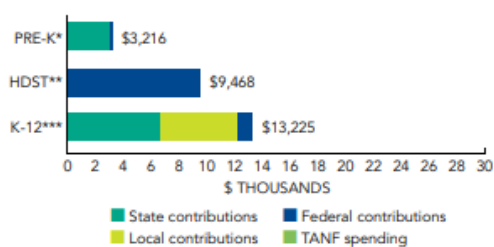
* Pre-K programs may receive additional funds from federal or local sources that are not included in this figure.
** Head Start per-child spending includes funding only for 3- and 4-year-olds.
*** K–12 expenditures include capital spending as well as current operating expenditures.

SPENDING PER CHILD ENROLLED

PRE-K* $3,216
HDST** $9,468
K-12*** $13,225

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
$ THOUSANDS

■ State contributions   ■ Federal contributions
■ Local contributions   ■ TANF spending

Note: From the National Institute for Early Education Research's "The State of Preschool Yearbook 2017," by W. S. Barnett & A. H. Friedman-Krauss, 2017.

Head Start is a federally funded, national preschool education program which began serving low-income children and families in 1964. Even though this is a national program, due to access, funding per child, teacher education, quality, and duration, there is a varied number of services offered. Nationally, services offered by Head Start varies by state and adequate funding allocated by Congress is needed to ensure increased enrollment, high-quality programs, and the employment of high-quality teachers who are paid appropriately. According to NIEER's State(s) of Head Start Report, a report detailing a state-by state description of Head Start enrollment, funding, quality, and duration, enrollment in Head Start programs decreased between 2007 and 2015. The percentage of students in poverty that are serves by Head Start is less than 40%. The enrollment of children of poverty varies from state to state from 7% to 100% (Barnett & Friedman-Krauss, 2016).

South Carolina Head Start scored above the benchmark quality score for providing proper emotional support but scored lower in the areas of instructional support and classroom organization. The percentage of teachers who hold a bachelor's degree of higher in South Carolina is 67% (Barnett & Friedman-Krauss, 2016). To view an overview of Head Start for the state of South Carolina, please refer to Figures 7 and 8.

Figure 6

Head Start Overview for the State of South Carolina

SOUTH CAROLINA Head Start & Early Head Start 2014-2015 Overview

FEDERALLY FUNDED ENROLLMENT

	NUMBER ENROLLED	PERCENT OF STATE	PERCENT OF LOW-INCOME
TOTAL	13,544	5%	8%
Pregnant Women	154	N/A	N/A
< 3-Year-Olds	1,971	1%	2%
3-Year-Olds	6,377	11%	19%
4-Year-Olds	5,042	8%	14%

FEDERAL FUNDING

	FUNDING
Total Federal Funding	$110,707,548
Early Head Start Funding	$27,231,000
Head Start Funding	$83,476,548

ENROLLMENT

PERCENT OF LOW-INCOME CHILDREN SERVED BY HEAD START

QUALITY

CLASSROOM QUALITY SCORES

TEACHER DEGREE

PERCENT OF TEACHERS WITH BA OR HIGHER

TEACHER SALARY

AVERAGE SALARY OF TEACHERS WITH A BA DEGREE

PROGRAM DURATION

PERCENT OF CHILDREN IN SCHOOL-DAY, 5-DAY/WEEK PROGRAMS

FUNDING

FEDERAL FUNDING PER CHILD

Note: From the National Institute for Early Education Research's "The State(s) of Head Start," by W. S. Barnett & A. H. Friedman-Krauss, 2016.

Figure 7

Head Start Staff Information
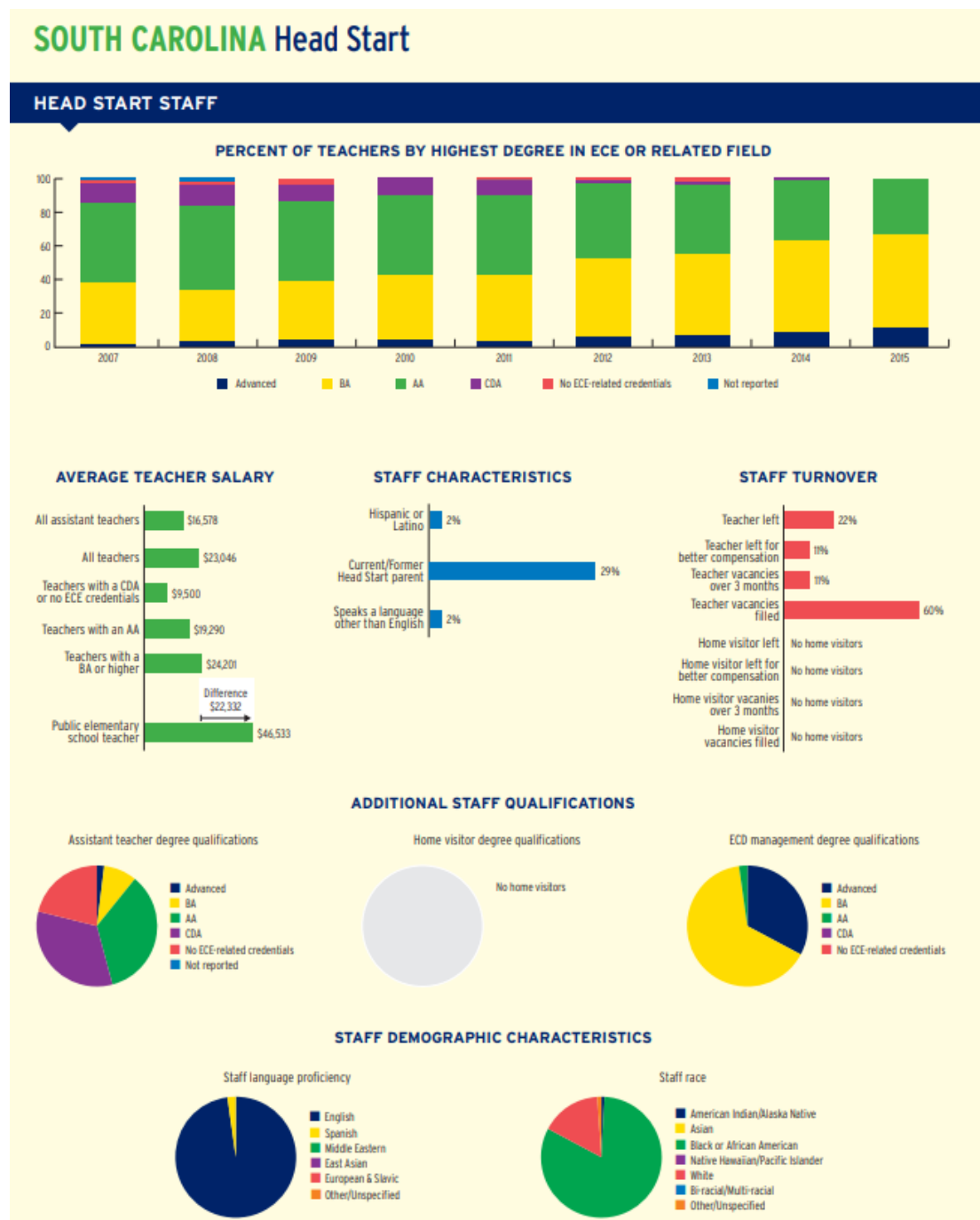
Note: From the National Institute for Early Education Research's "The State of Preschool Yearbook 2017," by W. S. Barnett & A. H. Friedman-Krauss, 2016.

Universal Preschool versus Targeted Preschool

Researchers argue whether preschool education should be universal, available to all, or targeted, where enrollment is based on a specific criterion and is more individualized based on student needs. There are points to support each stance. Finn (2010) outlines preschool education should be targeted because there are a variety of forms of preschool available to children, only students with the greatest need should be targeted, academic standards are not clearly defined and results-based assessment and its alignment to curricula is queasy (Finn, 2010). Targeted preschool can close the academic achievement gap between low-income and middle-income students, while making it easier for low-income parents to become employed (Finn, 2010).

The counterpart to this argument spotlights everyone benefits from universal preschool, including middle-class because of the affordability of private preschool. Also, low-income students can benefit from interactions with middle-class students (Duke University, 2017). If every child can benefit from universal preschool, should it become a constitutional right? A report prepared by Rebell and Wolff (2017) of the Center for Educational Equity explain their reasoning behind their belief that universal preschool should be a constitutional right. Rebell and Wolff (2017) showcases a strong research base which proves all children can benefit and be successful from universal preschool. Targeted children obtain improved access and academic benefits from learning from and gaining support from peers. They argue universal programs gain more political and public support while the economic returns are significant. Children who have access to universal preschool are less likely to need remedial or special education services, have a lesser chance of retention which results in savings to the public-school system (Rebell et al., 2017).

Federal and State Legislation

Early childhood education has been an ever-changing government interest since 1964, with the initiation of the Head Start Program. Former President Barack Obama prioritized preschool education in 2013 during his State of the Union Address. At the top of Mr. Obama's education agenda lived early childhood learning (Samuels, 2013). Obama planned to build a federal-state partnership which enticed states to participate, which would expand access to preschool education for low-income and middle-income students. Although offering incentives to motivate states to offer universal pre-kindergarten was part of this initiative, quality preschool education was the focal point (Klein, 2013). State legislators would welcome the federal funds if each state would be able to keep autonomy since most states already have a plan in place which addresses the need for additional support in early childhood education (Samuels, 2013). Former South Carolina Governor, Nikki Haley, signed a bill into action, Read to Succeed Act, which had a long-term goal of improving student's reading levels in hopes of all students becoming proficient readers by the end of third grade in South Carolina (The South Carolina State Department of Education, n.d.). In Haley's attempts to obtain this goal, Haley planned to eventually expand full-day kindergarten and prekindergarten for at-risk 4-year-olds and implement early intervention programs for struggling readers (Smith, 2014).

The SREB's Challenge to Lead 2020 Goals for Education lends itself to a perfect connection to The Obama Administration's education agenda, South Carolina's Read to Succeed Act, and the research conducted in this action research study. The first Challenge to Lead 2020 Goal encompasses all children entering school will exhibit knowledge and the social and developmental skills needed for success in first grade (Lord, 2016). In 2018, the SREB released a "Looking Closer" report which gave a detailed description of South Carolina's progression

towards the Challenge to Lead 2020 Goals. South Carolina continues to need improvement in fourth grade reading and math achievement and closing the achievement gap in academic outcomes related to household income (Gagne and Lord, 2018). The most recent bill, the Education Reform Bill, brought forth by South Carolina lawmakers, included a section regarding submitting a plan to increase the number of enrolled students into government-funded 4K programs (Education Reform Bill, 2019). Preschool education is currently still at the forefront of state and federal legislation which supports the research conducted in this research (Gagne and Lord, 2018; Klein, 2013; National Institute for Early Education Research, n.d.; Samuels, 2013; The South Carolina State Department of Education, n.d.).

<center>**Impacts of Preschool Education**</center>

Over the years, research has shown there are many positive and some negative impacts of preschool education. According to the SREB, there is an abundance of data which supports early childhood education ensures readiness, reduces retention, and promotes achievement. The SREB states lead the nation regarding quality, public pre-kindergarten and for this reason, positive effects of high-quality preschool are indisputable (Southern Education Foundation, 2010). On the contrary, Armor outlines gains initially made during the pre-kindergarten years fade when the child enters elementary school and policymakers should seek more research studies before making preschool education universal (Armor & Cato Institute, 2014).

One of the ways to measure impacts of preschool programs is to assess the effectiveness of the early childhood program. Marnie S. Shaul (2000), associate director of Education, Workforce, and Income Security Issues in the Heath, Education and Human Service Division, provided a testimony before the U.S. Senate defining the challenges in being able to do so. Shaul (2000) indicated traditional paper and pencil assessments are inadequate, since young children

develop quickly, assessments given at one point may not accurately provide a complete picture of student learning, and children's language proficiency before entering the early childhood program can skew the validity of assessment results. Finding a large quantity of highly qualified teachers is challenging (Morgan, 2019). Early childhood programs unable to be determined of high-quality without highly qualified teachers to deliver the curriculum. If teachers are not highly qualified, is effectiveness of the program truly measured? Lastly, standards, guidelines, and regulations created by policymakers are one way to aim to improve effectiveness in prekindergarten programs (Duke University, 2017).

Research demonstrates high-quality early childhood education can be beneficial. According to Morgan (2019), some beneficial characteristics of early childhood education were brain development, enhanced high-school rate, and positive outcomes in employment, crime, and health. Children who attend pre-kindergarten programs arrive to kindergarten more prepared since the year before kindergarten is a vital period in development. Daily interactions between teachers and students extended learning and supported peer cooperation and support. Engaging, effective curricula provide an essential foundation needed for students to succeed in language, literacy, and math (Duke University, 2017). Morgan (2019) showcases how universal prekindergarten benefits children from all socioeconomic background and will allow the United States to offer an educational system similar to other exceptional early educational systems in other countries.

<div align="center">**Assessment Instruments**</div>

DIBELS 8

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) are a series of assessment tools measuring and assessing reading skills in grades kindergarten through eighth

grade. Dr. Ruth Kaminski's doctoral theses and the assistance of a federal grant developed the first DIBELS measures that were intended for kindergarten and first grade in 1992 at the University of Oregon. In the years following, the DIBELS measures and the interpretation of them has evolved to include the research and expertise of many University of Oregon faculty members and graduate students. There have been several updated editions including the DIBELS 6th Edition in 2002, DIBELS Next in 2010, and currently DIBELS 8th Edition. Throughout the transitions of editions, measures have been excluded (e.g., Picture Naming Fluency, Initial Sound Fluency) and some have been included (e.g., Nonsense Word Reading Fluency, Oral Reading Fluency) (Biancarosa et al., 2020).

Six subtests that are aligned to four out of the five "Big Ideas" indicated by the National Reading Panel's 2020 report are included in the DIBELS 8th Edition (Biancarosa et al., 2020; National Reading Panel, 2020). Other considerations for the development of these six subtests include the developmental continuum of reading expressed by the National Reading Panel. Therefore, as the student's development and instructional foci changes across grade levels, the subtests also adapt. Subskills of reading associated with risk for reading disabilities such as dyslexia are also aligned to the subtests included in the DIBELS 8th Edition making Nonsense Word Fluency, Word Reading Fluency, and Oral Reading Fluency measures a screening measure for such reading disabilities (Biancarosa et al., 2020).

Curriculum-based measurement (CBM) is the approach taken for the DIBELS 8 subtests. CBMs evaluates the effectiveness of classroom instruction while measuring students' academic growth (Vanderbilt University, n.d.). The subtests are designed to be quick, one-minute assessments and are easy to administer to students in kindergarten through eighth grade. Most measures are administered individually and are timed. Timed subtests measure reading efficiency

and accuracy (Biancarosa et al., 2020). The measures analyzed for this study are the DIBELS 8 composite score, DIBELS 8 ORF-WRC and the DIBELS 8 ORF-ACC scores. All three measures will be described in detail in chapter three.

Conclusion

This quantitative research study was conducted to identify the impact that factors such as socioeconomic status, race, gender, and preschool enrollment has on the oral reading fluency of first-grade students in a school district in north eastern portion of South Carolina. Data will be collected utilizing the following instruments: DIBELS 8 composite score, DIBELS 8 ORF-WRC and the DIBELS 8 ORF-ACC assessments. Data was analyzed by the intensive and strategic categories as indicated by the DIBELS 8 composite score and disaggregated by socioeconomic status, race, gender, and prior preschool enrollment to determine if a correlation exits. Understanding the use and need for each component ensures the skill of oral reading develops appropriately. In chapter three, the methodology used to examine the data is discussed. The targeted population and sample proposed for the study will be presented. A discussion of the proposed methods will help with understanding the focus of the proposed research. Chapter four will provide a result of the data analyses. Chapter five will summarize the study and provide areas for future consideration.

Chapter 3: Methodology

Student achievement in reading has substantial effects on the future academic success for all students (Telesman et al., 2019). Oral reading fluency is a critical component of reading. It is utilized to measure reading competence and is the bridge between decoding and reading comprehension (Fuchs at el., 2001). Oral reading fluency is achieved when a student can read with adequate speed, accuracy, and understanding (Grima-Farrell, 2014). When a student can shift from decoding words on a word-by-word basis to reading words rapidly, accurately, and expressively, they are reading fluently (LaBerge & Samuels, 1974).

Teachers are charged with the task of reaching all students academically in hopes all students will become proficient readers by third grade. For students who are of a low socioeconomic status, diverse races or ethnicities, or have a disability, the outcome is unpromising (Wanzel et al., 2014; Wei et al., 2011). The greatest way to ensure reading readiness, promote achievement, and reduce student retention is investing in high-quality preschool education prior to kindergarten (Southern Education Foundation, 2010). School readiness impacts early literacy for young learners, policymakers, business leaders, parents, and the general public are becoming more aware (Education Reform Bill, 2019).

In this chapter, the research design and approach to this quantitative, causal-comparative study will be explained. The sample and setting will be defined and described. This chapter will provide an explanation of the instruments used for data collection. Chapter three will also describe the descriptive and inferential analyses developed in this research study.

Research Design

The purpose of this study is to determine the factors, socioeconomic status, race, gender, and/or preschool enrollment, that impact oral reading fluency of first grade students. The

instruments used to collect data were DIBELS 8 composite score, DIBELS 8 ORF-WRC and the

DIBELS 8 ORF-ACC assessments. Data from all participating first grade students was collected

at the Beginning of the Year (BOY) DIBELS 8 benchmark window which took place in

August/September of the 2021-2022 school year. Data was analyzed by the intensive and

strategic categories as indicated by the DIBELS 8 composite Score and disaggregated by

socioeconomic status, race, gender, and prior preschool enrollment. The data collected from the

DIBELS 8 assessments, student demographics, and preschool enrollment was the required data

needed to compute the statistical analysis and answer the research questions to determine if

factors impact the oral reading fluency of first grade students.

Setting and Sample

For this study, first grade students were the population of interest. First grade students

from a "county-wide school system, serving communities with more than 350,000 residents

along the Atlantic Coastline of southeastern South Carolina" were included as the sample to

participate in this study. The school district is one of the largest districts in the state of South

Carolina. Within this school district, there are 27 elementary schools, and nine attendance zones,

with a total elementary enrollment of 19,709 students. There are 10 elementary schools which

are Title I, receiving financial assistance provided to schools who have high percentages of

children from low-income families, as indicated by the school's percent of poverty index. There

are 17 elementary schools do not meet the criteria to be eligible for Title I financial assistance.

The breakdown of student demographics within the school district consists of 62%

White/Caucasian, 19% African American, 11% Hispanic, and 8% other.

First-grade students in the general education setting who were assessed in the BOY

DIBELS 8 assessment window in August/September of the 2021-2022 school year, that had a

DIBELS 8 composite score in the intensive or strategic range, were chosen to be included in this study. The intensive and strategic ranges are specified by the DIBELS 8th Edition Benchmark Goals. To view a copy of the DIBELS 8th Edition's Benchmark Goals, please refer to Appendix A.

Special education students who hold a current Individualized Education Program (IEP) with Language Arts services and multilingual learners who receive services with a multilingual teacher were excluded from this study. These students were excluded because their specified, required educational services are offered during the same time the general education students receive their small group reading instruction. Most instruction given to increase oral reading fluency occurs during the time allotted for small group reading instruction within the school district. The researcher's decision to exclude these students from the sample selected for this study was supported because the special education and multilingual students do not receive small group instruction.

The total amount of the first-grade sample consists of 732 intensive students and 498 strategic students. The breakdown of student demographics of the participating intensive first grade students consists of 47% White/Caucasian, 53% students of color. The breakdown of student demographics of the participating strategic first grade students consist of 51% White/Caucasian, 49% students of color. The intensive sample consists of 52% males and 48% females. The strategic sample consists of 44% male and 56% female. Both of the intensive and strategic sample has 72% of students that fell into the low socioeconomic status category as indicated by the school's percent of poverty index. The data used to classify a school as Title I fluctuates based on allocation of students enrolled at the individual school each year. Both of the intensive and strategic sample had 28% of students that do not meet the criteria indicating low

socioeconomic status. The intensive sample has 35% of participating first grade students and the

strategic sample has 42% of the participating first grade students enrolled in a preschool in an

educational setting consisting of Head Start, or a public location as indicated in PowerSchool by

the student's parent.

<div align="center">**Instrumentation**</div>

DIBELS 8 Composite Score

The DIBELS 8 composite score provides an interpretation of student performance across

all subtests. A type of statistical analysis called a confirmatory factor analysis (CFA), was used

to determine raw score weighting of all six DIBELS 8 subtests. Concurrently, the CFA also

accounted for relations among the subtests. The covariance between Nonsense Word Fluency

scores and all available subtests were accounted for in the final CFA (University of Oregon,

2018-2020). The computation of the DIBELS 8 composite score was created from the data of

thousands of real students (University of Oregon, 2020).

The strongest predictor of risk that DIBELS has ever offered is the DIBELS 8 composite

score. The accuracy and reliability of the DIBELS 8 composite score is superior to the raw score

of an individual subtest because of the accuracy of its predictors. Each student is provided an

overall risk status based on the computation of the DIBELS 8 composite score. This risk status is

also a predictor of end-of-year performance. Importantly, the risk status determines

individualized instruction needed and aids in placement of students for differentiated small group

reading instruction (University of Oregon, 2020).

The DIBELS 8 composite score will be accessed after students complete all subtests

required during the BOY DIBELS 8 assessment window. To eliminate using raw data from an

individual subtest, three types of cut-scores have been created. The cut-scores classify students

by risk status. The first type of cut-score is the at-risk cut-score. The at-risk cut score identifies 80% of student performing below the 20th percentile on an external outcome measure of reading ability and is designated by the color red in DIBELS 8 documentation. These students are performing well below benchmark and are considered to need intensive support (University of Oregon, 2020b).

The second cut-score is called the benchmark goal. The risk status for this cut-score is minimal risk. This cut-score identifies 80% or more of students performing below the 40th percentile on an external measure of reading ability. These students are performing at a benchmark level and the general curriculum serves students who fall under this risk status well. These students are designated green in DIBLES 8 documentation (University of Oregon, 2020b).

Students who fall between the minimal risk and at risk cut-score are identified as needing strategic support. The risk status for this cut-score is some risk. These students are identified as having some risk for not meeting proficiency goals by the end of the school year. Students at this risk status are designated by the color yellow in DIBELS 8 documentation (University of Oregon, 2020b).

The third cut-score identifies students performing well above benchmark. The risk status for this cut score is negligible risk. These students are identified as truly negligible of scoring below the 40th percentile on a criterion reading ability measure. Students that fall under this risk status category are designated by the color blue in DIBELS 8 documentation (University of Oregon, 2020b). To view a copy of the DIBELS 8th Edition's Benchmark Goals, please refer to Appendix A.

In calculating DIBELS 8 composite score, there are special rules to follow, when a discontinue or gating rule has been applied. Regarding this study, during the BOY DIBELS 8

assessment window, if the Word Reading Fluency (WRF) subtest is discontinued, the Oral

Reading Fluency (ORF) subtest is not administered (University of Oregon, 2020a). The

discontinue rule for WRF states that if a student does not get any words correct in the first line of

the assessment, discontinue assessing the WRF subtest (University of Oregon, 2020b).To obtain

a DIBELS 8 composite score, a score of zero is entered for Word Reading Fluency and no other

score is entered for the remaining subtest. This is substantial knowledge for this study to help the

reader understand why a portion of the sample will not have a DIBELS 8 ORF-WRC and ORF-

ACC score for the BOY DIBELS 8 assessment window.

Table 1

Composite Score Constants for the Discontinuation or Gating of Benchmarking

	Grade	Time Period	LNF	PSF	NWF CLS	NWF WRC	WRF	ORF WRC	ORF ACC
Discontinue	Kindergarten	BOY (fall)			0	0	0		
		MOY (winter)					0		
	First	BOY (fall)						0	0
Gating	First	MOY (winter)	66	56					
		EOY (spring)	68	60					
	Second	BOY (fall)			85	24	49		
		MOY (winter)			102	35	62		
		EOY (spring)			116	38	69		
	Third	BOY (fall)			120	33	59		
		MOY (winter)			137	45	64		
		EOY (spring)			140	44	69		

Notes: From University of Oregon's "Composite Score Calculation Guide Supplement," by Gina Bancarosa et al., 2020a

There are six steps when calculating a DIBELS 8 composite score. The steps consist of the following:

1. Multiply each subtest raw score by the weight listed

2. Sum the weighted scores from Step 1.

3. Subtract the mean of the weighted score from the sum of the weighted scores.

4. Divide the value from Step 3 by standard deviation.

5. Multiply value from Step 4 by 40 and round to the ones place.

6. Add the scaling constant for the season in which the student was tested to obtain the final composite score. Constants: Fall/Beginning = 360, Winter/Middle = 400, Spring/End = 440 (University of Oregon, 2020a).

To view a copy of the DIBELS 8th Edition Composite Score Calculation Worksheet for first grade students, please refer to Appendix B.

DIBELS Oral Reading Fluency (ORF)

The DIBELS 8 Oral Reading Fluency assessment measures fluency (ORF-WRC) and accuracy (ORF-ACC) through the timed reading of connected texts. The measure is administered individually by a trained educator within the classroom. Each measure has a time limit of one minute. The DIBELS ORF subtest assesses the ability to read words in a fluency passage form (University of Oregon, 2020b).

The DIBELS 8 ORF passages were written by aspiring short story authors who came from diverse socioeconomic and cultural backgrounds. The authors were given specific criteria including:

- The creation of narrative and information texts with appropriate grade-level vocabulary

- Syntax

- Sentence length and overall content

- Overall passage length

- Representation in terms of culture, geography, and locale

- The avoidance of culturally sensitive topics

- Generating a title that did not give away the ending (University of Oregon, 2020b).

The authors were tasked with writing narrative passages that had a clear beginning, middle, and end with multiple events occurring in the middle. A clear introduction, paragraphs offering supporting details, a conclusion, and the use of text features when appropriate were criteria given to the authors when writing informational passages. Passages created were to avoid slang, bold words, dialogue, and content that could be considered religious. Passages were to also avoid being too funny or emotional to ensure zero interference with the reading rate of the reader (University of Oregon, 2020b).

Passages were submitted for review by the DIBELS 8th Edition development team. Passages that remained after the first review were then reviewed by an external team of reviewers. The external review team looked for grade-level appropriateness of the passage vocabulary, syntax, sentence length, content, and the amount of background knowledge needed to comprehend the passage. Once passages had been reviewed by two or more panel members, the DIBELS 8th Edition development team revisited the areas where other reviewers noted problems. Finally, student performance on the passages was the deciding factor on grade-level passage assignment. In grades one through five, 60% of the passages required were narrative and 40% of the passages required were informational (University of Oregon, 2020b).

When scoring the DIBELS ORF assessment, ORF provides two scores. First, it provides the sum of the words read correctly, ORF-WRC. Insertions and repetitions of words are not counted as errors. Secondly, it provides an accuracy percentage, ORF-ACC. The accuracy percentage is calculated by dividing the words read correctly by the total words read x 100 (University of Oregon, 2020b). Figure 8 displays a picture of the ORF-ACC formula.

Figure 8

ORF-ACC Formula

$$\text{Accuracy} = \frac{\textit{words read correctly}}{\textit{total words read}} \times 100$$

Notes: From University of Oregon's "Administration and Scoring Guide," by Gina Bancarosa et al., 2020b.

Reliability of DIBELS 8

For the DIBELS 8th Edition, five forms of test reliability were investigated. The five forms examined were concurrent alternate form reliability, delayed alternate form reliability, test-retest reliability, intercept and slope reliability for progress monitoring, and standard error of measurement. For the purpose of this study, we will focus on the four forms that are emphasized for benchmark assessments and will exclude discussing the intercept and slope reliability for progress monitoring form. Estimates of score stability can be thought of through the five forms listed above (University of Oregon, 2018-2020).

Alternate Form Reliability

The relationship between scores produced with different versions of an assessment can be described using alternate form reliability. DIBELS 8th Edition examines both concurrent alternate form reliability and delayed alternate form reliability. Concurrent alternate form reliability is extremely strong for ORF. In all grades, the median reliability for ORF-WRC was .92 or higher. The strongest ORF-WRC median reliability was seen in first grade with a median of .96. The median reliability of ORF-ACC was strong but not as strong as ORF. The median

reliability of ORF-ACC ranged from .75 to .89. The overall ORF-ACC median reliability was

.83 (University of Oregon, 2018-2020). To view concurrent alternate form reliability for

DIBELS 8th Edition ORF-WRC and ORF-ACC, please refer to Tables 2 and 3

Table 2

Concurrent Alternate Form Reliability for DIBELS 8ᵗʰ Edition Oral Reading Fluency

Grade	Sample	Forms	N	r	CI
First	A	1:PM5	128	.97	.96–.98
		1:PM1	75	.98	.96–.99
		2:PM7	184	.96	.95–.97
		3:PM8	186	.94	.92–.95
	Median			.96	.95–.97
Second	A	1:3	118	.95	.92–.96
		1:PM5	109	.97	.96–.98
		1:PM7	108	.97	.95–.98
		2:3	118	.95	.93–.97
		2:PM2	159	.96	.94–.97
		2:PM6	159	.96	.95–.97
		3:PM3	118	.95	.92–.96
	B	1:PM16	365	.95	.93–.96
		2:PM15	393	.96	.96–.97
		3:PM20	338	.95	.94–.96
	Median			.95	.93–.97
Third	A	1:PM3	114	.93	.90–.95
		2:PM1	196	.95	.94–.96
		2:PM2	196	.93	.91–.94
		3:PM5	180	.91	.88–.93
		3:PM12	180	.89	.86–.92
	B	1:PM14	366	.94	.92–.95
		2:PM10	391	.94	.93–.95
		3:PM19	349	.93	.91–.94
	Median			.93	.91–.94

Grade	Sample	Forms	N	r	CI
Fourth	A	1:PM2	146	.93	.91–.95
		1:PM3	146	.94	.91–.95
		1:PM5	147	.94	.92–.96
		2:PM2	145	.81	.74–.86
		2:PM7	144	.87	.83–.91
		2:PM10	145	.85	.80–.89
		3:PM2	144	.92	.89–.94
		3:PM8	143	.88	.84–.91
	B	1:PM12	436	.94	.92–.95
		1:PM20	339	.94	.93–.95
		2:PM18	359	.94	.93–.95
		2:PM20	510	.94	.93–.95
		3:PM14	488	.95	.94–.95
		3:PM15	343	.94	.93–.95
	Median			.94	.93–.95
Fifth	A	1:2	123	.95	.92–.96
		1:3	131	.91	.87–.93
		1:PM5	133	.92	.89–.94
		1:PM1	132	.92	.89–.94
		1:PM3	133	.92	.89–.94
		2:PM2	181	.93	.91–.95
		2:PM20	58	.94	.89–.96
		3:PM7	131	.93	.90–.95
		3:PM8	131	.92	.89–.95
	B	1:PM14	327	.93	.91–.94
		1:PM15	387	.91	.89–.92
		2:PM16	399	.89	.87–.91
		2:PM19	519	.93	.91–.94
		3:PM17	349	.91	.88–.92
		3:PM20	467	.93	.92–.94
	Median			.92	.89–.94

Grade	Sample	Forms	N	r	CI
Sixth	A	1:2	69	.94	.91–.96
		1:PM19	69	.95	.93–.97
		2:3	98	.93	.90–.95
		2:PM1	99	.89	.84–.93
		2:PM2	104	.93	.90–.96
		2:PM3	99	.94	.91–.96
		2:PM4	104	.93	.89–.95
		2:PM11	104	.93	.90–.95
		2:PM16	98	.95	.92–.96
		3:PM15	98	.94	.91–.96
	B	1:PM13	182	.92	.90–.94
		1:PM16	166	.92	.89–.94
		2:PM7	292	.94	.92–.95
		2:PM14	167	.91	.88–.93
		3:PM8	296	.92	.90–.93
		3:PM12	167	.94	.92–.96
	Median			.93	.90–.96
Seventh	A	1:2	136	.92	.89–.94
		1:3	123	.90	.86–.93
		1:PM8	83	.93	.89–.95
		1:PM9	83	.87	.80–.91
		1:PM11	83	.93	.89–.95
		2:PM1	142	.92	.88–.94
		2:PM2	141	.91	.88–.94
		3:PM3	123	.89	.84–.92
	B	1:PM13	63	.91	.86–.95
		1:PM19	77	.95	.92–.97
		2:PM12	201	.95	.93–.96
		2:PM18	64	.93	.89–.96
		3:PM7	196	.95	.94–.96
		3:PM20	64	.94	.90–.96
	Median			.92	.89–.94

Grade	Sample	Forms	N	r	CI
Eighth	A	1:2	110	.92	.89–.95
		1:3	102	.81	.73–.87
		1:PM7	69	.92	.87–.95
		1:PM11	70	.91	.86–.94
		1:PM12	70	.92	.86–.95
		2:PM2	114	.90	.86–.93
		2:PM4	114	.92	.89–.94
		3:PM1	102	.80	.72–.86
		3:PM3	102	.78	.69–.85
	B	1:PM13	66	.95	.92–.97
		1:PM16	74	.95	.92–.97
		2:PM6	137	.92	.89–.94
		2:PM10	64	.94	.91–.96
		3:PM3	144	.93	.90–.95
		3:PM19	65	.95	.92–.97
	Median			.92	.87–.95
Median				.93	.90–.96

Notes: Form numbers without a prefix correspond to benchmark periods, while prefixed numbers refer to progress monitoring passage numbers. A = 2017-2018 CTL norming study. B = 2018-2019 CTL norming study. From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Table 3

Concurrent Alternate Form Reliability for DIBELS 8th Edition Oral Reading Fluency-Accuracy

Grade	Sample	Forms	N	r	CI
First	A	1:PM5	128	.92	.89–.94
		2:PM7	184	.90	.87–.93
		2:PM1	75	.92	.86–.95
		3:PM8	186	.91	.88–.93
	Median			.91	.88–.93

Grade	Sample	Forms	N	r	CI
Second	A	1:3	118	.77	.69–.84
		1:PM5	109	.91	.87–.94
		1:PM7	108	.89	.85–.93
		2:3	118	.83	.77–.88
		2:PM2	159	.90	.87–.93
		2:PM6	159	.87	.83–.90
		3:PM3	118	.78	.70–.84
	B	1:PM16	365	.85	.82–.88
		2:PM15	393	.92	.90–.93
		3:PM20	338	.92	.91–.94
	Median			.87	.83–.90
Third	A	1:2	114	.79	.71–.85
		1:PM3	114	.80	.90–.95
		2:PM1	196	.96	.94–.97
		2:PM2	196	.96	.95–.97
		3:PM5	180	.67	.58–.74
		3:PM12	180	.72	.64–.79
	B	1:PM14	366	.79	.75–.82
		2:PM10	391	.83	.80–.86
		3:PM19	349	.71	.65–.76
	Median			.79	.71–.85
Fourth	A	1:PM2	146	.74	.65–.80
		1:PM3	146	.75	.67–.81
		1:PM5	147	.78	.71–.84
		2:PM2	145	.76	.68–.82
		2:PM7	144	.60	.49–.70
		2:PM10	145	.61	.50–.71
		3:PM2	144	.86	.81–.90
		3:PM8	143	.67	.57–.75
	B	1:PM12	436	.88	.86–.90
		1:PM20	339	.87	.84–.89
		2:PM18	359	.87	.84–.89
		2:PM20	510	.87	.85–.89
		3:PM14	488	.90	.88–.91
		3:PM15	343	.77	.72–.81
	Median			.77	.72–.81

Grade	Sample	Forms	N	r	CI
Fifth	A	1:2	123	.97	.95–.98
		1:3	131	.57	.45–.68
		1:PM1	132	.76	.68–.83
		1:PM3	133	.68	.58–.76
		1:PM5	133	.73	.64–.80
		2:PM2	181	.96	.95–.97
		2:PM20	58	.94	.91–.97
		3:PM7	131	.54	.41–.65
		3:PM8	131	.65	.53–.74
	B	1:PM14	327	.75	.70–.80
		1:PM15	387	.85	.82–.87
		2:PM16	399	.79	.75–.83
		2:PM19	519	.89	.87–.90
		3:PM17	349	.59	.52–.67
		3:PM20	467	.55	.48–.61
	Median			.75	.70–.80
Sixth	A	1:2	69	.77	.65–.85
		1:PM19	69	.84	.75–.90
		2:3	98	.78	.69–.85
		2:PM1	99	.68	.56–.78
		2:PM2	104	.90	.87–.94
		2:PM3	99	.64	.50–.74
		2:PM4	104	.83	.76–.88
		2:PM11	104	.77	.68–.84
		2:PM16	98	.76	.67–.84
		3:PM15	98	.81	.73–.87
	B	1:PM13	182	.97	.96–.98
		1:PM16	166	.96	.94–.97
		2:PM7	292	.93	.91–.94
		2:PM14	167	.92	.90–.94
		3:PM8	296	.98	.97–.98
		3:PM12	167	.94	.92–.96
	Median			.83	.76–.88

Grade	Sample	Forms	N	r	CI
Seventh	A	1:2	136	.89	.85–.92
		1:3	123	.93	.90–.95
		1:PM8	83	.89	.83–.93
		1:PM9	83	.90	.85–.94
		1:PM11	83	.89	.83–.93
		2:PM1	142	.87	.82–.90
		2:PM2	141	.83	.78–.88
		3:PM3	123	.87	.81–.91
	B	1:PM13	63	.68	.51–.79
		1:PM19	77	.98	.97–.99
		2:PM12	201	.94	.92–.95
		2:PM18	64	.53	.32–.68
		3:PM7	196	.91	.88–.93
		3:PM20	64	.79	.68–.87
	Median			.89	.83–.93
Eighth	A	1:2	110	.85	.79–.89
		1:3	102	.82	.75–.88
		1:PM7	69	.84	.75–.90
		1:PM11	70	.86	.78–.91
		1:PM12	70	.73	.60–.83
		2:PM2	114	.84	.76–.89
		2:PM4	114	.89	.85–.92
		3:PM1	102	.76	.66–.83
		3:PM3	102	.85	.79–.90
	B	1:PM13	66	.90	.85–.94
		1:PM16	74	.88	.82–.92
		2:PM6	137	.76	.68–.83
		2:PM10	64	.91	.85–.94
		3:PM3	144	.80	.74–.86
		3:PM19	65	.78	.67–.86
	Median			.84	.75–.90
Median				.83	.76–.88

Notes: Form numbers without a prefix correspond to benchmark periods, while prefixed numbers refer to progress monitoring passage numbers. A = 2017-2018 CTL norming study. B = 2018-2019 CTL norming study. From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Delayed alternate form reliability was established by the correlation of DIBELS 8 Benchmark forms. The delay between testing administrations was roughly three months. Thus, the expected results of delayed alternate form reliability were to be weaker than the results of concurrent alternate form reliability. The ORF-WRC overall median reliability of .88 demonstrated a strong delayed alternate form reliability. In all grades, the median reliability for ORF-WRC ranged from .82 to .90. The strongest ORF-WRC median reliability was seen in first grade with a median of .88. Slightly weaker median reliability was seen with ORF-ACC. The median reliability in all grades ranged from .66 to .87. The overall median reliability for ORF-ACC was .73. The delayed alternate form reliability was stronger for DIBELS 8 composite score than any other subtest. The overall mean reliability of DIBELS 8 composite score was .89. In all grades, the median reliability for composite score ranged from .80 to .94 (University of Oregon, 2018-2020). To view delayed alternate form reliability for DIBELS 8th Edition please refer to Tables 4, 5, and 6.

Table 4

Delayed Alternate Form Reliability for DIBELS 8th Edition Oral Reading Fluency-Words Read

Correctly

Grade	Sample	Forms	N	r	CI
First	A	1:2	161	.94	.91–.95
		1:3	117	.87	.82–.91
		2:3	218	.92	.89–.94
	B	1:2	399	.94	.93–.95
		1:3	496	.84	.81–.86
		2:3	406	.90	.88–.92
	Median			.90	.88–.92
Second	A	1:2	225	.89	.86–.92
		1:3	116	.85	.79–.89
		2:3	116	.92	.89–.95
	B	1:2	418	.92	.90–.93
		1:3	379	.86	.84–.89
		2:3	464	.93	.91–.94
	Median			.89	.86–.92
Third	A	1:2	112	.91	.87–.94
		2:3	171	.84	.79–.88
	B	1:2	410	.88	.86–.91
		1:3	376	.85	.82–.88
		2:3	467	.88	.86–.90
	Median			.85	.82–.88
Fourth	A	1:2	142	.82	.76–.87
	B	1:2	391	.90	.88–.92
		1:3	369	.89	.87–.91
		2:3	460	.89	.87–.91
	Median			.89	.87–.91
Fifth	A	1:2	83	.89	.83–.92
		1:3	128	.86	.81–.90
	B	1:2	378	.81	.77–.84
		1:3	343	.82	.78–.85
		2:3	452	.90	.88–.91
	Median			.82	.78–.85

Grade	Sample	Forms	N	r	CI
	A	1:2	66	.86	.78–.91
		1:3	61	.91	.85–.94
		2:3	98	.91	.87–.94
Sixth	B	1:2	173	.89	.86–.92
		1:3	172	.89	.85–.92
		2:3	283	.89	.86–.91
	Median			.89	.85–.92
	A	1:2	79	.89	.83–.93
		1:3	65	.84	.74–.90
		2:3	127	.86	.81–.90
Seventh	B	1:2	75	.93	.89–.95
		1:3	71	.84	.81–.86
		2:3	190	.90	.88–.92
	Median			.86	.81–.90
	A	1:2	67	.92	.89–.95
		1:3	67	.73	.62–.81
		2:3	100	.74	.64–.82
Eighth	B	1:2	68	.94	.90–.96
		1:3	67	.94	.90–.96
		2:3	135	.88	.83–.91
	Median			.88	.83–.91
Median				.88	.83–.91

Notes: Form numbers correspond to benchmark periods, and data was gathered in the periods indicated. A = 2017- 2018 CTL norming study. B = 2018-2019 CTL norming study. From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Table 5

Delayed Alternate Form Reliability for DIBELS 8th Edition Oral Reading Fluency-Accuracy

Grade	Sample	Forms	N	r	CI
First	A	1:2	161	.89	.85–.92
		1:3	117	.71	.61–.79
		2:3	218	.78	.72–.82
	B	1:2	399	.84	.81–.87
		1:3	496	.65	.60–.70
		2:3	406	.78	.73–.81
	Median			.78	.72–.82
Second	A	1:2	225	.78	.73–.83
		1:3	116	.61	.48–.71
		2:3	116	.80	.72–.86
	B	1:2	418	.84	.81–.87
		1:3	379	.81	.78–.85
		2:3	464	.84	.81–.87
	Median			.80	.72–.86
Third	A	1:2	112	.75	.66–.82
		2:3	171	.65	.55–.73
	B	1:2	410	.79	.72–.82
		1:3	376	.66	.60–.72
		2:3	467	.78	.74–.81
	Median			.66	.60–.72
Fourth	A	1:2	142	.82	.76–.87
	B	1:2	391	.84	.80–.86
		1:3	369	.84	.81–.87
		2:3	460	.90	.88–.91
	Median			.84	.80–.86
Fifth	A	1:2	83	.89	.83–.92
		1:3	128	.86	.81–.90
	B	1:2	378	.81	.77–.84
		1:3	343	.62	.55–.69
		2:3	452	.71	.67–.76
	Median			.71	.67–.76

Grade	Sample	Forms	N	r	CI
	A	1:2	66	.89	.83–.93
		1:3	61	.77	.64–.86
		2:3	98	.85	.78–.89
Sixth	B	1:2	173	.89	.86–.92
		1:3	172	.87	.83–.90
		2:3	283	.92	.91–.94
	Median			.87	.83–.90
	A	1:2	79	.90	.85–.93
		1:3	65	.96	.94–.98
		2:3	127	.83	.77–.88
Seventh	B	1:2	74	.67	.52–.78
		1:3	70	.49	.29–.65
		2:3	189	.49	.37–.59
	Median			.67	.52–.78
	A	1:2	67	.73	.59–.82
		1:3	67	.67	.51–.78
		2:3	100	.75	.65–.83
Eighth	B	1:2	68	.79	.68–.86
		1:3	67	.77	.64–.85
		2:3	135	.62	.60–.71
	Median			.73	.59–.82
Median				.73	.59–.82

Notes: Form numbers correspond to benchmark periods, and data was gathered in the periods indicated. A = 2017- 2018 CTL norming study. B = 2018-2019 CTL norming study. From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Table 6

Delayed Alternate Form Reliability for DIBELS 8th Edition Composite Score

Grade	Forms	N	r	CI
	1:2	330	.80	.76–.84
	1:3	430	.70	.65–.75
Kindergarten	2:3	350	.86	.83–.88
	Median		.80	.76–.84
	1:2	396	.94	.92–.94
	1:3	489	.84	.81–.86
First	2:3	401	.90	.88–.91
	Median		.90	.88–.91

Grade	Forms	N	r	CI
Second	1:2	299	.89	.87–.91
	1:3	313	.88	.85–.90
	2:3	289	.93	.91–.94
	Median		.89	.87–.91
Third	1:2	354	.90	.88–.92
	1:3	345	.86	.83–.89
	2:3	442	.91	.90–.93
	Median		.90	.88–.92
Fourth	1:2	354	.90	.88–.92
	1:3	340	.89	.87–.91
	2:3	438	.90	.88–.92
	Median		.90	.88–.92
Fifth	1:2	321	.79	.74–.82
	1:3	269	.85	.81–.88
	2:3	359	.90	.87–.91
	Median		.85	.81–.88
Sixth	1:2	168	.89	.86–.92
	1:3	161	.90	.87–.93
	2:3	220	.88	.85–.91
	Median		.89	.86–.92
Seventh	1:2	68	.90	.85–.94
	1:3	67	.74	.60–.83
	2:3	126	.88	.83–.91
	Median		.88	.83–.91
Eighth	1:2	65	.94	.90–.96
	1:3	64	.94	.90–.96
	2:3	73	.92	.88–.95
	Median		.94	.90–.96
Median			.89	.87–.91

Notes: Form numbers correspond to benchmark periods, and data was gathered in the periods indicated. A = 2017- 2018 CTL norming study. B = 2018-2019 CTL norming study. From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Test-Retest Reliability

Test-Retest Reliability describes the correlation between scores for the same student, same assessment, administered during two different benchmark periods. In similarity to delayed alternate form reliability, the amount of time between the test and retest was roughly three months. The results from test-retest reliability were expected to be similar to delayed alternate form reliability due to the amount of time given between assessment periods. During the three-month period between the test and retest, three months of classroom instruction interceded. Test-retest reliability was strong for ORF-WRC with an overall mean reliability of .91. In all grades, the median reliability for ORF-WRC ranged from .86 to .94. Test-retest reliability was adequate for ORF-ACC with an overall median reliability of .75. In all grades, the median reliability for ORF-ACC ranged from .74 to .90 (University of Oregon, 2018-2020). To view test-retest reliability for DIBELS 8th Edition please refer to Tables 7 and 8.

Table 7

Test-Retest Reliability Coefficients for DIBELS 8th Edition Oral Reading Fluency-Words Read

Correctly

Grade	Benchmark period	N	r	CI
First	1:2	156	.92	.89–.94
	1:3	123	.88	.83–.91
	2:3	164	.94	.92–.95
	Median		.92	.89–.94
Second	1:2	150	.87	.83–.91
	1:3	116	.85	.79–.90
	2:3	148	.93	.90–.95
	Median		.87	.83–.91
Third	1:2	159	.94	.91–.95
	1:3	110	.92	.89–.95
	2:3	156	.94	.91–.95
	Median		.94	.91–.95
Fourth	1:2	274	.91	.89–.93
	1:3	259	.90	.87–.92
	2:3	316	.88	.86–.90
	Median		.90	.87–.92
Fifth	1:2	229	.91	.89–.93
	1:3	221	.87	.83–.90
	2:3	298	.91	.89–.93
	Median		.91	.89–.93
Sixth	1:2	169	.91	.89–.94
	1:3	158	.91	.87–.93
	2:3	219	.93	.91–.95
	Median		.91	.89–.94
Seventh	1:2	79	.90	.84–.93
	1:3	65	.86	.78–.91
	2:3	121	.86	.81–.90
	Median		.86	.81–.90
Eighth	1:2	67	.91	.86–.94
	1:3	67	.92	.87–.95
	2:3	96	.93	.90–.95
	Median		.92	.87–.95
Median			.91	.89–.93

Notes: The same form was administered in the benchmark periods indicated. All coefficients come from Sample A (i.e., 2017-2018 CTL norming study). From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Table 8

Test-Retest Reliability Coefficients for DIBELS 8th Edition Oral Reading Fluency-Accuracy

Grade	Benchmark period	N	r	CI
First	1:2	156	.80	.74–.85
	1:3	123	.49	.34–.61
	2:3	164	.74	.67–.81
	Median		.74	.67–.81
Second	1:2	150	.75	.67–.81
	1:3	116	.75	.67–.81
	2:3	148	.83	.78–.88
	Median		.75	.67–.81
Third	1:2	159	.86	.81–.90
	1:3	110	.74	.64–.82
	2:3	156	.80	.73–.85
	Median		.80	.73–.85
Fourth	1:2	274	.83	.79–.87
	1:3	259	.75	.70–.80
	2:3	316	.75	.70–.79
	Median		.75	.70–.80
Fifth	1:2	229	.79	.73–.83
	1:3	221	.79	.73–.83
	2:3	298	.83	.80–.87
	Median		.79	.73–.83
Sixth	1:2	169	.76	.69–.82
	1:3	158	.60	.49–.69
	2:3	219	.74	.67–.79
	Median		.74	.67–.79
Seventh	1:2	79	.90	.84–.93
	1:3	65	.95	.93–.97
	2:3	121	.84	.78–.89
	Median		.90	.84–.93
Eighth	1:2	67	.84	.75–.90
	1:3	67	.79	.68–.86
	2:3	96	.83	.75–.88
	Median		.83	.75–.88
Median			.75	.70–.81

Notes: The same form was administered in the benchmark periods indicated. All coefficients come from Sample A (i.e., 2017-2018 CTL norming study). From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Standard Error of Measurement

Standard error of measurement (SEM) uses a classical test theory approach. To obtain the SEM score the standard deviation for each measure is multiplied by the square root of one minus the reliability for each measure. For ORF-WRC and ORF-ACC, the median concurrent alternate form reliability for each grade level was used. For DIBELS 8 composite score, the median delayed alternate form reliability was used. For this reliability form, the best reliability will have the smallest SEM score. For the purposes of this study, we will look at the reliability of the SEMs in first grade. For ORF-WRC, the SEM scores are 9-11. For ORF-ACC, the SEM scores are 5-10. For DIBELS 8 composite score, the SEM scores are 9-14 (University of Oregon, 2018-2020). To view standard error of measurement for DIBELS 8th Edition please refer to Table 9.

Table 9

Standard Errors of Measurement for DIBELS 8th Edition by Grade, Subtest, and Time of Year

Grade	Subtest	Beginning	Middle	End
Kindergarten	LNF	8.07	9.30	8.39
	PSF	5.22	7.74	7.18
	NWF-CLS	4.76	6.50	7.37
	NWF-WRC	1.73	2.79	3.31
	WRF	1.23	2.14	2.81
	Composite	24.69	16.96	18.42
First	LNF	9.03	10.65	10.32
	PSF	6.71	7.24	7.52
	NWF-CLS	9.58	10.60	13.62
	NWF-WRC	3.42	3.96	4.91
	WRF	2.94	4.06	4.95
	ORF	5.31	6.36	8.11
	ORF-ACC	9.53	8.72	5.36
	Composite	8.78	10.49	13.60
Second	NWF-CLS	11.68	13.10	13.81
	NWF-WRC	3.97	4.62	4.62
	WRF	5.12	5.58	6.16
	ORF	8.54	9.92	10.59
	ORF-ACC	6.54	5.51	4.01
	Maze	3.56	3.43	4.22
	Composite	10.18	12.45	13.30
Third	NWF-CLS	14.26	17.30	17.49
	NWF-WRC	3.88	4.74	4.77
	WRF	5.14	5.52	7.40
	ORF	10.46	10.67	10.28
	ORF-ACC	4.64	3.72	2.20
	Maze	3.56	4.71	4.54
	Composite	10.85	12.81	12.70
Fourth	ORF	9.33	12.74	9.50
	ORF-ACC	4.08	2.93	3.03
	Maze	4.27	4.24	5.36
	Composite	10.10	13.75	10.50
Fifth	ORF	11.23	10.42	11.09
	ORF-ACC	3.51	3.43	1.45
	Maze	5.57	4.58	5.22
	Composite	14.63	13.52	15.10

Grade	Subtest	Beginning	Middle	End
Sixth	ORF	10.84	10.23	12.34
	ORF-ACC	4.56	3.02	3.76
	Maze	3.69	4.53	3.70
	Composite	12.78	12.47	13.30
Seventh	ORF	10.32	11.65	12.79
	ORF-ACC	1.54	1.87	1.66
	Maze	5.30	6.30	5.87
	Composite	10.67	12.53	14.30
Eighth	ORF	9.37	9.55	10.23
	ORF-ACC	2.08	1.93	1.33
	Maze	5.03	5.45	6.71
	Composite	8.94	9.99	10.20

Notes: SEMs were calculated using median concurrent alternate form reliability for a grade and the standard deviation (SD) for each benchmark period. Medians and SDs were drawn from Samples A and B. From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Validity of DIBELS 8

To ensure validity the intended construct of DIBELS 8th Edition has been captured, concurrent and predictive validity evidence was produced. Within concurrent validity, a correlation between subtests from DIBELS 8th Edition and the corresponding subtest from previous versions (DIBELS Next) was evaluated. The subtests were evaluated with external criterion measures and the other DIBELS 8 subtests. To validate the use of a measure for predicting performance and later period, predictive validation was used. An evaluation of screening accuracy is provided to ensure each measure is operating as proposed (University of Oregon, 2018-2020).

Correlations with DIBELS Next

Concurrent validity suggests that there is an equivalence between DIBELS Next and DIBELS 8th Editions. When two like constructs are measured, the correlation between the two is

expected to be high. There is a strong correlation with ORF-WRC and ORF- ACC scores between DIBELS Next and DIBELS 8th Edition. In all grades, the concurrent validity coefficients for ORF-WRC were .90 and above. In all grades, the concurrent validity coefficients for ORF-ACC ranged between .76 and .99 (University of Oregon, 2018-2020). To view the correlation between the DIBELS 8th Edition and DIBELS Next please refer to Tables 10 and 11.

Table 10

Concurrent Validity Coefficients for DIBELS 8th Edition Oral Reading Fluency-Words Read

Correctly

Grade	Period	r	N	CI
First	2	.93	227	.91–.95
	3	.94	188	.92–.96
Second	1	.83	173	.77–.87
	2	.95	192	.93–.96
	3	.97	25	.92–.98
Third	1	.92	100	.89–.95
	2	.90	209	.87–.92
	3	.90	176	.87–.93
Fourth	1	.90	35	.82–.95
	2	.90	37	.81–.95
	3	.92	58	.87–.95
Fifth	1	.95	51	.91–.97
	2	.93	84	.89–.95
	3	.98	25	.94–.99
Sixth	2	.93	40	.88–.96

Notes: Period 1 = Beginning of year. 2 = Middle of year. 3 = End of year. All coefficients come from Sample A (i.e., 2017-2018 CTL norming study). From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Table 11

Concurrent Validity Coefficients for DIBELS 8th Edition Oral Reading Fluency-Accuracy

Sixth	2	.91	30	.82–.96

Grade	Period	*r*	*N*	CI
First	2	.89	196	.86–.89
	3	.84	163	.78–.88
Second	1	.79	131	.71–.84
	2	.90	171	.87–.92
	3	.98	24	.95–.99
Third	1	.89	73	.83–.93
	2	.76	186	.70–.82
	3	.69	154	.60–.77
Fourth	1	.85	29	.70–.93
	2	.89	26	.77–.95
	3	.88	46	.78–.93
Fifth	1	.90	41	.81–.94
	2	.99	23	.97–.99

Notes: Period 1 = Beginning of year. 2 = Middle of year. 3 = End of year. All coefficients come from Sample A (i.e., 2017-2018 CTL norming study). From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Correlations with External Criterion Measures

Four criterion measures were used to prove validity of the DIBELS 8th Edition. The four

evaluated criterion measures given in the same benchmark period to ensure validity were

DIBELS Next Composite score, the Comprehensive Test of Phonological Processing-2nd Edition

(CTOPP-2) composite scores, Iowa Assessment Total Reading, and Iowa Assessment Word

Analysis raw scores. For the purposes of this study, we will exclude discussing the

Comprehensive Test of Phonological Processing-2nd Edition (CTOPP-2) composite scores. This

criterion measure is excluded because this specific measure is used to demonstrate correlations with DIBELS 8 subtests that are not utilized in this study (University of Oregon, 2018-2020).

Strong correlations occurred between DIBELS 8 subtests and DIBELS Next composite scores. This suggests that the measurements in both editions are highly similar. A strong correlation occurred between ORF-WRC and ORF- ACC scores and DIBELS Next composite scores. In all grades, the concurrent validity coefficients for ORF-WRC .74 or above. In all grades, the concurrent validity coefficients for ORF-ACC ranged between .63 and .68. In all grades, the concurrent validity coefficients for DIBELS 8 composite score ranged between .78 and .87 (University of Oregon, 2018-2020).

Relationships between DIBELS 8 subtests and Iowa Total Reading Assessment and the Iowa Word Analysis vary in correlation showing a stronger correlation with the Iowa Total Reading Assessment. Regarding correlations between DIBELS 8 subtest and the Iowa Total Reading Assessment, in all grades, the concurrent validity coefficients for ORF-WRC ranged between .41 and .82. In all grades, the concurrent validity coefficients for ORF-ACC ranged between .22 and .76. In all grades, the concurrent validity coefficients for DIBELS 8 composite score ranged between .42 and .79. Regarding correlations between DIBELS 8 subtest and the Iowa Word Analysis Assessment, in all grades, the concurrent validity coefficients for ORF-WRC ranged between .24 and .78. In all grades, the concurrent validity coefficients for ORF-ACC ranged between .14 and .63. In all grades, the concurrent validity coefficients for DIBELS 8 composite score ranged between .32 and .78 (University of Oregon, 2018-2020). To view correlations between ORF-WRC, ORF- ACC, and DIBELS 8 Composite Score and the selected external criterion measures, please refer to Tables 12, 13, and 14.

Table 12

Concurrent Criterion Validity Coefficients for DIBELS 8th Edition Oral Reading Fluency-Words

Read Correctly

Grade	Criterion	Sample	Period	N	r	CI
First	DIBELS Next composite	A	1	154	.75	.67–.81
			2	196	.91	.88–.93
			3	163	.91	.88–.94
		D	3	302	.88	.85–.90
	Iowa Total Reading	A	3	116	.82	.75–.87
		B	3	126	.71	.61–.79
	Iowa Word Analysis	A	3	118	.67	.55–.76
		B	3	102	.51	.35–.64
Second	DIBELS Next composite	A	1	131	.84	.78–.88
			2	130	.87	.82–.90
		D	3	197	.84	.79–.88
	Iowa Total Reading	A	3	87	.71	.59–.80
		B	1	83	.77	.66–.84
			3	190	.80	.74–.84
	Iowa Word Analysis	A	3	89	.60	.45–.72
		B	3	158	.78	.71–.84
Third	DIBELS Next composite	A	1	73	.89	.83–.93
			2	128	.83	.77–.88
			3	96	.83	.75–.88
		D	3	216	.74	.67–.80
	Iowa Total Reading	A	3	90	.58	.42–.70
		B	1	93	.72	.61–.81
			3	150	.73	.64–.80
	Iowa Word Analysis	A	3	72	.24	.01–.45
		B	1	51	.48	.23–.67
			3	115	.70	.60–.78
Fourth	Iowa Total Reading	A	3	91	.61	.47–.73
		B	1	96	.71	.60–.80
			3	165	.74	.66–.80
Fifth	Iowa Total Reading	A	3	59	.65	.48–.78
		B	1	109	.41	.24–.55
			3	148	.70	.60–.77
Sixth	Iowa Total Reading	A	3	82	.67	.52–.77
		B	3	152	.64	.53–.72
Seventh	Iowa Total Reading	A	3	91	.54	.38–.67
		B	3	150	.70	.61–.78

Grade	Criterion	Sample	Period	N	r	CI
Eighth	Iowa Total Reading	A	3	77	.59	.42–.72
		B	3	106	.60	.46–.71

Notes: 1 = Beginning of year. 2 = Middle of year. 3 = End of year. A = 2017-2018 CTL norming study. B = 2018-2019 CTL norming study. D = 2018-2019 Amplify study. From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Table 13

Concurrent Criterion Validity Coefficients for DIBELS 8th Edition Oral Reading Fluency-

Accuracy

Grade	Criterion	Sample	Period	N	r	CI
First	DIBELS Next composite	A	1	154	.76	.69–.82
			2	196	.78	.72–.83
			3	163	.76	.68–.82
		D	3	302	.82	.77–.85
	DIBELS Next NWF-CLS	A	1	166	.67	.58–.75
	Iowa Total Reading	A	3	116	.61	.48–.71
		B	3	126	.49	.34–.61
	Iowa Word Analysis	A	3	118	.60	.47–.71
		B	3	102	.33	.15–.50
Second	DIBELS Next composite	A	1	131	.63	.52–.73
			2	130	.68	.57–.76
		D	3	197	.65	.56–.73
	Iowa Total Reading	A	3	87	.48	.30–.62
		B	1	83	.76	.65–.84
			3	190	.58	.47–.66
	Iowa Word Analysis	A	3	87	.33	.13–.50
		B	3	158	.63	.52–.71
Third	DIBELS Next composite	A	1	73	.68	.53–.78
			2	128	.68	.58–.76
			3	96	.55	.39–.67
		D	3	216	.37	.25–.48
	Iowa Total Reading	A	3	90	.36	.17–.53
		B	1	93	.63	.48–.74
			3	150	.38	.22–.50
	Iowa Word Analysis	A	3	72	.14	-.10–.36
		B	1	51	.37	.11–.59
			3	115	.27	.09–.43

Grade	Criterion	Sample	Period	N	r	CI
Fourth	Iowa Total Reading	A	3	91	.37	.17–.53
		B	1	96	.50	.34–.64
			3	165	.45	.32–.57
Fifth	Iowa Total Reading	A	3	59	.22	-.04–.45
		B	1	109	.53	.46–.60
			3	148	.45	.31–.57
Sixth	Iowa Total Reading	A	3	82	.49	.31–.64
		B	3	152	.39	.24–.52
Seventh	Iowa Total Reading	A	3	91	.29	.09–.47
		B	3	150	.45	.31–.57
Eighth	Iowa Total Reading	A	3	77	.43	.22–.59
		B	3	106	.52	.37–.65

Notes: 1 = Beginning of year. 2 = Middle of year. 3 = End of year. A = 2017-2018 CTL norming study. B = 2018-2019 CTL norming study. D = 2018-2019 Amplify study. From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Table 14

Concurrent Criterion Validity Coefficients for DIBELS 8th Edition Composite

Grade	Criterion	Sample	Period	N	r	CI
Kindergarten	DIBELS Next composite	D	3	321	.85	.81–.88
	Iowa Total Reading	B	3	127	.61	.48–.71
	Iowa Word Analysis	B	3	128	.32	.16–.47
First	DIBELS Next composite	D	3	302	.87	.85–.90
	Iowa Total Reading	B	3	122	.68	.58–.77
	Iowa Word Analysis	B	3	98	.45	.27–.59
Second	DIBELS Next composite	D	3	193	.78	.72–.83
	Iowa Total Reading	B	1	80	.79	.69–.86
			3	179	.76	.69–.81
	Iowa Word Analysis	B	3	153	.78	.71–.83
Third	DIBELS Next composite	D	3	194	.70	.62–.76
	Iowa Total Reading	B	1	91	.73	.61–.81
			3	143	.74	.66–.81
	Iowa Word Analysis	B	1	50	.51	.27–.69
			3	115	.71	.61–.79
Fourth	Iowa Total Reading	B	1	95	.71	.60–.80
			3	157	.74	.66–.80

Grade	Criterion	Sample	Period	N	r	CI
Fifth	Iowa Total Reading	B	1	107	.42	.25–.57
			3	109	.67	.55–.76
Sixth	Iowa Total Reading	B	3	94	.52	.35–.65
Seventh	Iowa Total Reading	B	3	93	.71	.59–.80

Notes: 1 = Beginning of year. 2 = Middle of year. 3 = End of year. A = 2017-2018 CTL norming study. B = 2018-2019 CTL norming study. D = 2018-2019 Amplify study. From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Correlations Among DIBELS 8 Subtests

An additional way DIBELS 8th Edition ensures validity is to guarantee the correlation between the DIBELS 8th Edition subtests. All DIBELS 8th Edition subtests should measure the underlying construct of reading. For the purposes of this study, the researcher will only discuss correlations among DIBELS 8th Edition subtests at the beginning and end of first grade. Correlations between all subtests are positive, between .53 and .91, with exception of correlation to Phoneme Segmentation Fluency (PSF), .09 and .33. The strongest relationships occur between subtests which assess similar constructs. This will explain why a subtest that segments phonemes in words would not correlate with subtests expecting fluency (University of Oregon, 2018-2020). To view the correlation between the DIBELS 8 subtests at the beginning and end of first grade, please refer to Table 15.

Table 15

Correlations among DIBELS 8th Edition Subtests at the Beginning and End of First Grade

	LNF	NWF-CLS	NWF-WRC	ORF	ORF-ACC	PSF	WRF
LNF							
N		603	603	591	591	607	603
r		.67	.59	.53	.61	.33	.61
CI		.63–.72	.53–.64	.47–.59	.55–.66	.26–.40	.55–.65
NWF-CLS							
N	583		603	591	591	604	602
r	.63		.90	.77	.70	.26	.83
CI	.58–.68		.88–.91	.74–.80	.66–.74	.18–.33	.80–.85
NWF-WRC							
N	583	587		591	591	604	602
r	.57	.94		.71	.62	.23	.79
CI	.51–.62	.93–.95		.67–.75	.57–.67	.15–.30	.75–.82
ORF							
N	583	583	583		593	592	593
r	.64	.81	.76		.77	.09	.91
CI	.59–.68	.78–.84	.72–.79		.73–.80	.01–.17	.90–.93
ORF–ACC							
N	583	583	583	587		592	593
r	.63	.56	.54	.68		.26	.75
CI	.58–.68	.50–.61	.48–.60	.63–.72		.19–.34	.71–.78
PSF							
N	583	587	587	587	587		604
r	.26	.24	.27	.12	.28		.18
CI	.18–.33	.16–.31	.19–.34	.04–.20	.21–.36		.10–.25
WRF							
N	583	586	586	587	587	591	
r	.62	.83	.77	.94	.63	.12	
CI	.57–.67	.81–.86	.74–.80	.93–.95	.58–.68	.04–.19	

Notes: Correlations above the diagonal are for beginning-of-year benchmark forms, and those below the diagonal are for end-of-year benchmark forms. Data is drawn from Sample B (i.e., the 2018-2019 CTL norming study). From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Predictive Validity

When an instrument can predict scores on assessments observed at a later time, validity is established. This type of validity evidence is extremely important to the DIBELS 8th Edition because the measures are used as a screening and risk prevention tool. DIBELS 8 was evaluated for validity using the receiver operating characteristic (ROC) curve analyses and slopes for progress monitoring. For the purpose of this study, the researcher will be discussing validity through the use of receiver operating characteristic curve analyses because progress monitoring is not included in this study (University of Oregon, 2018-2020).

Predictive Correlations

DIBELS 8 subtests used in this study were correlated with DIBELS Next composite, Iowa Total Reading Assessment and the Iowa Word Analysis Assessment to establish validity. Predictive validity with DIBELS Next was strong while predictive validity with both Iowa assessments varied in strength. The stronger correlation occurs between measures where similar skills were assessed. Since first grade students are the population of interest for this study, the research will only include the correlations between DIBELS 8th Edition and DIBELS Next composite, Iowa Total Reading Assessment and the Iowa Word Analysis Assessment (University of Oregon, 2018-2020).

The correlation between ORF-WRC and DIBELS Next composite score ranged from .75 to .88. The correlation between ORF-WRC and Iowa Total Reading Assessment ranged from .62 to .79. The correlation between ORF-WRC and Iowa Word Analysis Assessment ranged from .37 to .69. The results of these correlations spotlight the strongest correlations with DIBELS 8th Edition ORF- WRC subtest to be DIBELS Next composite score (University of Oregon, 2018-2020).

The correlation between ORF-ACC and DIBELS Next composite score ranged from .77 to .87. The correlation between ORF-ACC and Iowa Total Reading Assessment ranged from .62 to .78. The correlation between ORF-ACC and Iowa Word Analysis Assessment ranged from .42 to .72. The results of these correlations showcase the strongest correlations with DIBELS 8th Edition ORF-ACC subtest to be DIBELS Next composite score (University of Oregon, 2018-2020).

The correlation between DIBELS 8 composite score and DIBELS Next composite score was .77. The correlation between DIBELS 8 composite score and Iowa Total Reading Assessment ranged from .63 to .68. The correlation between DIBELS 8 composite score and Iowa Word Analysis Assessment ranged from .39 to .42. The results of these correlations spotlight the strongest correlations with DIBELS 8th Edition composite score to be DIBELS Next composite score (University of Oregon, 2018-2020). To view predictive correlations between ORF-WRC, ORF- ACC, and DIBELS 8 Composite Score and the selected external criterion measures, please refer to Tables 16, 17, and 18.

Table 16

Predictive Validity Coefficients of DIBELS 8th Edition Oral Reading Fluency-Words Read

Correctly

Grade	Criterion	Sample	Period	N	r	CI
First	DIBELS Next composite	A	1	141	.82	.76–.87
			2	203	.88	.84–.91
		D	1	293	.75	.70–.80
			2	287	.76	.70–.80
	Iowa Total Reading	A	1	59	.73	.58–.83
			2	115	.79	.71–.85
		B	1	109	.62	.48–.72
			2	130	.68	.57–.76
	Iowa Word Analysis	A	1	59	.60	.40–.74
			2	117	.69	.58–.77
		B	1	90	.37	.18–.54
			2	104	.43	.25–.57
Second	DIBELS Next composite	A	1	121	.79	.71–.85
			2	140	.89	.85–.92
		D	1	201	.80	.74–.84
			2	195	.79	.74–.84
	Iowa Total Reading	A	1	137	.63	.51–.72
			2	163	.74	.66–.80
		B	1	127	.68	.58–.77
			2	185	.77	.70–.82
	Iowa Word Analysis	A	1	129	.55	.41–.66
			2	137	.64	.53–.73
		B	1	97	.62	.48–.73
			2	152	.73	.65–.80

Grade	Criterion	Sample	Period	N	r	CI
Third	Iowa Total Reading	A	1	61	.74	.61–.84
			2	132	.69	.59–.77
		B	1	86	.56	.39–.69
			2	142	.74	.66–.81
	Iowa Word Analysis	A	2	96	.50	.33–.64
		B	1	54	.62	.43–.76
			2	110	.69	.57–.78
Fourth	Iowa Total Reading	A	1	55	.53	.30–.70
			2	55	.67	.49–.79
		B	1	110	.69	.57–.77
			2	164	.80	.73–.85
Fifth	Iowa Total Reading	A	1	128	.63	.52–.73
			2	99	.69	.57–.78
		B	1	95	.46	.29–.61
			2	144	.73	.65–.80
Sixth	Iowa Total Reading	A	1	49	.50	.25–.68
			2	86	.65	.50–.75
		B	1	44	.69	.50–.82
			2	149	.75	.67–.81
Seventh	Iowa Total Reading	A	1	59	.52	.31–.69
			2	101	.57	.42–.69
		B	2	149	.74	.65–.80
Eighth	Iowa Total Reading	A	1	46	.69	.50–.82
			2	85	.48	.30–.63
		B	1	43	.77	.60–.87
			2	99	.63	.49–.73

Notes: 1 = Beginning of year. 2 = Middle of year. 3 = End of year. A = 2017-2018 CTL norming study. B = 2018-2019 CTL norming study. C = 2018-2019 CTL dyslexia subsample. D = 2018-2019 Amplify study. CTOPP-2 composites are derived from measures of rapid naming of colors and objects (non-symbolic) and digits and letters (symbolic). From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Table 17

Predictive Validity Coefficients of DIBELS 8th Edition Oral Reading Fluency-Accuracy

Grade	Criterion	Sample	Period	N	r	CI
First	DIBELS Next composite	A	1	141	.87	.82–.90
			2	203	.83	.78–.87
		D	1	293	.77	.72–.82
			2	285	.77	.71–.81
	Iowa Total Reading	A	1	59	.77	.71–.89
			2	115	.78	.70–.84
		B	1	109	.65	.53–.75
			2	130	.62	.50–.71
	Iowa Word Analysis	A	1	59	.72	.56–.82
			2	117	.72	.62–.80
		B	1	90	.50	.32–.64
			2	104	.42	.25–.57
Second	DIBELS Next composite	A	1	121	.70	.60–.78
			2	140	.69	.59–.77
		D	1	198	.64	.55–.72
			2	195	.70	.63–.77
	Iowa Total Reading	A	1	137	.61	.49–.70
			2	163	.51	.38–.61
		B	1	127	.67	.56–.76
			2	185	.64	.54–.71
	Iowa Word Analysis	A	1	129	.46	.31–.59
			2	137	.54	.41–.65
		B	1	97	.65	.52–.76
			2	152	.63	.52–.72
Third	DIBELS Next composite	A	1	81	.76	.65–.84
			2	126	.70	.70–.78
		D	1	210	.64	.55–.71
			2	214	.57	.47–.66
	Iowa Total Reading	A	1	61	.67	.51–.79
			2	132	.53	.53–.64
		B	1	86	.49	.31–.63
			2	142	.54	.41–.65
	Iowa Word Analysis	A	2	96	.44	.44–.59
		B	1	54	.40	.15–.60
			2	110	.51	.36–.64

Grade	Criterion	Sample	Period	N	r	CI
Fourth	Iowa Total Reading	A	1	55	.44	.20–.63
			2	55	.37	.11–.58
		B	1	110	.55	.41–.67
			2	164	.48	.36–.59
Fifth	Iowa Total Reading	A	1	128	.46	.31–.59
			2	99	.41	.23–.56
		B	1	95	.49	.32–.63
			2	144	.51	.38–.62
Sixth	Iowa Total Reading	A	1	49	.46	.20–.65
			2	86	.53	.36–.67
		B	1	44	.48	.21–.68
			2	149	.61	.50–.70
Seventh	Iowa Total Reading	A	1	59	.29	.04–.51
			2	101	.36	.17–.52
		B	2	149	.34	.19–.47
Eighth	Iowa Total Reading	A	1	46	.44	.17–.65
			2	85	.23	.02–.42
		B	1	43	.47	.19–.67
			2	99	.47	.30–.61

Notes: 1 = Beginning of year. 2 = Middle of year. 3 = End of year. A = 2017-2018 CTL norming study. B = 2018-2019 CTL norming study. C = 2018-2019 CTL dyslexia subsample. D = 2018-2019 Amplify study. CTOPP-2 composites are derived from measures of rapid naming of colors and objects (non-symbolic) and digits and letters (symbolic). From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Table 18

Predictive Validity Coefficients of DIBELS 8th Edition Composite

Grade	Criterion	Sample	Period	N	r	CI
Kindergarten	DIBELS Next composite	D	1	306	.68	.65–.76
			2	309	.85	.81–.88
	Iowa Total Reading	B	1	82	.59	.43–.72
			2	110	.52	.37–.64
	Iowa Word Analysis	B	1	84	.24	.02–.43
			2	111	.29	.11–.45
First	DIBELS Next Composite	B	1	293	.80	.75–.84
			2	285	.78	.73–.82
	Iowa Total Reading	B	1	108	.63	.50–.73
			2	130	.66	.56–.75
	Iowa Word Analysis	B	1	90	.39	.20–.55
			2	104	.42	.25–.57
Second	DIBELS Next Composite	D	2	190	.77	.71–.82
	Iowa Total Reading	B	1	122	.68	.58–.77
			2	144	.72	.63–.79
	Iowa Word Analysis	B	1	91	.70	.58–.79
			2	135	.71	.61–.78
Third	DIBELS Next Composite	D	2	211	.74	.67–.79
	Iowa Total Reading	B	1	82	.54	.36–.68
			2	138	.75	.67–.81
	Iowa Word Analysis	B	1	51	.65	.46–.79
			2	107	.69	.58–.78
Fourth	Iowa Total Reading	B	1	105	.70	.59–.79
			2	159	.80	.74–.85
Fifth	Iowa Total Reading	B	1	94	.47	.30–.62
			2	133	.73	.64–.80
Sixth	Iowa Total Reading	B	1	42	.69	.49–.82
			2	100	.66	.54–.76
Seventh	Iowa Total Reading	B	1	36	.78	.61–.88
			2	91	.77	.67–.84
Eighth	Iowa Total Reading	B	1	43	.77	.61–.87
			2	46	.74	.58–.85

Notes: 1 = Beginning of year. 2 = Middle of year. 3 = End of year. A = 2017-2018 CTL norming study. B = 2018-2019 CTL norming study. C = 2018-2019 CTL dyslexia subsample. D = 2018-2019 Amplify study. CTOPP-2 composites are derived from measures of rapid naming of colors and objects (non-symbolic) and digits and letters (symbolic). From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Screen Accuracy

ROC curve analyses were utilized to test the validity of test classification accuracy. Students are placed in specific risk statuses based on cut-scores for each individual DIBELS 8 subtests. Screening accuracy is used to describe the relation between true positive and false positive rates. Screening accuracy ensures that students who are not on track are correctly identified, and students indicated as not being on track when they really are on track to meeting end of year proficiency goals are recognized. The researcher will include the area under the curve (AUC) estimate for ORF-WRC, ORF-ACC, and DIBELS 8 composite score as a predictor of performance on the Iowa Total Reading Assessment percentile ranks. An AUC score of 1.0 indicates that the test is a perfect predictor in classifying students into the at-risk or some risk category and the prediction of student placement in other criterion measures of reading will be high (University of Oregon, 2018-2020).

The ROC curve results show for ORF-WRC an AUC range between .80 to .81 for students classified in the at-risk category and a range between .78 and .81 for students classified in the some risk category. The ROC curve results show for ORF-ACC an AUC range between .85 to .87 for students classified in the at-risk category and a range between .76 and .81 for students classified in the some risk category. The ROC curve results show for DIBELS 8 composite score an AUC range between .79 to .81 for students classified in the some risk category. The at-risk category coincides with the 20th percentile and the some risk category coincides with the 40th percentile in regard to the percentile ranks of the criterion based measure, the Iowa Total Reading Assessment. These results showcase that the validity of risk status classification is high in all three assessment measures (University of Oregon, 2018-2020). To

view the ROC curve results between DIBELS 8 first grade subtests predicting Iowa Total

Reading, please refer to Table 19.

Table 19

ROC Curve Results for DIBELS 8 First Grade Subtests Predicting Iowa Total Reading

Measure	Criterion	Period	N	AUC	AUC CI	Sensitivity	Specificity
LNF	20th	1	123	0.71	0.61-0.82	0.679	0.621
		2	137	0.73	0.63-0.82	0.714	0.637
		3	134	0.73	0.64-0.83	0.719	0.676
	40th	1	123	0.67	0.58-0.77	0.800	0.413
		2	137	0.70	0.62-0.79	0.704	0.561
		3	134	0.69	0.60-0.78	0.672	0.627
PSF	20th	1	122	0.67	0.57-0.77	0.643	0.628
		2	137	0.68	0.58-0.78	0.600	0.588
		3	134	0.69	0.60-0.79	0.688	0.637
	40th	1	122	0.62	0.52-0.72	0.783	0.484
		2	137	0.64	0.54-0.73	0.718	0.439
		3	134	0.62	0.53-0.72	0.597	0.597
NWF-CLS	20th	1	122	0.79	0.71-0.88	0.714	0.702
		2	137	0.79	0.71-0.86	0.771	0.686
		3	130	0.82	0.73-0.90	0.800	0.690
	40th	1	122	0.72	0.63-0.81	0.900	0.371
		2	137	0.74	0.66-0.83	0.859	0.439
		3	130	0.75	0.66-0.83	0.766	0.591
NWF-WRC	20th	1	122	0.74	0.66-0.82	0.750	0.596
		2	137	0.74	0.66-0.82	0.629	0.696
		3	130	0.75	0.66-0.84	0.733	0.680
	40th	1	122	0.71	0.62-0.80	0.950	0.403
		2	137	0.75	0.66-0.83	0.831	0.636
		3	130	0.73	0.64-0.81	0.766	0.545
WRF	20th	1	120	0.78	0.70-0.86	0.778	0.667
		2	137	0.82	0.76-0.90	0.829	0.725
		3	134	0.82	0.74-0.90	0.750	0.716
	40th	1	120	0.77	0.68-0.86	0.948	0.403
		2	137	0.78	0.70-0.86	0.817	0.652
		3	134	0.77	0.69-0.86	0.791	0.716
ORF	20th	1	113	0.82	0.75-0.90	0.769	0.724
		2	135	0.82	0.75-0.89	0.800	0.730
		3	132	0.84	0.77-0.91	0.750	0.810
	40th	1	113	0.81	0.73-0.89	0.944	0.407
		2	135	0.78	0.70-0.86	0.943	0.431
		3	132	0.80	0.72-0.88	0.776	0.738

Measure	Criterion	Period	N	AUC	AUC CI	Sensitivity	Specificity
ORF-ACC	20th	1	113	0.81	0.73-0.89	0.846	0.701
		2	135	0.80	0.72-0.88	0.714	0.770
		3	132	0.81	0.73-0.88	0.750	0.700
	40th	1	113	0.81	0.73-0.89	0.926	0.525
		2	135	0.76	0.68-0.85	0.929	0.400
		3	132	0.80	0.72-0.88	0.791	0.723
Composite	20th	1	112	0.86	0.79-0.93	0.808	0.791
		2	135	0.85	0.78-0.91	0.771	0.790
		3	128	0.87	0.80-0.94	0.767	0.878
	40th	1	112	0.79	0.71-0.88	0.778	0.690
		2	135	0.81	0.73-0.89	0.829	0.677
		3	128	0.81	0.73-0.89	0.797	0.781

Notes: Criteria were percentile ranks on end-of-year administration of criterion measure. Data is drawn from Sample B (i.e., the 2018-2019 CTL norming study). 1 = Beginning of year. 2 = Middle of year. 3 = End of year. From University of Oregon's "Technical Manual," by Gina Bancarosa et al., 2018-2020.

Variables

The dependent variables examined in this study are the DIBELS 8 composite score, and the DIBELS 8 ORF-WRC and ORF-ACC score of the participating first grade students. The independent variables observed in this study consist of socioeconomic status, race, gender, and prior preschool enrollment. Socioeconomic status is divided into two categories, low SES and students who do not fall into the low SES category as indicated by the school's poverty index. Race is divided into two categories for this study, white/Caucasian and students of color. Gender will be described as either male or female. Preschool enrollment will be defined as attending public preschool or Head Start. Data collected for dependent variables will come from a reading database called mCLASS by Amplify, a company leading the way in next-generation curriculum and assessment. Data collected for independent variables will come from PowerSchool.

Data Collection and Analysis

Data Collection Procedures

During the DIBELS 8 BOY testing window, (August/September of 2021), ___ first grade students were assessed using all six DIBELS 8 BOY Benchmark subtests to obtain a composite score. Five out of the six subtests are used to calculate the DIBELS composite score. One of the six DIBELS 8 subtests included in the BOY assessment is the DIBELS Oral Reading Fluency (ORF) assessment. An ORF-WRC score and an ORF-ACC score are obtained from the DIBELS Oral Reading Fluency (ORF) assessment. Each subtest in one minute of length and all students are tested in an individual setting by a trained classroom teacher. To view the BOY DIBELS Oral Reading Fluency benchmark assessment, please refer to Appendix C. To view the BOY DIBELS Oral Reading Fluency scoring sheet, please refer to Appendix D.

In this study, measures for ethical protection of participants were followed before any data retrieval began. The Director of Program Evaluation and Assessment for the participating school district aided in the data collection process. The director gave the researcher a data source in the form of an excel workbook file. The file contained data for all first-grade students in the participating county. The data collected in the file consisted of student ID number, DIBELS 8 composite, ORF-WRC, and ORF- ACC scores. They also contained the following student demographic data: gender, race, and SES status. Lastly, if the child attended preschool, the type of preschool was included in the data file (Head Start or public).

The data collected for this study is non-identifiable student data to protect the rights and confidentiality of the participating student sample. The school district has chosen not to make the findings public. The data was archival in nature and did not present any physical or psychological risks to the participants. Once approval by the school district and Coastal

Carolina's Institutional Review Board (IRB) was obtained, permission was granted to collect

data requested by the researcher from the school district's Director of Program Evaluation and

Assessment. The data use agreement was received and is included in the appendix.

Data Analysis

Research Questions and Hypotheses

This quantitative causal-comparative study examines four research questions. Each

question has a null hypothesis and a hypothesis created by the researcher. Figure 10 showcases

the research questions and hypotheses.

Table 20

Research Questions and Hypotheses

Research Question	Null Hypothesis	Hypothesis
RQ1: How does the oral reading fluency of first grade students differ based on socioeconomic status?	**HP0:** There is no statistical significance between socioeconomic status and the oral reading fluency of first grade students.	**HP1:** There is a statistical significance between socioeconomic status and the oral reading fluency of first grade students.
RQ 2: How does the oral reading fluency of first grade students differ based on gender?	**HP0:** There is no statistical correlation between gender and the oral reading fluency of first grade students.	**HP2:** There is a statistical correlation between gender and the oral reading fluency of first grade students.
RQ3: What relationship is there between race and the oral reading fluency of first grade students?	**HP0:** There is no statistical correlation between race and the oral reading fluency of first grade students.	**HP3:** There is a statistical correlation between race and the oral reading fluency of first grade students.
RQ4: How does preschool enrollment influence oral reading fluency of first grade students?	**HP0:** There is no statistical influence between preschool enrollment and the oral reading fluency of first grade students.	**HP4:** There is a statistical influence between preschool enrollment and the oral reading fluency of first grade students.
RQ5: Which factors influence the oral reading fluency of first grade students?	**HP0:** There are no statistical significance between factors such as socioeconomic status, race, gender, and preschool enrollment and oral reading fluency of first grade students.	**HP5:** There is a statistical significance between factors such as socioeconomic status, race, gender, and preschool enrollment and oral reading fluency of first grade students.

Descriptive Statistics

The sample chosen for this study consists of first grade students who were assessed in the

BOY DIBELS 8 assessment window in August/September of the 2021-2022 school year who are

classified in the intensive or strategic category as indicated by the DIBELS 8th Edition cut scores.

The Standard deviation and mean will be computed for each of the following: DIBELS 8 composite score, ORF-WRC, and ORF-ACC for the intensive and then again for the strategic students. The standards deviation and mean will also be disaggregated into the following categories: White/Caucasian students, African American students, Other students, female, male, low SES, SES, students who attended Head Start, students who attended Child Development, and students who attended a public preschool program. The table consisting of all standard deviation and mean data will be included in chapter four.

Inferential Statistics

Microsoft Excel was used to compute the statistical analysis of each research question. A stepwise regression model was conducted for each outcome (DIBELS 8 composite score, ORF-WRC, and ORF-ACC) for each group of students, intensive and strategic. First, a correlation was run for each group of students (Intensive and strategic) for each outcome (DIBELS 8 composite score, ORF-WRC, and ORF-ACC) including all independent variables to explore which variables yielded the strongest correlation to the outcome.

Next, to gain information about variability, three stepwise regression models were conducted for each group of students. The first model was run with DIBELS composite score as the outcome. The second model was run with ORF-WRC as the outcome. Lastly, the third model was run with ORF-ACC as the outcome.

Step one of the first regression model, which was ran with DIBELS composite score as the outcome, included all the independent variables that are considered demographics: gender, race, and SES. Step two included the demographic and preschool variables. Step three included the demographic, preschool variables, and ORF-ACC data. Step four included the demographic, preschool variables, and ORF-WRC data. Step five included the demographic, preschool

variables, ORF-WRC data and ORF-ACC data. This stepwise regression model was conducted for both the intensive and strategic students.

The second stepwise regression model included a three-step process. Step one of the second regression model, which was ran with ORF-WRC as the outcome, included all the independent variables that are considered demographics: gender, race, and SES. Step two included the demographic and preschool variables. Step three included the demographic, preschool variables, and ORF-ACC data. This stepwise regression model was conducted for both the intensive and strategic students.

This third stepwise regression model also included a three-step process. Step one of the second regression model, which was ran with ORF-ACC as the outcome, included all the independent variables that are considered demographics: gender, race, and SES. Step two included the demographic and preschool variables. Step three included the demographic, preschool variables, and ORF-WRC data. This stepwise regression model was conducted for both the intensive and strategic students.

Throughout each step of the stepwise regression models, the significant f and p-value was examined for a value of less than 0.05. A significant f of less than 0.05 tell the researcher that the regression ran is a respectable model. A p-value of 0.05 demonstrations the significance or effect the variable has on the outcome. The R-Square was investigated to determine how much change was driven by the independent variables. Tables including the information regarding the stepwise regression models will be included in chapter four.

Conclusion

This chapter highlighted the research design while examining the setting and sample chosen for this study. Chapter three explained the instrumentation used, DIBELS 8 composite,

ORF-WRC, and ORF-ACC scores, and the reliability and validity of the instruments. The data collection process and statistical analysis for this study was explained. The data collected and descriptive and inferential statistical analyses performed allowed the research questions to be answered. Chapter four will provide an overview of the findings of the analyses.

Chapter 4: Findings

The statistical results of this study are shown descriptively and inferentially for both the intensive student sample and the strategic student sample. The total sample size for this study consists of 1230 first grade students. After reporting the descriptive statistics, this chapter analyzed the inferential statics. The researcher analyzed the correlations and used a bootstrap analysis and stepwise regression model to examine the variables that had the most statistically significant impact on the outcome.

Descriptive Statistics of the Sample

The statistical software package used by the researcher to analyze the descriptive statistics of the intensive and strategic sample was IBM Statistical Package for the Social Sciences, (SPSS). For each variable included in this study, the mean and standard deviation were calculated. The percentage was also calculated for all demographic variables and preschool enrollment status. All calculated information in regard to student outcomes are presented in Tables 20, 21, and 22.

Table 21

Descriptive Statistics for Intensive and Strategic Students:Composite Score

	Intensive				Strategic			
	N	*n*	*M*	*SD*	*N*	*n*	*M*	*SD*
Pupils in Poverty	732		311.93	6.46	498		324.73	2.55
In Poverty		525	311.91	6.26		357	324.65	2.54
Not in Poverty		207	311.97	6.95		141	324.95	2.56
Gender	732		311.93	6.46	498		324.73	2.55
Male		381	311.69	6.50		218	324.67	2.49
Female		351	312.20	6.40		280	324.78	2.60
Race	732		311.93	6.46	498		324.73	2.55
White		342	313.20	5.92		256	324.87	2.59
Student of Color		390	310.81	6.70		242	324.59	2.50
Preschool Enrollment	732		311.93	6.46	498		324.73	2.55
Preschool		257	313.19	5.14		209	324.72	2.52
No Preschool		475	311.25	6.98		289	324.74	2.57

Table 22

Descriptive Statistics for Intensive and Strategic Students: ORF-WRC

	Intensive				Strategic			
	N	*n*	*M*	*SD*	*N*	*n*	*M*	*SD*
All	732		6.71	4.91	498		9.3	2.95
Pupils in Poverty								
In Poverty		525	6.78	4.82		357	9.39	3.01
Not in Poverty		207	6.51	5.16		141	9.06	3.79
Gender	732		6.71	4.91	498		9.3	2.95
Male		381	6.66	4.95		218	9.22	3.02
Female		351	6.67	5.16		280	9.35	2.89
Race	732		6.71	4.91	498		9.3	2.95
White		342	7.52	4.82		256	9.26	3.04
Student of Color		390	6	4.89		242	9.33	2.85
Preschool Enrollment	732		6.71	4.91	498		9.3	2.95
Preschool		257	7.27	4.48		209	9.31	2.69
No Preschool		475	6.4	5.115		289	9.29	3.13

Table 23

Descriptive Statistics for Intensive and Strategic Students: ORF-ACC

	Intensive				Strategic			
	N	*n*	*M*	*SD*	*N*	*n*	*M*	*SD*
Pupils in Poverty	732		6.80	12.65	498		28.09	19.22
In Poverty		525	6.61	12.86		357	26.24	19.43
Not in Poverty		207	7.26	12.10		141	32.77	17.87
Gender	732		6.80	12.65	498		28.09	19.22
Male		381	5.72	11.11		218	29.5	18.97
Female		351	7.96	14.05		280	26.99	19.37
Race	732		6.80	12.65	498		28.09	19.22
White		342	8.67	13.16		256	29.9	18.06
Student of Color		390	5.15	11.95		242	26.17	20.23
Preschool Enrollment	732		6.80	12.65	498		28.09	19.22
Preschool		257	6.61	13.71		209	27.69	19.05
No Preschool		475	6.9	12.04		289	28.38	19.37

Descriptive Statistics for Intensive Students

The intensive sample consist of 52% ($n = 381$) male and 48% ($n = 351$) female students.

Out of the 732 intensive students, 72% ($n = 525$) are living in poverty and 28% ($n = 207$) are not.

The percentage of intensive students who are white is 47% ($n = 342$) and 53% ($n = 390$) are

students of color. Lastly, 35% ($n = 257$) of the intensive students were enrolled in a preschool

program and 65% ($n = 475$) were not. The average DIBELS 8 Composite Score of the intensive

sample is 312, the average ORF-WRC score is 6.7, and the average ORF-ACC score is 6.8.

Descriptive Statistics for Strategic Students

The strategic sample consists of 44% ($n = 381$) male and 56% ($n = 351$) female students.

Out of the 498 intensive students, 72% ($n = 525$) are living in poverty and 28% ($n = 207$) are not.

The percentage of intensive students who are white is 51% ($n = 342$) and 49% ($n = 390$) are

students of color. Lastly, 42% ($n = 257$) of the intensive students were enrolled in a preschool

program and 58% ($n = 475$) were not. The average DIBELS 8 Composite Score of the intensive

sample is 325, the average ORF-WRC score is 9.3, and the average ORF-ACC score is 28.09.

Assumption Checking

A box-whisker diagram was used to check the normality of the data. The box-whisker

diagrams showed the researcher outliers within the data sets. The researcher removed the outliers

with extreme values to ensure that the data would not be skewed. After the researcher, eliminated

the outliers, a histogram was conducted. The histograms showed that the data was not equally

distributed. To ensure that there would not be any significant effects on conclusions that could be

gathered from the data, the researchers addressed the issue of having unequally distributed data

by conducting a bootstrap analysis along with the stepwise regression analysis.

Correlation of Variables for Intensive Students

To check for multicollinearity, a bivariate Person's *r* correlation was conducted to analyze the relationships between the variables within this study and the outcomes of the intensive students. The analysis examined the relationship between DIBELS 8 composite score (*M* = 312, *SD* = 6.46) and ORF-WRC (*M* = 6.71, *SD* = 4.92), the relationship between DIBELS 8 composite score (*M* = 312, *SD* = 6.46) and ORF-ACC (*M* = 6.80, *SD* = 12.65), and the relationship between the ORF-WRC (*M* = 6.71, *SD* = 4.92) and ORF- ACC.

The results of the bivariate correlation indicated there was a statistically significant positive relationship between the DIBELS 8 composite scores and the ORF-WRC scores, *r*(730) = .53, *p* <.001. This indicated that the DIBELS 8 composite score increased as the ORF-WRC score increased. The effect size is large, accounting for 29% of the variance. The bivariate correlation results also indicated that there was a statistically significant positive relationship between DIBELS 8 composite scores and the ORF-ACC scores, *r*(730) = .34, *p* <.001. This indicated that the DIBELS 8 composite score increased as the ORF-ACC score increased. The two variables were strongly correlated with a medium effect size which accounted for 12% of the variance. A statistically significant positive relationship was also indicated by the bivariate correlation between the ORF-WRC scores and the ORF-ACC scores *r*(730) = .26, *p* <.001. This was an indication that the ORF-WRC score increased as the ORF-WRC score increased. The effect size is small, accounting for 7% of the variance. This analysis proves that multicollinearity does not exist within this study.

Correlation of Variables for Strategic Students

To check for multicollinearity, a bivariate Person's *r* correlation was conducted to analyze the relationships between the variables within this study and the outcomes of the

strategic students. The analysis examined the relationship between DIBELS 8 composite score

($M = 325$, $SD = 2.55$) and ORF-WRC ($M = 9.30$, $SD = 2.95$), the relationship between DIBELS 8

composite score ($M = 325$, $SD = 2.55$) and ORF-ACC ($M = 28.09$, $SD = 19.21$), and the

relationship between the ORF-WRC ($M = 9.30$, $SD = 2.95$) and ORF- ACC ($M = 28.09$, $SD = 19.21$).

The results of the bivariate correlation indicated there was a no statistically significant

relationship between the DIBELS 8 composite scores and the ORF-WRC scores, $r(496) = -.05$, $p = .241$. The bivariate correlation results indicated that there was a statistically significant positive

relationship between DIBELS 8 composite scores and the ORF-ACC scores, $r(496) = .40$, $p < .001$. This indicated that the DIBELS 8 composite score increased as the ORF-ACC score

increased. The two variables were strongly correlated with a medium effect size which accounted

for 16% of the variance. A statistically significant negative relationship was indicated by the

bivariate correlation between the ORF-WRC scores and the ORF-ACC scores $r(496) = -.30$, $p < .001$. This was an indication that the ORF-WRC score increased as the ORF-ACC score

decreased. The effect size is small, accounting for 9% of the variance. This analysis proves that

multicollinearity does not exist within this study.

Regression Results for Intensive Students

A bootstrap analysis, along with a stepwise multiple regression was conducted to

examine which variables were meaningful predictors to the indented outcomes. First, the

researcher analyzed the outcome of the DIBELS 8 composite score. The results of the stepwise

multiple regression indicated that model 1 was statistically significant, $F(3, 728) = 9.08$, $p < .001$, with an adjusted R^2 of .03. Within the model, student race was a statistically significant

predictor of the DIBELS 8 composite score, $t(728) = -5.10$, $p < .001$. The results of the stepwise

multiple regression also indicated model 2 as being statistically significant, $F(4,727) = 12.75$, $p <$ .001, with an adjusted R^2 of .06. Within model 2, student race, $t(727) = .552$, $p < .001$, and preschool enrollment, $t(727) = -4.79$, $p < .001$, were predictors of the DIBELS 8 composite score. Model 3 of the stepwise multiple regression indicated as being statistically significant, $F(5,726) = 65.51$, $p < .001$, with an adjusted R^2 of .31. Within the model, student race, $t(726) = -3.78$, $p < .001$, preschool enrollment, $t(726) = -3.92$, $p < .001$, and ORF-WRC, $t(726) = 16.08$, $p < .001$ were predictors of the DIBELS 8 composite score. Model 4 of the stepwise multiple regression indicated as being statistically significant, $F(5,726) = 28.74$, $p < .001$, with an adjusted R^2 of .16. Within the model, student race, $t(726) = -4.70$, $p < .001$, preschool enrollment, $t(726) = -4.97$, $p < .001$, and ORF-ACC, $t(726) = 9.31$, $p < .001$ were predictors of the DIBELS 8 composite score. The results of the stepwise multiple regression indicated model 5 as being statistically significant $F(6,725) = 65.18$, $p < .001$, with an adjusted R^2 of .35. Within model 5, student race, $t(725) = -3.24$, $p = .002$, preschool enrollment, $t(725) = -4.14$, $p < .001$, ORF-WRC, $t(725) = 14.38$, $p < .001$, and ORF-ACC, $t(725) = 6.64$, $p < .001$, were predictors of the DIBELS 8 composite score.

Next, the researcher used a bootstrap analysis, along with a stepwise multiple regression to analyze the outcome of ORF-WRC. The results of the stepwise multiple regression indicated that model 1 was statistically significant, $F(3, 728) = 6.55$, $p < .001$, with an adjusted R^2 of .02. Within the model, student race was a statistically significant predictor of ORF-WRC, $t(728) = -4.38$, $p < .001$. The results of the stepwise multiple regression also indicated model 2 as being statistically significant, $F(4,727) = 6.28$, $p < .001$, with an adjusted R^2 of .03. Within model 2, student race, $t(727) = -4.68$, $p < .001$, and preschool enrollment, $t(728) = -2.73$, $p = .005$, were predictors of ORF-WRC. Model 3 of the stepwise multiple regression indicated as being

statistically significant, $F(5,726) = 15.39$, $p < .001$, with an adjusted R^2 of .90. Within the model,

student race, $t(726) = -3.84$, $p < .001$, preschool enrollment, $t(726) = -2.75$, $p = .003$, and ORF-

ACC, $t(726) = 6.92$, $p < .001$ were predictors of ORF-WRC.

Last, the researcher used a bootstrap analysis, along with a stepwise multiple regression

to analyze the outcome of ORF-ACC. The results of the stepwise multiple regression indicated

that model 1 was statistically significant, $F(3, 728) = 6.73$, $p < .001$, with an adjusted R^2 of .02.

Within the model, student gender, $t(728) = 2.40$, $p = .019$, and student race $t(728) = -3.69$, $p <$

.001,were statistically significant predictors of ORF-ACC. The results of the stepwise multiple

regression also indicated model 2 as being statistically significant $F(4,727) = 5.06$, $p < .001$, with

an adjusted R^2 of .02. Within model 2, student gender, $t(727) = 2.40$, $p = .019$, and student race

$t(727) = -3.70$, $p < .001$, were statistically significant predictors of ORF-ACC. Model 3 of the

stepwise multiple regression indicated as being statistically significant, $F(5,726) = 13.89$, $p <$

.001, with an adjusted R^2 of .08. Within the model, student gender, $t(726) = 2.44$, $p = .020$,

student race, $t(726) = -2.57$, $p = .009$, and ORF-WRC, $t(726) = 6.92$, $p < .001$ were predictors of

ORF-ACC.

Regression Results for Strategic Students

A bootstrap analysis, along with a stepwise multiple regression was conducted to

examine which variables were meaningful predictors to the indented outcomes. First, the

researcher analyzed the outcome of the DIBELS 8 composite score. The results of the stepwise

multiple regression indicated that model 1 was not statistically significant, $F(3, 494) = .89$, $p =$

.446. The results of the stepwise multiple regression also indicated model 2 not statistically

significant, $F(4,493) = .71$, $p = .598$. Model 3 of the stepwise multiple regression was also

indicated as not being statistically significant, $F(5,492) = .82$, $p = .538$. Model 4 of the stepwise

multiple regression indicated as being statistically significant, $F(5,492) = 16.65$, $p < .001$, with an adjusted R^2 of .16. Within the model, ORF-ACC, $t(492) = 9.74$, $p < .001$ was a predictor of the DIBELS 8 composite score. The results of the stepwise multiple regression indicated model 5 as being statistically significant $F(6, 491) = 16.95$, $p < .001$, with an adjusted R^2 of .16. Within model 5, ORF-ACC, $t(491) = 9.84$, $p < .001$, was a predictor of the DIBELS 8 composite score.

Next, the researcher used a bootstrap analysis, along with a stepwise multiple regression to analyze the outcome of ORF-WRC. The results of the stepwise multiple regression indicated that model 1 was not statistically significant, $F(3, 494) = .47$, $p = .704$. The results of the stepwise multiple regression also indicated model 2 as not being statistically significant, $F(4, 493) = .37$, $p = .833$. Model 3 of the stepwise multiple regression indicated as being statistically significant, $F(5, 492) = 9.78$, $p < .001$, with an adjusted R^2 of .08. Within the model, ORF-ACC, $t(492) = 6.88$, $p < .001$ was a predictor of ORF-WRC.

Last, the researcher used a bootstrap analysis, along with a stepwise multiple regression to analyze the outcome of ORF-ACC. The results of the stepwise multiple regression indicated that model 1 was statistically significant, $F(3, 494) = 5.14$, $p = .002$, with an adjusted R^2 of .02. Within the model, students of poverty, $t(494) = 2.97$, $p = .006$, were a statistically significant predictor of ORF-ACC. The results of the stepwise multiple regression also indicated model 2 as being statistically significant $F(4,493) = 4.00$, $p = .003$, with an adjusted R^2 of .02. Within the model, students of poverty, $t(493) = .14$, $p = .004$, were a statistically significant predictor of ORF-ACC. Model 3 of the stepwise multiple regression indicated as being statistically significant, $F(5,492) = 12.96$, $p < .001$, with an adjusted R^2 of .11. Within the model, students of poverty, $t(492) = .13$, $p = .008$, and ORF-WRC, $t(492) = .29$, $p < .001$ were predictors of ORF-ACC.

Conclusion

The results of this study indicate which factors have a statistically significant impact on the desired student outcomes of DIBELS composite score, ORF-WRC, and ORF-ACC. For the intensive sample, the factors that were predictors of the DIBELS composite score were race, preschool enrollment, ORF-WRC scores, and ORF-ACC scores. Race, preschool enrollment, and ORF-ACC scores were also predictors of ORF-WRC for the intensive sample. Lastly, for the intensive sample, student gender, race, and ORF-WRC scores were predictors of ORF-ACC scores.

Results differ for the strategic sample of students. Less factors made a statistically significant impact on the intended outcomes of DIBELS composite score, ORF-WRC, and ORF-ACC. For the strategic sample, the only factor indicated in this study that was a predictor of the DIBELS composite score and the ORF-WRC score was ORF-ACC scores. Students in poverty and ORF-WRC scores of the strategic sample were predictors of the ORF-ACC scores.

Chapter five will provide a summary and interpretation of the findings addressed in this chapter as they pertain to the research questions of the study. Implications of the study will be addressed. Chapter five will also present recommendations for actions for educational leaders. Lastly, it will include recommendations for further research.

Chapter Five: Discussion

This study addressed the impact that specific factors had on oral reading fluency of struggling first-grade students. Known factors that impact reading success for all students include oral reading fluency rate, socioeconomic status, gender, race, and enrollment in preschool education (LaBerge & Samuels, 1974; Wanzel et al., 2014; Wei et al., 2011; Schwabe & Trendtel, 2015; Southern Education Foundation, 2010). Addressing reading deficits early, inclusively, and diagnostically should be at the forefront of educators' attention (Telesman et al., 2019). Acquiring successful reading skills impacts the future of all students within different aspects of students' lives including academic success, postsecondary success, the ability to compete in the labor market, and the health of the American democracy (American Diploma Project, 2004; Chudowsky et al., 2007; National Reading Panal, 2000).

Oral reading fluency and it's two components, word recognition accuracy and automaticity and prosodic reading, are a critical component utilized in measuring reading competency and reading comprehension (Fuchs et al., 2001; Laberge & Samuels, 1974). When the shift from decoding words on a word-by-word basis to reading words rapidly, accurately, and with expression takes place, students become fluent readers (LaBerge & Samuels, 1974). Fluency typically takes place between first and third grade (Schwanenflugel, 2006). Educational research collected showcases that the investment in high-quality preschool education prior to kindergarten is the greatest way to ensure reading readiness, achievement, and reduce student retention (Southern Education Foundation, 2010).

Since the academic outcomes of students who come from a family who has a low socioeconomic status (lower educational achievement, poverty, and poor health), diverse races or ethnicities, or are disabled is unpromising and first-grade students who struggle in word reading

as compared to their same-aged peers, rarely achieve grade level academic expectations, the achievement gap between strong and weak readers widens (Wei et al., 2011; Wanzel et al., 2014, as cited in Juel, 1988; Cunningham & Stanovich, 1997; Fletcher & Foorman, 1994). Along with the achievement gap, educators have also been fighting the gender gap in education since the 1960s (Schwabe & Trendtel, 2015). The lower performance achieved by males and the higher representation of students of minority and students who come from a lower SES having reading deficits have become crucial issues in educational research and policy debates (Wei et al., 2011; Schwabe & Trendtel, 2015).

Research Questions

The research questions embedded in this study are:

RQ1: How does the oral reading fluency of first grade students differ based on socioeconomic status?

RQ 2: How does the oral reading fluency of first grade students differ based on gender?

RQ3: What is the relationship between race and the oral reading fluency of first grade students?

RQ4: How does preschool enrollment influence oral reading fluency of first grade students?

RQ5: Which factors influence the oral reading fluency of first grade students?

Theory Revisited

The theoretical frameworks chosen for this study created a foundation and connected theory and practice. Both Lev Vygotsky's Social Constructivism theory (Bodrova & Leong, 2005; Lynch, 2016) and Chall's Stages of Reading (Chall, 1996) framed the research of this study. When taking the educational perspective of Social Constructivism, knowledge is shared and obtained as a result of social interaction and language use (Lynch, 2016). Different aspects of Vygotsky's approach pertain to high-quality preschool. According to his approach, a high-

quality preschool amplifies the child's learning with developmentally appropriate activities and prepares children for later grades by helping children become school ready (Bodrova & Leong, 2005). Grounded in research of effective, systematic phonics instruction, Chall's six stages of reading evolved from her findings. The stages of reading development pertaining to this study are stage one, the initial reading or decoding stage, and stage two, the confirmation and fluency stage. These stages occur during the age of the first-grade sample examined in this study. Readers are learning the set of letters and associating them with their corresponding sounds and uses and then readers gain confidence and become courageous in using the skills they have acquired to gain speed and fluency (Chall, 1996).

Methodology Revisited

The purpose of this study was to determine the factors, socioeconomic status, race, gender, and/or preschool enrollment, that impact oral reading fluency of first grade students. A quantitative, causal comparative study was conducted using the DIBELS 8 composite score, DIBELS 8 ORF-WRC and the DIBELS 8 ORF-ACC assessments. Data was collected from all participating first grade students who were assessed at the Beginning of the Year (BOY) DIBELS 8 benchmark window. Data was analyzed by the intensive and strategic categories as indicated by the DIBELS 8 composite score and disaggregated by socioeconomic status, race, gender, and prior preschool enrollment. The data collected from the DIBELS 8 assessments, student demographics, and preschool enrollment was the required data needed to compute the statistical analysis and answer the research questions to determine if factors impact the oral reading fluency of first grade students.

The student outcomes analyzed for this study were the DIBELS composite scores, DIBELS Oral Reading Fluency Words Read Correctly scores (ORF-WRC), and DIBELS Oral

Reading Fluency Accuracy scores of first grade students scoring in the intensive and strategic categories as indicated by the DIBELS Benchmark Goals (See Appendix A). While all factors, socioeconomic status, gender, race, and preschool enrollment were predictors in these outcomes, they were not predictors in all outcomes for both the intensive sample and strategic sample. This chapter will outline conclusions gained by the researcher's findings, the implications of the study, present recommendations for actions for educational leaders and recommendations for further research.

Interpretation of Findings

Socioeconomic Status and Oral Reading Fluency

The first research question aimed to determine the influence socioeconomic status had on oral reading fluency. Based on the step-wise multiple regression model, there was no statistical significance between socioeconomic status and the outcomes of the intensive student sample. Socioeconomic status was not a predictor of the DIBELS composite scores, DIBELS ORF-WRC scores, or DIBELS ORF-ACC scores of the intensive student samples for this study. It was also found that there was no statistical significance between socioeconomic status and the outcomes of DIBELS composite score and the DIBELS ORF-WRC scores of the strategic student sample. Socioeconomic status was found to be a predictor of the outcome of DIBELS ORF-ACC scores of the strategic sample examined for this study.

Implications

These results build upon existing evidence for the need for research and policy debates on the topic of students of poverty. This is due to the over representation of students from a lower socioeconomic status having deficits in reading (Wei et all, 2011). These findings also align with the published research indicating that the nature of what a child learns prior to entering school is

vastly reliant on the community and culture that surrounds them (Kuhn & Stahl, 2003). Policymakers must realize to improve the education of students of poverty, school improvement must be combined with social and economic reforms such as higher minimum wage and universal prekindergarten programs.

Gender and Oral Reading Fluency

The second research question aimed to determine the influence gender plays in oral reading fluency. Based on the step-wise multiple regression model, there was no statistical significance between gender and outcomes of DIBELS composite score and DIBELS ORF-WRC of the intensive sample examined in this study. Gender was also not a statistically significant predictor in the outcomes of DIBELS composite scores, DIBELS ORF-WRC scores, or the DIBELS ORF-ACC scores of the strategic sample observed in this study. Gender was a statistically significant predictor in the outcome of DIBELS ORF-ACC scores of the intensive sample.

Implications

This research illuminates how gender gaps in school systems still exist today. Reading is a fundamental prerequisite for success in both academic achievement and society (Schwabe & Trendtel, 2015). These findings also align with the published research that showcases that regardless of age, income, race or ethnicity, gender gaps are an educational problem worth investigating (Schwabe & Trendtel, 2015; Nichols-Besel et al., 2018). Policymakers and educators must fully understand the needs for males and females to be treated equitably by allowing access to each gender's receptive needs. They must examine the biases in policies and instructional structures that are currently in place.

Race and Oral Reading Fluency

The third research question aimed to determine the influence race had on oral reading fluency. Based on the step-wise multiple regression model, there was no statistical significance between race and the outcomes of the strategic student sample. Race was not a predictor of the DIBELS composite scores, DIBELS ORF-WRC scores, or DIBELS ORF-ACC scores of the strategic student samples for this study. Race had a statistical significance on the student outcomes for the intensive sample. Race was found to be a predictor of the outcome of DIBELS composite scores, DIBELS ORF-WRC scores, DIBELS ORF-ACC scores of the intensive sample examined for this study.

Implications

The data contributes a clearer understanding of the need to investigate racial achievement gaps in the educational system. Minority students are also over represented as having reading deficits. (Wei et al., 2011). The Challenge to Lead 2020 goal was to narrow the achievement gaps between racial or ethnic groups but as of 2020, in South Carolina, the gap has widened in reading between white students and students of color (Southern Regional Education Board, 2020). Policymakers and educators must fully understand the equity problem that exists in their education, teacher preparation, and possibly their own experiences. Racial inequities affect multiple aspects of education including student achievement, curriculum, and teacher performance. To enact change, research must shift to include qualitative studies that include studying teacher's beliefs and instructional practices, to allow for an improved understanding of racial inequities in education.

Preschool Enrollment and Oral Reading Fluency

The fourth research question aimed to determine the influence preschool enrollment impacts oral reading fluency. Based on the step-wise multiple regression model, there was no statistical significance between preschool enrollment and the outcomes of the strategic student sample. Preschool enrollment was not a predictor of the DIBELS composite scores, DIBELS ORF-WRC scores, or DIBELS ORF-ACC scores of the strategic student samples for this study. It was also found that there was no statistical significance between preschool enrollment and the outcomes of the DIBELS ORF-ACC scores of the intensive student sample. Preschool enrollment had a statistical significance and was a predictor of the student outcomes of DIBELS composite score and DIBELS ORF-WRC for the intensive sample examined for this study.

Implications

This research illuminates the high need for universal, high-quality preschool programs. These results build on existing evidence proving the way to ensure reading readiness and student achievement is investing in high-quality preschool education prior to kindergarten (Southern Education Foundation, 2010). As parents, educators, policymakers, and the greater community are becoming more aware of the importance to increase school readiness and how school readiness impacts our youngest learners (Education Reform Bill, 2019). The goal is to create academically successful students and South Carolina is lacking in meeting quality standards and teacher standards. Universal prekindergarten education should be put on the forefront of educators and policymaker's agendas in hopes to enact change and to prepare our students for success.

Additional and Overarching Findings

The fifth research question aimed to determine that factors with the highest impact on oral reading fluency. While all factors, (socioeconomic status, gender, race, and preschool enrollment), analyzed in this study showed to be statistically significant as being indicated as a predictor for the student outcomes examined in this study, (DIBELS composite score, DIBELS ORF-WRC score, and DIBELS ORF-ACC score), the results of this study showcased that some factors were indicated to be a predictor of more than one student outcome. The factors that support more than one student outcome are race and preschool enrollment. These two factors alone were indicated by the step-wise multiple regression model to be predictors for five student outcomes. Gender and socioeconomic status were factors that each supported one student outcome as being a statistically significant predictor. For the intensive sample, race was the only factor that was a predictor of all the student outcomes, DIBELS composite score, DIBELS ORF-WRC score, and DIBELS ORF-ACC score. Preschool enrollment was a predictor of two of the three student outcomes for the intensive sample, DIBELS composite score and DIBELS ORF-WRC score. Gender and socioeconomic status were only predictors in one student outcome within this study. Gender was a predictor of DIBELS ORF-ACC scores for the intensive sample and socioeconomic status was a predictor of DIBELS ORF-ACC for the strategic sample examined in this study.

DIBELS Sub Tests and Oral Reading Fluency

While analyzing the demographic factors listed above, the other student outcomes were also analyzed for statistical significance within the step-wise multiple regression model. DIBELS ORF-WRC scores showed a statistical significance to the student outcomes of DIBELS composite score and DIBELS ORF-ACC score of the intensive sample. DIBELS ORF-WRC

also showed a statistical significance to the student outcomes as being a predictor of DIBELS ORF-ACC scores of the strategic sample. DIBELS ORF-ACC showed a statistical significance to the student outcomes as being predictors of DIBELS composite scores and DIBELS ORF-WRC scores for the intensive and strategic sample analyzed in this study.

Implications

These results build on existing evidence spotlighting the need for research to be conducted on oral reading fluency of students in primary grades. The connectedness of a systematic phonics continuum that leads to fluency, accuracy and in the future, comprehension is unmistakable. Addressing reading deficits early, inclusively, and diagnostically should be at the forefront of educator's attention (Telesman et al., 2019). Oral reading fluency is the bridge and a critical component to achieving the main reading goal, to comprehend (Fuchs et al, 2001). Educators, especially in the primary grades, must be adequately trained and prepared to teach reading. They must know how to assess the reading ability of their students and create differentiated and individualized instruction based on student needs.

Recommendations for Action

Although reforms should occur in both our government, the community, and within our education system, educators are not powerless. The results of this study challenges educators, district officials, and policymakers to act on the following recommendations. These recommendations for action will assist educational leaders with ensuring an equitable education for all learners regardless of the factors which according to the results of this study, impede their early literacy learning.

Socioeconomic status was found to be a predictor of the outcome of DIBELS ORF-ACC scores of the strategic sample examined for this study. Students who come from a lower

socioeconomic background may not have the literacy experiences or support at home to successfully tackle the vocabulary of more complex texts, making accuracy an issue. To support students in this area, educational leaders can provide in-school time for students to complete work when work requires costly materials or technology and invite students to attend after school tutoring, or summer learning camps to obtain further direct instruction with a teacher. Allowing student of poverty access to the same curricular opportunities as their same-aged peers of a higher socioeconomic status including inclusion in gifted and talented programs is another recommendation of action. Lastly, I challenge educators to continue to reach out to parents who seem unresponsive, challenge colleagues who stigmatize parents and students who live in poverty, and educate yourself on our bias, prejudices, and the cycle of poverty in schools and in our communities.

Gender was a statistically significant predictor in the outcome of DIBELS ORF-ACC scores of the intensive sample. Based on the findings of this study, some recommendations for actions for educational leaders consists of incorporate a variance of teaching styles into instructional practices, discourage female and male stereotypes and traditional gender roles, and encourage gender equity of student voice, choice, and classroom participation. One way to ensure gender equity in participation would be to create a calling system that allows the educator to be mindful of appropriate wait or think time and ensure that students of all regardless of gender are included in classroom discussions. Equal participation allows all genders the same opportunities, which will strengthen instruction in all academic areas. Finally, I challenge educators to continue to monitor for gender bias to minimize its impact on opportunities, learning, and student achievement. The essential need to become more aware of gender-biased tendencies and strategies to alter biased practices is evident.

Race was found to be a predictor of the outcome of DIBELS composite scores, DIBELS ORF-WRC scores, DIBELS ORF-ACC scores of the intensive sample examined during his study. The findings of this study showcases that educational leaders are tasked and encouraged to seek change by support the following recommendations. Educators can build stronger readers by including an equitable racial representation in classroom texts. Everyone deserves to see themselves represented in what they read. Seeing yourself represented in texts is motivational to students. Educational leaders should also take ownership of learning about racial inequities. To enact the changes needed in our nation and within education, have the hard conversations about racism within our school systems.

Preschool enrollment had a statistical significance and was a predictor of the student outcomes of DIBELS composite score and DIBELS ORF-WRC for the intensive sample examined for this study. Educators value early learning experiences. The need for educational reform to include universal prekindergarten is evident. The results of this study should be taken into account when considering the following recommendation. I challenge educational leaders to use your voice to fight for universal prekindergarten. Universal prekindergarten will allow our youngest learners to be exposed to language and literacy, foster thinking skills and assist in the learning of social skills, self-control, and having self-confidence. Universal prekindergarten will enhance language and motor skill development and reduce the need for future public spending on areas such as remedial education, criminal justice, and social support programs.

Although all factors, (socioeconomic status, gender, race, and preschool enrollment), analyzed in this study showed to be statistically significant as being indicated as a predictor for the student outcomes examined in this study, the additional student outcomes themselves were predictors as well. Since the results of this study show a correlation between student outcomes,

the following recommendations for action are encouraged. The results of this study demonstrate that oral reading fluency must become a focus for the primary grades. Educational leaders should use a universal screener such as DIBELS 8 or the CORE Phonics Survey when assessing reading deficits. Educators are tasked with differentiating reading instruction based on student needs and allow for fluid grouping of students. Fluid grouping of students allows students who grow faster than others to flourish while also providing scaffolding needed to those who struggle. Personalized reading instruction geared to the individual needs of all students ensures equitable instruction regardless of the factors that this study proves to impede early literacy. Educational leaders should provide opportunities for practice with interesting texts to foster the intrinsic love of reading. Lastly, I challenge educators to become the educator who is a confident teacher of reading by understanding the science behind reading, use diagnostic tools to pinpoint the entry point for where students fall on the continuum of learning how to read and think innovatively when faced with the challenge of teaching struggling readers.

Limitations

While this study was inclusive of struggling first grade readers in the general education setting, a limitation of this study was the exclusion of students who receive special education services. This decision was made because the instructional experiences of students receiving special education services within the school district used for this study vastly differ. These instructional experiences not only differ between the special education programs offered at the 28 elementary schools, but also by the minutes of instruction as well.

The exclusion of the use of student attendance records is another limitation of this study. While the researcher contemplated using attendance as another variable, the Director of Assessment for the school district used in this study let the researcher know that attendance data

was not easily attainable. It is not easily attainable due to platform used to collect this data, the sample size, and high number of participating elementary schools. The lack of use of attendance records is a limitation because the researcher is not able to see the role COVID-19 quarantines or extended absences had on the students' fluency instruction.

Another limitation of this quantitative study was that the study did not provide information about each prior educator. The information not included was the educator's highest level of education, the quality of their teacher preparation programs, and their evaluation status as designated by the South Carolina Teaching Standards (SCTS. It did not determine if all students who were enrolled in preschool were taught by a highly qualified educator.

A limitation of this study was that it did not indicate the level of early literacy intervention provided to students within their current grade level or previous grade levels. Although the research is aware of current mandated intervention programs used by the school district used in this study, it was also made aware that each school has the autonomy to use those programs or gain approval to create a program that better fits the needs of the particular student's in their school.

This study was a quantitative study that looks solely at data which could be seen as a limitation. In the current times, being that the 2021-2022 school year is the first full year back to face-to-face instruction in South Carolina, the data matters to all stakeholders. Stakeholders want to see that learning loss is minimized and accelerated growth is maximized. Although the data is examined throughout this study, the stakeholder perspectives could provide more context to the research problem if a qualitative or mixed-methods study was conducted.

Recommendations for Further Study

After reflecting on the execution and findings of this study, recommendations for further research include investigating the factors impacting oral reading fluency by sub groups other than general education students. Other subgroups should be examined by demographic factors such as individual races, males versus females, or students well above the poverty index. Data collection should also be extended to the analysis of sub groups that receive special education or intervention services. This study focused on struggling first-grade students who fell in the intensive and strategic categories as indicated by the DIBELS 8 Benchmark Goals. Another future recommendation for research by sub group would be to extend this study to students who score in the benchmark or above benchmark categories as indicated by the DIBELS 8 Benchmark Goals to see if the same factors impact their oral reading fluency.

Due to the learning loss associated with COVID-19, one recommendation for further study would be to analyze the attendance records of struggling students. This would allow educators, administrators, and district office officials to understand potential reasoning for specific collected data. The examining of attendance data could assist administration with meaningful student selection for afterschool tutoring and summer school programs.

The results of this study showcases the need for research to be conducted on the effectiveness of teacher preparation programs, teacher quality, and the of the current evaluation tool, South Carolina Teaching Standards (SCTS). This study highlights the importance of learning how to read to become a fluent reader. Primary teachers should be successful teachers of reading by understanding the science behind reading. Teacher preparation programs, teacher quality, and the use of an effective, supportive evaluation tool impacts educators. Further studies

on these topics can benefit all education leaders by bringing forth the positives and negative aspects of these topics.

Based on the results of this study and the theoretical framework that informed the study, further studies should examine the current intervention programs being offered to struggling readers to see if the current implemented interventions include a strong systematic approach to teaching phonemic awareness and phonics skills. The use of a universal screener such as DIBELS 8 or the CORE Phonics Survey to find an entry point in instruction along the phonological continuum should be examined.

Another recommendation for research would be to extend this research on the factors impacting oral reading fluency to other grade levels within a building, across buildings in the same district, across multiple Title I schools, or across districts in the same state. This research could be generalized by collecting data from all across the state of South Carolina to cast a broader net and to gain an increased the sample size.

Lastly, this quantitative research study should be extended into a qualitative or mixed-methods study to ensure the understanding of concepts and include the opinions and experiences of students and educators. Extending this research to other methodologies would broaden the perspectives on the research problem. Extending this research to a qualitative approach or mixed-methods approach could provide more context to the answer of which factors impact oral reading fluency.

<div align="center">**Conclusion**</div>

This study addressed the known factors that impact reading success for all students include oral reading fluency rate, socioeconomic status, gender, race, and enrollment in preschool education (LaBerge & Samuels, 1974; Wanzel et al., 2014; Wei et al., 2011; Schwabe

& Trendtel, 2015; Southern Education Foundation, 2010). Addressing reading deficits early, inclusively, and diagnostically assures students to obtain a successful future outside of K-12 education (Telesman et al., 2019; American Diploma Project, 2004; Chudowsky et al., 2007; National Reading Panal, 2000). This study signifies and identifies the importance of a critical component used in measuring reading competency and reading comprehension, oral reading fluency. (Fuchs et al., 2001; Laberge & Samuels, 1974).

Factors impeding the successful oral reading fluency of first grade students are gender, race, socioeconomic status, and preschool enrollment. The achievement, opportunity and gender gaps exist in American educational systems. Educational research showcases that students who come from a family who has a low socioeconomic status, rarely achieve grade level academic expectations, the achievement gap between strong and weak readers widens (Wei et al., 2011; Wanzel et al., 2014, as cited in Juel, 1988; Cunningham & Stanovich, 1997; Fletcher & Foorman, 1994). The lower performance achieved by males and the higher representation of students of minority and students who come from a lower SES having reading deficits have become an essential issue in educational research and policy debates (Wei et al., 2011; Schwabe & Trendtel, 2015). Educational research collected showcases that the investment in high-quality preschool education prior to kindergarten is the greatest way to ensure reading readiness and student achievement (Southern Education Foundation, 2010).

The results of this study suggest that student race and enrollment in preschool are factors that heavily impact first grade oral reading fluency. While this study shows that factors such as socioeconomic status and gender have a slightly less impact on oral reading fluency, they still have an impact and can add to the existing body of research. Considering the current National Assessment of Educational Progress' National Report Card, the state of South Carolina's fourth

grade reading proficiency level, and the fact that South Carolina did not meet the early grades' goal initiated by the Challenge to Lead Goals of 2020, the result of this study can aide to the gap of research and literature conducted on oral reading fluency of first-graders.

Reading skills have been associated to different aspects of students' lives other than academic success in the kindergarten through twelfth grade system such as postsecondary success, the ability to compete in the labor market, and the health of the American democracy (American Diploma Project, 2004; Chudowsky et al., 2007; National Reading Panal, 2000). This research illuminates how education is the battle against poverty, achievement, opportunity, and gender gaps, and early literacy experiences that educators should fight. The best way to fight is to empower people through access to quality education for all students. It is our duty as educational leaders and researchers to combat these very factors that are harmful in a systematic approach that is purposeful, meaningful, flexible, and relevant because our children deserve the very best chance to feel and become successful.

Appendix A

DIBELS 8 Benchmark Goals

DIBELS® 8th Edition Benchmark Goals
Updated: July 2020

	Kindergarten			First grade			Second grade			Third grade		
	B	M	E	B	M	E	B	M	E	B	M	E
Letter Naming Fluency (LNF)												
	25+	37+	42+	42+	57+	59+						
	24	36	41	41	56	58						
	16	31	35	32	51	53						
	15	30	34	31	50	52						
	0	0	0	0	0	0						
Phonemic Segmentation Fluency (PSF)												
	15+	43+	53+	47+	57+	61+						
	14	42	52	46	56	60						
	5	29	44	31	43	45						
	4	28	43	30	42	44						
	1	23	37	19	34	37						
	0	22	36	18	33	36						
		0	0	0	0	0						
Nonsense Word Fluency (NWF) – Correct Letter Sounds (CLS)												
	20+	36+	49+	47+	78+	87+	86+	103+	117+	121+	138+	141+
	19	35	48	46	77	86	85	102	116	120	137	140
	9	25	31	30	52	55	50	68	76	76	94	105
	8	24	30	29	51	54	49	67	75	75	93	104
	4	16	24	25	41	45	41	54	54	52	78	80
	3	15	23	24	40	44	40	53	53	51	77	79
	0	0	0	0	0	0	0	0	0	0	0	0
Nonsense Word Fluency (NWF) – Words Recoded Correctly (WRC)												
	--	9+	13+	16+	26+	28+	25+	36+	39+	34+	46+	45+
	1+	8	12	15	25	27	24	35	38	33	45	44
		3	7	5	14	15	15	20	22	24	30	31
	0	2	6	4	13	14	14	19	21	23	29	30
		1	4	1	10	11	10	15	17	18	23	24
	--	0	3	0	9	10	9	14	16	17	22	23
			0		0	0	0	0	0	0	0	0
Word Reading Fluency (WRF)												
	--	10+	18+	20+	33+	50+	50+	63+	70+	60+	65+	70+
	1+	9	17	19	32	49	49	62	69	59	64	69
		4	10	12	17	25	26	36	43	40	50	55
	0	3	9	11	16	24	25	35	42	39	49	54
		1	6	8	14	17	18	23	27	30	40	47
	--	0	5	7	13	16	17	22	26	29	39	46
			0	0	0	0	0	0	0	0	0	0
Oral Reading Fluency (ORF) – Words Correct												
				35+	57+	76+	85+	117+	128+	105+	141+	136+
				34	56	75	84	116	127	104	140	135
				10	21	39	49	78	94	73	105	114
				9	20	38	48	77	93	72	104	113
				5	10	26	29	59	77	55	85	96
				4	9	25	28	58	76	54	84	95
				0	0	0	0	0	0	0	0	0
Oral Reading Fluency (ORF) - Accuracy												
				67+	87+	91+	92+	96+	96+	96+	96+	96+
				66	86	90	91	95	95	95	95	95
				41	54	85	84	91	91	91	91	91
				40	53	84	83	90	90	90	90	90
				0	0	0	0	0	0	0	0	0
Maze												
							11.0+	14.5+	18.0+	15.0+	20.5+	22.5+
							10.5	14.0	17.5	14.5	20.0	22.0
							5.0	9.0	9.5	8.0	12.0	15.5
							4.5	8.5	9.0	7.5	11.5	15.0
							2.5	6.5	7.0	5.0	9.5	12.0
							2.0	6.0	6.5	4.5	9.0	11.5
							0	0	0	0	0	0
DIBELS Composite Score												
	332+	393+	450+	354+	424+	480+	361+	423+	474+	365+	427+	467+
	331	392	449	353	423	479	360	422	473	364	426	466
	306	371	420	330	389	441	329	389	439	332	393	442
	305	370	419	329	388	440	328	388	438	331	392	441
	280	356	406	321	377	427	316	373	421	314	377	424
	279	355	405	320	376	426	315	372	420	313	376	423
	200	200	200	200	200	200	200	200	200	200	200	200
	B	M	E	B	M	E	B	M	E	B	M	E
	Kindergarten			First grade			Second grade			Third grade		

DIBELS® 8th Edition Benchmark Goals
Updated: July 2020

	Fourth grade			Fifth grade			Sixth grade			Seventh grade			Eighth grade		
	B	M	E	B	M	E	B	M	E	B	M	E	B	M	E
Oral Reading Fluency (ORF) – Words Correct															
	131+	159+	159+	139+	149+	157+	151+	157+	160+	152+	161+	164+	142+	156+	159+
	130	158	158	138	148	156	150	156	159	151	160	163	141	155	158
	87	**121**	**125**	**103**	**122**	**137**	**123**	**133**	**141**	**126**	**136**	**141**	**125**	**131**	**135**
	86	120	124	102	121	136	122	132	140	125	135	140	124	130	134
	62	98	99	81	108	124	99	117	125	101	121	127	110	116	121
	61	97	98	80	107	123	98	116	124	100	120	126	109	115	120
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oral Reading Fluency (ORF) - Accuracy															
	96+	96+	96+	96+	96+	96+	96+	96+	96+	96+	96+	96+	96+	96+	96+
	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91
	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maze															
	21.0+	23.5+	28.0+	20.0+	27.0+	29.5+	23.0+	30.5+	33.5+	25.5+	33.0+	38.5+	24.5+	32.0+	38.0+
	20.5	23.0	27.5	19.5	26.5	29.0	22.5	30.0	33.0	25.0	32.5	38.0	24.0	31.5	37.5
	14.5	**16.5**	**17.0**	**13.5**	**17.0**	**21.0**	**14.5**	**19.5**	**26.5**	**20.0**	**24.5**	**29.5**	**20.0**	**26.0**	**28.0**
	14.0	16.0	16.5	13.0	16.5	20.5	14.0	19.0	26.0	19.5	24.0	29.0	19.5	25.5	27.5
	11.0	13.0	14.0	10.5	14.5	18.0	12.5	15.0	20.5	15.5	18.0	24.5	16.5	19.5	24.5
	10.5	12.5	13.5	10.0	14.0	17.5	12.0	14.5	20.0	15.0	17.5	24.0	16.0	19.0	24.0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIBELS Composite Score															
	368+	431+	461+	370+	421+	469+	364+	411+	454+	358+	407+	450+	378+	434+	478+
	367	430	460	369	420	468	363	410	453	357	406	449	377	433	477
	331	**399**	**442**	**335**	**394**	**449**	**336**	**386**	**435**	**336**	**385**	**430**	**361**	**404**	**452**
	330	398	441	334	393	448	335	385	434	335	384	429	360	403	451
	310	380	421	313	380	436	313	370	419	315	374	417	345	391	437
	309	379	420	312	379	435	312	369	418	314	373	416	344	390	436
	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
	B	M	E	B	M	E	B	M	E	B	M	E	B	M	E
	Fourth grade			Fifth grade			Sixth grade			Seventh grade			Eighth grade		

Legend

Blue goal = Core support; Negligible risk
(nearly all students in this range score at or above the 40th percentile rank on criterion measure)
Green range = Core support; Minimal risk
(about 80% of students who score at or above the 40th percentile rank on criterion measure fall in this range or above)
Yellow range = Strategic support; Some risk
(about 80% of students who score below the 40th percentile on criterion measure fall in this range or below)
Red range = Intensive support; At risk
(about 80% of students who score below the 20th percentile on criterion measure fall in this range)

* These Benchmark Goals come from University of Oregon (2020b)

Appendix B

DIBELS 8ᵗʰ Edition Composite Score Calculation Worksheet for First Grade

Step 1. Multiply each subtest raw score by the weight listed.

Subtest	Raw score	Weight		Weighted score
LNF	_____	x 35.44 if Beginning of year x 8.86 if Middle or End of year		= _____
PSF	_____	x 4.13		= _____
NWF-CLS	_____	x 14.93		= _____
NWF-WRC	_____	x 3.56		= _____
WRF	_____	x 5.62		= _____

Step 2. Sum the weighted scores from Step 1.   Total = _____

Step 3. Subtract the mean of the weighted score from the sum of the weighted scores.

_____ - 729 = _____
(Total from Step 2)

Step 4. Divide value from Step 3 by standard deviation.

_____ ÷ 630 = _____
(Value from Step 3)

Step 5. Multiply value from Step 4 by 40 and round to the ones place.

_____ x 40 = _____ (round to ones place)
(Value from Step 4)

Step 6. Add the scaling constant for the season in which the student was tested to obtain the final composite score.
Constants: Fall/Beginning = 289, Winter/Middle = 364, Spring/End = 398.

_____ + _____ = _____
(Value from Step 5)   (constant)   (final composite score)

* This Composite Score Calculation Worksheet comes from University of Oregon (2020b)

Appendix C

DIBELS 8th Edition Beginning of the Year Benchmark ORF Passage

Lucky Day

Bobby was on his way home from school one day. On his walk, he saw something green in the snow. He stopped and stared. He thought he was seeing things. Green in the snow? It couldn't be what it seemed to be, could it?

He bent down in the snow and quickly dug it out. It was a five-dollar bill. He carefully smoothed it flat.

He wondered if it was real money or just play money. It looked real. That made him feel good. This was his lucky day.

But then he felt bad. He knew that if he ever lost five dollars he would cry and cry. Once, he had dropped a dime on the floor, and it had rolled into the heating vent. He never saw that dime again.

What was it like to lose fifty dimes at one time? Whoever lost the money was having an unlucky day. But this was Bobby's lucky day. He had no way to find the owner, so the money was his to keep.

DIBELS 8th Edition
Benchmark ORF.1 Beginning

*This 1st Grade Benchmark Passage comes from the Student G1 Benchmark Materials and

Scoring Booklets (https://dibels.uoregon.edu/materials/dibels).

Appendix D

DIBELS 8th Oral Reading Fluency Scoring Sheet

DIBELS 8th Edition *Oral Reading Fluency*   Benchmark ORF 1.Beginning

Examiner script	Reminders	
Please read this (point to passage) out loud.	Start timer	When student says first word.
If you get stuck, I will tell you the word, so you can keep reading. When I say 'Stop' I may ask you to tell me about what you read, so do your best reading.	Prompts	Student hesitates: wait 3 seconds; give correct word; mark the missed word as incorrect.
Start here (point to first word of first paragraph of passage). Ready? Begin.	Discontinue	Student does not get any words correct within the first line: discontinue ORF.

Lucky Day

Bobby was on his way home from school one	(9)
day. On his walk, he saw something green in the	(19)
snow. He stopped and stared. He thought he was	(28)
seeing things. Green in the snow? It couldn't be what	(38)
it seemed to be, could it?	(44)
He bent down in the snow and quickly dug it out.	(55)
It was a five - dollar bill. He carefully smoothed it flat.	(66)
He wondered if it was real money or just play	(76)
money. It looked real. That made him feel good. This	(86)
was his lucky day.	(90)
But then he felt bad. He knew that if he ever lost	(102)
five dollars he would cry and cry. Once, he had	(112)
dropped a dime on the floor, and it had rolled into the	(124)
heating vent. He never saw that dime again.	(132)
What was it like to lose fifty dimes at one time?	(143)
Whoever lost the money was having an unlucky day.	(152)
But this was Bobby's lucky day. He had no way to	(163)
find the owner, so the money was his to keep.	(173)

Total words read _____   Total errors _____   Total words correct _____

*This 1st Grade Fluency Scoring Sheet comes from the G1 Student Benchmark Materials and

Scoring Booklets (https://dibels.uoregon.edu/materials/dibels).

Appendix E

District Approval

Horry County Schools

January 19, 2022

Dear Ms Shaw,

Your request to conduct research is approved subject to the following conditions:

1. You are not to release, present, or publish any personally identifiable information concerning students, their parents, or District staff members;
2. You are not to identify Horry County Schools or any school in our District in any publication, presentation, or release of information associated with your research without my written permission;
3. The records and raw data associated with your study are to be destroyed when they are no longer needed for the purposes set forth in your request;
4. You are to provide a copy of your completed research report to me at the District Office; and
5. You may not conduct research during your work hours. All research must be completed outside of your work hours.

I hope your research goes well. If you have any questions or are in need of further assistance, please contact me at 488-6843.

Sincerely,

Heather C. Sheehan
Director of Assessment
Horry County Schools

Appendix F

IRB Approval

OFFICE OF
SPONSORED PROGRAMS
AND RESEARCH SERVICES
COASTAL CAROLINA UNIVERSITY

February 14, 2022

Kimberly Shaw
Coastal Carolina University
Conway, SC 29528

RE: Building Comprehension: A Casual Comparative Study of Factors Contributing to the Oral Reading Fluency Rate of First Graders

Kimberly,

It has been determined that your protocol **#2022.93** is approved as **EXPEDITED** by the Coastal Carolina University Institutional Review Board (IRB) under the Federal Policy for the Protection of **Human Research Subjects Category #5**, Research involving materials (data, documents, records, or Specimens) that have been collected or will be collected solely for non-research purposes.

This approval is good for one calendar year commencing with the date of approval and concludes on **2/13/2023**. If your work continues beyond this date, it will be necessary to seek a continuation from the IRB. If your work concludes prior to this date, please inform the IRB.

Approval of this protocol does not provide permission or consent for faculty, staff or students to use university communication channels for contacting or obtaining information from research subjects or participants. Faculty, staff and students are responsible for obtaining appropriate permission to use university communications to contact research participants. For use of university email to groups such as all faculty/staff or all students, requests should be made to the Provost's Office after the research protocol has been approved by the IRB. Please allow at least one week to receive approval.

Please note, it is the responsibility of the Principal Investigator to report immediately to the IRB any changes in procedures involving human subjects and any unexpected risks to human subjects, any detrimental effects to the rights or welfare of any human subjects participating in the project, giving names of persons, dates of occurrences, details of harmful effects, and any remedial actions. Such changes may affect the status of your approved research.

Be advised that study materials and documentation, including signed informed consent documents, must be retained for at least three (3) years after termination of the research and shall be accessible for purposes of audit.

If you have any questions concerning this review, please contact Patty Carter, IRB Coordinator, at pcarter@coastal.edu or extension 2978.

Thank you,

Stephanie Cassavaugh
Director, Office of Sponsored Programs and Research Services
IRB Administrator

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