Science of Reading Literacy Coaching and Third Grade Reading Achievement in Northeast Ohio: A Correlational Study

by

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Submitted in Partial Fulfillment of the Requirements
for the Degree of
Doctor of Education
in
Educational Leadership

Youngstown State University
December 2024

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Abstract

Influenced by current legislation calling for full alignment to the science of reading, literacy instruction in Ohio has started shifting. Additionally, Ohio has devoted funds for literacy coaching to improve students' literacy achievement outcomes on state assessments. This correlative study analyzed the relationship between school districts that employ literacy coaches, their alignment to the science of reading, and their third-grade reading achievement scores. This study focused on a cohort of school districts in Northeast Ohio.

Ohio's Report Card, self-reported science of reading alignment completed by the Ohio Department of Education and Workforce, and a Google Form regarding the employment history of literacy coaches were the sources of data included in this study. The typology of the school districts was also considered, and it was also provided by the Ohio Department of Education and Workforce.

The results indicated that school districts that were lower performing were most likely to employ their own literacy coach. However, school districts that performed the highest on the third-grade reading assessment for two of the three years studied were districts that were fully aligned to the science of reading, but they did not employ a literacy coach. School districts that have strong professional development on the science of reading and success with implementation do not need coaches to impact student achievement.

Keywords: literacy, literacy coaching, science of reading, structured literacy

Dedication

This work is dedicated to my family, friends, students, and colleagues who I have had the pleasure of working with throughout the years. A special feeling of gratitude is to my husband, Matt, for supporting me. I started this program when our son was six months old and had our daughter a year and a half into the program. I simply could not have accomplished this work without your unwavering support and commitment to our family.

My parents, Mark and Mary, have been constant and steady support and have never left my side. They have done their share of gymnastics practices, music classes, and soccer games to make this dream become a reality. My in-laws, Dave and Roberta, thank you for your support during these years.

To my sister-in-laws, Dr. Alison Kreisler, PhD and Catherine English, J.D., thank you for paving the way.

A special thank you to my dissertation chair, Dr. Karen Larwin, my committee members, Dr. Melanie Brock and Dr. Kim Sharshan, and editor, Dr. Caitlin Reash. Your time is valuable, and I am honored that you chose to spend it with me and my study.

Finally, my children, Riley and Delanie. This is for you. You two inspire me every day, and I see all my former students in your eyes. I hope this work ensures that the literacy instruction you receive is research based and rooted in the science.

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Chapter One

Introduction

In 2022, reading scores of 4th- through 8th-grade students in the United States were lower than scores in 1999, and they were comparable to the initial NAEP scores from 1992 (NAEP, 2022). Nationally, just 32% of 4th-grade students were reading at a proficient or higher level in 2022; however, in Ohio, 35% of 4th-grade students reached those levels (NAEP, 2022). This was 3% higher than the national average. When examining 3rd-grade students in Ohio, 40% were not reading proficiently (Ohio Department of Education, 2023). These scores represent a reading crisis in the United States. Rooted in the reading wars of the 1990s (Lemann, 1997), recent political dialogue has increased around reading instruction in the United States, with 32 states and the District of Columbia passing laws or implementing new policies related to the science of reading (Schwartz, 2023). Although this dialogue has influenced literacy legislation (Schwartz, 2023), it has not improved outcomes for students learning to read across the United States (NAEP, 2022). There are promising results out of Mississippi, which is a state that has been at the forefront of this endeavor since 2013 (Lurye, 2023). Starting at 49th in the country for 4th-grade reading scores, Mississippi has climbed in rankings and was 21st in the country as of 2022 (Lurye, 2023).

The science of reading (SOR) is a vast interdisciplinary body of scientifically based research on how children learn to read, best practices in teaching reading, and other issues related to reading and writing (The Reading League, 2023). This research was conducted over the last five decades and was not limited to the United States. These researchers amassed the evidence to inform how students develop reading and writing

proficiencies, why students have difficulty learning to read and write, and how educators can effectively assess and teach, and in turn, improve student literacy outcomes (The Reading League, 2023).

The SOR research is over 50 years old (The Reading League, 2023), and more and more states, districts, and schools are implementing the SOR practices (Schwartz, 2021). In 2023, the Ohio governor, Mike DeWine, passed an education bill (i.e., House Bill 33) that forced school districts to pick only phonics based SOR materials from a list created by the Ohio Department of Education, effectively banning any use of three cueing materials or lessons (O'Donnell, 2023). As a result of low student scores and legislative changes, the state of Ohio invested $86 million for teacher professional development, $64 million for curriculum and instructional materials, and most notable to the current study, $18 million for instructional literacy coaches (Henry, 2023). Schools must now update curriculum materials, teacher trainings, and instructional practices, with very little time to plan. The SOR is now mandatory in Ohio, and according to the research, with support from literacy coaches, student achievement should rise (Joyce & Showers, 2002). The purpose of the quantitative correlational study was measuring if, and to what extent, there is any correlation between the use of literacy coaches and students' improved K-3 literacy scores in Northeast Ohio.

Problem Statement

Over the years, the United States has utilized a number of literacy instruction methods and strategies. In 1997, the National Reading Panel was convened to assess the effectiveness of different approaches used to teach children how to read (National Institute of Child Health and Development [NICHD], 2019). This panel found that

phonemic awareness, phonics, oral reading fluency, vocabulary, and comprehension were the elements of highly effective, research-based literacy instruction (Shanahan, 2005).

As an educator, the researcher of this study was left pondering, if the evidence was prepared more than two decades ago, why are 40% of students across the United States still not reading at a basic level for their grade (National Literacy Institute, 2023)? Even more, 70% of low-income fourth graders cannot read at a basic level (National Literacy Institute, 2023).

The SOR supports the findings of the National Reading Panel's 1997 findings. The best, most effective way to teach reading and writing to children is to teach through systemic, explicit instruction in the areas founded by the Panel: phonemic awareness, phonics, oral reading fluency, vocabulary, and comprehension (NRP, 2000). Educators have learned that the balanced literacy approach to teaching children how to read was inadequate and unjust. Reading does not develop naturally for children; they must be explicitly taught. The reading levels provided by leveling systems, such as Fountas & Pinnell, does not determine students' overall success in reading (Tobin, 2020); however, 43% of classrooms nationwide continue to utilize Fountas & Pinnell (Winter, 2022), which subscribes to leveled literacy methods as a form of benchmarking and instructing students.

Even with this body of knowledge, the reality is that schools are hesitant to make a large shift in how they teach reading and writing (Winter, 2022). A shift requires time, money, new curriculum and assessments, teacher training, and teacher buy-in. There is no quick fix or guarantee of success. With school districts in a bind (NAEP, 2022) and many states passing legislation surrounding literacy instruction (Schwartz, 2021), more

research is needed to understand how to most effectively and efficiently implement the SOR. One of the most effective means of implementing new teaching strategies is through using literacy coaches (Joyce & Showers, 1981). The author of this proposed study sought to understand the effectiveness of such coaches in supporting the implementation of the SOR in Northeast Ohio.

Purpose Statement

The purpose of this quantitative correlational study was to measure if, and to what extent, there is a relationship between the use of literacy coaches, grounded in SOR practices, and 3rd-grade literacy scores in Northeast Ohio. Understanding how school districts can use SOR research to guide decisions in their shift from balanced literacy to structured literacy will impact literacy instruction (NRP, 2000), and there is limited research on the successful implementation of SOR-based literacy instruction. This study was quantitative in the manner that results can only be communicated through student achievement and growth data. This study supports the critical need of improved literacy programs across Ohio and serves as a guide for how to shift literacy instruction, which will ultimately result in improved student achievement and improved literacy rates in Ohio.

Rationale and Significance of the Study

With just 60% of Ohio's third-grade students reading proficiently (NAEP, 2022), researchers must evaluate the current systems in place that may correct the path for Ohio's youngest learners. In Ohio, Governor Mike DeWine has effectively banned the use of whole language, balanced literacy approaches and has committed $26 million to early literacy efforts (10TV Web Staff, 2023) in his project, ReadOhio. These efforts

include curriculum recommendations, employment of literacy coaches, and teacher training programs. The SOR is the future for literacy in Ohio, and this study analyzed how much influence the presence of a literacy coach has on the success of students in kindergarten through third grade.

Research has been done in the field of literacy coaching, although not aligned with student reading scores, specifically the Ohio State Report Card component: Third Grade Proficiency. Research by Joyce and Showers (1981) has indicated that there is a correlation between the training element, effects on knowledge, effects on short-term use, and effects on long-term use. The data is detailed in Table 1.

Table 1

Training Components & Attainment of Outcomes in Terms of Percentage of Participants

Training Element	Effects on knowledge	Effects on short-term use	Effects on long-term use
Study of rationale (readings, discussions, lectures)	Very positive	5%-10%	5%-10%
Rationale plus demonstrations (10 or more)	Very positive	5%-20%	5%-10%
Rationale plus demonstrations plus planning of units and lessons	Very positive	80%-90%	5%-10%
All the above, plus peer coaching	Very positive	90%+	90%+

**Note:* Table from research by Joyce and Showers (1981).

As shown by Table 1, there is a strong correlation with effects on long-term use of training and the study of rationale, demonstration, planning, and peer coaching combined. Peer coaching is the catalyst to long-term change. This current study used evidence of effective coaching, paired with evidence of effective literacy instruction, to find a correlation between the two.

Research Questions

The following questions guided the study and were designed to develop the hypothesis that a relationship exists between reading achievement, based off the Ohio State Report Card for 3rd grade, and the presence of a literacy coach focused on the SOR. For this study, the Third Grade Proficiency component of the Ohio State Report Card, found under the Improving Early Literacy measure, was used. The following research questions were examined:

1. Is there a relationship between the presence of a literacy coach and student achievement in grade three in Northeast Ohio as measured by the Ohio State Report Card indicator: Third Grade Proficiency?
2. Are these relationships moderated by year, typology, grade levels of support, years of support, or alignment?

Hypothesis

There is a positive relationship between the presence of a literacy coach and student reading achievement of third graders in Northeast Ohio, as measured by Ohio State Report Card Indicator: Third Grade Proficiency.

Null Hypothesis

There is no relationship between the presence of a literacy coach and student reading achievement of third graders in Northeast Ohio measured by the Ohio State Report Card Indicator: Third Grade Proficiency.

Methodology

This study was quantitative and examined numerical data from student reading achievement scores of students in elementary schools, both with and without literacy

coaches. The study was correlational and looked at the relationship between two variables (i.e., presence of a literacy coach and reading achievement scores on the Third Grade Proficiency indicator). This study was not experimental, as there was no manipulation or control to any of the variables.

The study examined the effectiveness, if any, of literacy coaches supporting the SOR in third-grade student achievement outcomes based on the Ohio State Report Card. The study considered public schools that did not have literacy coaches and public schools that did have literacy coaches. There are 17 counties that encompass Northeast Ohio and 194 public school districts. Thirty-eight school districts reported having the presence of literacy coaches in some capacity, while seven school districts did not have the presence of a literacy coach.

The researcher of the study accessed and examined quantitative data from the Third Grade Proficiency Measure of the Ohio State Report Card, which was publicly available. Three components encompass the Early Literacy Measure: students' reading proficiency in third grade, student promotion from third grade to fourth grade, and Improving K-3 Literacy. For this study, the only Early Literacy Measure being studied was Third Grade Proficiency. These data are provided from Ohio State Tests, known as the Third Grade Reading Guarantee.

This study tracked and analyzed student data from three consecutive years, starting with the 2021-2022 school year. Data was collected from the fall administration of the state assessment (i.e., Third Grade Reading Guarantee) and the spring. Data for this study included three academic years: 2021-2022, 2022-2023, and 2023-2024.

Role of the Researcher

In this quantitative, correlational study, the researcher collected preliminary data on 194 public school districts in Northeast Ohio. The initial data included the school district name, whether there was a literacy coach present, and the school district's third-grade proficiency percentage.

After collecting the initial data, an analysis of variance (ANOVA) was used to determine differences in third-grade proficiency results in comparison to the presence of a literacy coach. ANOVA was the most appropriate statistical hypothesis test because the data included one continuous dependent variable and a categorical independent variable (Frost, 2021). In this study, the continuous dependent variable was the third-grade proficiency, which is normed and provided by the state of Ohio; the categorical independent variable was the presence of a literacy coach. This data was used to make assumptions about the impact that literacy coaches have on third-grade proficiency scores.

Limitations

In this study, third-grade proficiency data was collected through standardized testing measures, which are consistent across the state of Ohio. While this assessment is normed, it represents only one measure of student success. A limitation for this study is that growth was not being measured, as achievement was the only analyzed variable. While the goal of high-quality literacy coaching is to have higher achievement rates, it is possible that a school district could be in the first few years of coaching implementation and still have poor achievement scores.

A second limitation is the disregard for other factors. Factors such as gender and race were not considered in this study. This study set to answer one question: does the presence of a literacy coach impact achievement in a positive way? This study did not account for different factors that could impact achievement.

Operational Definitions

The following section provides operational definitions that describe the specific way they are used in this research study.

Balanced Literacy - a educational belief that assumes that reading and writing achievement are developed through instruction and support in multiple environments in which teachers use approaches that differ by the level of teacher support and child control (Fountas & Pinnell, 1996)

Comprehension - the ability to read text, process it and understand its meaning (Clements, 2023)

Correlational - a relation existing between phenomena or things or between mathematical or statistical variables which tend to vary, be associated, or occur together in a way not expected based on chance alone (Merriam-Webster, 2023)

Diagnostic - assessments that identify a student's specific strengths and weaknesses in reading (Reading Rockets, 2023d)

Fourth Grade - the fourth year of school, when children are nine or ten years old (Collins Dictionary, 2023a)

Literacy coach – a partner with teachers to help them improve teaching and learning so students are more successful. To do this, coaches collaborate with teachers to get a clear picture of current reality, identify goals, pick teaching

strategies to meet the goals, monitor progress, and problem solve until the goals are met (Knight, 2021).

Literacy – the ability to use printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential (White & McCloskey, 2003)

Northeast Ohio – the region of Ohio that includes the following counties: Ashland, Ashtabula, Columbiana, Cuyahoga, Erie, Geauga, Huron, Lake, Mahoning, Medina, Portage, Richland, Stark, Summit, Trumbull, Tuscarawas, and Wayne (Ohio Department of Development, 2023)

Oral Reading Fluency - the ability to read text accurately, with automaticity, and with proper expression (NICHD, 2019)

Phonemic Awareness – the ability to identify and manipulate individual sounds (phonemes) in spoken words (Reading Rockets, 2023c)

Phonics – instruction that teaches the relationships between the letters of written language and the sounds of spoken language (Reading Rockets, 2023a)

Phonological Awareness – the ability to recognize and manipulate the spoken parts of words, including syllables, onset-rime, and phonemes (Reading Rockets, 2023c)

Professional Development - a way for individuals and teams to expand and/or deepen their skills as educators. Professional development (sometimes abbreviated as PD) generally refers to formal classes, seminars, and workshops (Solution Tree, 2023)

Quantitative – a research process of collecting and analyzing numerical data (Bhandari, 2023)

Science of Reading - a vast interdisciplinary body of scientifically based research about reading and issues related to reading and writing (The Reading League, 2023)

Structured Literacy – an instructional approach that include (a) explicit, systematic, and sequential teaching of literacy at multiple levels- phonemes, letter-sound relationships, syllable patterns, morphemes, vocabulary, sentence structure, paragraph structure, and text structure; (b) cumulative practice and ongoing review; (c) a high level of student-teacher interaction; (d) the use of carefully chosen examples and nonexamples; (e) decodable text; and (f) prompt, corrective feedback (Spear-Swerling, 2018, p.2)

Teacher - one whose occupation is to instruct (Merriam-Webster, 2023)

Third Grade – the third year of school, when children are eight or nine years old (Collins Dictionary, 2023b)

Third Grade Proficiency [Ohio State Report Card] – a measure that reports how many students scored proficient or higher on the reading segment of Ohio's State Test for English Language Arts for grade 3 (Ohio Department of Education, 2022)

Third Grade Reading Guarantee – Ohio's program to identify students from kindergarten through grade 3 who are behind in reading. Synonymous with the assessment name for grade 3 (Ohio Department of Education, 2023)

Universal Screener – tests that are given 1-3 times a year to a class, grade, or even an entire school to check for potential reading difficulties (Reading Rockets, 2023d)

Variable - a person, place, thing, or phenomenon that you are trying to measure in some way (USC, 2023)

Vocabulary – the words we need to know how to both understand what we hear and read, and to communicate clearly and with precision, including listening vocabulary, speaking vocabulary, reading vocabulary, and writing vocabulary (Reading Rockets, 2023b)

Summary

This study utilized the research surrounding the science of reading and literacy coaching to frame the vignette of the current state of literacy instruction in Ohio. The research regarding SOR and coaching has been compounded over decades, and it has been brought to light in recent educational debates due to states, such as Ohio, requiring legislation surrounding these factors. This study examined the relationship between coaching and SOR, and the impact that these two variables have on improved student outcomes.

Chapter Two

Literature Review

Introduction

Literacy instruction in the United States is a widely debated topic among classroom teachers, parents, and politicians. With roots beginning in the 1800s, the United States has been in *The Reading Wars* since Horace Mann advocated against teaching the explicit sounds of each letter (Strauss, 2018). With the main argument surrounding phonics instruction versus whole language instruction, the United States is still on the cusp of this fight, with the addition of the science of reading (SOR) approach.

To aid in the development of teachers surrounding the varying approaches and the changes of instructional strategies, school districts across the nation have had to employ a variety of professional development opportunities. In addition to professional development, many districts have hired literacy coaches who are educators whose focus is the development of teacher practice (Quintero, 2019).

Starting with the legislative history on literacy instruction in the United States, the research establishes that there have been ongoing debates about literacy instruction, including where funding has gone for literacy instruction. With these initiatives, school districts have had to ensure that their teaching staff is following federal and state legislation, which requires more training to stay in compliance.

Federal Legislation and Literacy

The Elementary and Secondary Education Act (1965)

Enacted in 1965, the federal Elementary and Secondary Education Act (ESEA) is the nation's education law and shows a longstanding commitment to equal opportunity

for all students (Washington Office of Superintendent, 2022). The ESEA was a "cornerstone of President Lyndon B. Johnson's *War on Poverty,"* (Paul, 2022, para 1). This law "brought education into the forefront of the national assault on poverty and represented a commitment to equal access to quality education," (Paul, 2022, para 1). ESEA is an expansive statute that funds primary and secondary education, emphasizes high standards and accountability, and authorizes funds for professional learning, instructional materials, resources to support educational programs, and to promote parental involvement (Paul, 2022, para 1). The act was signed into law on April 9, 1965, and its appropriations were to be carried out for five fiscal years; the government has reauthorized the act every five years since its enactment (Paul, 2022, para 1).

A central provision of ESEA is Title I, a program created by the United States Department of Education to distribute funding to schools and school districts with high percentages of students from low-income families (ESEA, 1965). As defined in ESEA Section 1001, Title I provides all children with a significant opportunity to receive a fair, equitable, and high-quality education and close educational achievement gaps (ESEA, 1965).

The ESEA outlines national activities that the federal government provides funding for, with Subpart 2 of Part B entitled Literacy Education for All (ESEA, 1965). The purposes of this subpart are:

- ...to improve academic achievement in reading and writing by providing Federal support to States to develop, revise, or update comprehensive literacy instruction plans that, when implemented, ensure high-quality

instruction and effective strategies in reading and writing from early education through Grade 12.

- ...for States to provide targeted subgrants to early childhood education programs and local educational agencies and their public or private partners to implement evidence-based programs that ensure high-quality comprehensive literacy instruction for students most in need. (ESEA, 1965, p. 178)

As outlined in ESEA, comprehensive literacy instruction means instruction that:

- includes developmentally appropriate, contextually explicit, and systematic instruction, and frequent practice in reading and writing across content areas;
- includes age-appropriate, explicit, systematic, and intentional instruction in phonological awareness, phonics decoding, vocabulary, language structure, reading fluency, and reading comprehension;
- includes age-appropriate, explicit instruction in writing, including opportunities for children to write with clear purposes, with critical reasoning, and appropriateness to the topic and purpose;
- makes available and uses diverse, high-quality print materials;
- uses differentiated instructional approaches, including individual and small group instruction;
- provides opportunities for children to use language with peers and adults in order to develop language skills;
- includes frequent practice of reading and writing strategies;

- uses age-appropriate, valid, and reliable screening assessments, diagnostic assessments, formative assessment, and summative assessments;
- uses strategies to enhance children's motivation;
- incorporates the principles of universal design for learning;
- depends on teachers' collaboration in planning, instruction, and assessing a child's progress and on continuing professional learning; and
- links literacy instruction to the challenging State academic standards. (ESEA, 1965, p. 178)

In Part B, Section 222, the ESEA provides comprehensive literacy state development grants (ESEA, 1965). From the amounts reserved by the secretary, "the secretary shall award grants on a competitive basis to state educational agencies to enable the state educational agencies to: (1) provide subgrants to eligible entities serving a diversity of geographic areas, giving priority to entities serving greater numbers or percentages of children from low-income families; and (2), develop or enhance comprehensive literacy instruction plans that ensure high-quality instruction and effective strategies in reading and writing for children from early childhood education through Grade 12, including English learners and children with disabilities," (ESEA, 1965, p. 180).

A Nation at Risk: The Imperative for Educational Reform (1983)

Under President Reagan, the Secretary of Education, T. H. Bell, created the National Commission on Excellence in Education in August of 1981 (The National Commission on Excellence in Education, 1983). The task of this commission was to examine the quality of education in the United States and make a report to the Nation

within 18 months (The National Commission on Excellence in Education, 1983, p.1). The commission found that the United States was at risk, with several indicators of risk, such as: (1) international comparisons of student achievement that showed American students were never first or second, were last in achievement seven times, were functionally illiterate; (3) 13% of all 17-year-olds could be considered functionally illiterate, with a higher percentage in minority students; (4) the average achievement of high school students on standardized tests was lower than 26 years prior; (5) over half of the population of gifted students did not match their tested ability with comparable achievement in school (The National Commission on Excellence in Education, 1983).

After identifying risks, the commission concluded that the declines in educational performance were largely the result of disturbing inadequacies in the way the educational process itself is often conducted (The National Commission on Excellence in Education, 1983). The findings that the commission reported reflected four important components: content, expectations, time, and teaching (The National Commission on Excellence in Education, 1983, p.17).

Content. Regarding content, the commission found that secondary school curricula had been homogenized, diluted, and diffused to the point that they no longer have a central purpose (The National Commission on Excellence in Education, 1983). The commission also believed that there was extensive student choice, and that low numbers of students were participating in higher level classes, such as geography and calculus (The National Commission on Excellence in Education, 1983). Finally, regarding content, “25% of the credits earned by general track high school students were in physical and health education, work experience, remedial English and math, and

personal service and development courses," (The National Commission on Excellence in Education, 1983, p. 21).

Expectations. The findings in the component of expectations were: "(1) the amount of homework for high school seniors had decreased; (2) U.S. students were being outspent timewise high schools to offer foreign language; (3) only eight states require high schools to offer foreign language instruction, but none requires the students to take the courses; (4) too few experienced teachers were involved in writing textbooks; (5) students were able to master 80% of material in subject-matter texts before they had opened the books; and (6) expenditures for textbooks and other instructional materials had declined by 50% over the past 17 years, relative to the year this report was written," (The National Commission on Excellence in Education, 1983, p. 22).

Time. As far as time, the commission suggested that U.S. students were not in school long enough, comparing the traditional 6-hour school day to an 8-hour school day seen in England (The National Commission on Excellence in Education, 1983). They also reported finding that time spent learning how to cook counted as much as time in mathematics, English, science, and history (The National Commission on Excellence in Education, 1983). A California study was indicated as stating that because of poor use of classroom time, some elementary students received only one-fifth of the instruction that other students received in reading comprehension (The National Commission on Excellence in Education, 1983).

Teaching. The commission referred to findings regarding teaching, stating that not enough of the academically-able students were being attracted to teaching (The National Commission on Excellence in Education, 1983). At the time of the report, "the

average salary after 12 years of teaching was $17,000 per year, and teachers were required to supplement their income with part-time and summer employment," (The National Commission on Excellence in Education, 1983, p. 24). In addition, teachers reported that they had limited influence in such critical professional decisions, such as textbook selection (The National Commission on Excellence in Education, 1983).

America Reads Challenge (1997)

On April 26, 1997, President Bill Clinton proposed legislation to congress to help build a country of readers: The America Reads Challenge Act (ARCA). This act "mobilized AmeriCorps members, skilled reading specialists, and trained volunteer reading tutors to ensure that every student could read independently and well by the end of 3rd grade," (America Reads Challenge Act, 1997, p. 3). The ARCA set forth the first comprehensive, nationwide effort to create after-school, summer, and weekend tutoring focused on reading (America Reads Challenge Act, 1997). The America Reads Challenge Act was a "five-year, $2.75 billion commitment to local communities and organizations, as well as included national and regional efforts," (America Reads Challenge Act, 1997, p. 3).

To mobilize volunteer reading tutors, the ARCA funded 25,000 reading specialists and tutor coordinators, including 11,000 AmeriCorps members. At its inception, it was projected that by 2002, there would be at least one million reading tutors volunteering to work with children (America Reads Challenge Act, 1997). The ARCA included *Parents as First Teachers Grants*, which awarded more than $300 million over five years to build effective programs to aid with parents to help their children become proficient readers by the end of 3rd grade (America Reads Challenge Act, 1997). The

grants built on other commitments to early learning, such as the growth of the Head Start program, which reached one million preschool children (America Reads Challenge Act, 1997). Also included were additional investments in Title I to improve reading instruction during the school day, as well as family literacy efforts (America Reads Challenge Act, 1997).

National Reading Panel (1997)

In 1997, Congress convened the National Reading Panel (NRP) to assess the effectiveness of different techniques used to teach children to read (National Institute of Child Health and Human Development, 2019). The NRP was made up of 14 people, including "leading scientists in reading research, college representatives, teachers, educational administrators, and parents," (National Institute of Child Health and Human Development, 2019 p. 1). A thorough examination of research since 1966 resulted in the identification of approximately 100,000 available studies, which caused the NRP to set criteria for examining the research (Lazich, 2018). The NRP determined that the research must: "(a) measure one or more skills in reading, (b) cover a large population of students, (c) examine the effectiveness of an approach, and (d) be considered high quality," (Lazich, 2018, p.14). When the NRP issued its report, the chapters were presented in the following order: phonemic awareness, phonics, oral reading fluency, vocabulary, and comprehension (Shanahan, 2005).

Phonemic Awareness. "Phonemic awareness is strictly an auditory skill and involves the ability to identify and manipulate sounds in spoken words," (Lazich, 2018 p. 14). According to the findings of the NRP, "blending and segmenting are the two

phonemic awareness activities that should be emphasized since they are most closely related to later reading and spelling skills," (Lazich 2018, p. 15; NRP, 2000).

Phonics. Phonics "involves understanding the relationship between sounds of the spoken language and print," (Lazich, 2018 p. 15). Phonics instruction helps children understand the various connections between the spoken language and written language (Lazich, 2018). The NRP's findings were very clear that "systematic and explicit phonics instruction is particularly effective for teaching children to learn to read," (Lazich, 2018 p. 16; NRP, 2000).

Fluency. Fluency is defined as "the ability to read text accurately and quickly, with expression properly matching the content of the text (i.e., prosody)," (Lazich, 2018, p. 16). The NRP's findings address instructional approaches for building fluency: "repeated oral reading opportunities for children, coupled with systematic and explicit feedback from the teacher," (Lazich, 2018 p. 16; NRP, 2000).

Vocabulary. Vocabulary, as defined by the NRP (2000), "are the words children must know to effectively communicate," (Lazich, 2018 p. 17). There are two types of vocabulary: oral and written (Lazich, 2018). Oral vocabulary includes the words children use when listening and speaking; "written vocabulary encompasses the words children recognize when reading and those used in their writing," (Lazich, 2018 p. 17).

Comprehension. Comprehension is the reason individuals read, and how they gain meaning from the text that they read. Metacognition, or thinking about thinking, is a skill addressed in the report of the NRP (2000) (Lazich, 2018). The NRP's findings revealed that "comprehension could be developed through the teaching of six strategies:

- monitoring comprehension

- using various organizers
- understanding story structure
- summarizing
- asking questions
- answering questions to monitor understanding," (Lazich, 2018, p. 18)

No Child Left Behind (2002)

The No Child Left Behind Act (NCLB) of 2002 amended the ESEA of 1965 to revise, reauthorize, and consolidate various programs (USDE, 2002). NCLB is an act from President George W. Bush's White House that focused on improving student performance. This revision extended the authorizations of appropriations for ESEA programs through 2007. There were key revisions and additions in NCLB that focused on Title I, school choice endeavors, as well as standardized testing and student performance indicators.

Section 101 established requirements for: "(1) yearly testing and assessments of student performance; (2) State standards for and assessments of Adequate Yearly Progress (AYP); (3) local educational agency (LEA) identification of schools for improvement and corrective actions; (4) reporting to parents and the public on school performance and teacher quality; (5) eligibility requirements for schoolwide programs; and (6) increased qualifications of teachers and paraprofessionals," (USDE, 2002, para. 1).

Section 101 also provided alternatives for students at public schools failing to meet AYP standards within certain periods, including "public school transfer options for all students at such schools and supplementary educational services for low-income

children who remain at such schools, with such services allowed to be provided by various entities," (USDE, 2002, para. 1).

NCLB required each state to define AYP in a specified manner, which included "separate measurable annual objectives for continuous and substantial improvement for the achievement of all public elementary and secondary school students in the state, as well as for the achievement of specific groups:

- economically disadvantaged students
- students from major racial and ethnic groups
- students with disabilities
- students with limited English proficiency," (USDE, 2001, para. 4).

NCLB required states, "by the 2005-2006 school year, to conduct annual academic standards-based assessments in mathematics and reading or language arts in Grades 3 through 8, and science at three grade levels by the 2007-2008 school year," (USDE, 2002, para. 5).

NCLB revised and renamed section 1-B as "*Student Reading Skills Improvement Grants* to establish programs for *Reading First* and *Early Reading First Initiatives,* as well as revised and reauthorized the William F. Gooding *Even Start Family Literacy* programs," (USDE, 2002, para. 21). NCLB was also revised to establish a subpart 4 program for "*Improving Literacy through School Libraries,"* (USDE, 2002, para. 21).

The *Reading First* program provided increased funding for "improving classroom reading instruction, assistance to establish scientific research-based reading programs for all children in kindergarten through third grade, and professional development for teachers to identify children at-risk for reading failure," (USDE, 2002, para. 22). It also

provided for effective early instruction to overcome "specific barriers to reading proficiency," (USDE, 2002, para. 22). With this initiative, 80% of program funds were allocated to states based on poverty rates (USDE, 2002).

The early *Reading First* program of competitive grants were established to support enhanced reading readiness for children ages three through five in high poverty areas where there were high numbers of students who were not reading at grade level (USDE, 2002, para. 24). This addition provided for development of verbal skills, phonemic awareness, and pre-reading development. There was also assistance for teachers in childcare or Head Start centers focused on professional development for instructional activities that would prepare children for formal reading instruction in kindergarten and grade one (NCLB, 2002). The "*Improving Literacy through School Libraries* program set forth to provide students with increased access to up-to-date school library materials, well-equipped, technologically advanced school library media centers, and well-trained, professionally certified school library media specialists," (USDE, 2002, para. 26).

Title V, established in NCLB, included the *Promoting Informed Parental Choice and Innovative Programs* (USDE, 2002). Under this, "any child attending a Title I school (i.e., generally a school that served a high percentage of low-income students) who the state has listed as "in need of improvement," in "corrective action," or in "restructuring" was eligible to move to another public school in the same district," (USDE, 2002, para. 51). A child did not have to come from a low-income family to take part in public school choice, and in some cases, children were also able to move to a school outside of their home district (USDE, 2002). Additionally, the school district provided or paid for the

child's transportation to the new school, and the district first provided transportation to low-income, low-achieving students (USDE, 2002).

Race to the Top (2009)

This initiative, put in place by President Barack Obama, offered incentives to states willing to start systemic reform to improve teaching and learning in America's schools (Obama White House Archives, 2009). *Race to the Top* dedicated over $4 billion to 19 states that created robust plans to address four key areas of K-12 education reform:

- development of rigorous standards and better assessments
- adoptions of better data systems to provide schools, teachers, and parents with information about student progress
- support for teachers and school leaders to become more effective
- increased emphasis and resources for the rigorous interventions needed to turn around the lowest-performing schools (Obama White House Archives, 2009, para. 4)

Every Student Succeeds Act (2015)

The Every Student Succeeds Act (ESSA) was signed by President Obama on December 10, 2015 (U. S. Department of Education, 2022). The bipartisan measure reauthorized the ESEA, the nation's education law and longstanding commitment to equal opportunity for all students (U.S. Department of Education, 2022).

The ESSA included provisions that helped to ensure achievement for schools and students, such as "advancing equity by upholding critical protections for America's disadvantaged and high-needs students," (U.S. Department of Education, 2022, para. 3). It also required high academic standards for all students that prepare them to succeed in

college and careers (U. S. Department of Education, 2022). The ESSA also ensured that vital information was provided to educators, families, students, and communities through annual statewide assessments. An expectation that there would be "accountability and action to effect positive change in the nation's lowest-performing schools was also maintained, where groups of students were not making progress, and where graduation rates were low over extended periods of time," (U. S. Department of Education, 2022, para. 3).

The Reading Wars

The societal importance placed on learning to read has been evident in an unusually prolonged, and at times fierce, debate about how to teach reading. This debate is known as the *reading wars* (Wyse & Bradbury, 2022). Over many years, the pendulum has swung between arguments favoring a phonics approach (i.e., structured literacy), which the sounds that letters make are taught explicitly, and a whole-language approach (i.e., balanced literacy), which emphasizes the child's discovery of meaning through experiences in a literacy-rich environment (Castles et al., 2018).

With the abundance of research and literature regarding how early readers begin to be successful readers, there is still not a general consensus amongst policymakers and educators of the best way to teach reading. There are two factors that may contribute to this resistance. First, "limited knowledge about the nature of writing systems among many practitioners means that they are not equipped to understand why phonics works for alphabetic systems," (Castles et al., 2018, p. 38). Second, "practitioners know that there is more to reading than alphabetic skills, but a full presentation of the scientific evidence in relation to these more advanced aspects of reading acquisition in a public

interest forum has been lacking," (Castles, et al., 2018, p 38. As a result, calls for a greater focus on phonics instruction can seem unbalanced (Castles et al., 2018).

Balanced Literacy

Balanced literacy is a "philosophical orientation that assumes that reading and writing achievement are developed through instruction and support in multiple environments," (Frey et al., 2005, p. 1). In this orientation, teachers use various approaches that differ by the level of teacher support and child control (Frey et al., 2005). Literacy is taught using a balance of teacher- and student-initiated activities, as well as equal attention to phonics skills and whole-language approaches (Willson & Falcon, 2018). At its core, a balanced literacy approach includes read alouds, shared reading, guided reading, independent reading, shared writing, and independent writing (Willson & Falcon, 2018). The approach also adopts a workshop model, where the teacher meets with small groups of students to work on certain skills, while the rest of the class works on independent reading or writing (Willson & Falcon, 2018).

"Whole language advocates have conceptualized reading development as the gradual integration of three-cueing mechanisms (i.e., semantic, syntactic, and graphophonic)," (Hempenstall, 2006, p. 5). The three cues are not intended to be "employed in isolation, but so seamlessly that they appear simultaneous," (Hempenstall, 2006, p. 5). "Semantic cues involve enlisting the meaning of what has just been read to assist with decoding words about to be read (i.e., the next unknown word should make sense in the context of the reader's ongoing interpretation of the text meaning)," (Hempenstall, 2006, p. 5). Syntactic cues arise "because of the logic of the language system of sentence construction (i.e., words and their position in a sentence are

constrained by the rules of grammar)," (Hempenstall, 2006, p. 5). Finally, "graphophonic cues refer to the correspondence between graphemes (i.e., the symbols in print) and phonemes (i.e., the speech sounds that they represent)," (Hempenstall, 2006, p. 5). In practice, a student would be reading a text and come to an unknown word. Using the three-cueing method, the teacher would then prompt the student by first asking the student to look for clues in the picture, then read or reread the passage and fit in a word that makes sense, and finally to look at the first letter to help guess what the word may be (Hempenstall, 2006).

Reading Recovery. A concurrent framework that is demonstrated alongside balanced literacy is the Reading Recovery approach developed by Marie Clay in 1984. "If the child is a struggling reader or writer the conclusion must be that we have not yet discovered the way to help him learn" (Marshall, 2018, para. 7). Reading Recovery is "a short-term intervention in which the most struggling first-grade students work one-on-one with a trained Reading Recovery teacher in 30-minute sessions for 12-20 weeks," (Marshall, 2018, para 1). "Trained reading recovery teachers execute lessons for the identified lowest literacy learners and expose each student to a complex set of reading and writing literacy processing skills at an accelerated pace," (Carr, 2019, p. 1).

A critical component of Reading Recovery is the Observation Survey Reading Achievement Assessment (Clay, 2002, 2005, 2016). The dominant literacy domain areas of the observational survey include "reading text level, letter identification, concepts about print, writing, vocabulary, and hearing and recording sounds," (Carr, 2019, p. 30). The second crucial component of Reading Recovery is "Roaming Around the Known," (Carr, 2019, p. 30). The teacher focuses on "familiar, manageable tasks that allow

students to build confidence and problem-solving skills," (Carr, 2019, p. 31). The third component of Reading Recovery is Running Records, which are "oral assessment tools that measure reading behaviors of fluency, accuracy, and comprehension," (Carr, 2019, p. 32). As a student reads independently, the trained Reading Recovery teacher takes "detailed notes about the student's reading behaviors," (Carr, 2019, p. 32). Trained Reading Recovery teachers perform "daily running records to determine each student's reading progress, or lack of, to determine what literacy areas the student needs to improve," (Carr, 2019, p. 32).

The metric for assessment used in most balanced literacy models is a leveling system, such as Fountas and Pinnell's Leveled Literacy programs. The instructional materials provided to teachers to support students through reading progression are known as "leveled texts that typically come in a set and include a wide range of leveled materials and tools used to instruct students' literacy development." (Regnery, 2020, p. 1). Theoretically, the structure that leveled literacy kits use (i.e., assess, instruct, and reassess) allows for individualized instruction for each student, ensuring reading skill development occurs (Regnery, 2020). While leveled texts are used throughout the United States, they "promote criterion-referenced assessment types which focus a teacher's lens on the amount of student progression rather than on students' needs," (Regnery, 2020, p. 2). Further, it has been analyzed how leveled texts, specifically Fountas and Pinnell texts, feature "mostly White male main characters with no representation of cognitive or emotional disabilities and very few physical disabilities," (Regnery, 2020, p. 10).

Structured Literacy

Key features of structured literacy approaches include "(a) explicit, systematic, and sequential teaching of literacy at multiple levels- phonemes, letter-sound relationships, syllable patterns, morphemes, vocabulary, sentence structure, paragraph structure, and text structure; (b) cumulative practice and ongoing review; (c) a high level of student-teacher interaction; (d) the use of carefully chosen examples and nonexamples; (e) decodable text; and (f) prompt, corrective feedback," (Spear-Swerling, 2018, p. 202). Explicit means that the important skills and concepts are taught clearly and directly by the teacher (Archer & Hughes, 2011; Spear-Swerling, 2018). Explicit instruction is intentional. For the instruction to be systematic and sequential, the skills and concepts are taught in a logical order, with "important prerequisite skills taught first," (Spear-Swerling, 2018, p. 202; Torgesen, 2006). In reading text, teachers directly "teach skills in isolation first and then build in cumulative practice of previously learned skills, so students retain these skills and develop automaticity," (Spear-Swerling, 2018, p. 202).

Structured literacy (i.e., phonics approach) calls for educators to "explicitly teach decoding skills. Word decoding ability is one of the cornerstones of reading, as well as the main observable symptom of dyslexia," (Nordstrom et al., 2016, p. 1; Singleton, 2009; Tunmer & Greaney, 2010). Phonics is a body of knowledge regarding the relationship between the sounds of spoken language and the letters used to represent the writing (Buckingham et al., 2019). Phonics instruction teaches children this knowledge and how to apply it when reading, but it is most effective when used in combination with other, complementary strategies (Buckingham et al., 2019).

The alphabetic principle is “the understanding that letters and letter clusters in written words represent the sounds in spoken words, and letter-sound correspondences are predictable and reversible,” (Buckingham et al., 2019, p. 50). “Beginning readers access the meaning of a word via a phonological pathway in the brain (i.e., through the sound of the word, not its shape),” (Buckingham et al., 2019, p. 50). Therefore, “the ability to convert the written word to the spoken word through phonological decoding is crucial in the early development of reading,” (Buckingham et al., 2019, p. 50). “Word decoding measured in second grade predicted marks in subjects at the end of compulsory school and was also associated with choice of advanced English courses, advanced math courses, and choice of French and German language classes during secondary school,” (Nordstrom et al., 2016, p. 9).

Together, letter knowledge and beginning sound awareness facilitates entry into the second and third phases of concept of word. “As theory indicates, learners will likely use letter-sound knowledge as the primary tool with which to ground finger-point reading and word finding by helping them differentiate words from one another in a line of text,” (Mesmer & Williams, 2015, p. 487). “The use of syllable awareness, along with letter and phoneme awareness, likely helps children resolve how words, rather than syllables, are the units separated by white space on the page,” (Mesmer & Williams, 2015, p. 492).

As some of the critics of the science of reading have pointed out, much of the current research has evaluated the impact of instruction beyond phonics (Goldstein, 2022). Instructional studies have identified the importance of “explicit teaching of phonological awareness (Shanahan, 2020, p. 8), oral reading fluency (Shanahan, 2020, p.8), reading comprehension strategies (Shanahan, 2020, p. 8), vocabulary (NRP, 2000;

Shanahan, 2020, p. 8), the use of complex text (Shanahan, 2020, p. 8), the impact of writing on reading (Shanahan, 2020, p. 8), and several other curricular instructional approaches and interventions (Shanahan, 2020, p. 8)."

Background of Science of Reading

The Science of Reading

Science of reading is a phrase that has been used in various contexts, but its use within research, policy, and the press has shared one commonplace: "an intense focus on assessed reading proficiency as the primary goal of reading instruction," (Aukerman & Schuldt, 2021, p.1). Recently, the term SOR has been used in public debate to "promote policies and instructional practices based on research regarding the basic cognitive mechanisms of reading, the neural processes involved in reading, and the like," (Shanahan, 2020, p. 1). In a Google Books Ngram (i.e., visualization of occurrences of specific terms in published books) Shanahan found the term "science of reading" used in 8 million books written in English (2000). The impact of the SOR, as used today, is seen in both the connotation of the word and its actual meaning; it now often seems to be used as a "rhetorical club to challenge those not adhering to some conception of it, hence the arguments over who has the right to even use the term," (Goldstein, 2022, p. 4). The science of reading instruction for educators most often includes two references: The Simple View of Reading and The Reading Rope (Aukerman & Schuldt, 2021; International Dyslexia Association, 2018).

The Simple View of Reading. Within the last decade, scholars who have researched the SOR have focused on the Simple View of Reading (SVR), which holds decoding proficiency and language proficiency fully accountable for reading

comprehension proficiency (Aukerman & Schuldt, 2021). Decoding development has received more focus in the fast reaction and adoption of phonics instruction (Aukerman & Schuldt, 2021; Goldenberg, 2020; Pearson et al. 2020), and recent research has suggested that the entire SVR needs fundamental adjusting considering other factors emerging as impactful, from fluency to disciplinary content knowledge (Cervetti et al., 2020).

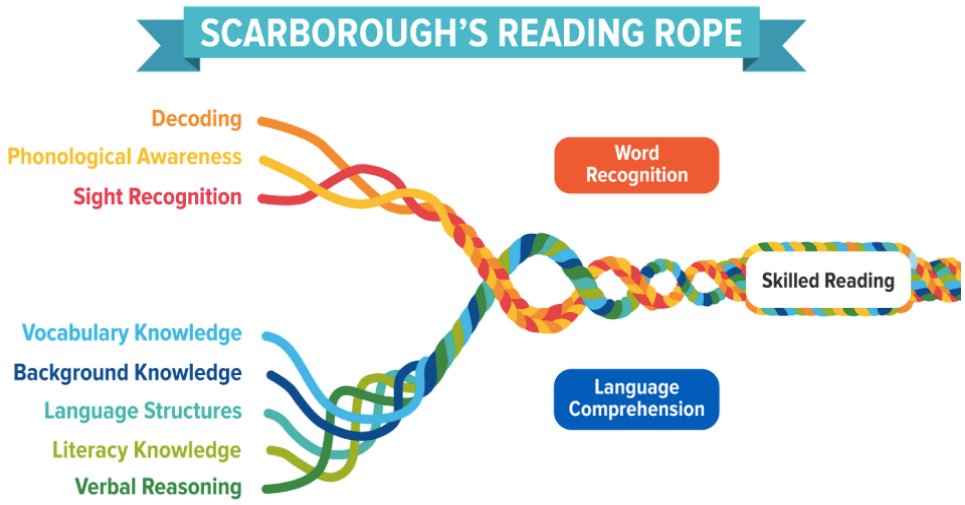
The SVR suggests that reading is the product of two independent components: decoding and listening comprehension (Duke & Cartwright, 2021). The SVR model is explained by the equation $D \times C = R$, where D represents decoding, R represents reading, and C represents comprehension (Duke & Cartwright, 2021). "Although the original SVR specified decoding and listening comprehension as the foundational constructs of reading, in contemporary work, these terms are frequently broadened to include word recognition and language comprehension," (Duke & Cartwright, 2021, para. 4). Gough and Tunmer (1986) initially proposed the SVR to emphasize the importance of decoding in reading, and in modern work, when researchers mention SVR, they have done so to show importance of decoding, language, or both, to the reading process, reading development, or reading instruction (Duke & Cartwright, 2021, para. 5).

SVR makes two important predictions about reading development and difficulties for students (Language and Reading Research Consortium, 2015). The first is the weighing of the two components – word recognition and listening comprehension – will change as students develop and gain automaticity (Gough et al., 1996). The second prediction that SVR makes about reading development and difficulties is that issues

within reading comprehension may arise because of difficulties in word recognition, listening comprehension, or both (Gough & Tumner, 1986).

Figure 1

The Reading Rope (International Dyslexia Association [IDA], 2018)



Developed by Hollis Scarborough, the Reading Rope consists of lower and upper strands (International Dyslexia Association, 2018). "The word-recognition strands (i.e., phonological awareness, decoding, and sight recognition of familiar words) work together as the reader becomes accurate, fluent, and increasingly automatic with repetition and practice," (IDA, 2018, para. 4). At the same time, the language-comprehension strands (background knowledge, vocabulary, language structures, verbal reasoning, and literacy knowledge) reinforce one another and then braid together with the word-recognition strands to produce a skilled reader (IDA, 2018). Dr. Scarborough used the Reading Rope as a pictorial representation of the development of skilled reading and created an analogy, backed by research, that expanded on the SVR to provide more understanding of the complexity of skilled reading (Hennessy, 2021).

Skilled reading can be defined as "the fluent execution and coordination of word recognition and text comprehension, both essential factors in reading proficiency," (Hennessy, 2021, pg. 17). Accurate and automatic word reading relies on three intertwined independent skills that are known as the three instructional components of effective reading instruction (Hennessy, 2021). Those three skills are phonological awareness, sight word recognition, and decoding (Hennessy, 2021).

Science of Reading Literacy Instruction. With the use of the SOR, the SVR, and the Reading Rope, educational leaders must establish a literacy block that is conducive to literacy instruction and learning. "Over the past two decades, U.S. elementary schools have increased the length of the literacy block in an effort to improve literacy scores, leaving disproportionately less time for content-area instruction," (Hwang et al., 2022, p. 1). Yet, even with the increased time spent on literacy, the most recent Nation's Report Card shows that approximately two-thirds of fourth-grade students did not reach a proficient level of reading achievement (NAEP, 2019). Educators can predict comprehension problems when issues arise in phonological awareness, syntax, listening comprehension, oral language, and working memory (Hwang et al., 2022).

Effective literacy blocks should include oral language, phonemic awareness, phonics, fluency, vocabulary, and comprehension (Florida Department of Education, 2016). Ohio's plan to raise literacy achievement emphasizes the "need for professional learning and resources that deepen teachers' understanding of how children best learn to read, diagnose why some children struggle to read, and sharpen teachers' abilities to implement reading instruction and intervention that is aligned to the science of reading," (Ohio Department of Education, 2020, p. 7).

Professional Development in the Teaching Profession

Overview of Professional Development

Professional development (PD) is a widely accepted method of teacher learning that holds the belief that teaching will improve (Kennedy, 2016). PD is required by virtually every teaching contract, and teachers participate in PD every year (Kennedy, 2016). In the state of Ohio, teachers must complete 18 continuing education units (i.e., 180 hours) in order to keep a professional teaching license every renewal period (Ohio Department of Education, 2022). Despite the agreement about its importance, there is little consensus about how PD works such as what happens in PD, how it fosters teacher learning, and how it is expected to alter teaching practice (Kennedy, 2016).

Borko et al. (2010) reviewed the literature on modern approaches to teacher PD and derived a number of important characteristics of effective PD: "(1) the content is situated in practice and addresses problems of practice; (2) the content is focused on students' learning; (3) preferred instructional practices are modeled; (4) PD fosters active teacher learning and teacher inquiry; (5) professional learning communities and collaborative learning environments are used; (6) PD settings are appropriate to goals, and are often school based; and (7) opportunities or models are on-going and sustainable," (Vermunt et al., 2019, p. 62).

It is important to make a distinction between the term professional development and the term professional learning. There is a need to move beyond the current focus on how best to provide PD activities and toward understanding more about the fundamental question of how teachers and adults learn (Vermunt et al., 2019, p. 5). Researchers should

ground the idea of effective PD more on a nuanced understanding of what teachers do, what motivates them, and how they learn and grow, rather than on a collection of design features (Kennedy, 2016; Vermunt et al., 2019). Many approaches to PD are highly prescriptive, which is not in line with modern student learning research emphasizing the importance of metacognition and self-regulation (Kennedy, 2016).

Literacy Coaching

As a nationwide strategy to enhance teacher practice leading to school improvement, literacy coaching is rapidly gaining interest (Gibbons & Cobb, 2017). The type of support that literacy coaches provide is mainly job-embedded, personalized, and sustained professional learning support for teachers through the coach-teacher partnership (Kho et al., 2020). There is growing empirical evidence that literacy coaching could bring about many benefits in school improvement efforts by improving teacher efficacy, fidelity in implementing teaching strategies, and student achievement (Kho et al., 2020).

Literacy coaches, also referred to as instructional coaches, curriculum specialists, lead teachers, or resource specialists, were a position created to assist instructional leadership as a support system for teachers (Anderson & Wallin, 2018). The idea of coaching stemmed from the idea that teachers would learn best from accomplished teacher colleagues (Anderson & Wallin, 2018). Overall, the literature about literacy coaching is conclusive. “When coaches are trained properly and are confident in their work, they can achieve positive outcomes for principals, teachers, and students,” (Anderson & Wallin, 2018, p. 54).

Jim Knight (2021) explains three approaches to coaching: facilitative, directive, and dialogical. The approaches can vary based on the needs of the teacher, as the

facilitative coach operates as a thought partner for teachers without sharing expertise, leading to the teacher being the decision-maker (Knight, 2021). By contrast, a directive coach would share specific knowledge surrounding an area that needs improvement. Finally, the dialogical coach uses questioning to drive discussions, having the teacher act as an active participant in the process of planning, creation, reflection, and interpretation (Knight, 2021).

Figure 2

Types of Literacy coaches (Knight, 2021, para. 1)

Facilitative	Dialogical	Directive
Coach does not share expertise	Coach shares expertise dialogically when appropriate	Coach's expertise is the focus of the coaching session
Teacher does most of the thinking	Coach and teacher think together	Coach does most of the thinking
Teacher-focused goal	Student-focused goal	Strategy-focused goal

Facilitative Coaching. Facilitative coaches see collaborating teachers as equals who make most of the decisions during coaching (Knight, 2021). As Whitmore states, "the relationship between the coach and the coachee must be one of partnership in the endeavor, or trust, of safety and of minimal pressure" (Knight, 2021, para 2). Facilitative coaches encourage coachees (i.e., teachers) to share their ideas openly by listening with empathy, paraphrasing, and asking powerful questions. "Facilitative coaches also do not share their expertise or suggestions about what a teacher can do better," (Knight, 2021, para. 3). In practice, facilitative coaching works when the teachers being coached have

the knowledge that they need to improve, but this type of coaching is not as effective when teachers do not have the knowledge that they need to address the issues in their classrooms (Knight, 2021). Facilitative coaching is not an appropriate method for schools planning to use coaching to share instructional practices because coaches are not there to share expertise (Knight, 2021).

Directive Coaching. Directive coaching is the opposite framework as seen in facilitative coaching (Knight, 2021). The directive coach's goal is to help teachers master a determined set of skills, and the relationship between the coach and teacher is like a master/apprentice relationship (Knight, 2021). The main premise of this approach is that the coach's expertise is the most important factor for coaching, and the coach is tasked with ensuring that teachers learn the correct way to do a skill or strategy (Knight, 2021). In practice, this would look like coaches telling teachers what to do, modeling practice, observing teachers, and providing constructive feedback to teachers until they can implement the new practices on their own and with fidelity (Knight, 2021). To be effective, directive coaches are skilled in communication and listen to their teachers, confirm understanding with strong questioning, and read their teachers' understanding or lack of understanding (Knight, 2021). The directive coach also needs to be "effective at explaining, modeling, and providing constructive feedback," (Knight, 2021, para 11). This model is used to meet fidelity with a new practice, but "directive coaching minimizes teacher expertise and autonomy; therefore, it frequently engenders resistance," (Knight, 2021, para. 12). This approach also fails to make impact because it oversimplifies the classroom, as most students within a classroom are too complex for a prescriptive approach to learning (Knight, 2021).

Dialogical Coaching. Dialogical coaches balance advocacy with inquiry (Knight, 2021). Dialogical coaches "embrace inquiry, asking questions that empower a collaborating teacher to identify goals, strategies, and adaptations that will have an unmistakable impact on students' achievement and wellbeing," (Knight, 2021, para. 15). Dialogical coaches ask meaningful questions, listen and think with teachers, and "collaborate with them to set powerful goals that will have a powerful impact on students' lives," (Knight, 2021, para. 15). Dialogical coaches, different from facilitative coaches, share their expertise and work from the assumption that the issues teachers face in classrooms can be better addressed if teachers understand what research has identified as effective teaching strategies (Knight, 2021). Dialogical coaches do not make the decision for teachers; rather, they position the teacher to be the decision maker (Knight, 2021). This approach is collaborative, and the coaches and teachers work together to develop goals and teaching strategies that will have impact on their student achievement (Knight, 2021).

Concerns with Literacy Coaching

While coaching is an effective professional development method, there are concerns with coaching from both the educators hired as the coaches and the teachers who are in the classrooms. A major concern points to "challenges associated with coaches getting access to teachers' classrooms," (Camburn et al., 2008; Mangin, 2005; Matsumura et al., 2009; Saclarides & Lubienski, 2018, p. 56). Many teachers perceive that the literacy coaches are administrators and fear that they may be observed and evaluated, which makes teachers hesitant to ask for coaching (Saclarides & Lubienski, 2018). In a specific study, "literacy coaches engaged in nonthreatening leadership

(Mangin, 2005), choosing to position themselves as trustworthy peers and avoid engaging in direct and difficult conversations with teachers," (Saclarides & Lubienski, 2018, p. 56). It can cause issues for coaches to focus on forming trusting relationships with teachers, as research suggests that this can "undermine the perception that teacher leaders are experts with important knowledge to share," (Mangin, 2005; Saclarides & Lubienski, 2018, p. 57). By avoiding engaging in difficult conversations with teachers, the coaches in this specific study avoided giving difficult feedback when working with teachers (Saclarides & Lubienski, 2018).

With this knowledge, if schools are employing literacy coaches, it is best to adopt a blended approach to coaching, "where teachers have the opportunity to select the topics they would like to focus on, and coaches have the freedom to initiate professional development with teachers and more actively shape their learning opportunities," (Saclarides & Lubienski, 2018, p. 58).

Conclusion

Literacy instruction has been an embattled topic in the history of the United States, with legislation and teaching practices shifting from year to year. There has not been consistency in terms of initiatives, leaving teacher education programs behind when training teachers. Because of the gap in teacher readiness, the use of professional development is crucial. The approach to professional development that has not been thoroughly researched in practice is the use of literacy coaches. While there is a body of research on what effective coaching looks like, there is not quantitative evidence on the benefits of hiring literacy coaches to improve literacy instruction and learning outcomes.

This research correlates the impact of literacy coaches with student achievement data. Chapter Three details the methodology utilized in this study.

Chapter Three

Methodology

This study was quantitative and examined numerical data from students' reading achievement scores in elementary schools, both with and without literacy coaches. The study was correlational and examined the relationship between two variables (i.e., presence of a literacy coach and reading achievement scores on the Third Grade Proficiency indicator). This study was not experimental, as there was no manipulation or control to any of the variables.

Through examining third-grade student achievement outcomes based on the Ohio State Report Card, the effectiveness of literacy coaches who support the SOR was examined. The study considered public schools that did not have literacy coaches and public schools that did have literacy coaches. There are 17 counties that encompass Northeast Ohio and 194 public school districts. At the time of this study, 38 school districts had the presence of literacy coaches, while seven school districts did not have the presence of a literacy coach. Five school districts reported receiving these services through their educational service center.

The researcher of the study accessed and examined quantitative data from the Third Grade Proficiency Measure of the Ohio State Report Card, which was publicly available. Three components encompass the Early Literacy Measure: students' reading proficiency in third grade, student promotion from third grade to fourth grade, and Improving K-3 Literacy. For this study, the only Early Literacy Measure studied was Third Grade Proficiency. These data are provided from Ohio State Tests, known as the Third Grade Reading Guarantee.

Data for this study included three academic years: 2021-2022, 2022-2023, and 2023-2024. Data was collected from the fall administration of the state assessment (i.e., Third Grade Reading Guarantee) and the spring administration.

Role of the Researcher

In this quantitative, correlational study, the researcher collected preliminary data on 194 public school districts in Northeast Ohio. The initial data included the school district name, whether there was a literacy coach present, and the school district's third-grade proficiency percentage.

After collecting the initial data, an analysis of variance (ANOVA) was used to determine differences in third-grade proficiency results in comparison to the presence of a literacy coach. ANOVA was the most appropriate statistical hypothesis test because the data include one continuous dependent variable and a categorical independent variable (Frost, 2021). In this study, the continuous dependent variable was the third-grade proficiency, which is normed and provided by the state of Ohio; the categorical independent variable was the presence of a literacy coach. This data was used to make assumptions about the impact that literacy coaches have on third-grade proficiency scores.

Instrumentation and Measurement

Instrumentation

There were two forms of data collection to support the research question of whether, and to what extent, the presence of a literacy coach positively impacted student achievement on the Third Grade Reading Guarantee.

Ohio School Report Card Data. The first set of data was archival data in the form of student achievement data. In the state of Ohio, student data on the Third Grade Reading Guarantee is publicly accessible and reported through the Ohio School Report Card. This data can be found under the *Early Literacy* component of the report card and identified as *proficiency in third-grade reading*. The *proficiency in third-grade reading* measure reports how many students score proficient or higher on the reading segment of Ohio's State Test for Grade 3 language arts (ODEW, 2023). It is important to note that this score is separate from overall reading proficiency on Ohio's State Test for Grade 3 language arts, as only the reading component is reported.

Google Form Survey. The instrument used for this study was a Google Form Survey. A Google Form is an online questionnaire tool to be used for data collection. The Google Form for this study was used to collect answers from district leaders on specific research questions:

1. Does your district employ an instructional or literacy coach?
2. How long has the [instructional] coach been with the district in this capacity?
3. What grade or grade band does the coach primarily service?

The Google Form intended to seek responses from superintendents or curriculum directors. The form was sent through email to district representatives.

The two sets of data were correlational, as the intent of the study was to determine if, and to what extent, there was a relationship between the presence of a literacy coach and student achievement. Data was correlated using Microsoft Excel. The Excel

spreadsheet organized the 194 public school districts in Ohio into separate tabs per county, with representation from 17 counties.

Participants and Data Collection

Participants

An email to participate in this study was mailed to 194 public school superintendents in Northeast Ohio, spanning over 17 counties. The counties included in Northeast Ohio for the purpose of this study were Ashland, Ashtabula, Columbiana, Cuyahoga, Erie, Geauga, Huron, Lake, Mahoning, Medina, Portage, Richland, Stark, Summit, Trumbull, Tuscarawas, and Wayne. Schools were chosen based on the geographical boundary between the four regions of the state.

A minimum of 100 responses to the instrument served as the sample. The school data was used to identify whether they employed an instructional or literacy coach; however, the response was necessary to factor their school in the total number of participating schools. A total of 45 superintendents representing 45 school districts in Northeast Ohio had sufficient responses to be included as part of the sample. Participation by superintendents was voluntary; those who chose to participate responded to the initial instrument that was received in their district email.

This study relied on student data; however, students were not directly invited to participate, as the student data was publicly accessible through Ohio's School Report Card. The Third Grade Proficiency score is reported as a percentage for each school district and does not contain any identifiable features.

Data Collection

The initial data collection was completed by an online search to determine the boundaries of the Northeast region of the state. Once the 17 counties that make up Northeast Ohio were determined, the counties and districts were added to an Excel Spreadsheet. This spreadsheet was utilized to store information about each district once the survey results were received. The spreadsheet had a separate tab by county, and included the survey questions, as well as publicly available student data.

Only public-school districts were included in this study due to public-school data being publicly accessible. The superintendent answered whether they employed an instructional or literacy coach, how long the instructional or literacy coach had been with the district, and what grade level or grade band the coach served.

The student data was taken from Ohio's School Report Cards that are public domain on the Department of Education's website. This data was collected using the public reports and added into the Excel spreadsheet to assist in making correlational observations between the employment of a literacy coach and the achievement scores of third-grade students.

Variable Descriptions and Analytic Strategy

Variable Description

There were two variables in this correlational study. The independent variable, as specified in the hypothesis, was the presence of a literacy coach. The survey instrument included the question of if there was a literacy coach present in the district, and this question determined which group the school was analyzed with: the group of schools

with the presence of a literacy coach or the group of schools without the presence of a literacy coach.

The dependent variable in this correlational study was student achievement data. The data that aligned to this study was the Third Grade Guarantee data found in the Ohio School's Report Card. In this measure, the schools are given a ranking based on the percentage of students considered proficient on the Third Grade Reading Guarantee. This assessment is given in both the fall and spring of a student's third grade year. The student can pass in either the fall or the spring, and the passing score will be reflected on this measure. The assessment measures reading and comprehension at an expected third-grade reading level.

The control variable involved in this correlational study was the learning hours required for all students in Ohio. In Ohio, all students in full-day kindergarten through Grade 6 have a minimum requirement of 910 hours of instruction per school year (ODEW, 2022). Utilizing the learning hours as a control variable indicates that all students have the same required learning hours and educational minutes, the impact of a literacy coach can be seen as an isolated factor of success.

Delimitations, Limitations and Assumptions

Delimitations

Delimitations refer to the boundaries or parameters that a researcher places on their study (Miles, 2019). Clarifying the delimitations of a study informs the audience of why the researcher conducted the study in the manner that was chosen. The objectives of this research study were to discover:

- if literacy coaches have a positive impact on student achievement.

- if instructional methods utilizing the science of reading, along with coaching, has a positive impact on student achievement.
- how school districts in Northeast Ohio are utilizing literacy coaching at the time of this study.

This research study did not aim to discover the preferable characteristics of literacy coaches, teacher perception of literacy coaches, or best practices of literacy coaches.

Limitations

There were several limitations when conducting this literacy coaching study. The limitations of this study derived from the study being quantitative in nature. While the benefit of this study was pronounced, the intention of this study was to determine if employing literacy coaches had benefits regarding literacy. Limitations included coach effectiveness, the sample size, as well as financial impacts. These limitations may have created potential roadblocks to the data being used in a meaningful way for individual districts.

The study intended to correlate the relationship between the presence of a literacy coach with student achievement outcomes; however, this was not a mixed methods research approach. Because of this, there were qualitative factors that were not evaluated at this time. However, future research can build upon the findings in this study. The current research examined the presence of a coach, how many years the coach had been with the district, and the grade levels that the coach serviced. The research did not evaluate the observational effectiveness of the coach, the collegial relations that the coach built, or the trust that the coach had among teachers. There are many qualitative aspects in education that cannot be observed with quantitative research. This research intended to

be the springboard into evaluating the necessity of employing coaches for ongoing teacher training relating directly to SOR instruction.

The sample size was dependent on the district representatives' willingness to respond. While all traditional demographics were included (i.e., urban, rural, suburban), there was overrepresentation of suburban districts based on the geographic location of Northeast Ohio. In addition, only traditional public schools were being examined in this study.

The financial limitations included the cost of hiring a literacy coach, potential replacement of the coach's previous position, training the coach, and providing ongoing professional learning opportunities for the coach. SOR certification may cost the district money, and districts may find that one coach is not enough to make an impact in their district. This is a limitation that may be explored more in depth in a future proposed study.

Assumptions

Determining the impact of literacy coaches in relation to student achievement data called for assumptions. The first assumption was that the coach was hired based on merit, education, and proven student achievement influence. Coaches are tasked with instructing teachers to make appropriate teaching decisions to guide students to grade level achievement, and without experience in being successful with student achievement, the coach may not be adequately prepared.

Another assumption was that the coach had adequate training in the SOR. In Ohio, districts and schools must require all teachers and administrators to complete a SOR course provided by the Department of Education (ODEW, 2024, p. 3). In alignment

with House Bill 33, all teachers in Grades K-5, English language arts teachers in Grades 6-12, intervention specialists, English learner teachers, reading specialists, and literacy coaches who serve any Grades PreK-12 must complete the 22 hours of coursework (ODEW, 2024, p. 3). Because of this law, it was an assumption that the individuals who were employed as coaches in the districts had adequate training in this area and were instructing teachers using the methods derived from the SOR body of research.

Research Ethics

In research, ethics can be defined as "the standards of behavior that guide your conduct in relation to the rights of those who become the subject of your work, or are affected by it," (Saunders et. al, 2015, p. 239). In accordance with Youngstown State University and federal guidelines, an Institutional Review Board (IRB) reviewed this study for ethical concerns. The three fundamental ethical principles for using any human subjects are: 1) respect for persons, 2) beneficence, and 3) justice (Kim, 2012). The researcher took great care in adhering to the stated guidelines.

Student Data

The student data used for this study was obtained through public domain, utilizing Ohio's School Report Cards. Individual student data was not collected, and identifying student data was not necessary. The student data was vague, calling only for the achievement percentage of students that were "on track" based on Ohio's Third Grade Reading Guarantee.

District Participation

Districts were not mandated to report their employment of a literacy coach. The survey was sent via email utilizing a Google Form. District representatives were invited

to enter if they employed a coach, how long they had employed the coach, and what grade levels the coach supported. At no time was the district asked to provide identifying information regarding staff or students. The participation in the survey was completely voluntary, minimizing the risk of harm.

Documentation

In accordance with Youngstown State University's policy, the researcher completed CITI Programs. The researcher completed the Social & Behavioral Research course, IRB Members course, and Social & Behavioral Responsible Conduct of Research course. The required certificates, as well as the IRB approval, are available in the appendix of this study (see Appendix A).

Chapter Four

Results

Introduction

The current investigation examined if there was a relationship between the presence of a literacy coach and third-grade student achievement in Northeast Ohio, as measured by the Ohio State Report Card indicator: Third Grade Proficiency (Ohio Report Card, 2023). Data was collected utilizing a Google Form Survey, and narrative responses were coded into point-scales.

Descriptive Statistics

The descriptive analysis for school districts that reported having a literacy coach was $n = 117$ (84.90%). School districts that reported not employing a literacy coach, but working with an Educational Service Center for this support was $n = 14$ (10.10%). School districts that reported not having literacy coaching support in any capacity was $n = 7$ (5.10%). The descriptive statistics for the presence of a coach are provided in Table 2.

Table 2

Descriptive Breakdown of Presence of a Coach

Coach? (Yes or No)	*n*	%
No	7	5.1
No but ESC	14	10.1
Yes	117	84.8

The school districts that were not aligned, as of Fall 2023, to the SOR were $n = 20$ (14.50%). School districts that were partially aligned, as of Fall 2023, were $n = 50$

(36.20%). School districts that were fully aligned, as of Fall 2023, were *n* = 68 (49.30%). The descriptive statistics for alignment to the SOR are provided in Table 3.

Table 3

Descriptive Breakdown of Alignment to the Science of Reading

Alignment to SOR	*n*	%
Not Aligned	20	14.5
Partial Aligned	50	36.2
Aligned	68	49.3

The results indicate that school districts had an average of *M* = 3.25 *(sd* = 3.46*)* years of support, with a normal level of skewness (2.2) and kurtosis (4.447), based on a sample of *n* = 138. For the number of grade levels that the literacy coach supported, the results indicate *M* = 10.36 (*sd* = 4.45), with a normal level of skewness (2.2) and kurtosis (-.36), based on a sample of *n* = 138.

School districts (*n* = 138) had an average of *M* = 57.05% (*sd* = 15.59) of students reading proficiently in the 3rd grade in 2020-2021, with a normal level of skewness (-.48) and kurtosis (.32). The same school districts (*n* = 138) had *M* = 63.41% of students proficiently in the 3rd grade in 2021-2022, with a normal level of skewness (-0.71) and kurtosis (1.67). In the year 2022-2023, school districts (*n* = 138) had *M* = 63.41% of 3rd grade students reading proficiently, with a normal level of skewness (-1.78) and kurtosis (4.94). The descriptive statistics for 3rd-grade proficiency for this sequence of three years is provided in Table 4.

Table 4

Third Grade Proficiency in 2020-2021, 2021-2022, 2022-2023

Statistics	3rd Proficiency Rate (2020-2021)	3rd Proficiency Rate (2021-2022)	3rd Proficiency Rate (2022-2023)
N	138	138	138
Mean	57.05	63.41	65.39
SD	15.59	13.03	16.67
Skewness	-0.48	-0.71	-1.78
Kurtosis	0.31	1.67	4.93

School districts that participated in the survey can be categorized into eight typologies: rural high poverty, rural average poverty, small town low poverty, small town high poverty, suburban low poverty, suburban very low poverty, urban high poverty, and urban very high poverty (Ohio Department of Education and Workforce, 2015). The participating districts are identified by typology in Table 5.

Table 5

Typology of Participating Districts

Typology	Frequency	Percent
Rural High Poverty	21	15.2
Rural Average Poverty	12	8.7
Small Town Low Poverty	15	10.9
Small Town High Poverty	29	21
Suburban Low Poverty	32	23.2
Suburban Very Low Poverty	12	8.7
Urban High Poverty	13	9.4
Urban Very High Poverty	4	2.9

As indicated above, the results show that most participative districts were from the typology suburban low poverty (23.2%), with small town high poverty (21%) being the next most frequent typology. The least represented typologies were rural average poverty (8.7%) and suburban very low poverty (8.7%).

Within these typologies, there are descriptive comparisons that can be made within the variables of the presence of a coach, alignment to SOR, and 3rd-grade proficiency for each year of data collection. This descriptive data for the 2020-2021 year is reported in Table 6.

Table 6

Comparative Descriptive Statistics by Typology 2020-2021

Typology	Coach?	Alignment to SOR	*M*	*sd*	*N*
Rural High Poverty	No	Partial Aligned	48.4	0	1
	Yes	Partial Aligned	56.1	3.62	6
Small Town Low Poverty	No	Not Aligned	62.85	7.14	2
	No	Partial Aligned	41.3	0	1
	Yes	Not Aligned	51.08	4.95	4
	Yes	Partial Aligned	64.44	6.90	5
Small Town High Poverty	No but ESC	Aligned	84.6	0	3
	Yes	Aligned	52.73	7.51	20
Suburban Low Poverty	No	Partial Aligned	75.7	0	1
	No	Aligned	81.4	0	1
	No but ESC	Aligned	75.7	0	2
	Yes	Partial Aligned	62.5	6.35	6
	Yes	Aligned	61.71	7.54	16
Suburban Very Low Poverty	No	Partial Aligned	88.2	0	1
	Yes	Partial Aligned	74.19	11	11
Urban High Poverty	No but ESC	Partial Aligned	48.7	0	4
	Yes	Partial Aligned	26.1	0	3
Totals	No	Not Aligned	62.85	7.14	2
	No	Partial Aligned	63.4	22.21	4
	No	Aligned	81.4	0	1
	No but ESC	Not Aligned	26.7	0	2
	No but ESC	Partial Aligned	48.7	0	4
	No but ESC	Aligned	74.28	10.04	8
	Yes	Not Aligned	54.32	11.11	16
	Yes	Partial Aligned	58.06	19.25	42
	Yes	Aligned	55.28	11.99	59

In 2020-2021, school districts that were aligned to the SOR had stronger proficiency performance than the districts that either did not have a coach or had ESC support. In rural high poverty schools, the presence of a coach, combined with partial alignment, led

to an increased proficiency rate for third-grade students. The descriptive comparisons for the school year 2021-2022 are indicated in Table 7.

Table 7

Comparative Descriptive Statistics by Typology 2021-2022

Typology	Coach?	Alignment to SOR	*M*	*sd*	*N*
Rural High Poverty	No	Partial Aligned	55.1	0	1
	Yes	Partial Aligned	63.05	6.52	6
Small Town Low Poverty	No	Not Aligned	79.85	4.17	2
	No	Partial Aligned	52.7	0	1
	Yes	Not Aligned	63.58	6.25	4
	Yes	Partial Aligned	71.92	9.75	5
Small Town High Poverty	No but ESC	Aligned	72.3	0	3
	Yes	Aligned	57.81	3.88	20
Suburban Low Poverty	No	Partial Aligned	83.8	0	1
	No but ESC	Aligned	81	0	2
	Yes	Partial Aligned	72.4	2.85	6
	Yes	Aligned	67.38	7.26	16
Suburban Very Low Poverty	No	Partial Aligned	84.8	0	1
	Yes	Partial Aligned	79.2	7.56	11
Urban High Poverty	No but ESC	Partial Aligned	54	0	4
	Yes	Partial Aligned	45.5	0	3
Totals	No	Not Aligned	79.85	4.17	2
	No	Partial Aligned	69.1	17.58	4
	No	Aligned	88.4	0	1
	No but ESC	Not Aligned	54	0	2
	No but ESC	Partial Aligned	54	0	4
	No but ESC	Aligned	74.81	3.84	8
	Yes	Not Aligned	62.96	11.88	16
	Yes	Partial Aligned	64.35	17.95	42
	Yes	Aligned	60.91	7.89	59

In 2021-2022, the strongest performing districts regarding third-grade reading proficiency were the districts that did not have a literacy coach, but they were aligned to the science

of reading. The descriptive comparisons for the school year 2022-2023 are indicated in Table 8.

Table 8

Comparative Descriptive Statistics by Typology 2022-2023

Typology	Coach?	Alignment to SOR	*M*	*sd*	*N*
Rural High Poverty	No	Partial Aligned	70.6	0	1
	Yes	Partial Aligned	60.65	1.47	6
Small Town Low Poverty	No	Not Aligned	83.15	2.05	2
	No	Partial Aligned	77.9	0	1
	Yes	Not Aligned	43.36	28.46	4
	Yes	Partial Aligned	76.18	7.50	5
Small Town High Poverty	No but ESC	Aligned	72.6	0	3
	Yes	Aligned	59.01	1.42	20
Suburban Low Poverty	No	Partial Aligned	86.4	0	1
	No	Aligned	76.8	0	1
	No but ESC	Aligned	78.8	0	2
	Yes	Partial Aligned	74.65	8.27	6
Suburban Very Low Poverty	No	Partial Aligned	88.3	0	1
	Yes	Partial Aligned	81.65	7.16	11
Urban High Poverty	No but ESC	Partial Aligned	53.2	0	4
	Yes	Partial Aligned	42.4	0	3
Totals	No	Not Aligned	83.15	2.05	2
	No	Partial Aligned	80.8	8.16	4
	No	Aligned	76.8	0	1
	No but ESC	Not Aligned	54.5	0	2
	No but ESC	Partial Aligned	53.2	0	4
	No but ESC	Aligned	76.13	2.95	8
	Yes	Not Aligned	52.38	32.07	16
	Yes	Partial Aligned	67.46	16.91	42
	Yes	Aligned	65.30	8.58	59

In 2022-2023, the highest performing districts were those not aligned to SOR and those without a literacy coach; however, it is important to note that the school districts in this

category were small town low poverty schools, and they were represented by $n = 8$ school districts. Urban high poverty schools, suburban very low poverty schools, suburban low poverty schools, small town high poverty schools, and rural high poverty schools were all partially or totally aligned to the SOR. This skew in sample size for districts representative of all typologies and alignments is a limitation found in this study.

Statistical Assumptions

A Pearson's zero-order correlation was conducted to examine the data for multi-collinearity and the relationship of each predictor variable to the dependent variable. The results of that analysis are presented in Table 9.

Table 9

Pearson's Zero-Order Correlation

	Coach? (Yes or No)
Coach? (Yes of No)	1
3rd Proficiency Rate (2020-2021)	-0.15
3rd Proficiency Rate (2021-2022)	-.213*
3rd Proficiency Rate (2022-2023)	-.198*

**Note:* Correlation is significant at the 0.05 level (2-tailed).

As indicated above, there was a significant negative relationship between schools that had literacy coaches and third-grade reading proficiency in the years 2021-2022 and 2022-2023. The scatterplot of the relationship between the school districts, proficiency, and presence of a coach in 2020-2021, 2021-2022, and 2022-2023 are presented in Figure 3, Figure 4, and Figure 5.

Figure 3

Scatterplot of 3rd-Grade Proficiency and the Presence of a Coach in 2020-2021

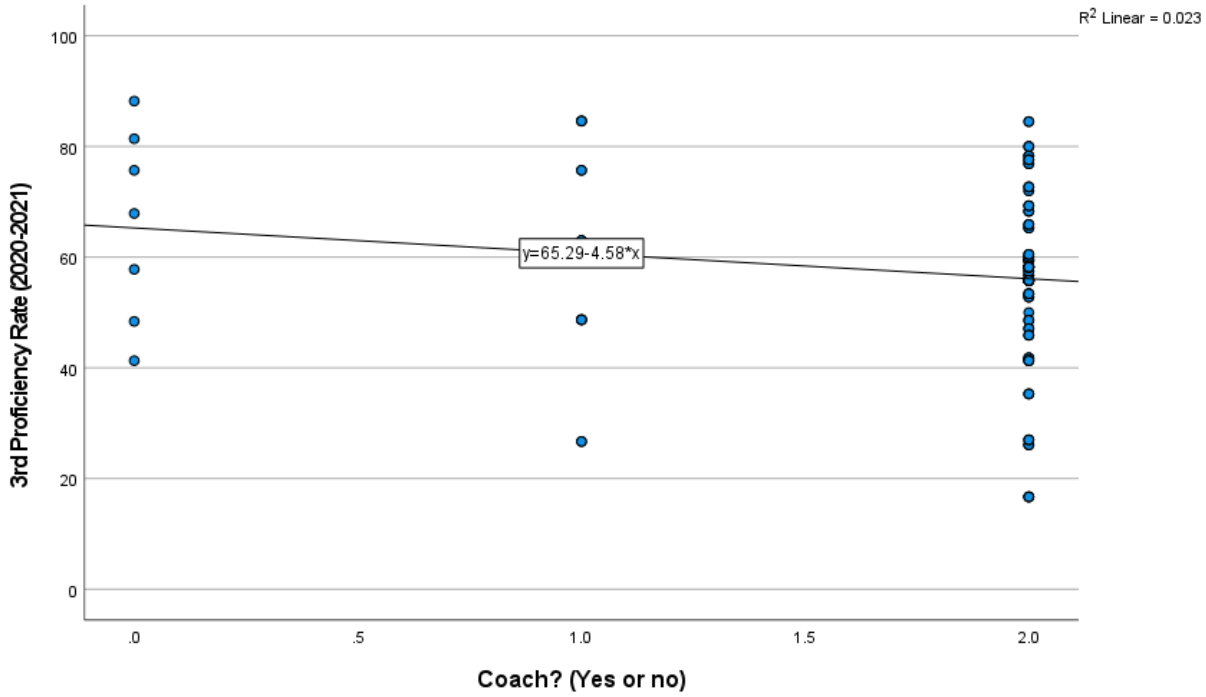


Figure 4

Scatterplot of 3rd-Grade Proficiency and the Presence of a Coach in 2021-2022

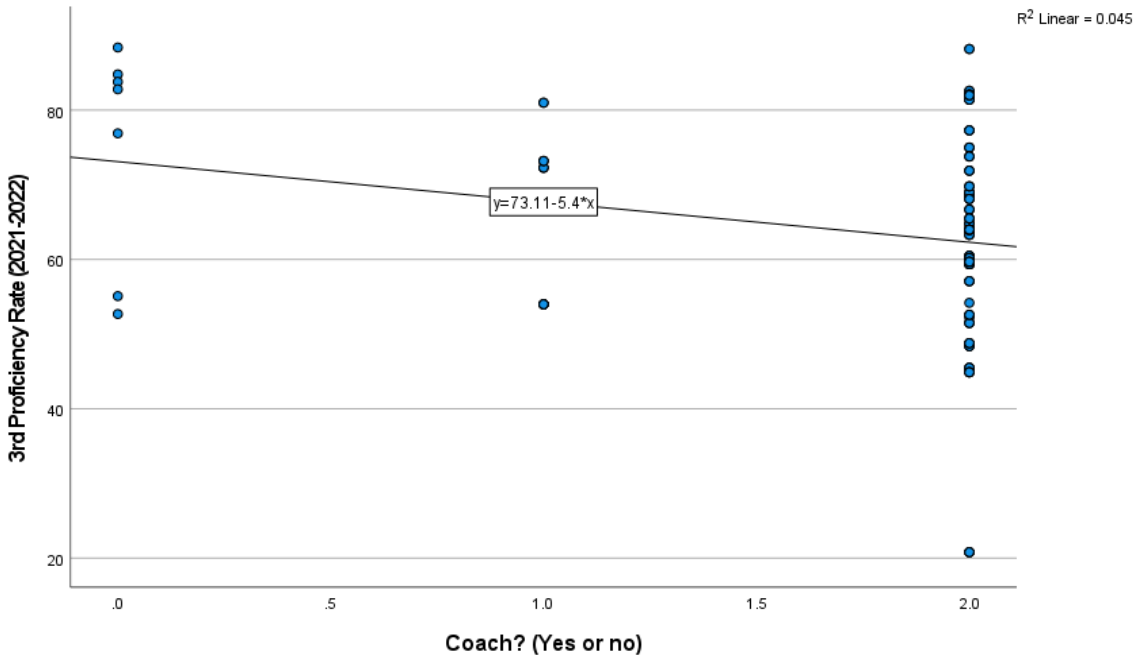
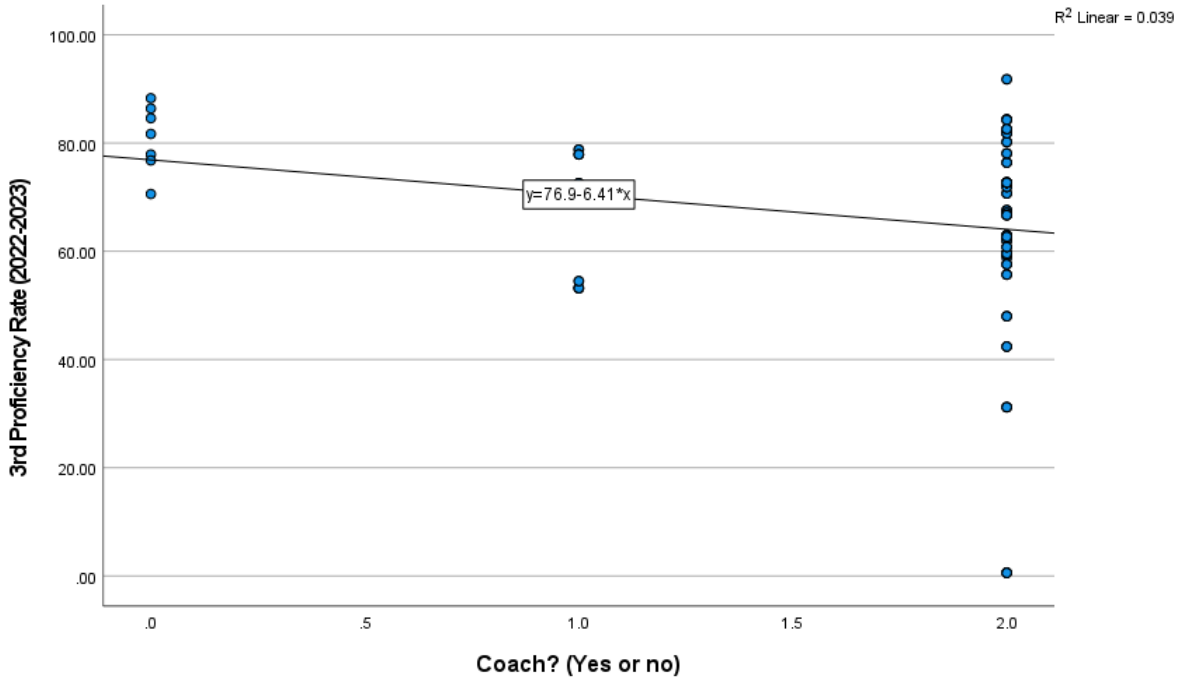


Figure 5

Scatterplot of 3rd-Grade Proficiency and the Presence of a Coach in 2022-2023



A multivariate test was completed to observe all three years of proficiency data together and to isolate any potential overlapping data. The dependent variables were the proficiency data rates by school year. The fixed factors were typology, alignment to the science of reading, and the presence of a coach. The covariant was the numerical grade levels that were supported by the coach. This analysis is indicated in Table 10.

Table 10

Multivariate Test Based on Hotelling's Trace

Effect	Value	F	Hypothesis df	Error df	Sig.
Intercept	10.48	373.94b	3	107	<.001
Typology * Coach	0.33	2.91	12	317	<.001
Typology * Alignment to SOR	1.30	6.54	21	317	<.001
Coach * Alignment to SOR	0.18	3.19	6	212	0.005

All interactions were significant in the multivariate test. An additional test was done between subjects to determine the effects. This data is reported in Table 11.

Table 11

Tests of Between-Subjects Effects

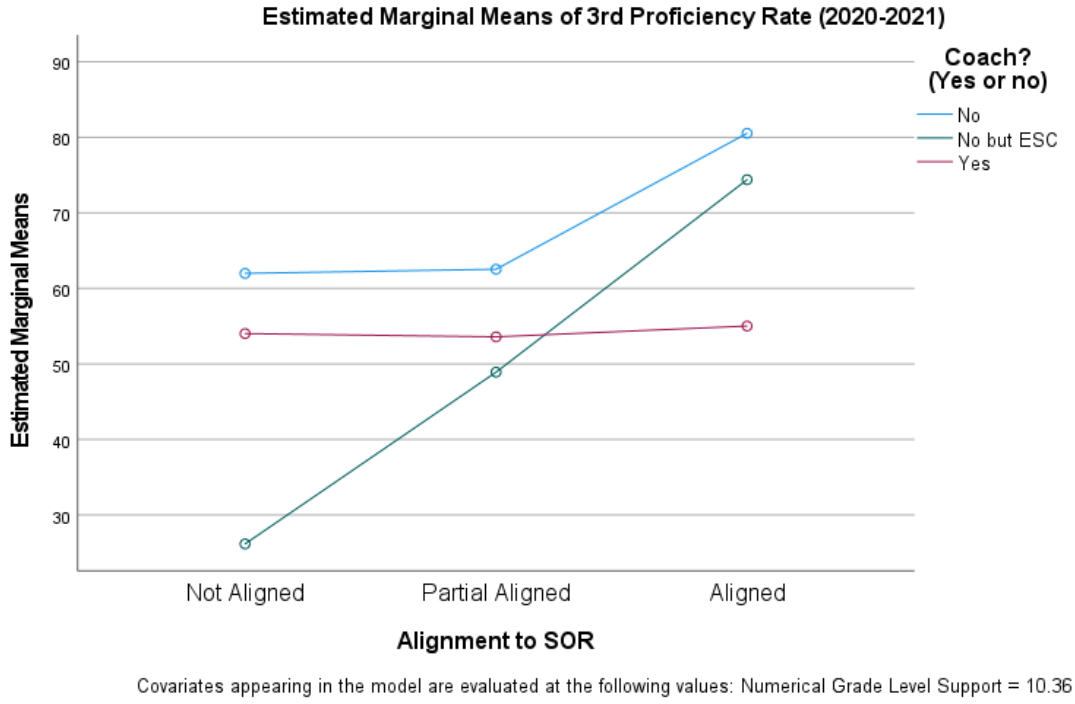
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3rd Proficiency Rate (2020-2021)	26653.44a	28	951.90	15.65	<.001
	3rd Proficiency Rate (2021-2022)	18897.95b	28	674.92	16.80	<.001
	3rd Proficiency Rate (2022-2023)	24500.84c	28	875.03	7.036	<.001
Intercept	3rd Proficiency Rate (2020-2021)	36477.68	1	36477.68	599.93	<.001
	3rd Proficiency Rate (2021-2022)	43567.11	1	43567.11	1084.9	<.001
	3rd Proficiency Rate (2022-2023)	42814.07	1	42814.07	344.26	<.001
Numerical Grade Level Support	3rd Proficiency Rate (2020-2021)	5.9	1	5.9	0.097	0.756
	3rd Proficiency Rate (2021-2022)	65.08	1	65.08	1.62	0.206
	3rd Proficiency Rate (2022-2023)	337.07	1	337.07	2.71	0.103
Alignment to SOR	3rd Proficiency Rate (2020-2021)	1629.99	2	814.99	13.40	<.001
	3rd Proficiency Rate (2021-2022)	226.60	2	113.30	2.82	0.064
	3rd Proficiency Rate (2022-2023)	376.54	2	188.27	1.51	0.225
Typology * Coach	3rd Proficiency Rate (2020-2021)	1136.91	4	284.22	4.67	0.002

	3rd Proficiency Rate (2021-2022)	482.27	4	120.56	3	0.022
	3rd Proficiency Rate (2022-2023)	240.48	4	60.12	0.48	0.748
Typology * Alignment to SOR	3rd Proficiency Rate (2020-2021)	1921.81	7	274.54	4.51	<.001
	3rd Proficiency Rate (2021-2022)	2460.75	7	351.53	8.75	<.001
	3rd Proficiency Rate (2022-2023)	6421.55	7	917.36	7.37	<.001
Coach* Alignment to SOR	3rd Proficiency Rate (2020-2021)	649.86	2	324.93	5.34	0.006
	3rd Proficiency Rate (2021-2022)	645.09	2	322.54	8.03	<.001
	3rd Proficiency Rate (2022-2023)	776.05	2	388.02	3.12	0.048

All of the main effects for typology and presence of coach were statistically significant. Alignment to SOR was statistically significant for 2020-2021, but not 2021-2022 and 2022-2023. The estimated marginal means of 3rd-grade proficiency rate for 2020-2021 with the presence of a coach and alignment to SOR is indicated in Figure 6.

Figure 6

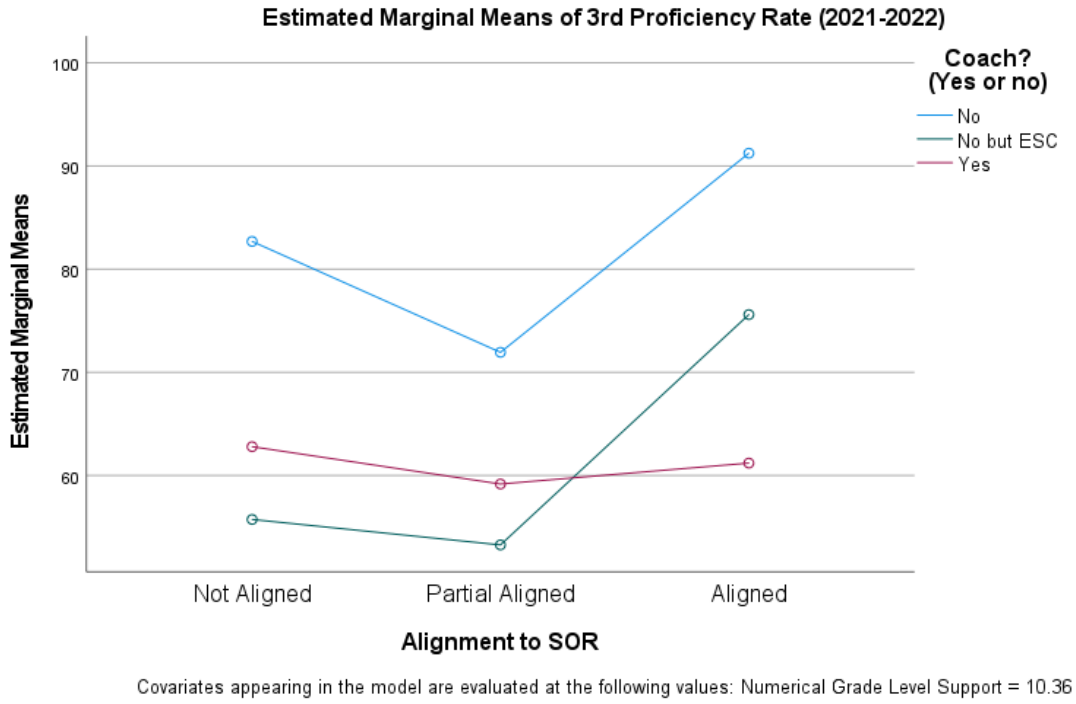
Estimated Marginal Means of 3rd Proficiency Rate (2020-2021)



The estimated marginal means of 3rd-grade proficiency for 2021-2022 with the presence of a coach and alignment to SOR is indicated in Figure 7.

Figure 7

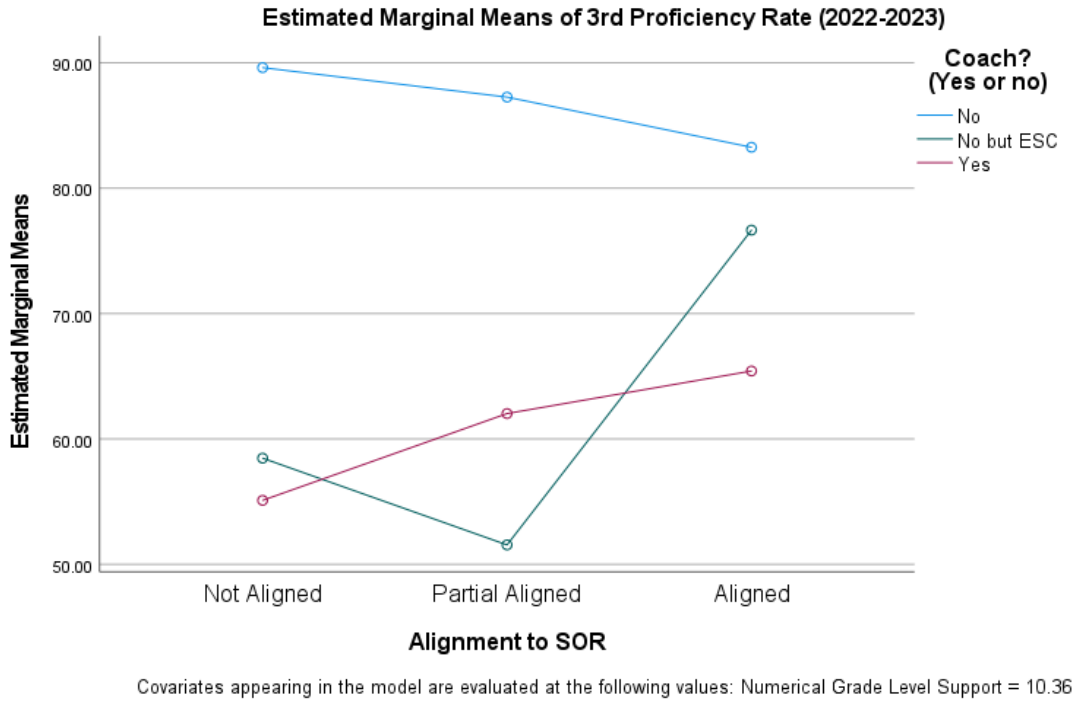
Estimated Marginal Means of 3rd Proficiency Rate (2021-2022)



The estimated marginal means of 3rd-grade proficiency for 2022-2023 with the presence of a coach and alignment to SOR is indicated in Figure 8.

Figure 8

Estimated Marginal Means of 3rd Proficiency Rate (2022-2023)



Conclusion

A GLM was used to analyze whether a district's reported presence of a literacy coach was different based on the number of years of support, grade levels of support, typology of the district, and self-reported alignment to the science of reading. The results indicate a negative relationship between school districts that employ literacy coaches and third-grade proficiency scores for each year of data collection. A multivariate test shows connections within the variables of typology and alignment to science of reading that supports the necessity for a deeper analysis.

Chapter Five

Discussion

Introduction

This research study set out to find a correlation between school districts that employed a literacy coach and third-grade proficiency in reading. School districts are tasked with making decisions that will impact student achievement, and the hiring of literacy coaches is becoming more popular in the state of Ohio. Ohio has recently dedicated a portion of the biennium budget to the implementation of literacy coaches in priority districts under the ReadOhio plan (Ohio Department of Education & Workforce, 2024). Understanding the impacts of literacy coaching is pertinent for districts, and this study provides a significant rationale for districts when hiring literacy coaches.

Summary of the Study

To determine the impact of literacy coaching, historical data was used for third grade reading proficiency scores, typology of the districts, and alignment to the science of reading. School districts participated in the study by providing data utilizing a Google Form. The superintendent answered whether they employed an instructional or literacy coach, how long the instructional or literacy coach had been with the district, and what grade level or grade band the coach serviced. Forty-five school districts in Northeast Ohio participated in this survey.

Summary of Findings

Of the participating school districts from Northeast Ohio, 84.8% reported employing their own literacy coach. While 10.1% of school districts did not employ their own coach, they did utilize coaching services from their local educational service center.

Schools that did not have literacy coaches were the lowest frequency, representing only 5.1% of the total population.

Alignment to the science of reading was determined by a self-reported survey completed by the Ohio Department of Education and Workforce. The survey was completed by superintendents and was self-reported. Of the participating districts, 49.3% reported being fully aligned to the science of reading, and 36.2% of districts reported being partially aligned. The lowest reported alignment included districts that shared they were not aligned, making up 14.5% of the total data collected. In consideration of this data, a statement can be made that most schools surveyed employed a literacy coach, and most schools surveyed were aligned to the science of reading.

The study utilized data that spanned three academic years (i.e., 2020-2021, 2021-2022, 2022-2023). The results indicated a negative relationship between school districts that employed literacy coaches and third-grade proficiency scores for each year of data collection. In 2020-2021, the school districts that performed the best in third-grade proficiency were the districts that were aligned to the science of reading and that did not employ a literacy coach. In 2021-2022, districts that did not have a literacy coach, but that were aligned to the science of reading, had the highest proficiency scores. The school districts that performed the highest in proficiency in 2022-2023 were the districts that were not aligned to the science of reading and did not have a literacy coach. This data is shared in Appendix C. Most districts that participated in this study were suburban low poverty (23.2%), followed by small town high poverty (15.2%). The lowest represented typology was urban very high poverty, with only four schools with this typology participating in the study.

Discussion of Findings

The data indicates a negative correlation of school districts that employ a literacy coach and third grade reading proficiency. However, it is important to note that more data was collected from school districts that employed a literacy coach. The seven school districts that reported not having a literacy coach were relatively high-performing districts, and most notably, districts with low or very low poverty. Only one of the seven districts that reported not having a coach had a typology involving high poverty.

In 2020-2021 and 2021-2022, school districts performed better in third-grade proficiency with more alignment to the science of reading, with the greatest difference present in districts that utilized their educational service center for literacy coaching support. In 2022-2023, the statement is still true for districts with educational service center support; however, districts with no literacy coach trended lower on achievement with more alignment to the science of reading.

Ultimately, the typology of district plays the largest role in third grade reading proficiency. School districts with less poverty are stronger performers in third-grade proficiency. This data encompasses the years of the Covid 19 pandemic, and it is evident that districts with lower poverty rebounded better than school districts with moderate to high poverty. School districts that are not performing well on third grade reading proficiency are districts that are employing literacy coaches to aid in support for students, and the results of these efforts may not be seen for several years.

Theoretical and Practical Implications

The average student in Ohio is two-fifths of a grade level behind students that were assessed before the pandemic, and in high-poverty urban districts, Ohio students are

between a three-fifths and a full grade level behind (Churchill, 2023). School districts with high poverty (i.e., rural, urban) need more support to enable students to achieve proficiency. An urban district that was included in this research saw a 24.5% increase in proficiency scores from 2020-2021 to 2022-2023, with partial alignment to the science of reading and literacy coaches in every grade level. While most school districts saw an increase from 2020-2021 to 2022-2023, the school districts making the most gains in proficiency were districts that employed literacy coaches.

This correlation leads to the implication that districts that are high need and low performing benefit from having a literacy coach, while districts that are already high performing do not need the additional support. Literacy coaches are being utilized across typologies and are making impacts on proficiency in districts with partial or full alignment to the science of reading. In districts that have a strong professional development program surrounding the science of reading, facilitative coaching would make the biggest impact, as the teacher is the focus, and the coach does not share expertise (Knight, 2021). In districts that are low performing and lack alignment to the science of reading, the coaching system would start with directive coaching, where the coach's expertise is the focus, and the coach does most of the thinking (Knight, 2021).

Limitations of the Study

The major limitation of this study is the span of typologies represented from surveyed districts. There was not an equal number of districts that were rural, urban, and suburban, or with high levels of poverty and low levels of poverty. This caused the data to trend negatively with districts that had literacy coaches because the higher performing districts did not employ literacy coaches.

In this study, third-grade proficiency data was collected through standardized testing measures, which is consistent across the state of Ohio. While this assessment is normed, it represents only one measure of student success. A limitation for this study is that growth is not being measured, as achievement is the only variable that was analyzed. While the goal of high-quality literacy coaching is to have higher achievement rates, it is possible that a school district could be in the first few years of coaching implementation and still have poor achievement scores.

Recommendations for Future Research

In the future, the data should be more representative of the typology of schools throughout Northeast Ohio. There should be equal distribution between all types of districts, and a large enough sample size from each typology to impact data appropriately.

Comparing the proficiency rates for third graders before the pandemic and after would also be of interest to future research. Data for this research began in the school year 2020-2021, and starting in that year certainly impacted the average performance of third grade students in Northeast Ohio. In addition, a growth measure was not considered for this study. Future research would benefit from analyzing year-over-year data for a specific group of students.

Finally, future research should make the distinction in the effectiveness of literacy coaches. Also important for future research is determining if districts that employ a literacy coach from within the district or from outside the district have higher proficiency rates. Examining the hiring practices of districts and what qualifications they require when hiring literacy coaches could also be impactful. There are effectiveness

implications regarding the hiring and training of literacy coaches that were not discovered in this study.

Conclusion

School districts that have a typology of high or very high poverty and that were partially aligned or completely aligned to the science of reading showed the most growth in proficiency with literacy support from an educational service center. School districts that were lower performing in proficiency were more likely to employ literacy coaches to aid in the proficiency growth of students. These statements lead to the conclusion that school districts with higher socioeconomic status consistently have higher proficiency scores without any additional support.

This research is significant for school leaders debating whether or not to add coaching support in their district. In Ohio, it became state law to be aligned to the science of reading beginning in the 2024-2025 school year, and the addition of a literacy coach may impact student proficiency in lower socioeconomic school districts. The impact of the literacy coach may not be seen until three to five years out from the date of employment.

Nationwide, literacy coaching has been researched and proven to be a successful method of ongoing professional learning. Joyce and Showers (1981) found that there is a very positive effect on knowledge, a 90%+ effect on short-term use, and a 90%+ effect on long-term use when the rationale, demonstration, planning of units and lessons, and peer coaching are involved in teacher training.

Ohio governor Mike DeWine has made literacy coaching a core tenet of his ReadOhio legislation under House Bill 33 (Ohio Department of Education & Workforce,

2024). The goal for ReadOhio is to place literacy coaches in over 100 sites throughout the state and to align literacy coaching to the science of reading. Keeping an eye on Ohio to see if the implementation of a statewide coaching system has positive influences on student proficiency in reading is important to this body of research.

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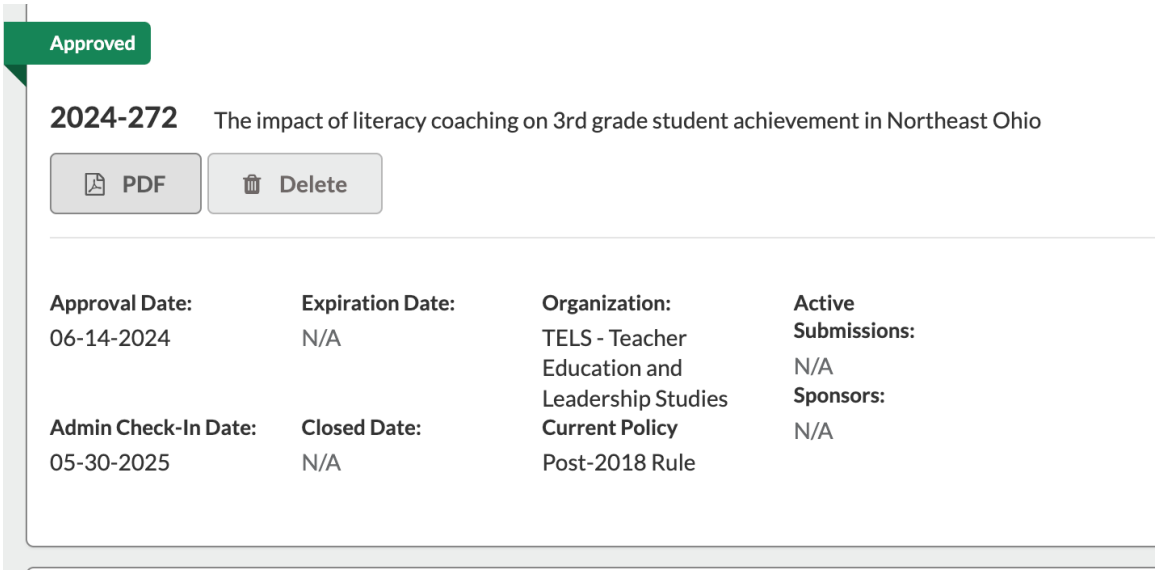
Appendix A

IRB NOTICE OF APPROVAL



Approved

2024-272 The impact of literacy coaching on 3rd grade student achievement in Northeast Ohio

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Approval Date:	Expiration Date:	Organization:	Active Submissions:
06-14-2024	N/A	TELS - Teacher Education and Leadership Studies	N/A
Admin Check-In Date:	**Closed Date:**	**Current Policy**	**Sponsors:**
05-30-2025	N/A	Post-2018 Rule	N/A

YOUNGSTOWN STATE UNIVERSITY

Jun 17, 2024 8:47:35 AM EDT

[redacted]
Teacher Ed and Leadership St

Re: Exempt - Initial - 2024-272 The impact of literacy coaching on 3rd grade student achievement in Northeast Ohio

Dear [redacted]

Youngstown State University Human Subjects Review Board has rendered the decision below for The impact of literacy coaching on 3rd grade student achievement in Northeast Ohio

Decision: Exempt

Selected Category: Category 2.(iii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:
The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).

Any changes in your research activity should be promptly reported to the Institutional Review Board and may not be initiated without IRB approval except where necessary to eliminate hazard to human subjects. Any unanticipated problems involving risks to subjects should also be promptly
reported to the IRB.

The IRB would like to extend its best wishes to you in the conduct of this study.

Sincerely,
Youngstown State University Human Subjects Review Board

CITI Certificates

CITI PROGRAM

Completion Date 26-Mar-2024
Expiration Date 26-Mar-2027
Record ID 54901098

This is to certify that:

Allison English

Not valid for renewal of certification through CME.

Has completed the following CITI Program course:

Social & Behavioral Research - Basic/Refresher
(Curriculum Group)
Social & Behavioral Research - Basic/Refresher
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Youngstown State University

CITI
Collaborative Institutional Training Initiative
101 NE 3rd Avenue, Suite 320
Fort Lauderdale, FL 33301 US
www.citiprogram.org

Generated on 26-Mar-2024. Verify at www.citiprogram.org/verify/?we9f53c2b-9ae3-4dc6-8afa-60eb56c524db-54901098

CITI PROGRAM

Completion Date 26-Mar-2024
Expiration Date 26-Mar-2027
Record ID 28744085

This is to certify that:

Allison English

Not valid for renewal of certification through CME.

Has completed the following CITI Program course:

IRB Members - Basic/Refresher
(Curriculum Group)
IRB Members - Basic/Refresher
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Youngstown State University

CITI
Collaborative Institutional Training Initiative
101 NE 3rd Avenue, Suite 320
Fort Lauderdale, FL 33301 US
www.citiprogram.org

Generated on 26-Mar-2024. Verify at www.citiprogram.org/verify/?w1bd7a6e7-4b72-45a8-9cab-749b1c78383a-28744085

CITI PROGRAM

Completion Date 13-Mar-2023
Expiration Date 13-Mar-2026
Record ID 54901099

This is to certify that:

Allison English

Not valid for renewal of certification through CME.

Has completed the following CITI Program course:

Social and Behavioral Responsible Conduct of Research
(Curriculum Group)
Social and Behavioral Responsible Conduct of Research
(Course Learner Group)
1 - RCR
(Stage)

Under requirements set by:

Youngstown State University

CITI
Collaborative Institutional Training Initiative
101 NE 3rd Avenue, Suite 320
Fort Lauderdale, FL 33301 US
www.citiprogram.org

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Appendix B

Raw Data

Typology

	Typology	Frequency	Percent
Valid	Rural High Poverty	21	15.2
	Rural Average Poverty	12	8.7
	Small Twon Low Poverty	15	10.9
	Small Town High Poverty	29	21
	Suburban Low Poverty	32	23.2
	Suburban Very Low Poverty	12	8.7
	Urban High Poverty	13	9.4
	Urban Very High Poverty	4	2.9

Coach? (Yes or no)

		Frequency	Percent
Valid	No	7	5.1
	No but ESC	14	10.1
	Yes	117	84.8

Alignment to SOR	Frequency	Percent
Not Aligned	20	14.5
Partial Aligned	50	36.2
Aligned	68	49.3

Statistics

	Numerical Years of Support	Numerical Grade Level Support
N	138	138
	0	0
Mean	3.25	10.36
Std. Deviation	3.462	4.447
Skewness	2.2	-1.186
Kurtosis	4.447	-0.364

Statistics	3rd Proficiency Rate (2020-2021)	3rd Proficiency Rate (2021-2022)	3rd Proficiency Rate (2022-2023)
n	138	138	138
Mean	57.05	63.41	65.3784
Std. Deviation	15.586	13.034	16.66692
Skewness	-0.481	-0.706	-1.784
Kurtosis	0.315	1.671	4.93

Correlations

		Coach? (Yes or no)	3rd Proficiency Rate (2020-2021)	3rd Proficiency Rate (2021-2022)	3rd Proficiency Rate (2022-2023)
Coach? (Yes or no)	Pearson Correlation	1	-0.151	-.213*	-.198*
	Sig. (2-tailed)		0.076	0.012	0.02
	N	138	138	138	138
3rd Proficiency Rate (2020-2021)	Pearson Correlation	-0.151	1	.873**	.693**
	Sig. (2-tailed)	0.076		<.001	<.001
	N	138	138	138	138
3rd Proficiency Rate (2021-2022)	Pearson Correlation	-.213*	.873**	1	.759**
	Sig. (2-tailed)	0.012	<.001		<.001
	N	138	138	138	138
3rd Proficiency Rate (2022-2023)	Pearson Correlation	-.198*	.693**	.759**	1
	Sig. (2-tailed)	0.02	<.001	<.001	
	N	138	138	138	138

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Coach? (Yes or no) * Typology Crosstabulation
Count

		Typology		
		Rural High Poverty	Rural Average Poverty	Small Town Low Poverty
Coach? (Yes or no)	No	1	0	
	No but ESC	0	0	
	Yes	20	12	
Total		21	12	

	Coach? (Yes or No)
Coach? (Yes of No)	1
3rd Proficiency Rate (2020-2021)	-0.151
3rd Proficiency Rate (2021-2022)	-.213*
3rd Proficiency Rate (2022-2023)	-.198*

* Correlation is significant at the 0.05 level (2-tailed).

	Typology	Coach? (Yes or no)	Alignment to SOR	Mean	Std. Deviation	N
3rd Proficiency Rate (2020-2021)	Rural High Poverty	No	Partial Aligned	48.4	.	1
			Total	48.4	.	1
		Yes	Not Aligned	60	0	3

		Partial Aligned	56.1	3.615	6
		Aligned	50.94	8.186	11
		Total	53.85	7.155	20
	Total	Not Aligned	60	0	3
		Partial Aligned	55	4.4	7
		Aligned	50.94	8.186	11
		Total	53.59	7.074	21
Rural Average Poverty	Yes	Not Aligned	47.1	0	3
		Partial Aligned	65.9	0	3
		Aligned	73.45	4.546	6
		Total	64.97	11.66	12
	Total	Not Aligned	47.1	0	3
		Partial Aligned	65.9	0	3
		Aligned	73.45	4.546	6
		Total	64.97	11.66	12
Small Town Low Poverty	No	Not Aligned	62.85	7.142	2
		Partial Aligned	41.3	.	1
		Total	55.67	13.428	3
	No but ESC	Aligned	63	0	3
		Total	63	0	3
	Yes	Not Aligned	51.08	4.95	4
		Partial Aligned	64.44	6.901	5
		Total	58.5	9.09	9
	Total	Not Aligned	55	7.866	6
		Partial Aligned	60.58	11.285	6
		Aligned	63	0	3

		Total	58.83	8.883	15
Small Town High Poverty	No but ESC	Not Aligned	26.7	0	2
		Aligned	84.6	0	3
		Total	61.44	31.713	5
	Yes	Partial Aligned	61.47	7.65	4
		Aligned	52.73	7.51	20
		Total	54.18	8.082	24
	Total	Not Aligned	26.7	0	2
		Partial Aligned	61.47	7.65	4
		Aligned	56.88	13.007	23
		Total	55.43	14.322	29
Suburban Low Poverty	No	Partial Aligned	75.7	.	1
		Aligned	81.4	.	1
		Total	78.55	4.031	2
	No but ESC	Aligned	75.7	0	2
		Total	75.7	0	2
	Yes	Not Aligned	57.25	16.925	6
		Partial Aligned	62.5	6.354	6
		Aligned	61.71	7.538	16
		Total	60.92	9.798	28
	Total	Not Aligned	57.25	16.925	6
		Partial Aligned	64.39	7.651	7
		Aligned	64.22	9.166	19
		Total	62.95	10.679	32
Suburban Very Low Poverty	No	Partial Aligned	88.2	.	1

		Total	88.2	.	1
	Yes	Partial Aligned	74.19	11.001	1 1
		Total	74.19	11.001	1 1
	Total	Partial Aligned	75.36	11.242	1 2
		Total	75.36	11.242	1 2
Urban High Poverty	No but ESC	Partial Aligned	48.7	0	4
		Total	48.7	0	4
	Yes	Partial Aligned	26.1	0	3
		Aligned	36.45	10.352	6
		Total	33	9.683	9
	Total	Partial Aligned	39.01	12.08	7
		Aligned	36.45	10.352	6
		Total	37.83	10.926	13
Urban Very High Poverty	Yes	Partial Aligned	16.7	0	4
		Total	16.7	0	4
	Total	Partial Aligned	16.7	0	4
		Total	16.7	0	4
Total 2020-2021	No	Not Aligned	62.85	7.142	2
		Partial Aligned	63.4	22.209	4
		Aligned	81.4	.	1
		Total	65.81	17.39	7
	No but ESC	Not Aligned	26.7	0	2
		Partial Aligned	48.7	0	4
		Aligned	74.28	10.037	8
		Total	60.17	19.736	14
	Yes	Not Aligned	54.32	11.113	16
		Partial Aligned	58.06	19.247	42

			Aligned	55.28	11.992	59
			Total	56.15	14.865	117
		Total	Not Aligned	52.41	13.576	20
			Partial Aligned	57.74	18.696	50
			Aligned	57.9	13.465	68
			Total	57.05	15.586	138
3rd Proficiency Rate (2021-2022)	Rural High Poverty	No	Partial Aligned	55.1	.	1
			Total	55.1	.	1
		Yes	Not Aligned	77.3	0	3
			Partial Aligned	63.05	6.518	6
			Aligned	55.48	8.487	11
			Total	61.03	10.488	20
		Total	Not Aligned	77.3	0	3
			Partial Aligned	61.91	6.666	7
			Aligned	55.48	8.487	11
			Total	60.74	10.304	21
	Rural Average Poverty	Yes	Not Aligned	51.5	0	3
			Partial Aligned	60.5	0	3
			Aligned	68.7	3.505	6
			Total	62.35	7.786	12
		Total	Not Aligned	51.5	0	3
			Partial Aligned	60.5	0	3
			Aligned	68.7	3.505	6
			Total	62.35	7.786	12

Small Town Low Poverty	No	Not Aligned	79.85	4.172	2
		Partial Aligned	52.7	.	1
		Total	70.8	15.95	3
	No but ESC	Aligned	73.2	0	3
		Total	73.2	0	3
	Yes	Not Aligned	63.58	6.25	4
		Partial Aligned	71.92	9.749	5
		Total	68.21	9.029	9
	Total	Not Aligned	69	9.877	6
		Partial Aligned	68.72	11.731	6
		Aligned	73.2	0	3
		Total	69.73	9.34	15
Small Town High Poverty	No but ESC	Not Aligned	54	0	2
		Aligned	72.3	0	3
		Total	64.98	10.023	5
	Yes	Partial Aligned	64.5	8.2	4
		Aligned	57.81	3.883	20
		Total	58.93	5.264	24
	Total	Not Aligned	54	0	2
		Partial Aligned	64.5	8.2	4
		Aligned	59.7	6.158	23
		Total	59.97	6.522	29
Suburban Low Poverty	No	Partial Aligned	83.8	.	1
		Aligned	88.4	.	1
		Total	86.1	3.253	2
	No but ESC	Aligned	81	0	2

		Total	81	0	2
	Yes	Not Aligned	61.1	13.912	6
		Partial Aligned	72.4	2.848	6
		Aligned	67.38	7.256	16
		Total	67.11	8.993	28
	Total	Not Aligned	61.1	13.912	6
		Partial Aligned	74.03	5.032	7
		Aligned	69.92	9.069	19
		Total	69.16	10.107	32
Suburban Very Low Poverty	No	Partial Aligned	84.8	.	1
		Total	84.8	.	1
	Yes	Partial Aligned	79.2	7.559	11
		Total	79.2	7.559	11
	Total	Partial Aligned	79.67	7.386	12
		Total	79.67	7.386	12
Urban High Poverty	No but ESC	Partial Aligned	54	0	4
		Total	54	0	4
	Yes	Partial Aligned	45.5	0	3
		Aligned	56.15	3.889	6
		Total	52.6	6.149	9
	Total	Partial Aligned	50.36	4.543	7
		Aligned	56.15	3.889	6
		Total	53.03	5.065	13
Urban Very High Poverty	Yes	Partial Aligned	20.8	0	4
		Total	20.8	0	4
	Total	Partial Aligned	20.8	0	4

			Total	20.8	0	4
	Total 2021-2022	No	Not Aligned	79.85	4.172	2
			Partial Aligned	69.1	17.584	4
			Aligned	88.4	.	1
			Total	74.93	14.78	7
		No but ESC	Not Aligned	54	0	2
			Partial Aligned	54	0	4
			Aligned	74.81	3.842	8
			Total	65.89	11.054	14
		Yes	Not Aligned	62.96	11.883	16
			Partial Aligned	64.35	17.953	42
			Aligned	60.91	7.899	59
			Total	62.42	12.881	117
		Total	Not Aligned	63.75	12.256	20
			Partial Aligned	63.9	17.291	50
			Aligned	62.95	9.257	68
			Total	63.41	13.034	138
3rd Proficiency Rate (2022-2023)	Rural High Poverty	No	Partial Aligned	70.6	.	1
			Total	70.6	.	1
		Yes	Not Aligned	80.2	0	3
			Partial Aligned	60.65	1.47885	6
			Aligned	65.4636	1.96024	11
			Total	66.23	6.60192	20
		Total	Not Aligned	80.2	0	3
			Partial Aligned	62.0714	3.99571	7

		Aligned	65.4636	1.96024	11
		Total	66.4381	6.50503	21
Rural Average Poverty	Yes	Not Aligned	62.7	0	3
		Partial Aligned	67.6	0	3
		Aligned	72.65	10.89968	6
		Total	68.9	8.52152	12
	Total	Not Aligned	62.7	0	3
		Partial Aligned	67.6	0	3
		Aligned	72.65	10.89968	6
		Total	68.9	8.52152	12
Small Town Low Poverty	No	Not Aligned	83.15	2.05061	2
		Partial Aligned	77.9	.	1
		Total	81.4	3.36006	3
	No but ESC	Aligned	77.9	0	3
		Total	77.9	0	3
	Yes	Not Aligned	43.3675	28.465	4
		Partial Aligned	76.18	7.5038	5
		Total	61.5967	25.12114	9
	Total	Not Aligned	56.6283	30.15019	6
		Partial Aligned	76.4667	6.74823	6
		Aligned	77.9	0	3
		Total	68.818	21.15057	15
Small Town High Poverty	No but ESC	Not Aligned	54.5	0	2
		Aligned	72.6	0	3

		Total	65.36	9.91378	5
	Yes	Partial Aligned	71.975	8.85	4
		Aligned	59.015	1.42876	20
		Total	61.175	6.02035	24
	Total	Not Aligned	54.5	0	2
		Partial Aligned	71.975	8.85	4
		Aligned	60.787	4.86278	23
		Total	61.8966	6.81183	29
Suburban Low Poverty	No	Partial Aligned	86.4	.	1
		Aligned	76.8	.	1
		Total	81.6	6.78823	2
	No but ESC	Aligned	78.8	0	2
		Total	78.8	0	2
	Yes	Not Aligned	39.3415	42.45781	6
		Partial Aligned	74.65	8.27061	6
		Aligned	74.4063	3.66833	16
		Total	66.9446	23.86369	28
	Total	Not Aligned	39.3415	42.45781	6
		Partial Aligned	76.3286	8.75932	7
		Aligned	74.9947	3.64851	19
		Total	68.6015	22.75021	32
Suburban Very Low Poverty	No	Partial Aligned	88.3	.	1
		Total	88.3	.	1
	Yes	Partial Aligned	81.6545	7.16008	11
		Total	81.6545	7.16008	11

	Total	Partial Aligned	82.2083	7.09128	12
		Total	82.2083	7.09128	12
Urban High Poverty	No but ESC	Partial Aligned	53.2	0	4
		Total	53.2	0	4
	Yes	Partial Aligned	42.4	0	3
		Aligned	54.4	7.01085	6
		Total	50.4	8.16823	9
	Total	Partial Aligned	48.5714	5.77284	7
		Aligned	54.4	7.01085	6
		Total	51.2615	6.80362	13
Urban Very High Poverty	Yes	Partial Aligned	31.2	0	4
		Total	31.2	0	4
	Total	Partial Aligned	31.2	0	4
		Total	31.2	0	4
Total 2022-2023	No	Not Aligned	83.15	2.05061	2
		Partial Aligned	80.8	8.16619	4
		Aligned	76.8	.	1
		Total	80.9	6.20806	7
	No but ESC	Not Aligned	54.5	0	2
		Partial Aligned	53.2	0	4
		Aligned	76.1375	2.95293	8
		Total	66.4929	11.76582	14
	Yes	Not Aligned	52.3887	32.07322	16
		Partial Aligned	67.4667	16.91841	42
		Aligned	65.3085	8.58319	59

		Total	64.3164	17.16804	117
	Total	Not Aligned	55.676	30.01744	20
		Partial Aligned	67.392	16.57425	50
		Aligned	66.7515	8.86261	68
		Total	65.3784	16.66692	138

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3rd Proficiency Rate (2020-2021)	26653.444a	28	951.909	15.655	<.001
	3rd Proficiency Rate (2021-2022)	18897.956b	28	674.927	16.807	<.001
	3rd Proficiency Rate (2022-2023)	24500.845c	28	875.03	7.036	<.001
Intercept	3rd Proficiency Rate (2020-2021)	36477.684	1	36477.684	599.926	<.001
	3rd Proficiency Rate (2021-2022)	43567.114	1	43567.114	1084.905	<.001
	3rd Proficiency Rate (2022-2023)	42814.078	1	42814.078	344.259	<.001

NumericalGradeLevelSupport	3rd Proficiency Rate (2020-2021)	5.9	1	5.9	0.097	0.756
	3rd Proficiency Rate (2021-2022)	65.085	1	65.085	1.621	0.206
	3rd Proficiency Rate (2022-2023)	337.076	1	337.076	2.71	0.103
AlignmenttoSOR	3rd Proficiency Rate (2020-2021)	1629.991	2	814.995	13.404	<.001
	3rd Proficiency Rate (2021-2022)	226.601	2	113.301	2.821	0.064
	3rd Proficiency Rate (2022-2023)	376.549	2	188.274	1.514	0.225
Typology * CoachYesorno	3rd Proficiency Rate (2020-2021)	1136.913	4	284.228	4.675	0.002
	3rd Proficiency Rate (2021-2022)	482.277	4	120.569	3.002	0.022
	3rd Proficiency Rate (2022-2023)	240.488	4	60.122	0.483	0.748
Typology * AlignmenttoSOR	3rd Proficiency Rate (2020-2021)	1921.819	7	274.546	4.515	<.001
	3rd Proficiency Rate (2021-2022)	2460.752	7	351.536	8.754	<.001

	3rd Proficiency Rate (2022-2023)	6421.556	7	917.365	7.376 <.001
CoachYesorno * AlignmenttoSOR	3rd Proficiency Rate (2020-2021)	649.866	2	324.933	5.344 0.006
	3rd Proficiency Rate (2021-2022)	645.09	2	322.545	8.032 <.001
	3rd Proficiency Rate (2022-2023)	776.055	2	388.027	3.12 0.048
Typology * CoachYesorno * AlignmenttoSOR	3rd Proficiency Rate (2020-2021)	0	0	.	. .
	3rd Proficiency Rate (2021-2022)	0	0	.	. .
	3rd Proficiency Rate (2022-2023)	0	0	.	. .
Error	3rd Proficiency Rate (2020-2021)	6627.598	109	60.804	
	3rd Proficiency Rate (2021-2022)	4377.17	109	40.158	
	3rd Proficiency Rate (2022-2023)	13555.873	109	124.366	
Total	3rd Proficiency Rate (2020-2021)	482361.53	138		

	3rd Proficiency Rate (2021-2022)	578151.94	138
	3rd Proficiency Rate (2022-2023)	627914.949	138
Corrected Total	3rd Proficiency Rate (2020-2021)	33281.042	137
	3rd Proficiency Rate (2021-2022)	23275.126	137
	3rd Proficiency Rate (2022-2023)	38056.719	137

a R Squared = .801 (Adjusted R Squared = .750)

b R Squared = .812 (Adjusted R Squared = .764)

c R Squared = .644 (Adjusted R Squared = .552)

Appendix C

District Proficiency Rates

	Assessment Year	Coach? (Yes or no)	Alignment to SOR	Mean	Std. Deviation	N
3rd Proficiency Rate	Total 2020-2021	No	Not Aligned	62.85	7.14	2
			Partial Aligned	63.40	22.21	4
			Aligned	81.40	.	1
			Total	65.81	17.39	7
		No but ESC	Not Aligned	26.70	0.00	2
			Partial Aligned	48.70	0.00	4
			Aligned	74.28	10.04	8
			Total	60.17	19.74	14
		Yes	Not Aligned	54.32	11.11	16
			Partial Aligned	58.06	19.25	42
			Aligned	55.28	11.99	59
			Total	56.15	14.87	117
	Total 2021-2022	No	Not Aligned	79.85	4.17	2
			Partial Aligned	69.10	17.58	4
			Aligned	88.40	.	1
			Total	74.93	14.78	7
		No but ESC	Not Aligned	54.00	0.00	2
			Partial Aligned	54.00	0.00	4
			Aligned	74.81	3.84	8
			Total	65.89	11.05	14
		Yes	Not Aligned	62.96	11.88	16
			Partial Aligned	64.35	17.95	42
			Aligned	60.91	7.90	59
			Total	62.42	12.88	117
	Total 2022-2023	No	Not Aligned	83.15	2.05	2
			Partial Aligned	80.8	8.17	4

		Aligned	76.8	.	1
		Total	80.9	6.21	7
	No but ESC	Not Aligned	54.5	0	2
		Partial Aligned	53.2	0	4
		Aligned	76.14	2.95	8
		Total	66.49	11.77	14
	Yes	Not Aligned	52.39	32.07	16
		Partial Aligned	67.47	16.92	42
		Aligned	65.31	8.58	59
		Total	64.32	17.17	117