Strategy Group Differentiation: The Effect On Literacy Development Of Accuracy, Fluency, And Comprehension

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STRATEGY GROUP DIFFERENTIATION: THE EFFECT ON LITERACY DEVELOPMENT OF ACCURACY, FLUENCY, AND COMPREHENSION

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DEDICATION

To my wonderful family and friends who have encouraged me and supported me throughout this achievement. To my loving husband, Brandon, thank you for helping with everything while I chased this dream and for always being my rock. To my precious daughters, EllieKate and Amelia Rae, thank you for being patient while I completed my school work and for loving me unconditionally; I pray you always follow your dreams and know how much you both have inspired me. To my parents, Martha and Dale, thank you for loving me and for always believing in me. I am the lady I am because of both of you. To Amanda, thank you for always reminding me to follow my dreams without settling for less and for listening to my struggles with support and love. Lastly, to my Savior, thank you Jesus for giving me strength, perseverance, and life.
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ABSTRACT

The problem of practice described in this paper was identified from the varying reading levels of first-grade students and the difficulty faced by teachers to meet the literacy needs of individual students within a diverse classroom. The identified problem guided the researcher to the following research question: what effect does strategy group differentiation during literacy have on accuracy, fluency, and comprehension development? The purpose of the current study is to determine if strategy group differentiation influences the academic success of students in the literacy elements of accuracy, fluency, and comprehension.

Through action research studies, teachers can study their own classrooms to improve their own educational practices (Mertler, 2014). The current study followed a quantitative research methodology cycle that included four stages: planning, acting, developing, and reflecting (Mertler, 2014). Identifying the problem of practice within the classroom, reviewing related literature concerning the problem of practice, and designing the action research method was the planning phase of the action research cycle and is introduced in chapters one and two. Chapter three of this paper details the acting phase of this study and involved implementing strategy group differentiation in a first-grade classroom and collecting quantitative data including a pre- and posttest, running records, and field notes. The quantitative data collected throughout the study guided the researcher’s grouping of strategy groups for differentiation during reading and aligned to answer the research question identified for the study. The developing phase included the
analysis of the data collected is detailed in chapter four. According to the data analyzed, 94% of students increased in reading accuracy and fluency; whereas, 100% of students increased in reading comprehension. Overall, 14 out of 17 students advanced at least one reading level and all students showed growth in at least one literacy element. Finally, the reflecting phase included a reflection of the data collected and redirecting of the study, as needed, and is described in chapter five. Comparison of pre- and post-tests demonstrated that strategy group differentiation may positively impact the literacy development of accuracy, fluency, and comprehension and may be useful with other developing reading groups. Accuracy, fluency, and comprehension improvement is likely promising in improving overall reading levels.
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CHAPTER 1

INTRODUCTION

President George Bush’s No Child Left Behind (NCLB) Act of 2001 began the requirement that schools show improvement from every student on a yearly basis in an effort to evaluate school performance (Riley, 2014). As a result, schools are placing the accountability of student success on teachers because if a school does not perform well on the annual report, the school can be penalized (Riley, 2014). School administrators are pushing teachers to increase the academic performance of students, particularly on standardized tests, because they do not want their school to be penalized and to have a negative reputation (Appleton, Christenson, & Furlong, 2008). Furthermore, teachers often suffer low self-esteem if schools receive poor scores on the annual reports due to increasing pressure from administration (Fredricks, Blumenfeld, & Paris, 2004).

Public school teachers are faced with the difficult task of meeting the individual and diverse needs of students in their class annually; however, because of the diverse needs of students and the ever-increasing and high demands on classroom teachers for successful test scores, teachers must differentiate classroom instruction to ensure success of all students, regardless of ethnic, cultural, and linguistic background (Dixon, Yssel, McConnell, & Hardin, 2014).
**Background of the Problem**

The population in the United States is steadily becoming more culturally, ethnically, linguistically, and academically diverse (Puzio, Newcomer, & Goff, 2015). The American classroom is changing just as quickly in terms of state standards, expectations, cultures, learning styles, languages, and intelligences (Dixon et. al., 2014). Furthermore, each student in the classroom has different needs and what works for one student may “not work for others” (Dixon et. al., 2014, p. 112). Teachers in the classroom need a variety of instructional strategies in order to meet diverse student needs (Garcia-Reid, Reid, & Peterson, 2005). The ability of the teacher to meet the diverse needs of the students has a tremendous effect on the academic success of the students (Rowley & Wright, 2011).

No Child Left Behind (NCLB) began the high-stakes accountability approach by administering standardized assessments to diverse students in an attempt to evaluate the performance of the school (Riley, 2014). Under NCLB, schools were required to show improvement for each student annually (Riley, 2014). Since the establishment of NCLB in 2001, it is evident that when teachers design the same lesson for all students, the learning of the students is limited (Riley, 2014). Therefore, districts and schools began to view students as individuals, rather than whole classes (Riley, 2014).

Teachers desire and strive to be effective and facilitate academic success with all students in the diverse classroom (Marchant & Anderson, 2012). Approximately one-third of the students in schools are culturally and ethnically diverse (Ladson-Billings, 1995). With a diverse classroom full of students with differing needs, it is vital to each
student’s educational success that the teacher meet the student on his or her individual level based on the needs of the student as an individual, rather than the class as a whole (Beecher & Sweeney, 2008). To do this, teachers must ensure that the pedagogy used in the classroom is aligned with state standards and student learning levels while incorporating cultural and ethnic backgrounds to make material more easily relatable for all students (Phuntsog, 2001). Teachers must also differentiate for students by adjusting instruction, curriculum, and expectations for each student based on his or her individual needs in order to ensure academic achievement (Dixon et. al., 2014).

Many things have an effect on student academic achievement including school and state curriculum, educational quality and experience, the learning environment, the students’ home life, parental involvement, and teacher commitment (Beecher & Sweeney, 2008). Research has also indicated that students should have positive learning experiences at school and at home in order to promote, motivate, and enhance educational achievement (Seitz & Bartholomew, 2014).

Within a typical first grade classroom, literacy abilities vary from a pre-kindergarten reading level to a fifth-grade reading level, and sometimes reading levels are higher (Fitzgerald, 2016). The rate in which each student learns also varies making it important to the success of the student for the teacher to differentiate instruction and assessments according to the individual learning rate of each student and to implement research-based, differentiated instruction daily (Strickland, Boon, & Spencer, 2013).
**Problem of Practice Statement**

The problem of practice for the present study was identified from the varying reading levels and the difficulty that teachers face in attempting to meet the needs of individual students in a diverse classroom to ensure academic success in literacy (Beecher & Sweeny, 2008; Seitz & Bartholomew, 2014; Fitzgerald, 2016). Yovanoff, Duesbery, Alonzo, and Tindal (2005) identify reading success as being vital to the academic success of students in all content areas. An estimated 17% of students in the first three years of school experience reading difficulties and are not on grade level by the fourth grade (Eckert, Dunn, & Ardoin, 2006). Furthermore, first grade is a vital year in developing the necessary literary components, including accuracy, fluency, and comprehension (Ankrum, Genest, & Belcastro, 2014).

Within the diverse classroom of the teacher-researcher, student reading levels vary each year. Some students can read on a third-grade reading level whereas other students are unable to identify their letters or letter sounds. Moreover, meeting the needs of these diverse learners is a challenge annually with time constraints and district expectations increasing in attempt to close the achievement gap prior to third grade.

Culturally and linguistically diverse students have difficulty learning any content in traditional classroom settings (Gorski, 2013). Due to the importance of the development of accuracy, fluency, and comprehension skills, it is imperative that teachers create a path to success for each student through the use of differentiation (Fitzgerald, 2016). The present study has addressed this problem of practice in attempt to build strong foundational reading skills through accuracy, fluency, and comprehension development.
Research Question

The following research question led the action research of the present study: What effect does strategy group differentiation during literacy have on accuracy, fluency, and comprehension development? This research question addressed the overall purpose of this study and contributed to development of teacher training opportunities to implement strategy group differentiation into the classroom. This study also provided insight into teacher perceptions of effective classroom practices and improved the accuracy rate, fluency rate, and comprehension of all students within the sample.

Purpose of the Study

The purpose of this study was to determine if strategy group differentiation has an effect on student academic achievement. The areas of focus for this study includes the literary elements of accuracy, fluency, and comprehension.

Theoretical Base

The present research study used a quantitative research approach to determine if strategy group differentiation has an effect on the development of literacy elements. Quantitative research focuses on collecting and analyzing structured data that will be represented numerically (Goertzen, 2017). The primary goal of quantitative research is to find true and accurate results that can be measured (McCarthy, Whittaker, Boyle, & Eyal, 2017) and to “build accurate and reliable measurements that allow for statistical analysis (Goertzen, 2017, p. 12). Data collected from quantitative research shows different behaviors or trends; however, it does not give reasons for the behaviors or trends (Goertzen, 2017). Quantitative research data is objective, can be measured, and can be evaluated (Goertzen, 2017).
The specific research design was chosen because quantitative research studies can focus on the performance of the teacher and students, including how the students are learning, if they are participating, if the strategies that are being used are working, and if the correct decisions are being made to improve literacy development for all of the students in the class based on a pretest, field notes, running records, and a posttest (Martin, 2016). The desire to understand the type of effect that differentiation has on the students’ literacy levels in order to improve literacy instruction and close the literacy achievement gap justifies the quantitative research design (Martin, 2016).

**Operational Definitions**

For the purpose of this study, the following definitions are provided to aid the reader in understanding key concepts that will be used often throughout the present action research study:

*Accuracy:* The amount of words that students read correctly. The reading accuracy score was determined using a percentage score of the amount of words total and the amount of words that the student reads correctly.

*Comprehension:* The ability of the students to understand the text that is being read. The reading comprehension score was determined by the amount of questions that a student correctly answers about a text. The comprehension component includes questions within the text and beyond the text.

*Differentiation:* The attempt of the teacher to address the needs of each individual student in the classroom.
Fluency: The ability of the students to read and decode words automatically. The reading fluency score was determined on a zero to three scale, with zero being not fluent and three being very fluent.

Strategy Groups: Students grouped for literacy instruction based on the particular literacy strategy that they need to work on in order to advance reading levels.

Assumptions

The teacher researcher is aware of the significant role that teachers have within the classroom and the importance of meeting the needs of diverse learners within a single classroom (Fitzgerald, 2016). The responsibility of effective differentiation lies with the classroom teacher (Rowley & Wright, 2011). Teachers are able to differentiate more effectively in strategy groups (Wasik, 2008), therefore, the teacher researcher assumes that strategy group differentiation will positively impact the development of accuracy, fluency, and comprehension during literacy instruction advancing students’ overall reading levels.

Limitations

This study does not compare strategy group differentiation to other forms of differentiation or other differentiation strategies. Furthermore, this study does not compare data with students who did not receive the treatment of strategy group differentiation. The length of the study is six weeks and data was not collected over an extended period of time, which also poses a limitation. Though they are reliable measures, quantitative research studies do not give reasons why the strategy works or
does not work (Goertzen, 2017). The study is only conducted in one classroom of seventeen students at one school, therefore the results cannot be generalized.

Scope

The scope of the present study includes a diverse sample of seventeen first grade students. The students have different cultures, languages, and ethnic backgrounds. The students have different learning styles and are on different reading levels, according to Fountas and Pinnell Benchmark Assessments (Fountas & Pinnell, 2009). Data collection included students’ Fountas and Pinnell scores, running records, and field notes. The data collected in the quantitative study is numerical and includes a percentage for accuracy and comprehension. The data is a number ranging from zero to three to determine reading fluency.

Significance of the Study

Gathering and analyzing the data. Research has continuously demonstrated the effectiveness of differentiation in today’s diverse schools (Fitzgerald, 2016; Tomlinson, 2005; Tobin & Tippett, 2014). The present study aimed to use quantitative data to determine the effect that the use of strategy group differentiation has on the literary elements of accuracy, fluency, and comprehension. The study used numerical data to track and show progress of the students’ ability to read accurately, read fluently, and to comprehend what is being read.

Professional application. The results of the present study will be shared within the teacher researcher’s school. The results will provide empirical data on the effectiveness of strategy group differentiation during literacy instruction. Furthermore,
the results will be used to determine if strategy group differentiation is best practice and if it positively impacts students’ development of accuracy, fluency, and comprehension during reading in first grade.

**Social changes.** The American classroom is more diverse than ever because of the ever-changing society (Puzio, Newcomer, & Goff, 2015). The sample class consisted of seventeen culturally, linguistically, and ethnically diverse students who received the same treatment of strategy group differentiation. The results from the present study will determine if diverse learners can grow in terms of accuracy, fluency, and comprehension during literacy with the implementation of strategy group differentiation, regardless of culture, language, and ethnic background.

**Summary**

Many instructional strategies have been researched in attempt to find strategies that ensure academic achievement for students (Tomlinson, 2005). With schools becoming more diverse and the achievement gap continuing to grow, it is imperative that teachers find best practices and implement them immediately in the classroom to ensure academic success (Dixon et. al., 2014). Research on differentiated instruction, if implemented correctly, has proven its effectiveness in the diverse classroom continuously (Tomlinson, 2005). The teacher researcher of the current study strives to improve foundational literary elements through the use of strategy group differentiation to ensure academic success of all students, regardless of culture, language, or ethnic background.

Chapter two of this dissertation includes the scholarly literature relevant to the background of the present study. It provides insight on the literary elements of accuracy,
fluency, and comprehension. Furthermore, it provides background information on differentiated instruction and strategy group instruction. Chapter three provides the framework of the research methodology used for the present study. Chapter four displays the data that was collected and analyzed in the present study. Finally, chapter five of the present study contextualizes the results of the action research study along with recommendations for future studies.
CHAPTER 2

REVIEW OF LITERATURE

The goal of this action research study was to determine if strategy group differentiation has an effect on accuracy, fluency, and comprehension during reading. With the population of the United States of America consistently becoming more culturally, linguistically, ethnically, and academically diverse, and the achievement gap widening more daily, the need for differentiated instruction in all classrooms is significant and immediate (Puzio, Newcomer, & Goff, 2015). Because of the varying learning levels within one single classroom, the teacher must implement research-based differentiated instruction and assessment daily in order to ensure the academic success of each student (Strickland, Boon, & Spencer, 2013; Tomlinson, 2005).

This chapter of this dissertation includes a combination of scholarly literature, including journal articles and books that are relative to the present study. This literature review covers important topics pertaining to the study including the history of differentiation, theories of differentiation, balanced literacy, strategy groups, accuracy, fluency, and comprehension. The literature for this review was collected using ERIC, JSTOR, Academic Search Complete, PsychINFO, and Education Source online databases. Books were also used to collect literature for this review. This literature review connects the action research study to the work of other scholars with similar studies (Webster & Watson, 2002). Furthermore, this literature review includes literature
that supports and contradicts the teacher-researcher’s points of views (Webster & Watson, 2002).

The materials chosen for this literature review are important in establishing a base knowledge in order to advance knowledge on the topics involved in this study (Webster & Watson, 2002). Without the base knowledge, the teacher-researcher would not be knowledgeable of differentiation and effective teaching practices (Tomlinson, 1999).

This literature review is organized based on different topics related to the problem of practice. Components of literature, including accuracy, fluency, and comprehension are thoroughly discussed, as well as literacy itself. The possible causes of the problem of practice are also detailed in this literature review. Furthermore, differentiation, the proposed solution to the problem of practice, is discussed in detail, along with the history of differentiation and the different teaching strategies used for differentiation, including strategy group differentiation, which is used in this action research study. Lastly, the challenges that one may face when differentiating instruction are discussed in this literature review.

**Literacy**

Literacy is most commonly termed as the ability to read and write (Vesay & Gischlar, 2013). There are five critical components of literacy that students must develop in order to be successful readers, including fluency, comprehension, phonemic awareness, alphabetic principle, and vocabulary (Vesay & Gischlar, 2013). The beginning or emergent literacy skills should include sound and letter correspondence, identifying the letters of the alphabet, phonological sounds, reading comprehension, semantic-syntactic development, and vocabulary (Vesay & Gischlar, 2013).
According to Deacon, Benere, and Pasquarella (2012), children improve as readers through grapheme-phoneme correspondence along with phonological awareness.

Fountas and Pinnell (2008) identify three crucial literacy experiences that help students develop as readers, including talk, texts, and teaching. Students need to experience talk through conversations with peers and with adults, responding to language, and telling of their experiences (Fountas & Pinnell, 2008). Students should also experience texts through reading and discussing numerous text formats, listening to and discussing various texts, and responding to texts in ways that are effective and meaningful (Fountas & Pinnell, 2008). Furthermore, students need to experience teaching by receiving clear and explicit instruction in order to understand different aspects of phonics and language (Fountas & Pinnell, 2008).

Causes of low literacy. Fountas and Pinnell (2009) identify several factors that lead to low literacy rates, including little exposure to reading, inattention to reading, and inadequate instruction in lower grades. Some students do not have access to opportunities to read books or to be read to by an adult (Fountas & Pinnell, 2009). Some students are unable to hold attention to reading or being read to due to finding other things more interesting (Fountas & Pinnell, 2009). Some teachers do not differentiate, causing low literacy rates, especially in younger grades when the foundation for reading is being established (Fountas & Pinnell, 2009).

Tomlinson (1999) found that students do not develop academically due to lack of differentiation in the classroom. Teachers tend to teach to the middle of the class, which leaves the lower students in the cracks and prohibits the higher students from advancing
(Tomlinson, 2005). Tomlinson (2005) also established that if students are uninterested in the content being taught, he or she is less likely to be academically successful. Because of this, Tomlinson (2005) stresses the importance of learning profiles and teaching with the students’ interests in mind.

Furthermore, Jerrim, Vignoles, Lingam, and Friend (2015) found that socioeconomic factors, along with parental reading abilities, have an effect on the reading rates of students. Students who live in poverty have parents who work often and are unable to devote time to reading with children, which lessens the amount of time that students have eyes on text (Jerrim et. al, 2015). If families have such a hard time and parents work consistently, a majority of money may be going to necessities, rather than children’s books (Fountas & Pinnell, 2009). The teachers of these students may work with them; however, students may develop a negative attitude due to negative feelings towards parents and take it out on their own self-efficacy of academic success (Jerrim et. al., 2015). Even families who do not have economic problems may be too busy to devote time to reading to children or listening to children read (Fountas & Pinnell, 2009).

Students who have parents who have low literacy rates are also less likely to excel in reading due to lack of motivation and lack of adult support at home (Jerrim et. al., 2015). Students who see that their parents are not motivated to read will be less motivated because the students will feel that reading is not a vital component to a successful life (Jerrim et. al., 2015). Furthermore, if a parent has difficulty reading, he or she will be unable to effectively help a child who is having difficulty reading (Jerrim et. al., 2015). Because of the underlying factors that cause low literacy rates, it is vital that
teachers differentiate instruction to promote academic success for students (Tomlinson, 2005).

**Balanced literacy.** Most schools have a reading curriculum that is supported by balanced literacy (Byrd, 2015). Byrd (2015) identifies balanced literacy as “a pedagogy that seeks to teach reading through an emphasis on metacognitive skills, authentic reading experiences, student ownership, and reading motivation” (p. 126). Through balanced literacy, teachers model and provide students with literacy strategies that help them to become better readers, while also providing social interactions that aid in linking reading to socialization (Byrd, 2015).

Balanced literacy is supported through teachers’ vital role, especially in the early grades of prekindergarten, kindergarten, and first grade, to provide a rich exposure to various literacy activities and to different genres of books (Ankrum, Genest, & Belcastro, 2014). The goal of teachers during literacy instruction should always be to increase reading performance through teacher preparation, collaboration, and support (Vesay & Gischlar, 2013). The literature chosen for instruction should be used to model language structure, scaffold student learning, and to motivate students to read and learn (Nathanson & Nathanson, 2004).

Reading should be instructed solely for authentic experiences, including pleasure, to be informed, and to master or perform tasks so that the learner can make meaning of the lesson (Nathanson & Nathanson, 2004). By teaching literature in an authentic way, the teacher reaches the students more effectively and has access to their Zone of Proximal Development (Nathanson & Nathanson, 2004). The Zone of Proximal Development, identified by Lev Vygotsky, can be used as a tool for teachers that indicates what a child
can do independently verses what a child can do with assistance (Wass & Golding, 2014). Teachers should also use high quality literature during literacy instruction, including story content that is rich and meaningful to the students, literature that expands on the concepts that have been taught, imagery to aid students in creating mental images and developing character, and connections to real life (Nathanson & Nathanson, 2004).

The reading behavior of students is an early indicator of their reading outcome and reading success in future years (Byrd, 2015). The early experiences with literacy that students have are indicators of how engaged in learning the student will be in the future (Fountas & Pinnell, 2008). Naeghel, Keer, Vansteenkiste, and Rosseel (2012) found that reading achievement can be predicted by the amount of time one spends reading.

Balanced literacy informs teachers of the levels that each student is on, allowing them to scaffold instruction to best meet the needs of individual students (Bingham & Hall-Kenyon, 2013). This combination of instructional strategies are aligned with improving the basic literacy skills of accuracy, fluency, and comprehension (Byrd, 2015).

**Basic Literacy Skills**

Many literacy experts highlight the importance of early literacy skills in the development and success of reading across the curriculum. While many literacy skills are important, the basic literacy skills that are identified as being the most important skills to achieve during early childhood include reading accuracy, fluency, and comprehension (Eckert, Dunn, & Ardoin, 2006).

**Reading accuracy.** Reading accuracy is the vital component of the reader’s ability to process what he or she is reading (Fitzgerald, 2016). Fountas and Pinnell (2008) identify reading accuracy as the amount of words that are read correctly. Reading
accuracy should not be timed, but students should not stumble on words for long periods of time (Juul, Poulsen, & Elbro, 2014).

Lovett (1987) suggests that a student’s ability to read accurately determines his or her success in literacy. Contradicting this belief, other researchers speculated that the speed one reads determines his or her literacy success (Lovett, 1987). Furthermore, Chabot, Zehr, Prinzo, and Petros (1984) determined that rapid word recognition skills determine reading performance.

Reading accuracy does not include the speed at which one reads; however, students can exhibit both speed and accuracy while lacking comprehension due to trying to read too quickly (Juul, Poulsen, & Elbro, 2014). Dialect of the student, phoneme awareness, and many other factors come into play when determining reading accuracy (Juul, Poulsen, & Elbro, 2014).

Deacon, Benere, and Pasquarella (2012) indicated that there is a direct link between morphological awareness and reading accuracy. When students are able to decode words based on different parts of the words that he or she knows, it improves his or her accuracy (Deacon, Benere, & Pasquarella, 2012). According to Lovett (1987), there are three phases of reading accuracy including reliably identifying the words, automatically identifying the words, and increasing speed in word recognition leading to automaticity in fluency. Students must be familiar with high frequency words in order to become an accurate reader (Fountas & Pinnell, 2008).

A student’s ability to read accurately is not a sole indicator of fluency nor comprehension, as some students are unable to read accurately yet still comprehend the
text; however, there is a direct relationship between reading accuracy, fluency, and reading comprehension (Fountas & Pinnell, 2008).

**Reading fluency.** Reading fluency is one of the foundational components of successful readers and it should be the goal of teachers for students to master reading fluency as early as possible (Rasinski, Rikli, & Johnston, 2009). Chard (as cited in Strickland, Boon, & Spencer, 2013) identified reading fluency as the “ability to read sight words, decode words, and read phrases and sentences automatically and rapidly” (p. 2). In order for students to develop fluency, students must be exposed to assorted texts and words in effort to expand students’ vocabulary (Stahl, 2012).

Students who read with fluency exhibit accurate and effortless word identification along with proper phrasing and tone each time they read (Spear-Swerling, 2006). Rasinski, Rikli, and Johnston (2009) suggest that lack of reading fluency is one of the greatest deficiencies in reading, resulting in poor academic performance in other content areas.

There are many components of reading fluency, particularly automaticity and prosody, which are considered to be vital components of the development of reading fluency (Rasinski, Rikli, & Johnston, 2009). According to Rasinski, Rikli, and Johnston (2009) teacher instruction should be primarily focused on developing automaticity and prosody in attempt to establish fluency.

Automaticity is the students’ ability to decode words effortlessly (Rasinski, Rikli, & Johnston, 2009). If students are able to save the energy that is used for decoding words, they can use that energy for comprehending the text more quickly and accurately (Rasinski, Rikli, & Johnston, 2009). LaBerge and Samuels (1974) developed a theory of
automaticity that established that students who lack reading automaticity in recognizing words have to use cognitive energy to decode words while reading therefore taking away the cognitive energy that should be used to comprehend the text.

Prosody is reading at an appropriate rate and using expression while reading through voice pitch, stress, and phrasing (Rasinski, Rikli, & Johnston, 2009). Voice expression, volume, phrasing, accuracy, smoothness, and pace are all considered when determining reading prosody by teachers (Taylor, Meisinger, & Floyd, 2013). If a student has prosody, he or she will be more motivated to read because it will come easier to him or her (Rasinski, Rikli, & Johnston, 2009).

There are many strategies to help students increase reading fluency. Whole-class choral reading is a strategy that is known to improve fluency in classrooms (Paige, 2011). Whole-class choral reading is a strategy similar to shared reading, differing in that the students read aloud with the teacher in unison and usually the text is only about two hundred to two hundred fifty words (Paige, 2011). Upon completion of reading the text, the teacher provides feedback to students to encourage students to read with prosody (Paige, 2011). Often in whole-class choral reading, the teacher has the students read the same text several times until the class is fluent at reading the text (Paige, 2011).

Silent reading also helps students establish fluency through reading independent level texts silently (Reutzel & Juth, 2014). Silent reading involves students choosing texts of interest and on his or her independent reading level, then reading for extended periods of time building stamina and focusing on the text, thus building fluency, along with comprehension (Reutzel & Juth, 2014).
Oral reading is a strategy where students read independent level texts aloud (Hale et al., 2011). Text characteristics and visual stimuli influence one’s ability to orally read fluently (Taylor, Meisinger, & Floyd, 2013). Studies suggest that oral reading helps students read more fluently and comprehend text more effectively (Hale et al., 2011). In addition, oral reading enables teachers to maintain field notes on student progress, and helps the student become a more fluent reader from hearing him or herself read (Hale et al., 2011).

Mastering reading fluency is important in the elementary school grades because it builds the foundation for fluency and comprehension in upper grade levels (Rasinski, Rikli, & Johnston, 2009). Fluency leads students from word recognition to text comprehension (Seitz & Bartholomew, 2014). Rasinski, Rikli, and Johnston (2009) discuss a model indicating that once students develop fluency, the development of comprehension is imminent and will become noticeable soon after. Student reading fluency directly effects student comprehension (Huang & Liang, 2015).

**Reading Comprehension.** There are many skills and processes that determine one’s ability to comprehend when reading (Learning to Read, 2015). Reading comprehension involves students understanding the text that is being read and being able to make a mental representation of what is being read (Broek, Kendeou, Lousberg, & Visser, 2011). Kucer (2014) states that “comprehension is a constructive process of meaning making” (p. 31).

Comprehension is vital in the progression of reading levels in all grade levels (Bursuck, Munk, Nelson, & Curran, 2002). Knowledge of vocabulary is a vital component of reading comprehension (Wright, 2014). Spear-Swelling (2006) found that
reading comprehension and fluency influence each other; therefore, it is vital that students develop comprehension in order to develop fluency and fluency in order to develop comprehension.

When a student comprehends a text, he or she is able to make inferences and understand the text (Karasakaloglu, 2012). To enhance student comprehension, teachers must ensure that the teaching strategy being used is differentiated to meet the needs of each individual student, detailed feedback is given to students quickly, different texts are used based on the needs and interests of the students, and students are taught different strategies for comprehension in order to choose the right comprehension strategy that best benefits him or her (Karasakaloglu, 2012). The ability to decode text and listen in order to comprehend text are the main skills that teachers look for in students’ ability to comprehend (Learning to Read, 2015).

Teachers should model different comprehension strategies for students and the students should be familiar with and use different strategies for comprehension of text based on what works best for the student (Gutierrez-Braojos, Fernandez, & Salmeron-Vilchez, 2014).

Byrd (2015) also stressed the importance of teachers educating students on several comprehension strategies including questioning, determining importance of the events in the book, connecting the book to real life situations or things that the student is familiar with, and creating a mental picture of what is being read.

There are many strategies that aid students in comprehension. Retelling is a strategy used by the teacher to ensure that students comprehend the text (Kucer, 2014).
When a student can correctly retell something that he or she has read, it is evident that the student understood what was read and comprehends the reading (Kucer, 2014).

**Effective Literacy Strategies**

Research and practice have identified many effective strategies for improving reading accuracy, fluency, and comprehension. Repeated reading, shared reading, goal-setting, buddy reading, readers’ theater, exposure to reading, and small group instruction have been cited as methods to enhance these literacy skills.

Strickland, Boon, and Spencer (2013) found that repeated reading is effective in increasing reading comprehension, along with reading accuracy and fluency. Repeated reading involves a student reading the same text multiple times until the student is accurate and fluent with the text (Strickland, Boon, & Spencer, 2013).

Shared reading is also an effective strategy, particularly for promoting comprehension. Stahl (2012) explains that shared reading involves the teacher choosing texts to read to the whole class that are more challenging and are at the higher end of the students’ Zone of Proximal Development. While reading, the teacher provides instructional support through modeling appropriate ways to read, including reading with accuracy, fluency, and comprehension, which will teach students to use these strategies when reading independently (Stahl, 2012). After the teacher completes the whole class reading, students can read the same text independently so that they can practice the strategies that were just modeled by the teacher (Stahl, 2012).

Goal-setting for students has proven to increase reading accuracy, fluency, and comprehension, especially for students who are identified to be below grade level (Mason
et al., 2016). Setting goals allows students to see growth and motivates students to beat previous scores (Mason et al., 2016).

Buddy reading allows students to build accuracy, fluency, and comprehension by reading with others because students are able to learn from each other during their reading time (Seitz & Bartholomew, 2014). Lev Vygotsky (as cited in Seitz & Bartholomew, 2014) found that students use language and collaboration to learn most effectively, which is what they are doing during buddy reading.

Readers’ theatre involves students acting out what they are reading to be more involved with the text (Griffith & Rasinski, 2004). This strategy supports accuracy, fluency, and comprehension of readers (Griffith & Rasinski, 2004). Students progress in fluency because they are taking part of the text that they are reading and are learning to read with expression (Griffith & Rasinski, 2004). Students progress in comprehension because they are becoming a part of the text and are able to relate to it (Griffith & Rasinski, 2004). Furthermore, reader’s theatre motivates the students and increases the students’ enjoyment of reading (Griffith & Rasinski, 2004).

A student’s exposure to reading materials is vital to reading accuracy, fluency, and comprehension development (Spear-Swerling, 2006). Teachers should expose students to books of interest so that students will develop a positive attitude towards reading and creating a desire to read (Reis et. al., 2007).

Finally, small group instruction builds accuracy, fluency, and comprehension (Begeny & Silber, 2006). According to Begeny and Silber (2006) the groups must only consist of three to five students who are all working on learning the same reading strategy through differentiated instruction by the teacher. This type of instruction is more
individualized and offers more effective support than whole group instruction (Begeny & Silber, 2006).

**Differentiation**

**History of differentiation.** Differentiated instruction began in the one-room school house in the late 1600s, when multiple grades were in one room with one teacher (Grittner, 1975; Tomlinson, 2005). This practice changed in the 1900s, when students were classified into grades based on age (Grittner, 1975).

Research for differentiation began through brain research (Wolfe, 2001). Research has demonstrated that the brain functions best by paying attention to meaningful content (Wolfe, 2001). Research has also proven that when students are frustrated, no learning occurs and the adrenal glands release cortisol, resulting in the death of brain cells, negatively effecting memory and retention (Tomlinson, 2000).

Differentiation allows for lessons that appeal to the interests of the students and are on the student’s learning level, so that the student does not become frustrated thus allowing learning to take place (Wolfe, 2001).

**Theories of differentiation.** There are many theories that have contributed to the framework of differentiation. Some of the well-known theorists who have contributed to these theories include Piaget, Vygotsky, Dewey, Kilpatrick, Gardner, Sternberg, and Tomlinson (Tzuo, 2007).

Jean Piaget’s cognitive constructivist theory became popular in the 1960s (Tzuo, 2007). Piaget believed that a child constructed his or her own knowledge through connecting previous knowledge to new and individual experiences, and then tested the
new knowledge in contexts (Tzuo, 2007). Piaget places the emphasis for learning on the individual and the environment (Tzuo, 2007).

Lev Vygotsky’s social constructivist theory became popular in the 1980s (Tzuo, 2007). Vygotsky believed that a child constructed his or her own knowledge through social interactions with others (Tzuo, 2007). Vygotsky believed that the society and individual interactions with other people led to construction of knowledge (Tzuo, 2007). Vygotsky also believed that each child has a Zone of Proximal Development, which is the zone from where a child can complete a task independently to where the child can complete a more difficult task with assistance (Tzuo, 2007).

Though Piaget and Vygotsky’s theories are quite similar and prioritize social interactions and adaptations, they differ in the role of the child and the context of social interactions through play (Tzuo, 2007). Piaget and Vygotsky also differ in that Piaget believes that development precedes learning; whereas, Vygotsky argues that learning leads development (Tzuo, 2007).

John Dewey’s reflective thinking theory emphasizes the importance of experiences on learning (Tzuo, 2007). In Dewey’s model, students, along with assistance from teachers, decide what experience is required for the student’s learning needs (Tzuo, 2007). Dewey theorized that students must reflect on experiences in order to grow and learn (Sutinen, 2013). Dewey believed that classrooms should focus on the experiences that each individual student needs to progress academically and that teachers should ensure that students feel successful in order to motivate students to be successful (Tzuo, 2007).
Similar to Dewey, William Kilpatrick’s theory of motivated learning established that the individual student’s social context and the individual student’s attitude should be considered because the student’s motivation is based on stimulus and response which determines success, which is also similar to Thorndike’s theory of connectionism (Sutinen, 2013). According to Sutinen (2013), Kilpatrick theorized that it was essential for students to set a goal for an activity, make a plan to act towards the goal, act out the plan, feel success in the goal, and lastly, enable the learning to occur.

Howard Gardener believed that intelligence was “fluid, and not fixed” and that people needed learning experiences to grow knowledge (Tomlinson, 2005, p. 18). Furthermore, Gardner believed that students had different things that they were good at, and called them intelligences (Tomlinson, 2014). These intelligences also had an effect on the way that students learn most effectively (Tomlinson, 2014). He established eight different types of intelligences that people have, including verbal-linguistic, logical-mathematical, visual-spatial, bodily-kinesthetic, musical-rhythmic, interpersonal, intrapersonal, and naturalistic (Tomlinson, 2005).

Similar to Gardner, Robert Sternberg believed that people had different types of intelligences, but they were limited to three types, including analytical, practical, and creative (Tomlinson, 1999). Sternberg also established the different thinking styles that each person has (Tomlinson, 1999).

Carol Ann Tomlinson (2014) brought ample attention to differentiation and differentiated instruction strategies in 1999 when she published a book about her beliefs focusing on differentiation and its implementation in classrooms. Furthermore, she explained how differentiation should be a way of thinking, rather than solely a strategy of
teaching (Tomlinson, 2014). This book brought about many changes to the traditional American classrooms; teachers began to learn to effectively differentiate instruction within their classrooms (Tomlinson, 2014).

Tomlinson (2014) grounded her theory surrounding other theories, particularly those of Benjamin Bloom and Howard Gardner. Bloom established a taxonomy of levels that help classify learning objectives (Tomlinson, 2014). This taxonomy helps teachers distinguish different levels within a student’s Zone of Proximal Development and aids teachers in scaffolding questions for students according to the taxonomy (Tomlinson, 2014).

Though theorists differ in beliefs of the ways that we learn, they all agree that people learn and think in different ways establishing the need for differentiated instruction in all classrooms (Tomlinson, 2005).

**Significance of differentiation in the classroom.** Research has shown that the most effective way for teachers to effectively engage and ensure success of all students on all levels in a single classroom is to differentiate instruction (Fitzgerald, 2016). Differentiation is the “assessment, planning, and instructional practices of the general education classroom teacher” (Puzio, Newcomer, & Goff, 2015, p. 136) as he or she, “guided by assessment data, proactively adapts their instruction or curriculum for individuals or groups (Puzio, Newcomer, & Goff, 2015, p. 136). Differentiating instruction encompasses the teacher meeting each individual student on his or her learning level based on the student’s needs, interests, and learning style (Fitzgerald, 2016). “Differentiation involves the teacher varying instruction to meet the student on
his or her level, rather than the level of the middle of the class, as most teachers tend to do (Valiandes, 2015).

Each classroom has diverse educational and individual needs; therefore, the need to modify content and teaching strategies is present (Shaunessy-Dedrick, Evans, Ferron, & Lindo, 2015). “Differentiation addresses the needs of both struggling and advanced learners” (Tomlinson, 2005, p. 24). Through differentiation, the teacher begins instruction according to independent student levels, rather than curriculum maps or curriculum guides (Tomlinson, 2005). When teachers effectively differentiate, they help students become independent at a certain task through the process of scaffolding (Ankrum, Genest, & Belcastro, 2014).

Santangelo and Tomlinson (2012) emphasize that “effective differentiation is grounded in teachers' understanding of, and appreciation for, students' unique needs as well as their commonalities” (p. 310). Because students differ in intelligences, readiness, language, culture, and learning level, the understanding of and implementation of effective differentiation should be the focus of all teachers (Tomlinson, 2005).

Tomlinson (2005) stressed that for effective differentiation, teachers should meet students at individual starting points and use modifications to ensure that the needs of all students are met so that substantial growth is observed each year. Teachers should determine the student’s Zone of Proximal Development, which is the zone where a student can complete a task with assistance from an adult to the zone of potential, where the student can complete the same task without help (Ankrum, Genest, & Belcastro, 2014). Upon determination of the students’ Zone of Proximal Development, the teacher should provide scaffolding, or support, to the student to help him or her reach the zone of
potential, in which the support would be removed (Ankrum, Genest, & Belcastro, 2014). Constructivist theorist, Lev Vygotsky, “argued that effective instruction occurs at the child’s Zone of Proximal Development, since this is where true learning transpires” (Ankrum, Genest, & Belcastro, 2014, p. 41).

“Effective differentiation needs a plan, a strategy that teachers can use to turn intention into practice” (Fitzgerald, 2016, p. 18). Through effective use of differentiation and self-reflection for teachers and students, teachers can improve instructional strategies and the educational success of students (Fitzgerald, 2016). Effective differentiated instruction encompasses “actively engaging students in their own learning and linking teaching strategies to students’ interests” (Pardini, 2005, p. 14). Differentiation addresses and meets the individual needs of diverse learners within an inclusion classroom (Tobin & Tippett, 2014). Differentiated instruction is unique in every classroom because each teacher views and implements teaching strategies differently (Pardini, 2005).

Fountas and Pinnell (2012) suggested that by differentiating literacy instruction, students will be able to learn more effectively. Furthermore, there are many ways to differentiate literacy instruction including providing variety and choices for students to read, level the reading books for students and ensure that they are reading books on their level, and using self-reflection techniques such as journaling aids students in developing accuracy, fluency, and comprehension (Fountas & Pinnell, 2012).

By knowing the students and the interests of the students, teachers can differentiate instruction by referring to student interests during instruction and by providing reading materials relevant to student interests, which grabs student attention (Tobin & Tippett, 2014). If a student is interested in material being taught and can relate
to it, the student will become more motivated to learn the material, also increasing the students’ self-efficacy (Tobin & Tippett, 2014).

When differentiating instruction for students, teachers alter the curriculum to adjust to the needs of the students rather than forcing students to adjust to the curriculum (Dixon et al., 2014). Fountas and Pinnell (2012) found that differentiation during literacy and small group instruction effectively aids in the development of literacy skills, such as accuracy, fluency, and comprehension, which are the foundation for literacy development. Students must develop accuracy, fluency, and comprehension in order to be successful readers (Fountas & Pinnell, 2012).

**Strategy Group Differentiation**

Group learning can be defined by different terms, such as collaborative learning groups, strategy groups, and cooperative learning groups; however, they all entail students working together in a small group so that each member of the group can participate (Gunderson & Moore, 2008). Strategy group differentiation includes groups consisting of no more than five students, who are all on similar reading levels and who are working on the same literacy strategy (Wasik, 2008). There are cognitive, social, and emotional benefits for students in small group instruction (Wasik, 2008). Small group instruction can have a major effect on language development due to the opportunities presented to students to express themselves verbally and respond to feedback from the teacher (Wasik, 2008). The chance of students talking and responding to prompts doubles in small group instruction (Wasik, 2008).

Though best practice research has indicated the positive effect that small group instruction and differentiation has on learning, these strategies are not used effectively in
classrooms (Wasik, 2008). However, when it is implemented, differentiated instruction is most successfully completed in small group (Al Otaiba et. al., 2011). Al Otaiba et al. (2011) found that small group instruction is more effective than whole group instruction because it allows for differentiation and is more personal. Within the small group, the individual students’ comments are heard and the teacher is able to give immediate and meaningful feedback (Wasik, 2008). Furthermore, small group instruction increases both the quality and the quantity of instruction time with students (Wasik, 2008).

Small group instruction encourages students to be engaged in their own learning (Wasik, 2008). Students listen to what other students have to say assisting in oral comprehension when in small group (Wasik, 2008). There should be a balance between student led and teacher led discussion during small group instruction (Nathanson & Nathanson, 2004) and the strategies that are taught during small group instruction should be practiced by students at any time that the students are able to utilize those skills (Hedrick & Pearish, 1999).

Small group instruction allows teachers to observe students’ performance and interactions on a more independent level (Wasik, 2008). Small group instruction improves classroom management and enhances learning and instruction (Wasik, 2008). Research has shown that the more contact that students have with adults, such as teachers in small groups, the more positive effect that it has on the student’s learning (Wasik, 2008).

Usually, when a teacher teaches to the entire class, he or she is teaching to the middle of the class based on the state standards and not to the diverse students based on their individual needs (Al Otaiba et al., 2011). Meeting in small, leveled groups is
recommended so that the teacher is able to provide opportunities to individual learners to learn on his or her level, rather than the level of the whole class (Byrd, 2015). This type of instruction enables students to read books with fitting vocabulary, length, and visual support (Byrd, 2015).

Too often, small groups are organized so that behavior problems are minimal, which should not be the purpose of small group instruction (Wasik, 2008). Groups are also often organized based on gender, ethnicity, academic ability, or personality (Patterson, Connolly, & Ritter, 2009). In order for small group instruction to be meaningful and effective, careful planning needs to occur that aligns with the concepts and standards (Wasik, 2008). Wasik (2008) found that diversity in small groups creates leaning experiences for students; however, scaffolding levels must be considered when creating groups to ensure that the strategies and lesson being taught is not cognitively exhaustive for the students.

Assessing in small groups is more effective for teachers (Wasik, 2008). Teachers assessing in small group can probe students about what they have learned or what they know without worrying about the time that it takes and takes away from other students (Wasik, 2008). Teachers have more energy to instruct students based on their needs due to spending less energy on managing students when teaching in small groups (Wasik, 2008).

Wasik (2008) establishes seven guidelines for small group instruction. First, groups must be limited to five or fewer students in order to effectively meet the diverse needs of each student (Wasik, 2008). The learning objective of the activity should align with what the student, or students need to progress towards a learning goal (Wasik,
Small groups should have different activities than center groups; small groups should provide instruction and center groups should provide practice (Wasik, 2008). Teachers must play an active role in the small group for the learning to be effective (Wasik, 2008). Build small group instruction time into the daily schedule for the instruction to be most effective (Wasik, 2008).

Al Otaiba et al. (2011) found that small group instruction is more effective than whole group instruction because it allows for differentiation and is more personal. Furthermore, Fountas and Pinnell (2012) established that by differentiating literacy instruction in small groups, students will learn more effectively. Moreover, there are many ways to differentiate literacy instruction including providing variety and choices for students to read, leveling the reading books for students and ensuring that they are reading books on their level, and using self-reflection techniques such as journaling in attempt to aid students in developing fluency and comprehension (Fountas & Pinnell, 2012).

There are various types of small group literacy instruction that are identified by Fountas and Pinnell (2009), including guided reading, book clubs, whisper reading, and reading conferences. Guided reading includes the teacher working with a group of students with similar needs to work on one specific strategy (Fountas & Pinnell, 2009). Book clubs are when students work together to read a book and then discuss it together, as the teacher listens and supports the discussion (Fountas & Pinnell, 2009). Whisper reading involves a small group reading at the same time in a whisper voice (Fountas & Pinnell, 2009). Reading conferences are when teachers work and establish reading goals
with students independently within the students’ Zone of Proximal Development (Fountas & Pinnell, 2009).

Wasik (2008) stresses the importance of small group instruction, for without it, “class instruction is not of high quality” (p. 516). Though research has proven the success of differentiated instruction, differentiation is not being used in many classrooms due to several challenges that teachers have (Tomlinson, 2005).

**Challenges of Differentiation**

Responding to varying learners in the classroom is difficult, yet it is the most effective means of learning across all subject areas and ensures that each student has a chance to be successful (Fitzgerald, 2016). Meeting the needs of different types of learners is challenging for most teachers because they must learn to present information to students in a variety of ways (Tobin & Tippett, 2014). This requires teachers to learn new things outside of their comfort zone that will match the needs of individual students in the classroom in order to ensure success for all students (Tomlinson, 2005).

Most teachers do not like change and it makes them feel uncomfortable (Parker, Patton, & Sinclair, 2016). Furthermore, when teachers change their way of teaching to differentiation, it causes them to reflect and makes them feel that the pedagogy that they learned prior to this change was all wrong (Parker, Patton, & Sinclair, 2016).

Teacher self-efficacy plays a major role in differentiated instruction and how effective it is implemented in the classroom (Dixon et. al., 2014). Teachers must be confident in what they teach and in their teaching strategies, therefore changing their
familiarized teaching strategies lowers their self-esteem and self-efficacy (Dixon et. al., 2014).

Another reason that differentiation is not implemented in schools is due to teachers not having an abundance of professional development to ensure the confidence that is required to differentiate (Santangelo & Tomlinson, 2012). Similar to without effective instruction students will not learn; without effective professional development, teachers will not learn to effectively differentiate instruction (Santangelo & Tomlinson, 2012).

If teachers received effective professional development on differentiation, they would recognize the importance of differentiation and would feel more comfortable differentiating instruction in their classrooms (Santangelo & Tomlinson, 2012). This becomes the responsibility of administrators to offer support and professional development to ensure that teachers have self-efficacy and that the use of differentiated instruction and assessment in all content areas is encouraged (Puzio, Newcomer, & Goff, 2015).

Though differentiation may impose challenges, it is in the best interest of the student that differentiated instruction and differentiated assessment be implemented daily in all classrooms (Tomlinson, 2005).

**Conclusion**

The purpose of this literature review is to introduce the elements that are vital to the present action research study concerning differentiated strategy group instruction and the literacy components of accuracy, fluency, and comprehension. This study is
significant because of the low literacy rates and achievement gap in a first-grade classroom and the need to raise literacy rates and close the achievement gap.

This literature review also details the different theoretical frameworks that are associated with differentiated instruction. It outlines the different theories and teaching strategies that have evolved over time used by educators since the 1600s, often unknowingly. It details the importance of differentiated instruction and the positive effect that it has on students’ self-efficacy and literacy success. This literature review also outlines numerous issues that could be contributing to the low literacy achieving rates of students.

This action research study seeks to examine the effect of differentiated instruction in strategy groups on the vital literacy components of accuracy, comprehension, and fluency in relation to the entire class, including students who are below grade level, on grade level, and above grade level.
CHAPTER 3

METHODOLOGY

Quantitative research is used to discover truth about topics of interest by generating data that can be quantified and measured (McCarthy et. al., 2017). Quantitative research methods aid the researcher in drawing numeric conclusions about a particular question from a researcher-selected sample (McCarthy et. al., 2017). Because quantitative research provides measurable data, it is the chosen method for the present study (Goertzen, 2017).

This action research study is examining the effect of strategy group differentiation on the literary elements of accuracy, fluency, and comprehension. The present study included a first-grade class consisting of approximately seventeen students. Fountas and Pinnell benchmark assessment systems, informal running records, and field notes were used to collect data for the action research study.

The purpose of this quantitative study was to determine if strategy group differentiation had a positive, negative, or no effect on the development of accuracy, fluency, and comprehension during reading among the participating students. The purpose of the present study was determined based on the ongoing struggle faced by teachers to meet the diverse needs of students in the classroom. It is estimated that 17% of students experience reading problems and are not reading on grade level by fourth
grade (Eckert, Dunn, & Ardoin, 2006). The present study identified the effect of strategy group differentiation in attempt to close the achievement gap.

This chapter of this dissertation in practice details the methodology used throughout the present action research study. The action research design, the role of the action researcher, the study sample and study setting, the instrumentation and materials used, data collection technique, and the data analysis are thoroughly explained throughout this chapter.

**Action Research Design**

For the present study, quantitative research was used to explore the effect that strategy group differentiation had on the literacy elements of accuracy, fluency, and comprehension. A quantitative research design was appropriate for this study because numerical data was used to determine if strategy group differentiation, as implemented by the teacher-researcher, had an effect on the development of the identified literacy components in first grade students.

The data are represented for accuracy and comprehension using a percentage and for fluency using a rating number beginning with zero and ending at three. Using a quantitative research design allows the researcher to compare student data taken at the beginning and ending of the study, along with tracking data throughout the study to determine if strategy group differentiation results in higher accuracy, fluency, and comprehension scores (Goertzen, 2017).
Role of the Researcher

Mertler (2014) explains that the teacher-researcher is an active participant in action research because the researcher is engaged in the study directly as she takes on a role in the study to improve her own classroom instruction. The researcher implemented the intervention being explored and determined its effect on the development of accuracy, fluency, and comprehension of her own students in efforts to improve literacy scores of students who are above grade level, on grade level, and below grade level.

The researcher ensured credibility of data collected, analyzed the data collected, summarized the data, and reported findings throughout the study. The researcher attempted to avoid bias towards the data and reported true findings of student scores. The researcher used the Fountas and Pinnell benchmark assessment system, running records, and field notes to score students’ accuracy, fluency, and comprehension levels for data collection. Furthermore, the researcher self-reflected on the effectiveness of strategy group differentiation and altered instructional strategies as needed to ensure success for all students in the classroom (Dana & Yendol-Hoppey, 2014).

The Context of the Present Study

The school. The present study included a suburban elementary school that services pre-kindergarten through fifth grade. This school has 620 students. The school is a “learning through leadership” school in which students assume leadership roles daily and are empowered in attempt to develop self-efficacy. Students are encouraged to take responsibility for their actions and for their learning daily. The school has won many awards including Palmetto’s Finest Award, National Blue Ribbon Award, Exemplary Writing Award, and recently, the school became STEM certified. The school also wins
numerous awards annually for varying reasons. The school is competitive for the highest test scores in Beaufort County School District and always scores higher than the South Carolina state average on standardized tests. The school has a diverse student body because of changing school zones. There are 28 white teachers, two African American teachers, and one Hispanic teacher at the elementary school. The principal is white, and the assistant principal is African American.

**The sample.** The sample for the present study was determined based on convenience. The sample consisted of the teacher-researcher’s first-grade students, who were approximately six or seven years old and in the beginning stages of literacy development. The students were reading on varying Fountas and Pinnell levels at the time of the study. Thirteen students were reading above grade level (level G or higher), two students were reading on grade level (level F), and two students were reading below grade level (level D or below) at the time of the present study. The students in the sample were quite diverse and had varying learning styles and learning needs (Dixon et. al., 2014). Using the sample of the researcher’s convenience, the size of the sample is justified due to the purpose of action research studies being to improve one’s own practice (Mertler, 2014).

**The classroom.** The classroom in which the study took place is large in size compared to other classrooms and has a wall of windows, two doors, a bathroom, a closet, a water fountain, and a sink. The classroom has a Promethean Board, a large library with books sorted according to genre and according to reading level, a math manipulative center, a writing center, a reading center, a word work center, and a technology center. Each student is assigned his or her own iPad issued by the school.
The classroom offers flexible seating, including traditional table and chairs, low table, high table, bungee chairs, wobble seats, bean bag chairs, stools, exercise balls, rocking chairs, and carpet squares. The strategy group differentiation occurred around 8:30 in the morning daily at the teacher’s table, which is shaped like a kidney bean and allows for students to choose the type of seating to bring to the table. The students also selected their own books during strategy group instruction. The researcher focused on teaching different strategies for the reading component, either accuracy, fluency, or comprehension, that each group needed based on the needs of the participants. The researcher modeled the strategy exclusively and observed students practicing the strategy when reading on their independent reading levels (Fountas & Pinnell, 2009).

**Ethical protection of the participants.** To consider ethical problems in this research study, the researcher informed all parents and guardians of the research and kept them informed throughout the entire process of the research. Furthermore, the researcher informed the parents and guardians of the purpose of the research and how the data collected throughout the research was used.

The parents of the student participants were provided a permission slip explaining the research study’s purpose, the methodology of the research, and requesting permission for their child’s participation in the research. Parents signed and returned the permission slip before students were considered for the study sample. Throughout the study, parents received weekly updates reminding them of the study and which part of the research process the class was currently in.

All data collected throughout the research study was used for the purpose of the research, solely, and remained confidential from parents and student participants.
(Mertler, 2014). The researcher ensured the confidentiality of all students during the research process and ensured that students did not become vulnerable or obvious for establishing social identities based on their performance (Knifsend & Juvonen, 2014).

**Research Design Methodology**

There are four steps of the action research process, including planning, acting, developing, and reflecting (Mertler, 2014). This action research study has been designed according to these steps.

**Planning the research.** During the planning phase of this research process, the researcher gathered data about the various topics in chapter two of this dissertation in practice and planned this study. Using the data that was collected, the researcher developed the plan to determine the effect that strategy group differentiation has on accuracy, fluency, and comprehension during literacy.

Prior to the study, the teacher-researcher administered a Where to Start Word Test to individual students to determine the appropriate reading level in which students needed to test for reading levels. Table 3.1 shows the research timeline that the teacher-researcher followed throughout the course of this action research study after completion of the Where to Start Word Test.
Table 3.1

*Research Timeline*

<table>
<thead>
<tr>
<th>Day of Study</th>
<th>Teacher Researcher</th>
<th>Student Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 data collection</strong></td>
<td>The teacher researcher will administer the final Fountas and Pinnell benchmark assessment to student participants to obtain the accuracy and comprehension percentages and the fluency rate of each individual to collect baseline data. The teacher researcher will take detailed notes as the student participants read.</td>
<td>Student participants will read designated books to the teacher researcher. Upon completion of the book, the student participants will answer comprehension questions.</td>
</tr>
<tr>
<td><strong>2 data collection</strong></td>
<td>The teacher researcher will administer the final Fountas and Pinnell benchmark assessment to student participants to obtain the accuracy and comprehension percentages and the fluency rate of each individual to collect baseline data. The teacher researcher will take detailed notes as the student participants read.</td>
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The Fountas and Pinnell benchmark system (Appendices B-C) requires participants to read a leveled book while the researcher marks each time the participants reads words incorrectly and determines the fluency of the reading. Then, the researcher asks the participant questions about the book. Using this assessment system, the researcher determined the reading strategy that each student participant needed to work on and grouped students based on the strategy needed to advance to the next reading level. The researcher grouped students based on the strategies the student needed rather than current reading level. There were fourteen groups. Each group did not exceed four participants and some students were in multiple groups based on students’ needs.

During the meeting times, the researcher implemented strategy group differentiation instruction, solely, to each group based on the specific reading needs of the students in the group. The teacher-researcher focused on the following key strategies during the strategy groups: looking at the word from beginning to end, looking for small chunks inside of the word, looking for small words or parts of words inside of the word, scooping up the words, reading punctuation marks, doing a five finger retell, going beyond the text, grouping letters to form words, and cross-checking to ensure accuracy (Boushey & Moser, 2009). The researcher eliminated whole group instruction for the duration of the study and only had strategy group instruction. The researcher took daily
running records and field notes to collect data on the accuracy, fluency, and comprehension of the participants and to guide daily instruction.

During the acting phase of this research study, the researcher tested student participants at the beginning and end of the study period with the Fountas and Pinnell benchmark assessment system (Appendices B-C) to determine the student participants’ reading accuracy, fluency, and comprehension. In addition, summaries of running records were developed and quantified to determine alignment with Fountas and Pinnell. Running records also provided the researcher with immediate feedback to inform strategies used during strategy group instruction. Finally, field notes were used to guide instructional strategies for the next day.

**Developing the data.** Quantitative data was collected prior to and throughout the study. The initial data and final data collected was from the Fountas and Pinnell benchmark assessment (Appendices B-C) that determined the accuracy and comprehension percentage and the fluency score of each participant (Fountas & Pinnell, 2003). The daily collection of data through the use of running records (Appendix A) and field notes (Appendix D) tracked the progress of each participant throughout the study. The researcher tracked the quantitative data on a chart. The chart is divided into three sections, including accuracy, fluency, and comprehension (Appendix E).

The teacher-researcher further categorized the data based on instructional and independent reading levels. Vygotsky (as cited in Stahl, 2012) established that children can work independently at lower levels of difficulty, which is the independent reading level, and can work with support at higher levels of difficulty, which is the instructional reading level.
The data collected for reading accuracy is a percentage that is determined by adding the number of errors that the participant made while oral reading to the number of times that the participant corrected him or herself when reading and dividing that number by the total number of words that the participant read (Fountas & Pinnell, 2009). This gives the researcher the participant’s accuracy percentage. The percentage should be ninety-five percent or higher for the book level to be considered for the participant’s independent reading level and ninety percent or higher for the book to be the participant’s instructional level (Fountas & Pinnell, 2009).

The data collected for reading fluency is a number ranging from zero, which is not fluent, to three, which is very fluent (Fountas & Pinnell, 2009). A score of one is determined when the participant reads in two-word phrases, a score of two is determined when a participant reads mostly fluent, but does not read complete sentences each time, and a score of three is when the participant reads each sentence paying attention to punctuation and expression (Fountas & Pinnell, 2009). The participant had to score two for the book to be considered instructional or one for the book to be the student’s independent reading level (Fountas & Pinnell, 2009).

The data collected for comprehension is a percentage (Fountas & Pinnell, 2009). Upon completion of the book, the researcher asked the participant questions about the book. The participant earned one point for each question answered correctly. The researcher divided the number of questions answered correctly into the total number of questions to obtain the percentage of comprehension that the participant has on the book (Fountas & Pinnell, 2009). The participant needed to receive eighty percent
comprehension for the instructional level and ninety-three percent comprehension for independence (Fountas & Pinnell, 2009).

Pinnell and Fountas (2011) identified instructional and independent reading levels to scaffold reading for student participants. The instructional and independent reading levels are consistent with Vygotsky’s Zone of Proximal Development theory (Stahl, 2012).

Analyzing the data. The teacher-researcher analyzed the Fountas and Pinnell data at two time points (prior to study and end of study) based on the growth of each participant as an individual. The supplemental data including running records and field notes were reviewed to determine group-level or student-level growth daily. If the student participant increased the score, it demonstrates that strategy group differentiation has a positive effect on the development of accuracy, fluency, and comprehension. Contrarily, if the student participant scores stayed the same or decreased, the effect the strategy group differentiation has on accuracy, fluency, and comprehension is limited, or negative.

Reflecting on practice. The researcher determined how to proceed during the reflecting phase and determined if new strategies needed to be implemented (Mertler, 2014). Upon completion of the action research study, the researcher shared the results with parents of the participants and with colleagues within the school in hopes that they will implement differentiation strategies that will aid in the development of accuracy, fluency, and comprehension. The researcher also published the results on the school website so that parents and guardians could have access to the results of the study.
Conclusion

The teacher-researcher utilized a quantitative research approach to collect numerical data on the scores of accuracy, fluency, and comprehension of the participants in a first grade classroom throughout the study. The use of a quantitative research design enabled the researcher to gather and analyze numerical data to determine if strategy group differentiation caused an increase in student participant scores. The data collected from Fountas and Pinnell benchmark assessment system, running records, and field notes were triangulated to add to the credibility of the present study. The action research design was created based on the research question: What is the effect that strategy group differentiation has on accuracy, fluency, and comprehension during literacy?
CHAPTER 4

PRESENTATION AND ANALYSIS OF DATA

This chapter presents the data that were collected and analyzed throughout this action research study from the Fountas and Pinnell Benchmark Assessments, field notes, and running records. The purpose of this quantitative study was to determine if strategy group differentiation increased the accuracy, fluency, and comprehension rates of first grade students. This study was conducted in a first-grade public school classroom with 17 linguistically and culturally diverse students. The researcher of this study used a strategy group differentiation intervention for a total of four weeks in attempt to meet the diverse needs of students within the classroom. The results of this study relate to the research question that guided this study.

The difficulty that teachers face in an effort to meet the differing needs of students in literacy daily led to the identification of the problem of practice for the present study (Beecher & Sweeny, 2008; Fitzgerald, 2016). It is estimated that 17% of all students experience reading difficulty in grades one through three, causing these students to perform below grade level in reading by the fourth grade (Eckert, Dunn & Ardoin, 2006). Due to the importance of reading in determining the academic success of students in all subject areas, it is imperative that teachers create a path to literacy success for students through the use of differentiation (Fitzgerald, 2016; Yovanoff, Duesbery, Alonzo, &
Numerous studies have indicated that lack of differentiation within the classroom contributes to poor foundational reading skills (Dixon et. al., 2014). The present study addresses this problem of practice in attempt to build strong foundational reading skills through the use of differentiation to develop reading accuracy, fluency, and comprehension.

The present study was guided by the following research question: What effect does strategy group differentiation during literacy have on accuracy, fluency, and comprehension development? This research question addresses the overall purpose of this study and contributes to the development of teacher training opportunities to implement strategy group differentiation into the classroom.

The purpose of this study was to determine if strategy group differentiation has an effect on student academic achievement. The areas of focus for this study were the literary elements of accuracy, fluency, and comprehension.

**Intervention/Strategy**

Action research methodology was used throughout this quantitative research study. Quantitative data was collected and analyzed throughout six weeks for the purpose of this study. The data was collected from a pre and post Fountas and Pinnell Benchmark Assessment System test. The pretest was given to individual students during week one. The data from the pretest was used to form baseline data and to determine the individual needs of students and the students’ reading levels so that the teacher researcher could effectively differentiate instruction throughout the study (Tomlinson, 2005).

During a six-week period, the teacher researcher grouped students and used a variety of literacy strategies targeted at increasing accuracy, fluency, and comprehension. Table 4.1
lists the strategies that were used throughout the present study according to literacy element. The strategies were selected according to the needs of the students from the CAFÉ menu identified by Boushey and Moser (2009).

Table 4.1

*Strategies Used During the Study*

<table>
<thead>
<tr>
<th>Accuracy</th>
<th>Fluency</th>
<th>Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>look for chunks of words inside of words</td>
<td>read the punctuation</td>
<td>use prior knowledge to connect to the text</td>
</tr>
<tr>
<td>look for small words inside of words</td>
<td>read the text as the author would read it</td>
<td>make a picture or form a mental image about what has been read</td>
</tr>
<tr>
<td>use cross-checking to make sure the words and pictures match</td>
<td>adjust and apply different reading rates throughout the text</td>
<td>ask questions throughout the reading of the text</td>
</tr>
<tr>
<td>flip the sounds of vowels</td>
<td>reread</td>
<td>identify the literacy elements within the text</td>
</tr>
<tr>
<td>pay close attention to the beginning and ending sounds</td>
<td>oral read</td>
<td>back up and reread the text</td>
</tr>
<tr>
<td>blend the sounds, stretch the word out, and then reread the word</td>
<td>silent read</td>
<td>buddy read</td>
</tr>
<tr>
<td>skip the word and come back</td>
<td>buddy read</td>
<td></td>
</tr>
<tr>
<td>recognize words at sight</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After forming strategy groups with a limit of four students per group, the teacher researcher had a total of 14 groups with differing needs. Each group needed a different
literacy strategy within the element of accuracy, fluency, or comprehension. Each accuracy group was taught a different accuracy strategy. None of the groups focused on the same strategy. Table 4.2 shows the group along with the element of focus for each group. There were seven groups that focused on accuracy strategies, three groups that focused on fluency strategies, and four groups that focused on comprehension strategies. Some groups only had one student while other groups had four students. The average group size was three students. The time allotted for literacy daily is 90 minutes, so the teacher researcher was able to meet with seven strategy groups daily for seven minutes each during the intervention of the study. The group sessions were timed daily to ensure that seven groups were seen daily and that each group received the same amount of instructional support. Students were part of multiple strategy groups, so each student received instruction daily.

Table 4.2

<table>
<thead>
<tr>
<th>Group</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Element</strong></td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>A</td>
<td>A</td>
</tr>
</tbody>
</table>

*Note. A=accuracy, F=fluency, C=comprehension*

The posttest was given to individual students during week six and was used to determine if each student grew in the literacy areas of accuracy, fluency, and comprehension. Data collected from field notes and running records by the teacher researcher guided the daily strategy group instruction.
General Findings/Results

To answer the research question of the present study, the teacher researcher used the Fountas and Pinnell Benchmark Assessment System to obtain pretest and posttest data in order to measure student growth in each area of accuracy, fluency, and comprehension.

**Pretest data.** The pretest given to students was the Fountas and Pinnell Benchmark Assessment. In reference to the literacy element of reading accuracy, Figure 4.1 shows that six students were reading at 95% or higher, eight students were reading at 90-94%, and three students were reading less than 90% on the pretest. Regarding reading fluency, seven students were reading at a level 1, six students were reading at a level 2, and four students were reading at a level 3. In reference to reading comprehension, three students scored excellent, five students scored satisfactory, two students scored limited, and seven students scored unsatisfactorily, according to pretest data.

![Accuracy, Fluency, and Comprehension Bar Charts]

*Figure 4.1.* Pretest data according to literacy elements.
Table 4.3 indicates the independent reading levels for each student based on the data from the pretest using Fountas and Pinnell (2009) reading levels at the point in the year that the assessment was taken. Thirteen students were on an above grade reading level (G and above), two students were on grade level (level F), and two students were below grade level (level E and below).

Table 4.3

*Pretest Independent Reading Levels*

<table>
<thead>
<tr>
<th>Reading Level</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>2</td>
</tr>
<tr>
<td>G</td>
<td>3</td>
</tr>
<tr>
<td>H</td>
<td>4</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
</tr>
<tr>
<td>J</td>
<td>1</td>
</tr>
<tr>
<td>L</td>
<td>1</td>
</tr>
<tr>
<td>N</td>
<td>1</td>
</tr>
<tr>
<td>O</td>
<td>1</td>
</tr>
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</table>
Posttest data. The posttest given to students was the Fountas and Pinnell Benchmark Assessment. On the posttest, in reference to reading accuracy, seven students were reading at 95% or higher, nine students were reading at 90-94%, and one student was reading less than 90%. Regarding reading fluency, one student had a rating of level 1, eleven students had a rating of level 2, and five students had a rating of level 3. In reference to reading comprehension, three students scored excellent, thirteen students scored satisfactory, no students scored limited, and one student scored unsatisfactorily. All of these data are shown in Figure 4.2.

![Figure 4.2. Posttest data according to literacy elements.](image)

Most students showed growth in accuracy, fluency, and comprehension which enabled students to move up reading levels. Reading accuracy scores are identified by percentages of words that the students read correctly. Scores in the 95%-100% range indicates the student had an excellent accuracy level, 90%-94% indicates the level was
satisfactory, and less than 90% indicates that the accuracy level of the student is unsatisfactory. Figure 4.3 indicates that all students increased reading accuracy except for one student, who was in the less than 90% range. Because the reading levels of the students changed, some may have increased in reading accuracy level that may not be visible on this chart. When students move up reading levels, the accuracy level drops.

![Accuracy Chart](image)

*Figure 4.3. Comparison of pretest data and posttest data for reading accuracy.*

In the area of fluency, level 1 is an indicator of little or no fluency, level 2 is acceptable fluency, and level 3 is excellent fluency. Figure 4.4 demonstrates that the number of students with little to no fluency decreased dramatically. There was only one student who did not increase reading fluency; therefore, all student participants except for one had an acceptable fluency level on the posttest.
Figure 4.4. Comparison of pretest data and posttest data for reading fluency.

Satisfactory and excellent are ideal comprehension scores for this assessment. Furthermore, limited and unsatisfactory scores depict that the student is unable to comprehend the text effectively. Figure 4.5 shows that all but five students grew in the area of reading comprehension. Because most students advanced reading levels during this study, the comprehension levels would decrease as the student advanced levels. Because of this, some students that did not advance, did advance by progressing in reading levels.
Figure 4.5. Comparison of pretest data and posttest data for reading comprehension.

The research also explored growth in overall reading levels. Typically, first grade students advance from reading level D to reading level J in their reading level from the beginning of the year to the end of the year. At the time of the action research study, the expectation was that students advance two reading levels during a nine-week period. During the six-week period of the study, most students (82%) showed growth in accuracy, fluency, and comprehension which enabled students to move up reading levels. Table 4.5 demonstrates reading level growth during this six-week research study. Three students did not move reading levels, seven students advanced one reading level, and seven students advanced two reading levels.
Table 4.4

*Number of Reading Levels Advanced During Study*

<table>
<thead>
<tr>
<th># of Reading Levels Advanced</th>
<th># of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

The independent reading level is the level that the student is able to read independently without help from an adult. Independent reading levels that were obtained on the posttest (Table 4.6) indicated that fifteen students were on an above grade reading level (level G and above), zero students were on grade level (level F), and two students were below grade level (level E and below).

Table 4.5

*Posttest Independent Reading Levels*

<table>
<thead>
<tr>
<th>Reading Level</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>1</td>
</tr>
<tr>
<td>G</td>
<td>1</td>
</tr>
<tr>
<td>H</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
</tr>
<tr>
<td>J</td>
<td>3</td>
</tr>
<tr>
<td>K</td>
<td>4</td>
</tr>
<tr>
<td>M</td>
<td>1</td>
</tr>
<tr>
<td>N</td>
<td>1</td>
</tr>
<tr>
<td>P</td>
<td>1</td>
</tr>
</tbody>
</table>
Analysis of Data Based on Research Questions

The teacher researcher explored student overall performance in accuracy, fluency, and comprehension as well as reading level growth. Through these multiple sources, the researcher was able to determine that 94% of students increased their accuracy, 94% of students increased their fluency, and 100% of students increased their comprehension. In addition, 14 of 17 students advanced in their reading level. According to the data collected in alignment with the research questions that guided this study, all students with the exception of three moved up reading levels in this study. Of the three students that did not move up reading levels, the students did increase their scores in all literacy elements including accuracy, fluency, and comprehension. Furthermore, according to the data collected, strategy group differentiation does have a positive effect on the reading accuracy, fluency, and comprehension of students in that all students showed progress within these elements.

Supplemental Analysis of Data

The teacher researcher also analyzed data based on race to determine if there were any trends among race within this action research study. Table 4.7 lists each race and how many levels each student of that race advanced throughout the study. There is not a significant trend noted regarding this data.
Table 4.7

Reading Growth Based on Race

<table>
<thead>
<tr>
<th>RACE</th>
<th>NUMBER OF READING LEVELS ADVANCED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAUCASIAN</td>
<td>1 2 0 2 2 2 1</td>
</tr>
<tr>
<td>AFRICAN AMERICAN</td>
<td>1 2 1</td>
</tr>
<tr>
<td>HISPANIC/ASIAN</td>
<td>1 1 2 1 2 0 0</td>
</tr>
</tbody>
</table>

Summary

The purpose of this action research study was to determine if strategy group differentiation had an effect on reading accuracy, fluency, and comprehension. To fulfill the purpose of this study, the teacher researcher gave students a pretest to gain baseline data and to form strategy groups. Using the data from the pretest, the teacher-researcher used the literacy block to solely teach the strategies that each group needed in order to advance to the next reading level. The teacher researcher collected data daily using field notes and running records. The field notes and running records aided the teacher researcher to plan ways to differentiate for strategy group lessons for the following day. After four weeks of strategy group differentiation, the teacher gave the posttest, which was used to determine if strategy group differentiation had an effect on reading accuracy, fluency, and comprehension.

The pretest took one week to complete, strategy group differentiation was implemented daily for 90 minutes throughout a period of four weeks, and the posttest took one week to complete. According to the data collected throughout this research
study, strategy group differentiation had an effect on reading accuracy, fluency, and comprehension in that it increased the rates of each element. Furthermore, strategy group differentiation is promising to increase student reading levels.
CHAPTER 5

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Chapter Five outlines the summary and conclusions of the present action research study that explored the effect that strategy group differentiation had on the development of accuracy, fluency, and comprehension skills of first graders. The present study used a quantitative action research approach that allowed the teacher researcher to gather and analyze data based on a pretest, field notes, running records, and a posttest to determine if strategy group differentiation increased the accuracy, fluency, and comprehension rates of first grade students.

The teacher-researcher observed that the literacy rate of students varies greatly within a single first grade classroom annually, which led to the problem of practice identified for this study (Beecher & Sweeny, 2008). An estimated 17% of students perform below grade level in reading before reaching fourth grade (Eckert, Dunn, & Ardoin, 2006). Due to the significant role that reading plays in the academic success of students in all subject areas, differentiation is a vital tool in the classroom (Fitzgerald, 2016). After identifying the problem of practice, the following research question guided the present study: What effect does strategy group differentiation during literacy have on accuracy, fluency, and comprehension development? This research question addresses the overall purpose of the present study and contributes to the academic success of students and teacher practices. The goal of this action research study was to determine if
strategy group differentiation increased the accuracy, fluency, and comprehension for first grade students.

The present study was conducted with 17 diverse student participants in a first-grade public school classroom. The pre and post data were collected from the Fountas and Pinnell Benchmark Assessment System test. The pretest was given to individual students during week one. Data from the pretest was used to form baseline data and to determine individual needs for student instruction (Tomlinson, 2005). Over a four-week period, the teacher researcher grouped students and used a variety of literacy strategies targeted at increasing accuracy, fluency, and comprehension. The strategies were established by Boushey and Moser (2009) in their CAFÉ framework. The posttest was given to individual students during week six.

Results Relating to Existing Literature

The current action research study is grounded in studies on differentiation and balanced literacy. Byrd (2015) stressed the importance of teachers modeling reading strategies to students in balanced literacy to increase reading skills and Nathanson and Nathanson (2004) stressed the importance of the teacher using materials that the students are interested in and that are within the student’s Zone of Proximal Development when modeling. Throughout the course of this study, the teacher researcher explicitly modeled reading strategies based on the needs and the interests of the individual student and the instructional reading level of the student (Fountas & Pinnell, 2008). Instruction was differentiated based on the sole need of each individual student and what the student needed to progress reading levels (Tomlinson, 2005).
The teacher-researcher explored student overall performance in accuracy, fluency, and comprehension as well as reading level growth based on the Fountas and Pinnell Benchmark Assessment System. The teacher researcher was able to determine that 94% of students increased their accuracy, 94% of students increased their fluency, and 100% of students increased their comprehension through use of multiple sources. In addition, 14 of 17 student participants advanced in their reading level. Of the three students that did not move up reading levels, the students did increase their scores in all literacy elements including accuracy, fluency, and comprehension. Though all students increased in each component, no data indicated that accuracy influenced the outcome on fluency or comprehension (Fountas & Pinnell, 2008); however, data showed that if a student had a low fluency score, his or her comprehension score was also low (Spear-Swelling, 2006).

The teacher-researcher helped students make goals for their reading prior to the study to intrinsically motivate students as recommended by Dewey, who encouraged self-reflection (Mason et. al., 2016; Sutinen, 2013). This strategy was to help students who did not have a desire to read, find that desire so they would read at home and in spare time throughout the day. Thorndike and Kilpatrick both stressed the need for goal-setting (Sutinen, 2013) due to the direct impact that motivation has on success (Fountas & Pinnell, 202). Students were also motivated through reader’s theatre, which increased their literacy skills (Griffith & Rasinski, 2004) and by being able to choose books that are appealing to the interests of the student (Spear-Swelling; Reis et. al., 2007).

Gardner’s Theory of Multiple Intelligences notes that students have different things that they are good at, which aligns with their interests and learning styles (Tomlinson, 2005). Like Gardner, Sternberg stressed that each child has a different
thinking style (Tomlinson, 2014) and Bloom created a taxonomy that listed different levels of thinking for students (Tomlinson, 2014). Because all students are vastly different, Tomlinson (2005) stressed the need for differentiation within the classroom to meet the needs of the low and above level students. Differentiation during strategy group instruction aided in the development of accuracy, fluency, and comprehension, as indicated by the data collected for this study (Fountas & Pinnell, 2012; Begeny & Silber, 2006; Wasik, 2008; Byrd, 2015).

Repeated reading, or rereading, was a strategy that the teacher-researcher used for all literacy components (Strickland, Boon, & Spencer, 2013) along with shared reading that scaffolded instruction according to Vygotsky’s Zone of Proximal Development (Tzuo, 2007; Stahl, 2012). Several strategies were used to build reading fluency, particularly silent reading (Reutzel & Juth, 2014) and oral reading (Hale et. al., 2011). Furthermore, student participants read with friends and had conversations about reading strategies and books. Vygotsky stressed the importance of social interactions for learning to occur (Tzuo, 2007).

The teacher-researcher modeled various comprehension strategies for students (Byrd, 2015; Salmeron-Vilchez, 2014). Kucer (2014) recommended using the strategy of retelling to increase in comprehension. The teacher-researcher modeled this strategy and it was a strong strategy for students who needed to increase their comprehension level. Furthermore, the teacher-researcher ensured that the book that was being read or used for modeling was familiar to student participants so that they could relate it to their life and understand the content of the book as recommended by Jean Piaget (Izuo, 2007).
The teacher-researcher used many strategies during strategy groups to increase the accuracy, fluency, and comprehension rate of students. The increase in scores from the pretest to the posttest indicates that strategy group differentiation had a positive effect on the reading accuracy, fluency, and comprehension of students in that all students showed progress within these elements.

**Practice Recommendations**

Differentiation has been the focus of academic discussion for years; however, it is often not implemented in classrooms despite numerous research studies proving that it is best practice (Tomlinson, 2005). After completing this study, it is recommended that differentiation be implemented in all classrooms and for all subject areas, especially in reading. Differentiation allows the teacher to meet the student on his or her individual level and work within the Zone of Proximal Development of the student (Tomlinson, 2005).

Small, strategy groups are also recommended upon completion of this study. Small group instruction is more effective than whole group instruction according to the results of this study and numerous other studies (Al Otaiba et. al., 2011; Wasik, 2008; Byrd, 2015). Wasik (2008) recommends five or fewer students in the group, alignment of instruction with student needs, modeled instruction, and daily small group instruction.

Though no strategy was more effective than others, it is recommended to use the CAFÉ framework established by Boushey and Moser (2009) to find the strategies needed to advance in reading levels for students. The framework is laid out similar to a menu and identifies emergent strategies that are needed prior to more advanced strategies.
When teaching reading strategies to students, modeling the strategies desired for student use is recommended and closely monitoring students during groups to detect progress, or lack of progress. This allows for additional strategies to be considered, as needed.

**Limitations or Suggestions**

There were several limitations for this action research study. First, the sample size was relatively small with just 17 student participants; however, the student participants in the study were linguistically and culturally diverse. Furthermore, the sample came from one classroom in a local public school where all the students live within a 15-mile radius which could have altered the results.

The time frame for the study was limited in that the entire study was concluded within six weeks. Because the time frame was limited, the results could have been inaccurate, and the retention of knowledge and skills is unknown. A longer time frame is ideal so that it can be determined if the students are retaining the knowledge.

The sample consisted of one age group, which included first graders. First graders are typically six years old. This limits the results of the study in that the results can only determine if first graders increase their rate of accuracy, fluency, and comprehension when strategy group differentiation is implemented within the classroom.

The study focused on the accuracy, fluency, and comprehension levels of students; however, examining the number of reading levels that the students advanced could have been a more promising method to determine student growth. Furthermore,
examining students according to ability levels on an independent basis could have been a more effective method to determine potential effects of the intervention.

**Recommendations for Future Research**

Future research for this type of study should include a larger sample size. A larger sample will allow for more accurate results. Furthermore, the sample should include student participants from different schools so that the sample will be more diverse. This sample was from a local area in which all students were within 15-mile radius. A larger sample consisting of participants from different locations across a district, or even a state could lead to more accurate results.

Future studies could also parse out accuracy, fluency, and comprehension to determine the impact on individual components; however, the focus of this study was on the interrelationship between the three elements. Flexible groupings made it difficult to explore the impact on one factor alone. Furthermore, it would make more sense for future studies to examine the reading level advancement rather than the accuracy, fluency, and comprehension because the scores for each element changes as students advance reading levels.

Moreover, the study should last longer to determine if the results are long-lasting. Four weeks is not enough time to determine if knowledge and skills are retained or if the student continued to grow at the same rate in accuracy, fluency, and comprehension. Finally, the study should include samples of various grade levels and age groups, rather than just first graders, who are typically six years old.
Summary

While trying to increase the reading accuracy, fluency, and comprehension of first-grade students, the teacher-researcher determined that strategy group differentiation is an effective strategy and tool. The present study determined that 94% of students increased their scores in accuracy, 94% of students increased their scores in fluency, and 100% of students increased their scores in comprehension. The results of this study are consistent with numerous other studies that support the use of differentiation within the classroom. The goal of all teachers should be the academic success of students, so it is imperative that all teachers use proven best practices, such as differentiation, in the classroom to ensure the academic success of all students.
REFERENCES


Hedrick, W. B. & Pearish, A. B. (1999). Good reading instruction is more important than who provides the instruction or where it takes place *The Reading Teacher, 52*(7), 716-726.


Naeghel, J., Keer, H., Vansteenkiste, M., & Yves, R. (2012). The relation between elementary students’ recreational and academic reading motivation, reading


APPENDIX A

RUNNING RECORD TOOL SHEET

Running Record Sheet

<table>
<thead>
<tr>
<th>P#</th>
<th>Book Title</th>
<th>Level</th>
<th>Run Wds.</th>
<th>e</th>
<th>sc</th>
<th>m</th>
<th>s</th>
<th>v</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[
\frac{RW}{e} = \text{Error Rate} 1: \\
\frac{PW-e}{PW} \times 100 = \text{Accuracy} \% \\
\frac{e + sc}{60} = \text{SC Rate 1:}
\]

Notes on Fluency & Phrasing:
APPENDIX B

FOUNTAS AND PINNELL LEVEL F

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<table>
<thead>
<tr>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>“Do you want to read at school?”</td>
</tr>
<tr>
<td>5</td>
<td>“I want to read,” said Anna. “I love books! But I don’t want glasses.”</td>
</tr>
<tr>
<td>6</td>
<td>Anna went to the doctor. “You do need glasses,” said the doctor.</td>
</tr>
<tr>
<td>7</td>
<td>Anna looked at the glasses.</td>
</tr>
<tr>
<td>8</td>
<td>“I don’t like these glasses,” she said.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Page</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>“Look at the purple glasses,”</td>
</tr>
<tr>
<td></td>
<td>said Mom.</td>
</tr>
<tr>
<td></td>
<td>Anna put on</td>
</tr>
<tr>
<td></td>
<td>the purple glasses.</td>
</tr>
<tr>
<td>11</td>
<td>Anna put on some red glasses.</td>
</tr>
<tr>
<td></td>
<td>“I like red and I like these red glasses,” she said.</td>
</tr>
<tr>
<td></td>
<td>“You look great in those glasses,” said Mom.</td>
</tr>
<tr>
<td>12</td>
<td>It was the first day of school.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Anna put her new red glasses in her new red backpack.</td>
</tr>
<tr>
<td>15</td>
<td>Anna and her mom walked to school.</td>
</tr>
<tr>
<td>Page</td>
<td>Test</td>
</tr>
<tr>
<td>------</td>
<td>------</td>
</tr>
</tbody>
</table>
| 15 cont. | Anna looked at her new teacher.  
She opened her backpack and  
put on her new glasses. |
| 16 | “I am Mrs. Bell,” the teacher said.  
“I am your new teacher.  
We have the same glasses!”  
Anna smiled.  
“Yes, these are  
great glasses!” |

Subtotal  
Total
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Part Two: Comprehension Conversation

Have a conversation with the student, noting the key understandings the student expresses. Use prompts as needed to stimulate discussion of understandings the student does not express. It is not necessary to use every prompt for each book. Score for evidence of all understandings expressed—with or without a prompt. Circle the number in the score column that reflects the level of understanding demonstrated.

**Teacher:** Talk about what happened in this story.

<table>
<thead>
<tr>
<th>Key Understandings</th>
<th>Prompts</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Within the Text</strong></td>
<td>What was Anna’s problem in this story?</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Anna had to get glasses to see better but she did not want to wear them.</td>
<td>What happened in this story? Then what happened? What happened at the end of the story?</td>
<td></td>
</tr>
<tr>
<td>Recounts the major events of the story, such as: Anna didn’t want to get new glasses; she tried on many different glasses and chose red ones; she got some new glasses but she didn’t want to wear them; she put them on when she saw that her teacher’s glasses were the same as hers.</td>
<td>Note any additional understandings:</td>
<td></td>
</tr>
<tr>
<td><strong>Beyond and About the Text</strong></td>
<td>Talk about how Anna felt at the beginning of the story. How did Anna feel about wearing glasses when she got to school? Why? Talk about how Anna felt at the end of the story. Why? Look at the picture on page 14. How can you predict that Anna will put on her glasses?</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Anna didn’t want to wear glasses to school because (any plausible explanation).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anna felt good when she saw her teacher had glasses just like hers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anna felt good because she would not look so different from everyone else.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The pictures showed the teacher with her glasses, so I knew Anna would put hers on.</td>
<td>Note any additional understandings:</td>
<td></td>
</tr>
</tbody>
</table>

**Guide to Total Score**
- 6 = Excellent Comprehension
- 5 = Satisfactory Comprehension
- 4 = Limited Comprehension
- 3 = Unsatisfactory Comprehension

**Add 1 for any additional understandings:**

**Total Score:**

---

Part Three: Writing About Reading (optional)

Read the writing/drawing prompt on the next page to the student. Specify the amount of time for the student to complete the task. (See Assessment Guide for more information.)

**Writing About Reading Scoring Key**
- 6 = Reflects excellent understanding of the text.
- 5 = Reflects very limited understanding of the text.
- 4 = Reflects limited understanding of the text.
- 3 = Reflects partial understanding of the text.
- 2 = Reflects excellent understanding of the text.

---

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APPENDIX C

FOUNTAS AND PINNELL LEVEL G

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<table>
<thead>
<tr>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
</table>
| 6    | “Will you read me a story?”  
Nick asked his mom.  
Mom read the story to Nick.  
Nick liked the story  
about the magic fish.  
When the story was over,  
Nick’s mom turned off the light. |
| 7    | “Good night, Nick,” his mom said. |
| 8    | “Will you turn on the nightlight?”  
asked Nick.  
“Okay, Nick,” his mom said.  
She turned it on. |

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“Good night, Nick,” his mom said.
“Now it’s time to go to sleep.”

“I can’t go to sleep,” said Nick.
“I will give you a good night kiss,” said Nick’s mom.

“Good night, Nick,” his mom said.
“Go to sleep now.”

“I can’t go to sleep,” said Nick.
“Will you open the door?" he asked.
<table>
<thead>
<tr>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Nick’s mom opened the door. Light came into the room.</td>
</tr>
<tr>
<td>13</td>
<td>“Good night, Nick,” his mom said.</td>
</tr>
<tr>
<td>14</td>
<td>“I can’t go to sleep,” said Nick. “Something is missing.” He looked around the room. Something came in the door.</td>
</tr>
<tr>
<td>15</td>
<td>“Wags! You’re late,” said Nick. “Now we can go to sleep.”</td>
</tr>
</tbody>
</table>
### Bedtime for Nick • Level G • Fiction

#### Part One: Oral Reading continued

<table>
<thead>
<tr>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>“Good night, Nick,” said Mom.</td>
</tr>
<tr>
<td></td>
<td>“Good night, Wags.”</td>
</tr>
<tr>
<td></td>
<td>“Good night, Mom,”</td>
</tr>
<tr>
<td></td>
<td>said Nick.</td>
</tr>
</tbody>
</table>

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Fluency Scoring Key

0. Reads primarily word-by-word with occasional but infrequent or inappropriate phrasing; no smooth or expressive interpretation, irregular pacing, and no attention to author's meaning or punctuation; no stress or inappropriate stress, and slow rate.

1. Reads primarily in two-word phrases with some three- and four-word groups and some word-by-word reading; almost no smooth, expressive interpretation and pacing guided by author's meaning and punctuation; almost no stress or inappropriate stress, with slow rate most of the time.

2. Reads primarily in three- or four-word phrase group; some smooth, expressive interpretation and pacing guided by author's meaning and punctuation; mostly appropriate stress and rate with some slowdowns.

3. Reads primarily in larger, meaningful phrases or word groups; mostly smooth, expressive interpretation and pacing guided by author's meaning and punctuation; appropriate stress and rate with only a few slowdowns.
**Part Two: Comprehension Conversation**

Have a conversation with the student, noting the key understandings the student expresses. Use prompts as needed to stimulate discussion of understanding; the student does not express. It is not necessary to use every prompt for each book. Score for evidence of all understandings expressed—with or without a prompt. Circle the number in the score column that reflects the level of understanding demonstrated.

Teacher: Talk about what happened in this story.

<table>
<thead>
<tr>
<th>Key Understandings</th>
<th>Prompts</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Within the Text</strong></td>
<td>Nick got ready for bed. He went to bed but he couldn’t go to sleep. He told his mom to do different things to help him. (Gives 2-3 examples, such as read a story; turn on the nightlight; give a kiss; open the door.) His dog (Wags) came in and then he went to sleep. Note any additional understandings:</td>
<td>What happened in this story? 0 1 2 3</td>
</tr>
<tr>
<td></td>
<td>Nick didn’t know why he couldn’t sleep. (Or, he really did know.) Nick missed Wags and that’s why he couldn’t go to sleep. Wags might have been taking a walk with Dad (or any plausible reason). The most important part of the story was when you see Wags’ tail in the picture. Nick loves Wags and that’s why he missed him and couldn’t sleep. Note any additional understandings:</td>
<td>Do you think Nick really knew why he couldn’t sleep? What makes you think that? What was the real reason that Nick couldn’t go to sleep? I wonder why Wags was so late going to bed. What do you think? Show me the most important part of the story. How do you think Nick feels about Wags?</td>
</tr>
</tbody>
</table>

**Comprehension Scoring Key**

- 0 Reflects unsatisfactory understanding of the text. Either does not respond or talks off the topic.
- 1 Reflects limited understanding of the text. Mentions a few facts or ideas but does not express the important information or ideas.
- 2 Reflects satisfactory understanding of the text. Includes important information and ideas but neglects other key understandings.
- 3 Reflects excellent understanding of the text. Includes almost all important information and main ideas.

**Guide to Total Score**

- 6-7 Excellent Comprehension
- 5 Satisfactory Comprehension
- 4 Limited Comprehension
- 3-2 Unsatisfactory Comprehension

**Part Three: Writing About Reading (optional)**

Read the writing/drawing prompt on the next page to the student. Specify the amount of time for the student to complete the task. (See Assessment Guide for more information.)

**Writing About Reading Scoring Key**

- 0 Reflects no understanding of the text.
- 1 Reflects very limited understanding of the text.
- 2 Reflects partial understanding of the text.
- 3 Reflects excellent understanding of the text.

**Subtotal Score:** 0

Add 1 for any additional understandings: 0

**Total Score:** 0

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APPENDIX D

FIELD NOTES TOOL

Anecdotal Notes

Student Name: 

Subject: Teacher: 

Date: 
Observations:

Instructional Support:

Date: 
Observations:

Instructional Support:
APPENDIX E

DATA TRACKING TOOL

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<th>Accuracy:</th>
<th>95-100%</th>
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<td>Fluency:</td>
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<tr>
<td>Comprehension:</td>
<td>0-2 3-4 5-6</td>
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