READING FLUENCY INTERVENTIONS THAT WORK IN HIGH-POVERTY SCHOOLS

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AUTHORIZATION TO SUBMIT DISSERTATION

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DEDICATION

This dissertation is dedicated in memory of my beloved Grandma Marie who always said I should be a doctor.

This dissertation is also dedicated to the students I work with each day. They face burdens I can't imagine facing and continue to come to school each day and try their best. They amaze me with their strength and resiliency.

ABSTRACT

This study measured the impact of targeted reading interventions on improving reading fluency for second-grade students as indicated by their performance on a statewide standardized assessment of reading fluency proficiency. Reading fluency scores for students who received intervention in second grade were measured again in their third-grade year to see if the intervention had a lasting impact on their overall reading fluency ability. Statistical analysis using a paired samples *t*-test revealed that reading fluency ability increases with the use of targeted intervention among second grade students. A statistically significant relationship was discovered through the use of a paired samples *t*-test for students who receive targeted intervention in second grade and their third-grade IRI scores. This verifies that targeted reading fluency interventions are successful among students from high-poverty backgrounds. Individual and focus-group interviews were completed with teachers, para-professionals, and instructional coaches whom provided reading fluency interventions to students. Themes emerged indicating a need for targeted intervention, meaningful practice, and instructional strategies in order for students to become fluent readers. Further analysis determined that schools that utilize classroom teachers rather than para-professionals to provide reading fluency intervention to struggling, high-poverty students achieved the most overall growth on the IRI. Another contributing factor to overall growth on the IRI was the amount of time students received intervention. Students that received at least forty-five minutes a day of additional intervention exhibited higher levels of growth. Lastly, several different reading curricula were used in the present study, revealing that instructional strategies and targeted intervention leads to greater acquisition of reading fluency skills regardless of the prescribed curriculum.

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Chapter I

Introduction

Poverty is a term that is used frequently in education. For instance, a school may serve a high-poverty or low-poverty population. Even though it is often used as a descriptor for the demographics of a school setting, the impact of poverty on students' lives is much more than a number or definition. Poverty can impact children's lives in many ways including socially, emotionally, and academically (Jensen, 2009; Kiernan & Mensah, 2011; Payne, 1996). Students who qualify for free and reduced lunch have a family income that is 130% or less than the national poverty guideline, which is used to measure poverty in the school setting (Burney & Beilke, 2008). A family of four making less than $24,300 per year would meet the national poverty level, according to the 2016 guidelines (Familiesusa, 2016).

In schools with high-poverty populations, student achievement often is lower than in schools serving low-poverty populations (Lam, 2014; Mistry & Wadsworth, 2011). Poverty has been shown to have the largest correlation with reading achievement (Cunningham, 2006; Mahabir, 2010). Students who live in poverty situations do not perform as well as their more affluent peers on standardized reading assessments. One of the reasons for their low performance is due to limited resources and parents' lack of ability to read to their children or have suitable educational materials at home (Mahabir, 2010; Southern Education Foundation, 2010).

The Southern Education Foundation (2010) gathered data from across the United States of America related to children who come from home environments of impoverished conditions. The Southern Education Foundation (2010) stated,

> During the course of their early years, children in extreme poverty received considerably less informal education due to their parents' oftentimes limited education and the absence

> of rich learning environments which non-poor children often enjoy. For example, poor children hear and learn on average about one-third to one-half the number of spoken English words non-poor children learn simply through exposure in their early years. (p. 18)

In order to mediate the educational effects of poverty in the home environment, schools are seeking techniques to improve student achievement. Many of these interventions begin as students enter kindergarten (Denton, Solari, Ciancio, Hecht, & Swank, 2010; MacDonald & Figueredo, 2010; Nielsen & Friesen, 2012; Wanzek & Vaughn, 2008). The interventions vary in their form and intensity. Some common interventions involve having students attend a full-day, every day kindergarten program (MacDonald & Figueredo, 2010; Nielsen & Friesen, 2012), while others involve a summer school program to minimize regression of skills (Denton et al., 2010). Each intervention type has value and use in the school setting.

Additional funds are provided to schools serving a high percentage of students who come from low-income households through Title I, which aims to make sure all students can meet the demands of rigorous state achievement standards (U.S. Department of Education, 2014). Schools are provided funds to help improve student achievement.

There are many schools that serve a high-poverty, large minority population and also reach high levels of academic achievement (Kannapel & Clements, 2005; Kearney, Herrington, & Aguilar, 2012; Reeves, 2003). These schools are known as 90/90/90 schools, which indicates that 90% of the student population qualifies for free and reduced lunch, 90% of the students are from a minority group, and at least 90% of the students meet performance benchmark on standardized assessments (Reeves, 2003).

The purpose of this study was to examine high-poverty, high-achieving schools and determine how student achievement is impacted by different types of intervention. The study also aimed to determine if there is a significant difference in reading achievement for students who receive specific, targeted intervention. This intervention can take on many forms (Chambers et al., 2011; Dyson, Miller, & Gagne, 2008; Gibson, Cartledge, Keyes, & Yawn, 2014; Ritchey, Silverman, Montanaro, Speece, & Schatschneider, 2012; Vadasy & Sanders, 2013). Intervention may be provided through small-group, guided reading sessions facilitated by the classroom teacher (Ritchey et al., 2012), or intervention may be provided through one-to-one repeated practice of basic reading skills provided by an educational assistant (Dyson et al., 2008). Intervention can also be provided through computer programs that work on building phonics skills in students with reading difficulty (Chambers et al., 2011; Gibson et al., 2014). The characteristics and examples of high-poverty, high-achieving schools will also be explained.

Statement of the Problem

Schools that serve students from poverty backgrounds can be found in urban and rural areas (Jensen, 2009). However, it has been reported the rural poverty rate has exponentially grown since data were first collected in the 1960s and has surpassed the urban poverty rate each year since that time (Jensen, 2009). Rural schools need to know how to help high-poverty families and students succeed. Students are entering the classroom with limited exposure to age-appropriate printed material at home (Southern Education Foundation, 2010). Oral language skills and concepts of letters and reading are limited (Denton et al., 2010; Southern Education Foundation, 2010). Students who come from low-income families have less access to reading materials and show a higher rate of exhibiting difficulties with literacy acquisition (Cunningham, 2006; MacDonald & Figueredo, 2010; Musti-Rao & Cartledge, 2007).

Schools receive federal money in the form of Title I funds to help improve student achievement (U.S. Department of Education, 2014), but many teachers are unsure of the effectiveness of the interventions they implement (Dyson et al., 2008; Gibson et al., 2014). In order to understand how to serve high-poverty students, it is crucial to understand the interventions which are proven to be effective and significant.

The overall significance of providing an appropriate intervention can be awe inspiring. Schroeder (2007) conducted a study in which low-income students attended full-day kindergarten, and the subsequent academic progress was monitored for three years. Results indicated students who attended full-day kindergarten programs had much higher test scores in mathematics and English–language arts as compared to peers who only attended kindergarten for half a day (Schroeder, 2007). The results also indicated an 18-point increase for English–language arts and a 25-point increase for mathematics scores (Schroeder, 2007). Researchers noted the impact of poverty had been diminished for the students who attended kindergarten full-day, as well as minimizing the achievement differences between children from low-income families and those from more affluent backgrounds (Schroeder, 2007). Intervention can also encourage students to be confident in their reading ability and improve their overall fluency and comprehension scores (Cunningham, 2006; MacDonald & Figueredo, 2010; Musti-Rao & Cartledge, 2007; Neddenriep, Fritz, & Carrier, 2011).

Oral reading fluency has long been documented as being an effective predictor of overall reading comprehension ability (Abbott, Wills, Miller, & Kaufman, 2012; Fuchs, Fuchs, Hosp, & Jenkins, 2001; Kim, Petscher, Schatschneider, & Foorman, 2010; Li & Wu, 2015; Neddenriep et al., 2011; Wise et al., 2010). Reading fluency interventions can improve students' overall reading speed, which enhances their comprehension ability (Fuchs et al., 2001; Kim et al., 2010;

Neddenriep et al., 2011). Reading fluency and comprehension are important skills for students to attain and improve their overall likelihood of success in middle school and high school (Hunley, Davies, & Miller, 2013).

Background

Several studies have been conducted to examine the impact of early intervention on kindergarten students' reading ability (Denton et al., 2010; MacDonald & Figueredo, 2010; Nielsen & Friesen, 2012; Razza, Martin, & Brooks-Gunn, 2010; Wanzek & Vaughn, 2008). Each investigation used a unique approach to study the impact of intervention on improving students' overall language and early literacy skills. The analyses that have been conducted provide a solid foundation in studying the impact of intervention on improving the reading scores of high-poverty students.

Denton, Solari, Ciancio, Hecht, and Swank (2010) conducted a study with an experimental and control group of kindergarten students. Full-day, summer school classes were provided for both groups for a total of 20 sessions. Students who were part of the treatment group were provided with small-group instruction related to listening comprehension and basic reading skills, as well as large-group instruction in listening comprehension and lessons on vocabulary within a storytelling format (Denton et al., 2010). The results indicated that the experimental group had improved outcomes in the areas of word reading and listening comprehension after receiving intervention.

MacDonald and Figueredo (2010) conducted an experiment where the control group attended a half-day of regular kindergarten and the experimental group received a half-day of targeted oral language instruction and a half-day of regular kindergarten. The intent of the experimental program was to build oral language development for students coming from high-

poverty home environments. The program was referred to as the Kindergarten Early Literacy Tutoring (KELT) program. Tutors were hired to instruct students during the half-day intervention time. Tutors were provided with specific training prior to working with the students. They also followed a structured daily plan and monthly sequence of topics and activities to complete with the students.

The purpose of the KELT program was to allow students to share personal insights and express themselves within the format of experiential, language-rich events. The researchers found that those who participated in the KELT program acquired skills in the areas of phonemic awareness, understanding printed material, oral language, vocabulary knowledge, letter-sound correspondence, and knowledge at a faster rate than the control group (MacDonald & Figueredo, 2010). The results indicated that oral language and prereading skills can be enhanced through early intervention, which improves students' readiness skills for school (MacDonald & Figueredo, 2010). Early intervention can help offset the impact of parenting behavior and lead to success among this group of students. Razza, Martin, and Brooks-Gunn (2010) found maternal parenting behavior influences a child's focused attention ability in families of poverty. Early intervention can help offset the impact of parenting behavior and lead to success among this group of students.

Reading fluency ability has been tied to overall understanding and comprehension of the text read (Abbott et al., 2012; Fuchs et al., 2001; Kim et al., 2010; Li & Wu, 2015; Neddenriep et al., 2011; Wise et al., 2010). Wise et al. (2010) conducted a study with second-grade students who struggled with reading fluency ability. The students were divided into groups and received different interventions aimed at improving their reading fluency ability. The researchers also measured reading comprehension ability among the students in the intervention groups. Results

of the study indicated real-word, oral reading fluency interventions were strongly related to how students performed on measures of reading comprehension (Wise et al., 2010).

Neddenriep, Fritz, and Carrier (2011) used a performance feedback, practice, and error correction method of reading fluency intervention with five fourth-grade students. The intervention sessions occurred over 12 weeks. The results of the intervention revealed an increase in overall total number of correct words read per minute, as well as improved reading comprehension ability (Neddenriep et al., 2011).

An effective measure of oral reading fluency ability is a curriculum-based measure (CBM) that has become a universal method for assessing reading growth (Abbott et al., 2012). CBMs provide educators with valid, reliable, and efficient methods for measuring student progress in a given area of academic need (Fuchs, Fuchs, & Compton, 2004). The effectiveness of reading fluency interventions are typically evaluated using CBMs (Abbott et al., 2012; Fuchs et al., 2004; Hunley et al., 2013).

The ecological systems theory of development provides a theoretical framework to use when examining the impact of poverty on the acquisition of reading fluency skills through targeted reading fluency intervention. The ecological systems theory of development explains how a child develops in the context of different situations the child may face (Bronfenbrenner, 1979). The influential factors in a child's development may include the child's home environment, the relationship between a child's teacher and parent, and also the child's socioeconomic status (Bronfenbrenner, 1979). All of these factors lead to the development of the child and impact different areas of the child's life. The examination and overall impact of reading fluency interventions within high-poverty schools were viewed in the context of

Bronfenbrenner's (1979) theory which served as the theoretical framework and ballast for the present study.

Research Questions

Reading scores at the elementary level often determine which students will succeed academically and also graduate from high school (Jensen, 2009; Musti-Rao & Cartledge, 2007). Therefore, students who learn basic reading skills and become proficient on state assessments are likely to succeed as they move on in their educational career. Due to the importance of reading ability among high-poverty students, this study aimed to measure the impact of effective reading fluency interventions.

This mixed-methods study focused on three research questions:

1. Do second-grade reading scores, as evidenced by the Idaho Reading Indicator (IRI), significantly increase with the use of targeted intervention in high-poverty schools?
2. Is there a significant relationship between students who receive targeted intervention in second grade and their third-grade IRI scores?
3. Is there a difference in the type of intervention that is provided as compared to student growth on the IRI?

Description of Terms

There are several terms used in this study that may be unfamiliar or may be used in new ways. The following is a list and definition of the terms used in this study:

90/90/90 school. The term 90/90/90 was originally coined by Douglas Reeves in 1995 after his observations of schools in Milwaukee, Wisconsin (Reeves, 2003). At those schools, 90% or more of the students qualified for free and reduced lunch and were minority

students, and the students also met the state academic testing standards for achievement (Reeves, 2003). That term is commonly used when describing high-poverty and high-performing schools.

Curriculum-based measure (CBM). A CBM is an assessment that becomes reliable and valid through progress monitoring, is a short one- to three-minute task, includes a system to count the correct and incorrect responses within a given amount of time, has established administration and scoring procedures, and ensures reliability through easy-to-follow procedures (Fuchs et al., 2001).

Extended Year Reading Intervention (EYRI) program. The EYRI program mandates that all schools will offer an additional 40 hours of instruction to students in kindergarten through third grade who are below grade level on the IRI assessment (Idaho State Department of Education, 2012).

Factors. There are five factors that lead to high-poverty schools being successful (Jensen, 2009). Those five factors include providing for the social and emotional needs of students, engaging in data-based decision making, holding school staff accountable, forming rapport, and believing all students can succeed (Jensen, 2009).

Idaho Reading Indicator (IRI). The IRI is a result of Idaho Code 33-1614 (enacted spring 1999), which stated, "In continuing recognition of the critical importance of reading skills . . . all public school students in kindergarten and grades one (1), two (2), and three (3) shall have reading skills assessed . . . by a single statewide test." It is given at least twice yearly to identify below-grade-level students (Idaho State Department of Education, 2012).

IRI scores. Students receive a score of 1, 2, or 3 on the IRI. A score of 1 is considered intensive and indicates a lack of mastery of some or all skills (Idaho State Department of Education, 2012). A score of 2 is considered strategic and indicates partial mastery of skills

(Idaho State Department of Education, 2012). A score of 3 is a benchmark and indicates a mastery of skills (Idaho State Department of Education, 2012).

Paraprofessional. An educational assistant provides one-to-one tutoring or helps with classroom management and provides instructional assistance (U.S. Department of Education, 2004).

Poverty. Payne (1996) defined poverty as the extent to which an individual does without resources, including financial, emotional, mental, spiritual, physical, support systems, relationships and role models, and knowledge of hidden rules.

Significance of the Study

The purpose of this study was to examine high-poverty, high-achieving schools and determine if reading scores improve for students who receive intervention. The purpose was also to determine if there is a significant difference in reading achievement for students who receive specific, targeted intervention. This study specifically aimed to determine the impact of EYRI on student IRI scores (Idaho State Department of Education, 2012).

The present research study took place in the context of four high-poverty schools in one rural school district in the state of Idaho within the United States of America. It aimed to identify different types of intervention students were given and determine if there was a significant difference between the type of intervention they received and their growth on the IRI measure.

This study is unique because it intended to measure different intervention strategies used as part of an intervention program and determine if there was a significant difference in students' performance based upon each intervention type. It is also unique because it focused on high-poverty, high-achieving, rural elementary schools. It also compared different curricula types to determine a difference in student performance. The present study also involved differences in the

person providing reading fluency intervention. At some of the schools certified teachers were used to provide intervention while at other schools paraprofessionals facilitated intervention sessions.

Being able to improve the literacy abilities of students in high-poverty schools was also an underlying purpose of this study. Educators aim to provide their students with targeted support which can improve student achievement (Burney & Beilke, 2008; Murley, Keedy, & Welsh, 2008). This study will provide educators and administrators with facts related to the type of reading fluency intervention which are most effective for students in high-poverty schools.

Overview of Research Methods

The present research study was a mixed-methods study in which ex post facto data were collected from one rural school district in the state of Idaho within the United States of America. This school district had approximately 15,000 students in schools spread out over an expansive rural setting. Ex post facto data from four elementary schools within the district were analyzed for information related to IRI scores for second-grade students in the fall of the 2014–2015 school year and the spring of the 2014–2015 school year. The demographics of each school were similar with at least 84% of the student population qualifying for free and reduced lunch. The schools also needed to demonstrate a historic pattern of high achievement as evidenced by the Idaho Standards Achievement Test (ISAT) reading scores for the past five years.

The ex post facto data collected specifically looked at IRI scores for second-grade students in the 2014–2015 school year that were compared to IRI scores for that same group of students who were in third grade in the fall and spring of the 2015–2016 school year. The students that were included in the sample had earned a score of either 1 or 2 on the fall 2014 IRI. Students who received a score of 3 were not included in the sample as they were considered

proficient readers. The mean of each group, which denotes the arithmetic average of the numbers in a group (Tanner, 2012), was calculated using IBM SPSS Version 23.0 (IBM SPSS, 2015).

Information was also gathered related to the type and length of intervention that was provided at each school. Title I funds were used to provide targeted intervention for students who did not meet the benchmark score on the IRI (U.S. Department of Education, 2014). This type of intervention was compared to the overall growth or lack of growth students made between the fall and spring 2014–2015 IRI. As part of the examination of the lasting impact of reading interventions, scores of students who took the fall and spring 2014–2015 IRI as second graders were compared to their performance on the 2015–2016 IRI as third graders. This comparison sought to determine if there is a lasting positive impact of the targeted intervention that was received.

Focus-group interviews were conducted for members of the school staff who provided reading fluency intervention to students. The focus-group interview was generated and validated by this researcher to be used to gather qualitative data about the type of employee providing the reading fluency intervention. This person was either a certified teacher or a paraprofessional. The focus-group interview included questions about the type of intervention (one-to-one, small-group, computerized) provided and the curriculum used for that intervention. The focus-group interview also gathered data about the group size and length of intervention provided. Interview questions were also asked related to how student growth was measured and what instrument was used to determine the growth.

Chapter II

Review of the Literature

Introduction

Poverty continues to impact children's lives in many ways, including socially, emotionally, and academically (Jensen, 2009; Kiernan & Mensah, 2011; Payne, 1996).This impact continues to be noticed in the classroom setting and often continues into adulthood. Compared to more affluent peers, students who live in poverty complete two years less formal education, receive more money in government assistance, and are more than twice as likely to report poor overall physical and psychological health (Duncan, Ziol-Guest, & Kalil, 2010). These facts demonstrate the importance of understanding poverty and the interventions which should be used to negate the influence of poverty in student's lives.

Historically speaking, families from higher income backgrounds live in neighborhoods that are affluent, and their children attend schools that have a supportive, engaged staff dedicated to superior teaching and learning (Mistry & Wadsworth, 2011). However, children from lower income families often attend schools with a higher percentage of poverty and less academic success, have teachers with little belief in their students' academic potential, and who focus on correcting student's behavior instead of providing rigorous instruction (Benner & Mistry, 2007; Lam, 2014). However, not all schools who serve students who live in poverty also have low-achievement scores or low-academic expectations. There are pockets of schools which have a high percentage of students who live in poverty who also score exceptionally high on achievement measures (Jensen, 2009; Kannapel & Clements, 2005; Kearney et al., 2012; Reeves, 2003).

This literature review will aim to examine the current literature regarding what constitutes poverty and the impact of poverty in the classroom and home setting. It also intended to understand high-poverty and high-performing schools. It will seek to learn the definition of a 90/90/90 school and explore common factors which lead to success within those schools. The literature review will examine school-based interventions for high-poverty schools including school-wide factors, classroom and teacher factors, and leadership factors that lead to success in high-poverty and high-performing schools. Lastly, the literature review will explore reading fluency interventions and the impact reading fluency has on later acquisition of reading skills.

What Is Poverty?

Poverty can occur in all areas of the United States of America in rural and urban settings. The poverty rate in rural areas has grown exponentially and exceeded the rate of poverty growth in urban areas since data were first collected in the 1960s (Jensen, 2009). Payne (1996) defined poverty as how an individual copes with the lack of monetary, spiritual, emotional, mental, and physical resources, including support systems, role models, and navigating hidden societal rules. By this definition, poverty has an impact on all areas of a student's life. According to Jensen (2009), poverty is a debilitating condition defined by an individual's inability to acquire food, shelter, or clothing, due to their current financial situation. Poverty can vary depending on what area of the United States of America a student lives in.

The Impact of Poverty

Poverty in the classroom. The most significant risk factors affecting children living in poverty include social and emotional challenges, severe and ongoing stressors, thinking errors, and health and safety issues (Jensen, 2009). This is evident in a quote from a teacher in a high-poverty school (White, 2010):

> I see kids, and continue to see kids, coming to school not having had anything to eat, and so at times I've been making them breakfast because they just can't sit in the classroom to concentrate on what their class is working on because they are too hungry. (p. 5)

The social and emotional challenges can be difficult for teachers and other students to interpret and understand. Oftentimes, teachers may assume students are being purposefully disrespectful; however, students typically encompass a smaller range of emotional responses than expected (Jensen, 2009). Students who live in poverty situations may have difficulty understanding what information to focus on in the classroom setting. Recent studies in cognitive neuroscience have shown children in poverty pay equal amounts of attention to relevant and irrelevant information, where in contrast, more affluent students are able to ignore distractors and focus on what is important (Schibli & D'Angiulli, 2011).

The importance of teachers understanding the impact poverty can have on students in the classroom setting cannot be overstated. Studies have shown that 60% of the difference in standardized testing results can be attributed to poverty (Tienken, 2012). Poverty can also have long-term effects on students (Duncan et al., 2010; Jensen, 2009; Payne, 1996; Taylor, 2005). When compared to higher income households, students from lower income families are more likely to struggle academically and fail to graduate (Taylor, 2005). The dropout rate for students from lower income families has improved over the last 25 years but is still significantly higher than the rate of dropout for students from higher income households (Taylor, 2005). It is also important to understand the impact of high-quality instruction when educating students from impoverished backgrounds (Jensen, 2009; Kennedy, 2010; Lauen & Gaddis, 2013). Studies have indicated changes need to be made to school systems related to providing high-quality instruction and teacher expectations, as well as understanding poverty impacts a student's prior

knowledge in order to improve student achievement for students from poverty (Borjas, 2011; Lauen & Gaddis, 2013).

Poverty in the home. Children who live in poverty have fewer social connections, as compared to more affluent peers (Jensen, 2009; Miller, Vortruba-Drzal, & Setodji, 2013); live in communities with minimal relationships and connections among its inhabitants (Jensen, 2009; Miller et al., 2013); and, tend to rely on their peers rather than adults for emotional support once they reach adolescence (Jensen, 2009). Early childhood exposure to poverty conditions can have a more devastating effect on families than on those who experience poverty when their children are older (Duncan et al., 2010). In the home environment, lower income children have a tendency to feel alone and unloved, which can lead to them struggling academically in school, exhibiting behavioral problems, failing to graduate, and engaging in substance use (Jensen, 2009). Children who live in poverty often experience unstable and chaotic home environments. Research has indicated chaotic home environments can statistically predict how students will respond to academic challenge, specifically experiencing feelings of helplessness or hopelessness when academic content is difficult (Brown & Low, 2008).

Parents who come from poverty do not have as well-developed executive functions as those not living in poverty and, therefore, are unable to pass on executive function skills to their children (Payne & Slocumb, 2011). Executive functions include working memory, behavioral self-regulation, cognitive control, reward processing, and problem-solving ability (Payne & Slocumb, 2011). These skills often need to be taught to children so they can succeed in the formal education setting.

Another factor which can have an impact on a child's social, emotional, and academic functioning is the education level of the child's mother. In a longitudinal study by Rouse,

Fantuzzo, and LeBoeuf (2011), multiple logistic regression analyses demonstrated mothers who did not have a high school diploma had the greatest association with reading and math scores for third-grade students, attendance, and school suspensions. Essentially, being born and raised by a mother who has not completed high school has been shown to have an impact on academic performance, as well as attendance rates and disciplinary actions. Parental education attainment is more relevant to student outcomes than current financial circumstances, and better educated parents engage in behaviors that help their students succeed, such as reading to their children, helping with homework, and having access to literary materials (Krashen, 2005). Parental education level should be considered when working with families, because it can have a compounding effect on those families who live in poverty.

Poverty can have a lingering impact on children, even if their family no longer lives in those conditions. Research has indicated the impact of poverty can be long lasting, still creating challenges for families who no longer live in impoverished conditions (Kiernan & Mensah, 2011). However, with older children, increases in family income are intertwined with improvements in the quality of the home learning environment and children's cognitive and academic outcomes (Mistry & Wadsworth, 2011).

Another important aspect to consider when working with children from poverty is the community in which they live. Communities can have an impact on students' overall achievement level and their ability to pursue higher education opportunities (Brown, Copeland, Costello, Erkanli, & Worthman, 2009). The constraints of poverty and family circumstance are especially evident for youth in rural communities where the community heavily influences the educational aspirations of its young people (Brown et al., 2009). Being mindful of the

community in which students live helps educators to understand more about the mind-sets, attitudes, and beliefs of the families who live in that area.

Bronfenbrenner's Ecological Systems Theory of Development

This theory of development provides a theoretical framework that is helpful when studying the impact poverty can have on students' development and overall acquisition of reading fluency skills. Bronfenbrenner's (1979) theory of development involves the ecology of human development.

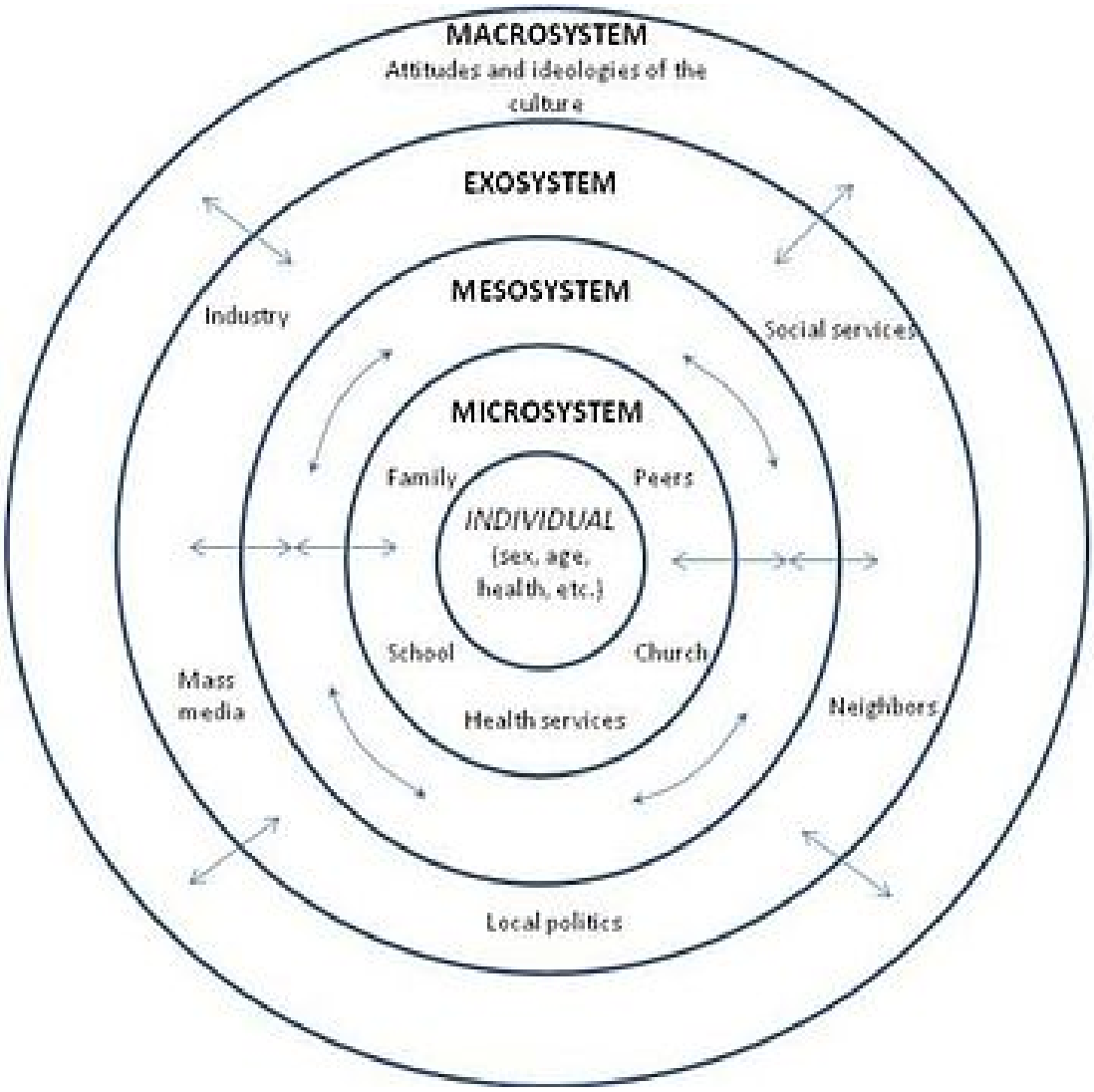
> The ecology of human development involves the scientific study of the progressive, mutual accommodation between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by relations between these settings, and by the larger contexts in which the settings are embedded. (Bronfenbrenner, 1979, p. 21)

There are five different systems encompassed within this theory. The first is the individual child who engages in a reciprocal relationship with other aspects of their environment. The next is the microsystem which includes interpersonal relationships and social roles within the context of a given setting. The mesosystem incorporates the associations and activities taking place between two or more settings, such as home and school and the school and community in which the child is actively engaged. The exosystem involves linkages and processes taking place between two or more settings wherein one does not include the developing person, such as the place of employment of the developing person's parent. The macrosystem incorporates the attitudes and ideologies of the cultures, such as poverty, cultural customs, and opportunity structures (Bronfenbrenner, 1979).

Figure 1 provides a visual representation of Bronfenbrenner's theory.

Figure 1

Bronfenbrenner's Ecological Systems Theory of Development



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Bronfenbrenner's (1979) ecological systems theory of development was the theoretical framework used for this study. Within the context of the present study, which relates to reading fluency interventions in high-poverty elementary schools, Bronfenbrenner's (1979) theory can easily be applied. The individuals who were represented in the study included each student

participant. Each of the students had his or her unique life experiences and exposure to different stimuli; however, each student attended a high-poverty elementary school and each student was taught the skills necessary to learn to read. The microsystem in Bronfenbrenner's (1979) theory, when applied to the present study, includes the relationships and social roles which occur in each student's home and school setting. It involves the relationship between a child's parent and teacher. According to Bronfenbrenner (1979), a child's ability to learn to read is impacted by the presence and type of connections between home and school as much as the actual instruction in basic reading skills.

The exosystem involves policies and procedures which may or may not have a direct impact on the student (Bronfenbrenner, 1979). This may include school board policies or decisions about reading curriculum which are made with the goal of benefitting the student; however, the student's input is not provided. The macrosystem incorporates the ideals and beliefs of a culture (Bronfenbrenner, 1979). In the present study, the culture of poverty is the macrosystem which influences the student participants.

The theoretical framework in place for the present study incorporated Bronfenbrenner's (1979) ecological systems theory of development. Human development is not viewed in isolation; rather, it is the involvement of multiple factors which lead to the formation of a person (Bronfenbrenner, 1979). A student's ability to learn how to read incorporates the home environment, relationships between the student and the student's teacher, policies in place which dictate reading curriculum used within the school setting, and the overriding values of a culture of poverty. All of those factors have a lasting impact on a student and work in relation with one another to create a unique individual. Bronfenbrenner's (1979) ecological systems theory of

development provides a lens to examine and understand reading fluency interventions in the context of a high-poverty school.

High-Poverty and High-Performing Schools

Common school-wide factors which lead to success. Based upon studies conducted with high-poverty and high-performing schools, common characteristics have been shown to be present among these schools (Kannapel & Clements, 2005; Kearney et al., 2012; Picucci, Brownson, Kahlert, & Sobel, 2004; Reeves, 2003). These characteristics are an emphasis on student learning, evident curriculum choices, frequent monitoring and feedback of student progress, focus on nonfiction composition, and collaborative marking of student work (Reeves, 2003). The most common characteristics of the 90/90/90 schools are related to performance assessments and required written responses to the assessment questions (Reeves, 2003). The use of written responses appears to help teachers understand strengths and areas for improvement in each student's writing and allows students to articulate the thinking process used to respond to an academic challenge (Reeves, 2003).

Kannapel and Clements (2005) conducted a study in Kentucky which examined high-poverty and high-performing schools and found several common factors present in all of the eight schools studied. Those characteristics included a systematic expectation of behavior for all members of the school community:

- relationships encompassing care and respect,
- focused academic standards,
- processes for frequent evaluation of individual students,
- team discussions and decisions made in a collaborative session with school leaders,
- dedicated and diligent faculty with strong morale, and

- strategic recruitment, hiring, and placement of teachers (Kannapel & Clements, 2005).

At the schools in Kentucky which were high poverty and high performing, researchers found there was a school-wide belief that all students were capable of academic success, and staff were able to ensure that achievement (Kannapel & Clements, 2005). Another area the schools exceeded in was providing caring relationships to all patrons of the school (students, parents, community members), as well as visitors. High expectations were closely related to the caring, nurturing environment found in each of the eight schools (Kannapel & Clements, 2005). The schools studied in Kentucky also had a strong academic focus closely aligned to the Kentucky Core Content for Assessment. Many instructional strategies and various curricula were used to ensure that the core content was covered as intended (Kannapel & Clements, 2005).

The schools studied in Kentucky participated in high-stakes assessment at the end of the year and also gave formative assessments throughout the year to guide students' learning. Based upon the assessment results, teachers regularly planned and changed instruction reflecting individual student needs (Kannapel & Clements, 2005). The schools studied varied greatly in their leadership styles, but there was a common thread, the schools had democratic leaders who engaged in collaborative processes when making decisions (Kannapel & Clements, 2005). Teachers groups are needed so teachers who work in challenging environments can develop a wider pedagogical repertoire and feel confident in decisions they are able to make after collaborating with their peers (Wrigley, 2012). Collaboration with colleagues can be a key factor in preventing teachers from feeling isolated and alone in the profession (Kannapel & Clements, 2005; Reeves, 2003; Wrigley, 2012).

The eight schools studied in Kentucky also had a strong faculty work ethic and morale which met the varying needs of the students and families. These needs ranged from analyzing

student data and designing appropriate interventions, helping families find clothing and food, and working after school and on weekends to provide tutoring and parent programs (Kannapel & Clements, 2005; Reeves, 2003). Another common characteristic among the schools was the process of teacher recruitment and hiring. Several of the schools worked with local universities to place student teachers at their school to determine if they were a good fit and to encourage them to apply the following year (Kannapel & Clements, 2005).

Studies similar to Kannapel and Clements (2005) have been conducted in multiple settings with comparable results. Picucci, Brownson, Kahlert, and Sobel (2004) found successful middle schools are driven by a common purpose, have thoughtful school structures, give attention to individual students, use data to focus curriculum and instruction, and provide ongoing and tailored professional development. Whitney, Maras, and Schisler (2012) interviewed school staff and found administrative support, professional collaboration, and high-quality school personnel led to the school staff's overall perception of their success.

Another study conducted in three New York schools using longitudinal student achievement data and interviews with staff and other stakeholders. There were several common themes found among the three schools studied. The mission of each school was clear and the overriding focus, through staff working together, was meeting the needs of students and also improving each student's life chance (Jacobson, Brooks, Giles, Johnson, & Ylimaki, 2007). Another common theme was creating a welcoming, safe environment by having the principal personally greet parents and students at arrival and dismissal times (Jacobson et al., 2007).

A similar study examined two elementary schools in South Carolina that were high poverty and high achieving. Common characteristics were found related to principal effectiveness in helping to encourage high-achievement in high-poverty schools. Interviews

revealed the common factors of relationships, teacher empowerment, and setting the example for all participants (Suber, 2011).

School-Based Interventions for High-Poverty Schools

School-wide factors. There are five factors that lead to high-poverty schools being successful (Jensen, 2009).

Support for whole child. Support for the whole child includes providing social, emotional, and health-related supports for students. This approach encompasses wraparound services for all children. Wraparound services are those which provide services in the school, community, and home setting and aim to meet all basic needs of the child as it relates to social, emotional, and health needs (Jensen, 2009). A similar philosophy has been implemented at schools in Texas. According to Ramalho, Garza, and Merchant (2010), the school's mission statement revealed the belief that every child is capable of learning and achieving at high levels, staff are responsible for teaching and keeping every student safe, everyone is treated with respect, and what is created will be supported.

Examination of student data. Schools who are successful frequently assess student knowledge through the collection and examination of data which allow for immediate feedback for teachers and students (Jensen, 2009; Kannapel & Clements, 2005; Reeves, 2003). The use of data to make decisions about students' learning can help them succeed in the classroom setting. Specific, ongoing data collection is a must for success in all schools, but especially in high-poverty ones (Jensen, 2009; Kannapel & Clements, 2005). It is important to create a culture of data collection among teachers. They also need to be willing to meet and discuss students' performance based upon the data that have been collected (Jensen, 2009; Kannapel & Clements, 2005; Reeves, 2003).

As a way to monitor student achievement data, Payne (2008) recommended knowing what is taught and how much time is given to that particular content or skill, providing high-quality instruction, giving formative assessments related to the standards, and determining interventions for students who are not succeeding.

Accountability for students and staff. Accountability is established through the creation of a learning goal and the administration of formative assessments that provide specific data related to progress towards that goal (Jensen, 2009; Kannapel & Clements, 2005; Reeves, 2003).This accountability applies to both students and teachers, para-professionals, and other employees of the school. -An example of excellence in accountability can be found in the Lapwai School District in Northern Idaho.

> At Lapwai Elementary School in Idaho, the student population is mostly made up of low-SES (Socio-Economic Status) American Indian children, of whom 95% are reading at or above grade level. The secret? Everyone at the school has accepted his or her share of responsibility and feels accountable for the results. The teachers assign tough work and expect students to do it—and do it right. What matters is a relentless focus on the academic core, on clear and high standards, and on accountability systems that demand results for all kinds of students—all supported by intensive efforts to help teachers improve their practice and to provide extra instruction for students who need it. (Jensen, 2009, pp. 83–84)

There have been other studies which have also supported the idea of school-wide accountability. Themes that emerged from the study included understanding high-poverty, rural schools; creating goals and accountability; providing support; and constructing a collaborative community (Horst & Martin, 2007).

Building relationships. The relationships that are important at school include peer relationships, parental relationships with children, faculty members' relationships with one another, and teacher and student relationships (Jensen, 2009; Kannapel & Clements, 2005; Kearney et al., 2012; Reeves, 2003). It is important for students who live in poverty to feel valued and appreciated at school. Tutoring students is a tool to help improve academic performance in high-poverty schools (Kearney et al., 2012). Kearney, Herrington, and Aguilar (2012) revealed through staff interviews, "Mr. Allen (school principal) finds ways to get money to pay teachers to stay after school and tutor their students, and it's not just one or two people, which I've seen at other schools, this is every classroom teacher gets to tutor" (Kearney et al., 2012, pp. 242–243). The tutoring process helps to build relationships and also improve academic ability. Supportive, trusting relationships built between adults and high-poverty students help encourage the students' self-esteem and independence and protect them from the detrimental effects of poverty (Jensen, 2009; Kannapel & Clements, 2005; Kearney et al., 2012; Reeves, 2003).

Payne (2008) detailed steps to follow to build relationships of mutual respect with students, which included making sure all students have at least one adult in the building who touches base with them once a day and cares about them. Also, ensuring all students have a peer or peer group they can talk to during an academic task each day is important. Lastly, teachers must make sure no child plays alone at recess for more than one day and no secondary student eats lunch alone (Payne, 2008).

Enrichment mind-set. The enrichment mind-set includes encouraging emotional engagement, building intellectual curiosity, forming relationships with others, and capitalizing on the potential of students and staff (Jensen, 2009; Kannapel & Clements, 2005; Reeves, 2003).

Enrichment can take a variety of forms including nutrition, extending the school day, and offering extracurricular activities. After-school programs help children from low-income families, and student participation in extracurricular activities transfers to greater success with academic tasks, indicating that time and resource investment are well worth the effort (Orthner, Cook, Rose, & Randolph, 2002).

Another factor which can lead to success is early intervention programs, such as Head Start. Ensure resources which promote academic development, such as Head Start, are available to all children helps to improve the outcome of low-income children (Miller et al., 2013).

Classroom and teacher factors. According to Jensen (2009), after a thorough review of literature, there are several classroom-level themes which emerge in high-poverty, high-performing schools. These themes include instruction driven by a set of learning standards (Reeves, 2003), humanities education, advanced placement courses, and engrossing instruction (Jensen, 2009). Other researchers have examined the classroom factors which lead to success and found successful teachers indicate high learning expectations through challenging curriculum (Kannapel & Clements, 2005; Reeves, 2003), improved family participation, incorporate the arts and movement into instruction, capitalize on student and family strengths, promote reading for enjoyment, and frequently reach out to families (Gorski, 2013). Another important factor is the teacher's willingness and desire to work with students from difficult backgrounds. In Kannapel and Clements' (2005) study, the researchers found the teachers were passionate about working with students who faced difficult circumstances, such as living in poverty or having limited social and emotional resources at home.

Standards-based learning. Schools who have shown improvement have a curriculum aligned with standards of achievement and progress-monitoring assessments (Jensen, 2009). This

process involves transforming standards into engaging units of study, conducting formative assessments to determine each student's background knowledge, and customizing daily lesson plans based upon the formative assessment results (Jensen, 2009; Kannapel & Clements, 2005; Reeves, 2003). Effective curriculum should incorporate the learning of routine skills combined with new and complex tasks (Knapp, Turnbull, & Shields, 1990).

Hope building and increased course offerings. Hopefulness needs to be pervasive and each student should experience it daily (Jensen, 2009). Research has indicated students filled with hope work harder, for longer periods of time, and reach higher levels of academic achievement (Jensen, 2009). Research has indicated that essential learning skills and thinking ability are enhanced through humanities offerings and challenging curriculum, whereas recess, sports, and physical activity reduce students' likelihood of developing depression (Jensen, 2009). Therefore, it is beneficial for schools to incorporate movement, challenging curriculum, and the arts into each school day (Jensen, 2009).

Cognition training. Students are able to problem solve through the process of mediation, which includes identifying the trigger for their emotional response, understanding and processing the situation, and recognizing a strategy to use (Payne, 1996). This helps students understand a new way to face a problem or understand a situation. Students need to possess a champion's mind-set, demonstrate hopeful effort, have strong attentional skills, and have good short-term and working memory, strong processing skills, and sequencing or organizational skills to succeed in school (Jensen, 2009; Kannapel & Clements, 2005). Students are taught the previously listed skills to help them navigate the educational system and be successful.

Students in disadvantaged circumstances are equipped to meet the academic challenges of school when teachers encourage students to use their background knowledge to solve new

problems and also expose them to novel ways of processing and thinking (Knapp et al., 1990). Students learn school expectations when they are provided teacher models and clear explanations of expected behavior (Jensen, 2009; Knapp et al., 1990). Steps to make learning engaging for students are to gather information from the students about their level of engagement versus level of boredom in the classroom, communicate the information learned from the students with the staff and have a plan of action to enhance engagement, add new teaching strategies, and monitor the students' progress on a weekly basis (Jensen, 2009; Kannapel & Clements, 2005; Reeves, 2003).

Enhanced relationship between school and home. Relationships between educators and low-income families are enhanced by providing parent–school activities which can be experienced by all families and when a school climate of mutual support and two-way communication in reaching the educational goals for all students are the focus (Amatea & West-Olatunji, 2007).

Payne (2008) recommended identifying multiple approaches to parent involvement, focusing parent workshops on skills related to student success, and making sure when parents do come to school, they are greeted with a smile and their concerns are genuinely heard.

Leadership factors. School principals can have a large impact on how high-poverty schools perform academically and how the teachers respond to the students. Ramalho et al. (2010) discovered school leaders were committed to their schools and student body through focusing on achievement, building capacity among the staff members, and forging relationships built on collaboration and trust. The principals developed a climate of positivity and set high expectations for discipline procedures (Kannapel & Clements, 2005; Reeves, 2003), well-being,

and student safety, and the school leaders were able to develop efficacy among staff by having teachers focus on the academic progress of students (Ramalho, Garza, & Merchant, 2010).

This concludes the literature review of school based interventions used in high-poverty schools. The next section focuses on an analysis of existing literature related to reading fluency, CBM, reading fluency interventions, and the effectiveness of reading fluency interventions.

Reading Fluency

Oral reading fluency. Reading fluency is commonly measured using oral reading fluency passages (Apthorp et al., 2012; Baker et al., 2008; Harding, Harrison-Jones, & Rebach 2012). Oral reading fluency is measured by having students complete a one-minute timed reading of grade-level reading material, and the amount of words correctly read in one minute indicate their performance score (Baker et al., 2008). Research has indicated that using oral reading fluency as a way to measure students' difficulty with reading is an effective, accurate practice, and oral reading fluency measures can be used to monitor student growth in reading skills (Baker et al., 2008).

Curriculum-based measurement. CBMs have long been used as a measure of reading fluency ability (Abbott et al., 2012; Fuchs et al., 2004; Hunley et al., 2013). Teachers can use CBMs to monitor reading fluency performance by having students read a one-minute timed passage and record the total number of correct and incorrect words read (Fuchs et al., 2004). CBMs can be conducted as frequently as once a week with scores recorded to help inform instructional practices (Fuchs et al., 2004). Hunley, Davies, and Miller (2013) conducted a study involving seventh-grade students reading a fluency CBM and later completing a high-stakes reading assessment. Their scores on the CBM were compared with their levels of proficiency on the state-mandated assessment. Results indicated students with lower reading fluency ability did

not perform as well on the reading assessment (Hunley et al., 2013). This provides further evidence that CBMs can be effective tools for determining students who may require intervention (Hunley et al., 2013).

Reading fluency interventions and effectiveness of interventions. Reading fluency interventions can take many forms, including small-group instruction, one-to-one interventions, computer-based instruction (Chambers et al., 2011; Davidson, Fields, & Yang, 2009; Gibson et al., 2014; Harding et al., 2012), tutoring programs (Dyson et al., 2008; MacDonald & Figueredo, 2010; Moore-Hart & Karabenick, 2009; Vadasy & Sanders, 2013), books provided to take home (Allington et al., 2010), supplemental vocabulary programs (Apthorp et al., 2012; Carlisle, Kelcey, & Berebitsky, 2013), and professional development for staff (Kennedy, 2010; Tivnan & Hemphill, 2005).

There are many different types of reading fluency interventions available (Allington et al., 2010; Apthorp et al., 2012; Carlisle et al., 2013; Chambers et al., 2011; Davidson et al., 2009; Dyson et al., 2008; Gibson et al., 2014; Harding et al., 2012; Kennedy, 2010; MacDonald & Figueredo, 2010; Moore-Hart & Karabenick, 2009; Tivnan & Hemphill, 2005; Vadasy & Sanders, 2013), and it is important to know which one is most effective in building students' reading fluency ability.

Small-group intervention. This type of reading fluency intervention is provided in the context of direct instruction in a variety of basic reading skills occurring during the school day with a teacher or interventionist and a small group of students ranging in size from four to eight (Harding et al., 2012; Musti-Rao & Cartledge, 2007; Ritchey et al., 2012). A variety of different curricula types are used, such as Scott Foresman's *Early Reading Intervention* (Musti-Rao & Cartledge, 2007) or science context texts (Ritchey et al., 2012).

Harding et al. (2012) found that students who participated in a supplementary instruction program, as compared to those who did not participate, showed greater improvement in math scores [$F(1, 6179) = 188.59$, $p < .001$] and reading scores [$F(1, 6231) = 100.63$, $p < .001$]. Several different types of intervention, such as one-to-one tutoring, computer-based intervention, and small-group intervention, were studied, and the intervention that provided the most overall student growth was the small-group intervention (Harding et al., 2012).

One-to-one intervention. Reading fluency intervention is provided in a one-to-one setting with one teacher or paraprofessional providing intervention to one student during the school day (Harding et al., 2012). Harding et al. (2012) found one-to-one tutoring yielded the highest test scores, but had the lowest amount of overall student participation. Students did not regularly participate or attend the one-to-one tutoring sessions as they did the other intervention options, such as small-group tutoring or computer-based intervention (Harding et al., 2012).

Computer-based intervention. The advancement of technology have led to the availability of computer-based programs for providing reading intervention to students (Chambers et al., 2011; Davidson et al., 2009; Gibson et al., 2014). There are many different computer-based curricula used, such as *Ready, Set, Leap!* (Davidson et al., 2009), which focuses on oral language, phonological awareness, and letter-sound awareness. Another is *Read Naturally Software Edition*, which focuses on read-along, one-minute readings and practice readings (Gibson et al., 2014). *Alphie's Alley* is another computer-based program that offers multimedia screens that focus on building phonemic awareness skills, sound blending, and connected reading (Chambers et al., 2011).

Although technology based interventions have increased in usage and popularity (Chambers et al., 2011; Davidson et al., 2009; Gibson et al., 2014), results related to

effectiveness have been mixed. Davidson, Fields, and Yang (2009) conducted a study that included an experimental and control group with the experimental group using the *Ready, Set, Leap!* program and the control group using the district's current curriculum. The results indicated no main effects for the experimental program, which was the use of the computerized intervention (Davidson et al., 2009). Gibson, Cartledge, Keyes, and Yawn (2014) found through the use of a computerized intervention program, all students increased their oral reading fluency and word-retell fluency. Chambers et al. (2011) found a first-grade treatment group whom received computerized intervention to assist with reading skills outperformed the one-to-one tutored control group on three different measures: letter–word identification (ES = 0.17, $p = .05$), word attack (ES = 0.21, $p = .04$), and passage comprehension (ES = 0.15, $p = .05$).

Tutoring programs. Tutoring sessions are another option for providing reading fluency intervention to students (Dyson et al., 2008; MacDonald & Figueredo, 2010; Moore-Hart & Karabenick, 2009; Vadasy & Sanders, 2013). Tutoring can take the form of supplemental instruction in a one-to-one or small-group setting (Dyson et al., 2008; Vadasy & Sanders, 2013) or providing additional time outside of the regular school day to accommodate tutoring sessions (MacDonald & Figueredo, 2010). At times, students may choose their own reading material and have tutors help them read the text they have chosen (Moore-Hart & Karabenick, 2009).

Tutoring in a one-to-one session which involves reading, recognizing words, writing, and building words helps improve the overall reading ability of culturally diverse students in an elementary school setting (Moore-Hart & Karabenick, 2009).

Books provided to take home. The intervention of providing books to students to take home developed out of the need to off-set summer reading setback and narrow the reading achievement gap between low and high-poverty households (Allington et al., 2010). Research

indicates the reading achievement of students from low-income households decreases over the summer holiday, whereas students from more affluent families gain reading skills during the summer break (Allington et al., 2010). In order to offset the impact of summer break and lack of access to reading resources, students were provided with 15 self-selected books to take home and keep to read over the summer (Allington et al., 2010). The books were provided as a reading fluency intervention.

The effectiveness of providing summer reading material to offset reading setback was measured. Results indicated a *t* test found statistically significant differences ($t = 2.434$, $df = 1{,}328$, $p = .015$) in the performance of the treatment (students given books to take home) and control (students not provided books) students on the Florida Comprehensive Assessment Test administered after three consecutive summer book distributions (Allington et al., 2010). Other statistical analysis conducted found an even larger effect size with the subpopulation of students who qualified for free and reduced price lunch (ES = .21; Allington et al., 2010). The data from the survey results, which were related to how often students read over the summer and where students acquired the books they read, indicated the book distribution had a positive effect on the frequency of summer reading that occurred with the treatment group (Allington et al., 2010). Students were more likely to read the books because they had self-selected the titles and were able to keep the materials (Allington et al., 2010).

Supplemental vocabulary program. Reading fluency intervention can occur in the form of teaching specific vocabulary words in each new reading lesson that students receive (Apthorp et al., 2012; Carlisle et al., 2013). Depending on the grade level of the students, a certain quantity and type of vocabulary words are defined and used in context for the students (Apthorp et al.,

2012; Carlisle et al., 2013). Teachers typically introduce a set of new vocabulary words with each literacy lesson presented.

The impact of a supplemental vocabulary program that focused on passage comprehension and vocabulary knowledge, titled *Elements of Reading* (Apthorp et al., 2012), was measured, and the results of the intervention indicated there was a positive proximal effect which was statistically significant (Apthorp et al., 2012). Overall, results of this study indicate that the *Elements of Reading* intervention can improve certain aspects of reading, such as vocabulary knowledge and reading comprehension, but does not have a global impact on reading ability (Apthorp et al., 2012). Carlisle, Kelcey, and Berebitsky (2013) found that the extent of teachers' support of their students' knowledge of vocabulary was pointedly related to improvements in reading comprehension throughout the year.

Professional development for staff. Specific professional development for teachers in the areas of alphabetics, reading fluency, and comprehension can be used as a reading fluency intervention (Kennedy, 2010; Tivnan & Hemphill, 2005). The professional development can occur through teacher observations of teaching and specific feedback or whole-group instruction related to a specific reading principle (Kennedy, 2010; Tivnan & Hemphill, 2005).

Professional development was provided to teachers in the area of literacy development (Kennedy, 2010). Students' scores were gathered before, during, and after the intervention of the teachers receiving professional development. Results indicated that specific MANOVA and post hoc tests were completed to decide if there were statistically significant differences in student achievement levels over time (Kennedy, 2010). The study found by the end of the intervention period in the form of professional development, the students had significantly higher achievement scores in reading, writing, and spelling. The Drumcondra Sentence Reading Test

scores increased at a rate which was statistically significant (t (52) = 10.217, $p < 0.001$, Cohen's $d = 1.29$) over an 18-month period for students between first grade and second grade (Kennedy, 2010).

After providing professional development to teachers, Tivnan and Hemphill (2005), found the four literacy reform models appeared to be able to move low-income children with initial reading skills to higher achievement levels in word reading and phonemic segmentation by the end of first grade. However, skills related to understanding the meaning of a word or passage were low for children in all four of the instruction models, with reading comprehension and vocabulary below grade-level expectations (Tivnan & Hemphill, 2005).

In another study, students were placed in intervention and comparison groups and the interventionist teachers received professional development directly related to improving reading skills (Connor et al., 2009). The results of the study indicated the children who received the exact amounts of recommended instruction had the larger amounts of literacy growth (Connor et al., 2009).

Importance of reading fluency. Oral reading fluency has long been documented as being an effective predictor of overall reading comprehension ability (Abbott et al., 2012; Fuchs et al., 2001; Kim et al., 2010; Li & Wu, 2015; Neddenriep et al., 2011; Wise et al., 2010). Errors made on a CBM can have implications for reading comprehension ability (Abbott et al., 2012). They found among second-grade students, specific interventions to target the improvement of errors made on fluency passages led to greater comprehension of material read (Abbott et al., 2012). Increases in correct words read per minute led to the enhancement of reading comprehension skills (Neddenriep et al., 2011).

Reading fluency ability among primary grades can have a lasting impact on reading comprehension in later grades. Oral reading fluency growth rate in first grade was the greatest predictor of reading comprehension ability in first, second, and third grade as found in Kim, Petscher, Schatshneider, and Foorman (2010). Those students who showed a slower rate of growth during their first-grade year also demonstrated difficulty with reading comprehension in later years, which revealed the importance of monitoring reading fluency growth as a future indicator of comprehension ability (Kim et al., 2010).

The capacity of students to read a passage of text and answer comprehension questions was strongly associated with their overall oral reading fluency ability (Fuchs et al., 2001). In other words, greater reading fluency ability was linked to higher performance on passage comprehension assessments. A study among second-grade students with reading difficulties was conducted and discovered that real-word oral reading fluency was strongly related to how students performed on measures of reading comprehension (Wise et al., 2010). Their study emphasized the importance of monitoring a student's reading fluency ability because of the potential consequence of affecting passage comprehension due to the robust connection between reading fluency and reading comprehension (Wise et al., 2010).

In a recent study conducted in China, students who had a difficult time with morphological awareness, or understanding word structure also had lower scores on measures of reading comprehension (Li & Wu, 2015). Reading fluency ability was also found to have a positive impact on students' overall reading comprehension ability (Li & Wu, 2015). Valencia et al. (2010) found it is important for reading fluency instruction to include rate, accuracy, and prosody to improve reading comprehension ability.

Numerous studies (Abbott et al., 2012; Fuchs et al., 2001; Kim et al., 2010; Li & Wu, 2015; Neddenriep et al., 2011; Wise et al., 2010) have stressed the importance of monitoring a student's reading fluency ability due to the direct link between reading fluency and reading comprehension ability. Reading fluency is an important predictor of overall reading proficiency and academic success (Fuchs et al., 2001), further validating the purpose of the present study.

The purpose of this current study was to examine high-poverty, high-achieving schools and determine if reading scores improve for students who receive intervention and if there is a significant difference in reading achievement for students who receive specific, targeted intervention. The research study specifically aimed to determine the significance of students reading achievement scores after receiving EYRI as a result of their performance on the IRI (Idaho State Department of Education, 2012). It also aimed to measure reading fluency performance in high-poverty schools and the overall impact of interventions which were provided to students in these schools. Ultimately, this investigation aimed to discover effective, lasting interventions which can be provided to students in high-poverty schools to improve their reading fluency ability.

The present study is unique as it intended to measure different intervention strategies used as part of the EYRI program and determine if there is a significant difference in students' performance based upon each intervention type. It took place in the context of high-poverty schools in urban school districts in the state of Idaho within the United States of America.

Conclusion

This analysis of existing literature aimed to examine current information regarding what constitutes poverty and the impact of poverty in the classroom and home setting. The literature review also intended to help the researcher understand high-poverty and high-performing schools

and learn the definition of a 90/90/90 school and the common factors that lead to success. It sought to examine school-based interventions for high-poverty schools including school-wide factors, classroom and teacher factors, and leadership factors that lead to success in high-poverty and high-performing schools. Lastly, the analysis of existing literature examined different types of reading fluency intervention and the effectiveness of those interventions.

Chapter III

Design and Methodology

Introduction

Poverty continues to impact children's lives in many ways, including socially, emotionally, and academically (Jensen, 2009; Kiernan & Mensah, 2011; Payne, 1996). The purpose of this study was to examine high-poverty, high-achieving schools and determine if reading fluency scores improve for students who receive intervention. The purpose was also to ascertain if there is a significant difference in reading achievement for students who receive specific, targeted intervention. This study specifically aimed to determine the significance of students reading achievement scores after receiving EYRI as a result of their performance on the IRI (Idaho State Department of Education, 2012).

Successful high-poverty elementary schools have been studied to see what administrative and teacher factors help students succeed (Jensen, 2009; Kannapel & Clements, 2005; Kearney et al., 2012; Picucci et al., 2004; Reeves, 2003). However, minimal research has been done to determine how high-poverty schools succeed academically. This study aimed to measure reading fluency performance in high-poverty schools and the overall impact of interventions that were provided to students in these schools. Ultimately, this study aimed to discover effective, lasting interventionswhich can be provided to students in high-poverty schools to improve their reading fluency ability.

Research Questions

This mixed-methods study focused on three research questions:

1. Do second-grade reading scores, as evidenced by the IRI, significantly increase with the use of targeted intervention in high-poverty schools?

2. Is there a significant relationship between students who receive targeted intervention in second grade and their third-grade IRI scores?
3. Is there a difference in the type of intervention that is provided as compared to student growth on the IRI?

Research Design

This study used a mixed-methods embedded design. An embedded design involves the collection of qualitative and quantitative data concurrently; however, one form of data is used primarily, with another form of data playing a secondary role to create a complete research design (Creswell, 2012). Within the present study, the quantitative data played the primary role, with the qualitative data serving a supporting role. The quantitative data provided information related to student performance on the IRI. They also included the overall growth or lack of growth on the IRI after students were provided intensive intervention. The qualitative data supported and extended information related to the specific interventions students received. The focus-group interviews and individual interviews allowed the researcher to explore the unique reading fluency interventions from the perspective of teachers, paraprofessionals, and instructional coaches that were provided at each school site. The quantitative portion of this study included the analysis of ex post facto IRI data. The IRI data were selected because they included factual information in the form of student scores that were available in a public domain (Creswell, 2012). The IRI is also the primary standardized measure of reading success and adequate reading achievement for Idaho public schools. Data were also obtained from the nutrition services department to determine how many students qualified for free and reduced lunch. The cumulative data collected from the nutrition services were evaluated to ensure at least 84% of the student population at each school site qualified for free and reduced lunch. Codified

data were collected from students who had taken the IRI assessment as a second-grade student in the fall and spring of the 2014–2015 school year. Historical data were also collected from students who had taken the IRI as a third–grade student in the fall of the 2015–2016 school year. These data were analyzed to look for student growth in reading fluency over the course of the two school years. Informational data were also collected related to the length and type of reading fluency intervention that each student received.

The qualitative portion of this study included data collected through focus-group and individual interviews. Focus-group interviews were the preferred format because they encourage dthe expression of differing opinions and ideas and could lead to in-depth discussions (Marshall & Rossman, 2016). Focus-group interviews also can be completed with a group of people who share a similar characteristic; in this case, they had all provided reading fluency intervention to students (Marshall & Rossman, 2016).The questions used for the individual and focus group interviews were piloted in the summer of 2015 with a school administrator, one instructional coach, and one classroom teacher. These individuals provided feedback and suggestions for specific intervention questions that could be asked. The focus-group interviews occurred with eight total teachers and paraprofessionals who had provided reading fluency intervention to students who attend the four high-poverty elementary schools in the school district being studied. Additionally, individual interviews occurred with three teachers who had provided reading fluency intervention to students in the same schools. All interviews occurred within the participating buildings to make it easier for teachers and paraprofessionals to participate in the interviews (see Appendix A). The two focus-group sessions that were held each lasted for 45 minutes. The three individual interviews each lasted about 30 minutes.

During the individual and focus-group interviews, interventionists were asked questions related to the type and length of intervention they provided, the materials used to provide intervention, how student growth was measured, and how often that measurement occurred (see Appendix A).

Participants

The sampling technique used in this study was nonprobability sampling. According to Creswell (2012), in nonprobability sampling, individuals are chosen to participate because they are accessible, appropriate, and embody a specific characteristic about which the researcher desires to learn. The participants were chosen for the study because they attended one of the four high-poverty, high-performing elementary schools and had taken the IRI assessment.

In this study, the sample of ex post facto student records included 173 second-grade students from four different elementary schools in the state of Idaho within the United States of America. Each of the elementary schools had 84% or more of their student population who qualified for free and reduced lunch. The student participants were selected because they attended a high-poverty elementary school in the school district being studied. They were also selected because they had taken the IRI assessment as a second-grade student in both the fall and spring of the 2014–2015 school year. Students also took the IRI as a third-grade student in the fall of the 2015–2016 school year. The IRI is an assessment taken by all students in grades kindergarten through third grade as required by the Idaho State Department of Education. The students in the sample took the IRI in the 2014–2015 school year, and as a result of their performance on the assessment, received varying types of targeted intervention. Students included in the sample received a score of 1 or 2 on the fall 2014–2015 IRI, indicating their score fell below the benchmark level. A score of 1 is considered intensive and indicates a lack of mastery of some or all skills (Idaho State Department of Education, 2012). A score of 2 is

considered strategic and indicates partial mastery of skills (Idaho State Department of Education, 2012). Parental permission of inclusion of student data was sought in the form of a parental opt-out form (see Appendix B). Parents were notified and able to opt out of their child's IRI data being included in this study. Forms with detailed information written in both English and Spanish were sent home to all second-grade students. Eight students were removed from the initial sample due to receiving a parental opt-out form.

The adult interview participants were all school district employees within one of the four high-poverty schools and regularly provided reading fluency intervention to students. The adult participants were either paraprofessionals, certified classroom teachers, or instructional coaches. The adult participants were recruited through electronic communication in the form of e-mail (see Appendix C). The potential participants' names and e-mail addresses were provided by the school principal at each of the four elementary schools. Meetings were held with each of the school principals to obtain potential participant names and inform them of the purpose and parameters of the present study.

In preparation for becoming an ethical researcher, online training was completed and certification for human research through the National Institute of Health was acquired (see Appendix D). Permission to conduct this study and use ex post facto student records was obtained from the school district superintendent (see Appendix E). Consent was also sought and obtained from the Human Research Review Committee at Northwest Nazarene University prior to beginning this study (see Appendix F).

Data Collection

In this study, several steps were involved in collecting both quantitative and qualitative data. The first step for collecting quantitative data conducted by the principal researcher was to

obtain data from the nutrition services department to verify that each of the four elementary schools in the study served a student population with at least 84% of the student body qualifying for free and reduced price lunch. This occurred in early September 2015. The second step was to view historical achievement records for each elementary school to determine which schools had a pattern of high and low achievement as evidenced by the ISAT. For the purpose of this study, the overall level of reading proficiency on the ISAT was used to determine high and low achievement. The third step the researcher conducted was to meet with each building principal at the four elementary schools being studied to obtain ex post facto student IRI records. This occurred over several days in mid-September 2015. The researcher ensured each student had taken the IRI as a second-grade student in both the fall and spring of the 2014–2015 school year and also as a third-grade student in the fall of the 2015–2016 school year. Ex post facto student records for students who earned a score of 1 or 2 on the IRI were included in this study. Records of students who earned a score of 3 on the IRI were not included because those student scores indicate proficiency and do not indicate a need for reading fluency intervention.

The next step was to determine if each student had received reading fluency intervention and the amount of hours and type of intervention provided. This information was gathered from either the building principal or instructional coach through meetings held at each school site. These data were gathered in the beginning of October 2015.

The qualitative portion of this study first involved piloting the focus-group interviews with teachers to determine their effectiveness. Marshall and Rossman (2016) suggested that piloting the interviews helps to determine bias and barriers and also to understand technical matters like audio-recording interviews. The researcher was able to pilot the interview questions with a school administrator who was also a former teacher. The administrator helped the

researcher determine the true point and intent of each question that was being asked. Another pilot interview was held with a group of first-grade teachers. This group was chosen because they were familiar with the terms used in the questions, such as IRI, and also because the target groups for the study were second- and third-grade teachers. Being able to pilot a focus-group was valuable because it allowed the researcher to try different techniques, ensuring that each participant's voice was heard. The first-grade teachers also suggested questions about the limitations, as well as successes, of the intervention program.

The next step involved the recruitment of individual and focus-group interview participants through an electronic notice (see Appendix C). Two e-mail electronic notices were sent to try and recruit more participants. The first e-mail was sent one week before the second e-mail was sent. Several potential participants did not respond to either e-mail, and the potential participants who did consent were sent a follow-up e-mail to arrange a date and time for the focus-group interview. Once participants were located, consent was obtained (see Appendix G) and individual and focus-group interviews were scheduled (see Appendix H). The consent form was read aloud to each participant before their signature was obtained. Participants were also provided a copy of the consent. Before the individual and focus-group interviews occurred, participants were provided with a general overview of the questions to be asked so they had time to prepare and reflect on their responses (see Appendix A). The researcher intended for all interviews to be focus-groups, however, due to the lack of participants at individual schools, three of the interviews were conducted individually rather than in a focus-group setting. All focus-group and individual interviews occurred at each of the four participating sites and lasted no longer than 45 minutes. Each focus-group and individual interview was held at the interventionists' school of employment to ensure ease of participation. The focus-group and

individual interviews were held and questions were asked related to the type and length of intervention the participants provided, the materials used to provide intervention, how student growth was measured, and how often measurement occurred. Each focus-group and individual interview was audio recorded by the researcher for later transcription of content. The focus-group and individual interviews were transcribed by a professional transcriptionist and checked for accuracy. The identifying information in each focus-group and individual interview was protected to ensure the privacy of participants (Creswell, 2012; Marshall & Rossman, 2016). Pseudonyms for the schools where each participant was employed were used, as well as pseudonyms for the adult participants.

Analytical Methods

The first step in analyzing quantitative data collected for this study was to verify each of the four elementary schools had a student population in which at least 84% of students qualified for free and reduced price lunch. These data were obtained from the nutrition services department, and the recorded percentage of students qualifying for the 2014–2015 and 2015–2016 school years was documented in a password-protected spreadsheet created by the researcher.

Ex post facto school achievement records were analyzed to determine a historical pattern of high achievement. Overall student achievement in reading was calculated from the 2008–2009 school year through the 2012–2013 school year. The reading achievement was determined using the percentage of students who earned proficient or advanced scores on their ISAT, which is a state mandated assessment given to students in third through fifth grade (Idaho State Department of Education, 2016). The following percentages indicate the average percentage of students who earned proficient or advanced scores on the reading ISAT for the five years listed above 2008-

2013: Elmore Elementary: 87%; Latah Elementary: 91%; Nez Perce Elementary: 80%; and Oneida Elementary: 88% (Idaho State Department of Education, 2016). The results indicated that all schools had a historical pattern of being high-achieving elementary schools.

The next step in analyzing ex post facto student records related to reading fluency on the IRI assessment involved determining student scores received on the measure. A password-protected spreadsheet was created by the researcher in which student names, school, grade, date of IRI assessment, IRI score, correct words read per minute, and errors read were documented. This information was obtained from student records, and only for students who had taken the IRI as a second-grade student in both the fall and spring of the 2014–2015 school year and also as a third-grade student in the fall of the 2015–2016 school year. For analysis purposes, the only student records used in this study were from students who had earned an initial score of a 1 or 2 as a second-grade student on the IRI in the fall of their 2014–2015 school year. Student records of those students who had earned a 3 as a second-grade student on the IRI in the 2014–2015 school year were not included in the sample for this study because they were deemed fluent readers. The student IRI data was provided to the researcher by a school district administrator. The school district superintendent gave the administrator permission to share the IRI data due to the researcher's employment with the school district. Once the student IRI data was received, student names were removed from the data and a code created by the researcher was used in place of any student name. This allowed for confidentiality of the student data.

After completion of ex post facto student record data entry, student reading fluency scores, as evidenced by the IRI, were analyzed for overall sustained student growth in reading fluency performance were determined. Data analysis was completed using IBM SPSS Statistical Software Version 23 (IBM SPSS, 2015). Descriptive statistics were calculated for each group of

student scores on the fall 2014 IRI and spring 2015 IRI. The descriptive statistics included calculating the mean and standard deviation for each group (Laerd Statistics, 2016; Tanner, 2012). In order to complete further statistical analysis, it was necessary to establish the independent and dependent variables. Independent variables are those that are manipulated or changed, and dependent variables are the results that occur as a result of changes made to the independent variable (Creswell, 2012; Tanner, 2012).

The dependent variable in this study was student IRI scores. The independent variables were amount of time spent receiving reading fluency intervention, type of reading fluency intervention received, group size of reading fluency intervention, curriculum used to provide intervention, and the person providing the reading fluency intervention. Further analysis was conducted to determine statistically significant differences in IRI scores. The difference between the total correct words read per minute on the IRI in the spring of 2015 and the fall of 2014 was calculated. A paired samples *t* test was conducted to determine if there was a statistically significant difference between the two data points. The paired samples *t* test was chosen because the participants in each group were the same (Laerd Statistics, 2016; Tanner, 2012). The only difference within the groups was the overall change in the total number of words read correctly, or the dependent variable (Laerd Statistics, 2016; Tanner, 2012). Correct words per minute reflect the reading speed and accuracy of a passage read aloud (Abbott et al., 2012). Correct words per minute are calculated by taking the total number of words read in a timed passage and subtracting from that total the number of words read incorrectly (Abbott et al., 2012).

Overall student growth on the IRI was calculated through the process of looking at each student's data and determining the correct words per minute read on the fall 2015 IRI and subtracting from that amount the total errors read on the fall 2014 IRI. This same process was

completed for the spring 2015 IRI and fall 2015 IRI score reports. The overall growth was calculated by comparing the fall 2015 correct words per minute with the fall 2014 correct words per minute. This information provided student growth scores. These data were recorded and grouped by gender, ethnicity, and special services, such as those students receiving special education services and those receiving limited English proficiency (LEP) services.

Within the embedded research design, the quantitative data were triangulated with the qualitative data, meaning different types of data were collected to help explain a phenomenon (Creswell, 2012). Within the present study, the quantitative data were compared with the qualitative data to explain effective reading fluency interventions as evidenced by student growth on the IRI. Through the process of collecting ex post facto IRI data, other quantitative data was collected to compare to qualitative data. Within the password-protected spreadsheet used for ex post facto IRI data, was also a column to indicate the amount of hours of intervention each student received, as well as the type of intervention. Examples of the different types of intervention included small-group, whole-group, or one-to-one intervention. If the information was available, the researcher also noted if the person providing the intervention was a paraprofessional or a certified teacher.

Through the process of the embedded research design, the qualitative data were collected as a supplement to the quantitative data (Creswell, 2012). Analysis of qualitative data collected occurred through the process of focus-group and individual interviews that were conducted, and responses were audio recorded and transcribed. The audio files were transcribed by a professional transcriptionist. The resulting transcriptions were examined by the researcher for accuracy, and focus-group and individual interview responses were coded to find similarities and differences among responses (Creswell, 2013). Potential themes among the types of intervention

provided, as well as the perceived effectiveness of the interventions, were also noted (Creswell, 2013). Themes are considered categories grouped together to form a common idea (Creswell, 2013). The themes were interpreted to gain larger meaning between student IRI scores and the person providing the intervention and the type of intervention provided. A member-checking e-mail (Appendix I) was sent to participants to determine if the emerging themes were accurate and represented their opinions effectively.

Role of the Researcher

Included within the role of the researcher are the researcher's own bias, personal experience, and values (Marshall & Rossman, 2016). The researcher tried to be mindful of personal bias and experience while conducting research. However, the researcher has worked in a high-poverty elementary school as a school psychologist and has had a multitude of experiences while working with students and families in poverty. The researcher was empathetic and had a large amount of compassion for the situations students face in their homes and how those spill over to the school setting. The researcher had to be aware of personal beliefs when conducting individual interviews and focus-group interviews to avoid influencing the outcome and potential responses from the participants. The researcher also had bias about reading fluency interventions. The researcher believed that students who are struggling the most to learn to read deserve the most qualified person to help them learn the skills needed to be a fluent reader. In the researcher's opinion, the most qualified person to provide that instruction is a classroom teacher. The researcher had to keep personal bias hidden when talking to teachers and paraprofessionals who had an opposing view and belief about reading fluency intervention.

Limitations

The limitations of this study included the rural setting, the demographic, the minority population, and lack of focus-group interviews. The present study occurred within a rural school district in Idaho. The school district served a total student population of 15,000, but the surrounding area was rural in nature. Another limitation was all student records were obtained from elementary schools that were high-poverty and also high-achieving. As the research has indicated, high-poverty schools are not typically high-achieving, therefore generalizations to other populations should be limited. There was a large Hispanic population within the school district, therefore the majority of LEP students' first language learned was Spanish. This is also a narrow representation of other high-poverty schools. The only student records represented within the study were second and third grade students. Comparison of results to other grade levels should be minimized. The IRI only includes a CBM which is not inclusive of other reading fluency skills such as rate and prosody. Lastly, not all of the interviews included in the study were focus-group interviews as originally intended. It was difficult to recruit enough participants to conduct focus-group interviews; therefore, several of the interviews were individual rather than with a focus group.

Chapter IV

Results

Introduction

The impact of living in impoverished situations on students' lives has long been documented (Jensen, 2009; Payne, 1996). The aspects of students' lives most often affected by poverty include social functioning, emotional regulation, and academic performance (Jensen, 2009; Kiernan & Mensah, 2011; Payne, 1996). Poverty has been proven to impact the academic performance of students, including the areas of reading and, more specifically, reading fluency (Jensen, 2009; Kiernan & Mensah, 2011; Payne, 1996). Reading fluency is an important predictor of reading comprehension ability (Li & Wu, 2015; Wise et al., 2010). Therefore, the purpose of this study was to determine effective reading fluency interventions within the construct of four high-poverty elementary schools. With those things in mind, the following questions guided this research study:

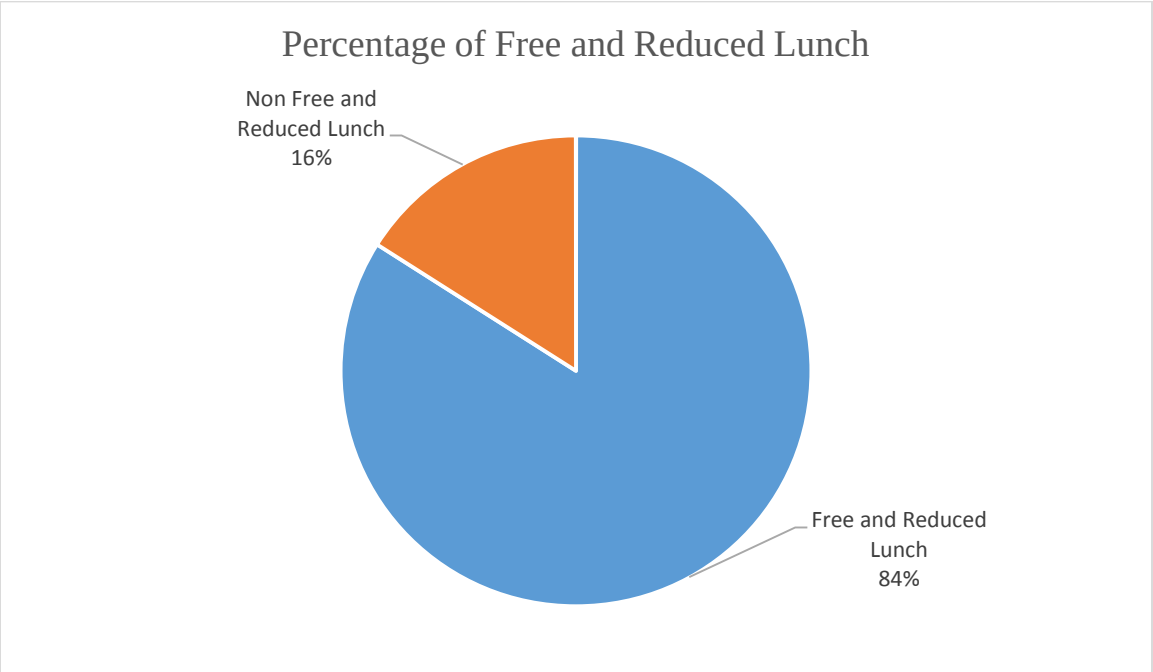
1. Do second-grade reading scores as evidenced by the IRI significantly increase with the use of targeted intervention in high-poverty schools?
2. Is there a significant relationship between students who receive targeted intervention in second grade and their third-grade IRI scores?
3. Is there a difference in the type of intervention that is provided as compared to student growth on the IRI?

The following study occurred within four high-poverty elementary schools in one rural school district in the state of Idaho within the United States of America. All four of the elementary schools served a student population where at least 84% of the student body qualified

for free and reduced lunch. Figure 2 provides a visual of the percentage of students who qualified for free and reduced lunch.

Figure 2

Percentage of Student Population Receiving Free and Reduced Lunch



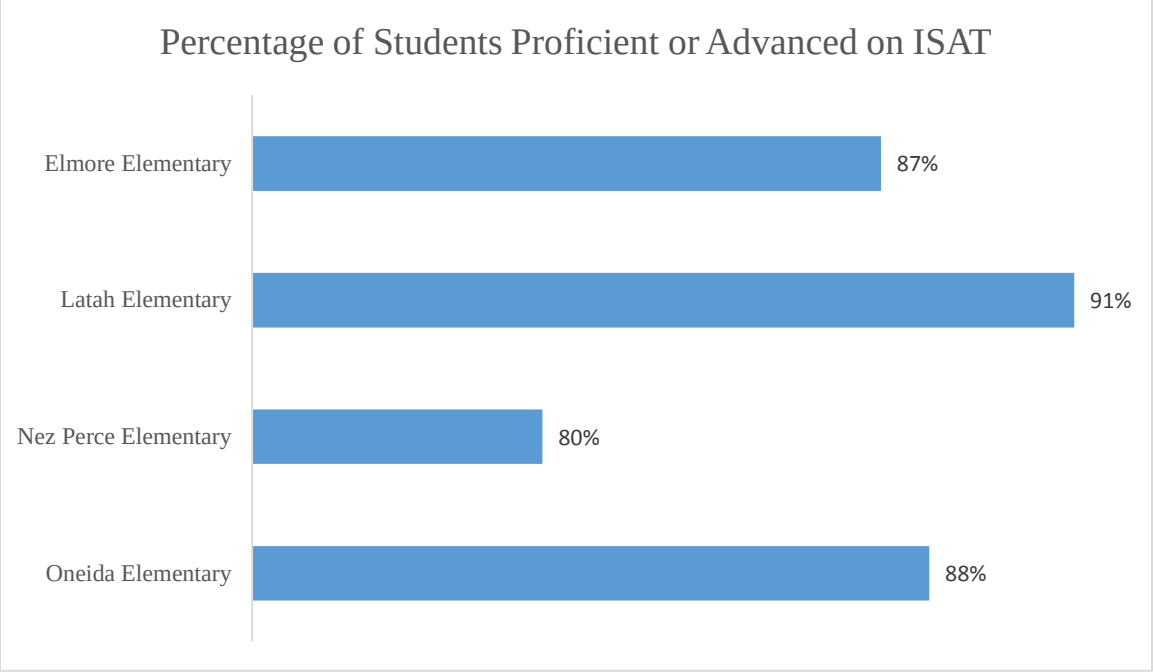
As evidenced in Figure 2, 84% of students in the four elementary schools in the study qualified for free and reduced lunch. Ex post facto data were collected related to student IRI scores. The IRI is a CBM that is given to all students in Kindergarten through third grade (Idaho State Department of Education, 2012). The intent of the IRI is to provide teachers with information related to the reading needs of their students (Idaho State Department of Education, 2012). Additionally, focus-group and individual interviews were conducted with teachers and paraprofessionals at each school site to gather information related to specific reading fluency interventions provided to a cohort of second-grade and third-grade students.

Participants

The four high-poverty elementary schools were chosen because at least 84% of their student body qualified for free and reduced lunch. The schools chosen for this study also had to exhibit a historic pattern of high achievement as evidenced by the average percentage of students who had earned proficient or advanced scores on the reading ISAT for five years, or the 2008–2009 school year through the 2012–2013 school year. Figure 3 details the percentage of students who met the benchmark on the ISAT by earning proficient or advanced scores on the ISAT for five years in a row. The average overall student performance for the five years was calculated and included in Figure 3.

Figure 3

Percentage of Students Who Met Benchmark on the ISAT



The following percentages indicate the average percentage of students who earned proficient or advanced scores on the reading ISAT for the five years listed above: Elmore Elementary: 87%; Latah Elementary: 91%; Nez Perce Elementary: 80%; and Oneida

Elementary: 88% (Idaho State Department of Education, 2016). These include scores for all students assessed in grades 3 through 5. The results indicated all schools had a historical pattern of being high-achieving elementary schools.

Student participants were chosen for this study because they had taken the fall IRI in 2014 and the spring IRI in 2015 as a second-grade student. To be included in the present study, they also had to take the fall IRI in 2015 as a third-grade student. School–staff participants included teachers and paraprofessionals who provided reading fluency intervention. Those staff members participated in either individual or focus-group interviews.

IRI participants. Demographics are included in Table 1. The school names listed below are pseudonyms and not the actual names of the schools that participated in the present study.

Table 1

Student Participants—Fall 2014 and Spring 2015 IRI

	Total Population	Sample	Female	Male
Elmore	75	46 *(61%)*	22 *(48%)*	24 *(52%)*
Latah	71	37 *(52%)*	13 *(35%)*	24 *(65%)*
Nez Perce	97	59 *(61%)*	23 *(39%)*	36 *(61%)*
Oneida	102	69 *(68%)*	33 *(48%)*	36 *(52%)*
Totals	345	211 *(61%)*	91 *(43%)*	120 *(57%)*

Students included in the initial sample received a score of 1 or 2 on the fall 2014 IRI. The student population at the four elementary schools was highly transient; therefore, 30 students were removed from the initial sample because they had not taken the fall 2015 IRI at one of the four elementary schools participating in the study.

Permission for student data to be included in the study was obtained from parents in the format of an opt-out form (see Appendix B). The form detailed the purpose of the study and parents were able to sign and return the form if they did not want their student's IRI data included in the sample. The forms were distributed in both English and Spanish to all third-grade students in the four elementary schools included in the study. The forms were given to all third-grade students, even those who received a 3 on the fall 2014 IRI. The researcher collected the signed forms and removed those students as requested by their parents from the sample. There were a total of eight students removed from the sample due to the receipt of a parental opt-out form. Table 2 includes the number of forms distributed and the total number of students removed from the sample.

Table 2

Student Participants—Parental Opt-Out Forms

	Sample	Forms Distributed	Removed from Sample	Final Sample
Elmore	41	100	5	36
Latah	32	90	3	29
Nez Perce	51	100	0	51
Oneida	57	100	0	57
Totals	181	390	8	173

The total number of students included in the sample after those excluded for not taking the fall 2015 IRI and also returning the parental opt-out form are listed in Table 2. At Elmore Elementary, five students were removed from the sample, and three were removed from the Latah Elementary sample. This changed the total student sample from 181 to 173 students.

Figure 4 indicates the gender of the students included in the final sample who had taken the IRI in the fall of 2014, spring of 2015, and fall of 2015.

Figure 4

Gender of Students Included in the Sample

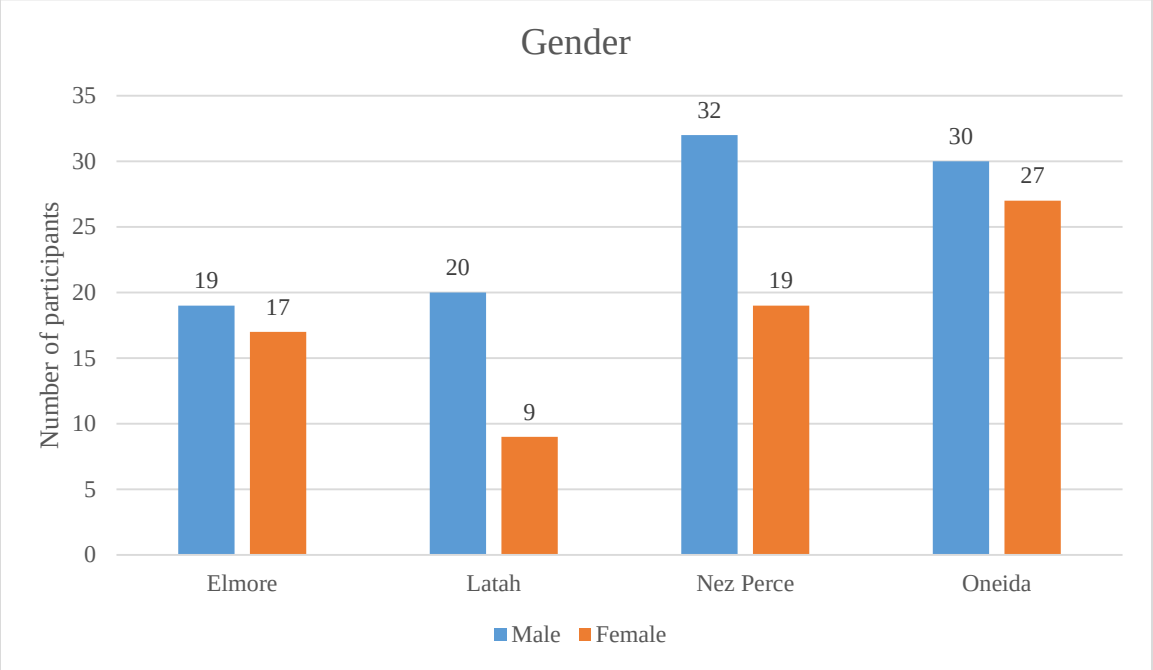
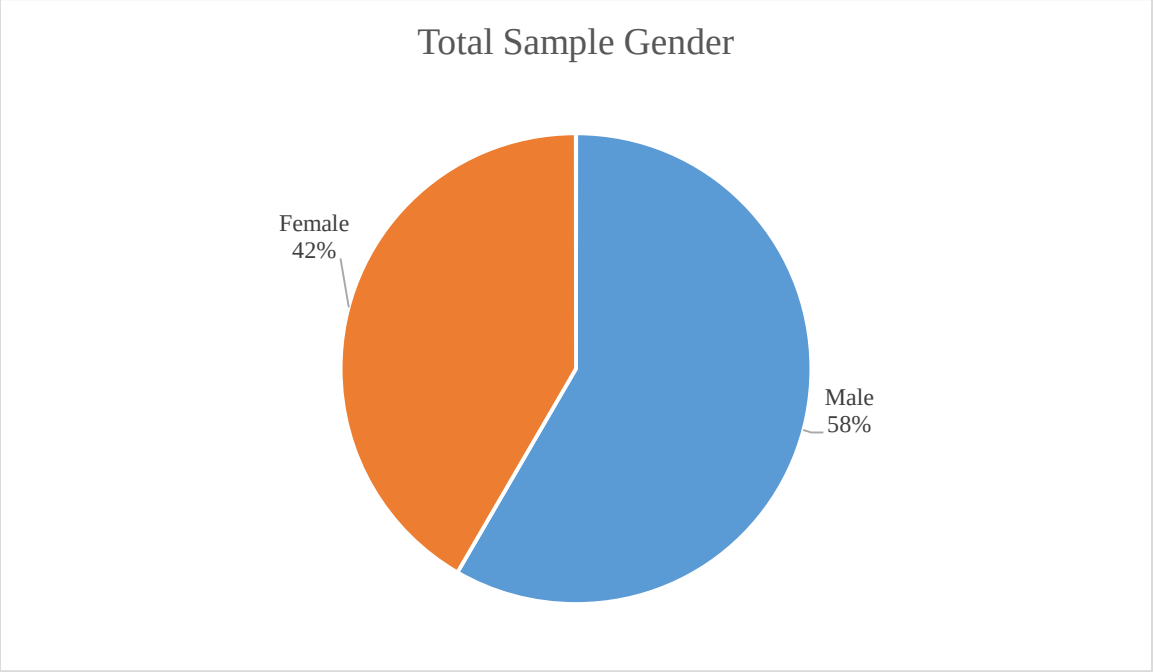


Figure 4 indicates that in the final sample, there were more males than females at each of the four elementary school locations. There were 101 total males in the sample and 72 total females as evidenced in Figure 5.

Figure 5

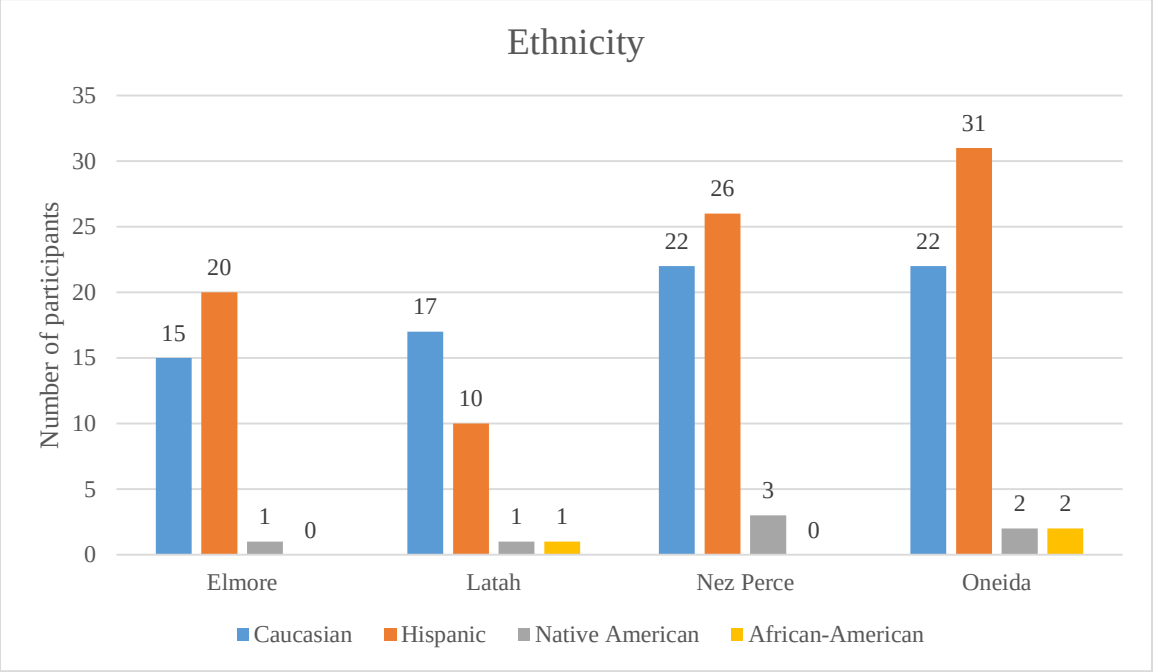
Gender of Total Sample



The entire sample included in this study was comprised of a majority of male students at 58% and female students at 42%. Figure 6 details the ethnicity of students included in the sample. The categories are Caucasian, Hispanic, Native American, and African-American.

Figure 6

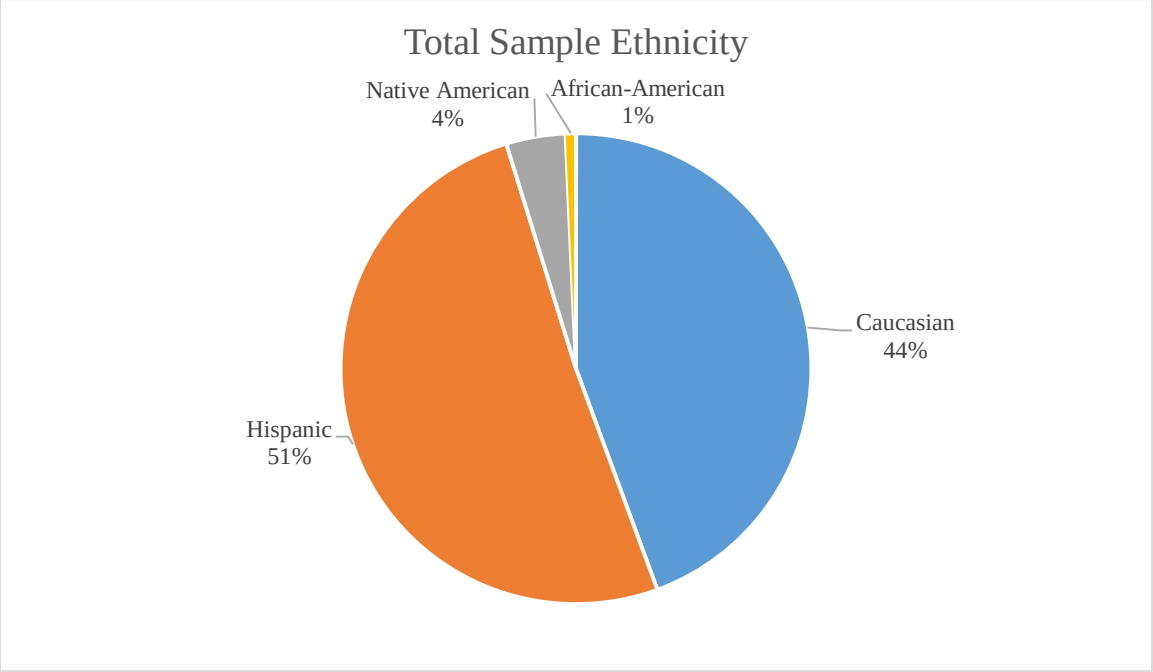
Ethnicity of Students Included in the Sample



As evidenced in Figure 6, the student participants in the study were primarily of Caucasian and Hispanic descent. Fifty percent of the participants were Hispanic, 44% were Caucasian, 4% Native American, and 2% African-American as displayed in Figure 7.

Figure 7

Ethnicity of Total Sample



The largest percentage of students in the sample had a Hispanic background (51%). The other demographic groups included Caucasian (44%), Native American (4%), and African-American (1%). Figure 8 details the students enrolled in special programs at each of the four participating elementary schools. The programs included those receiving special education services through an individualized education plan (IEP), those receiving LEP services, and students who were not enrolled in any special program listed.

Figure 8

Students Enrolled in Special Programs

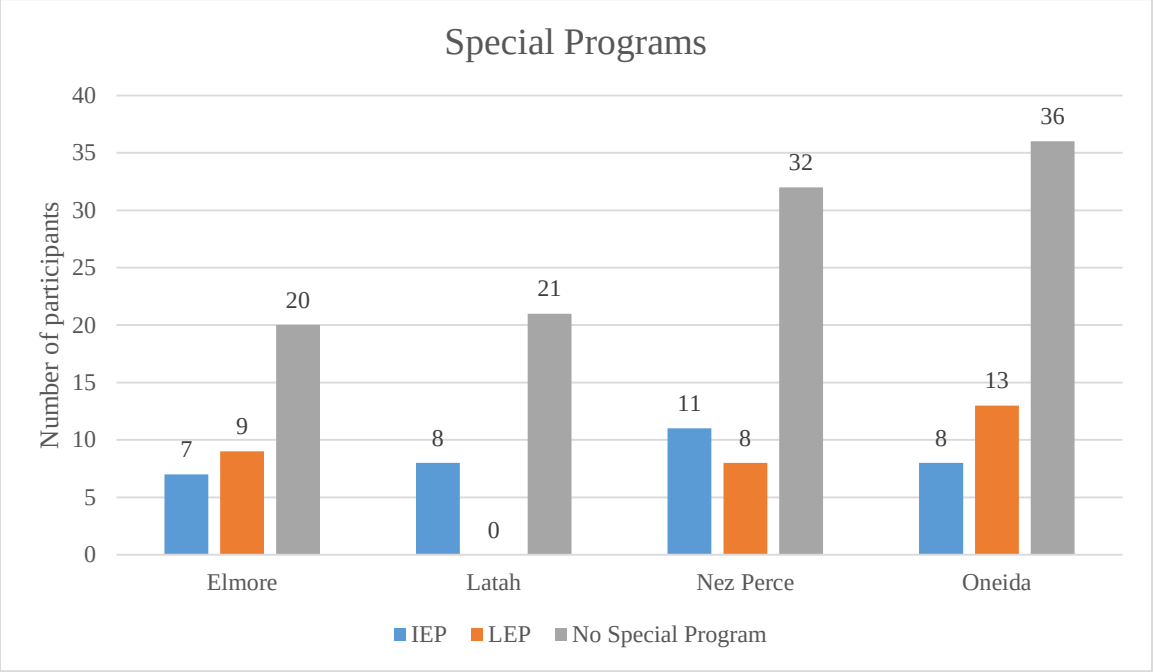
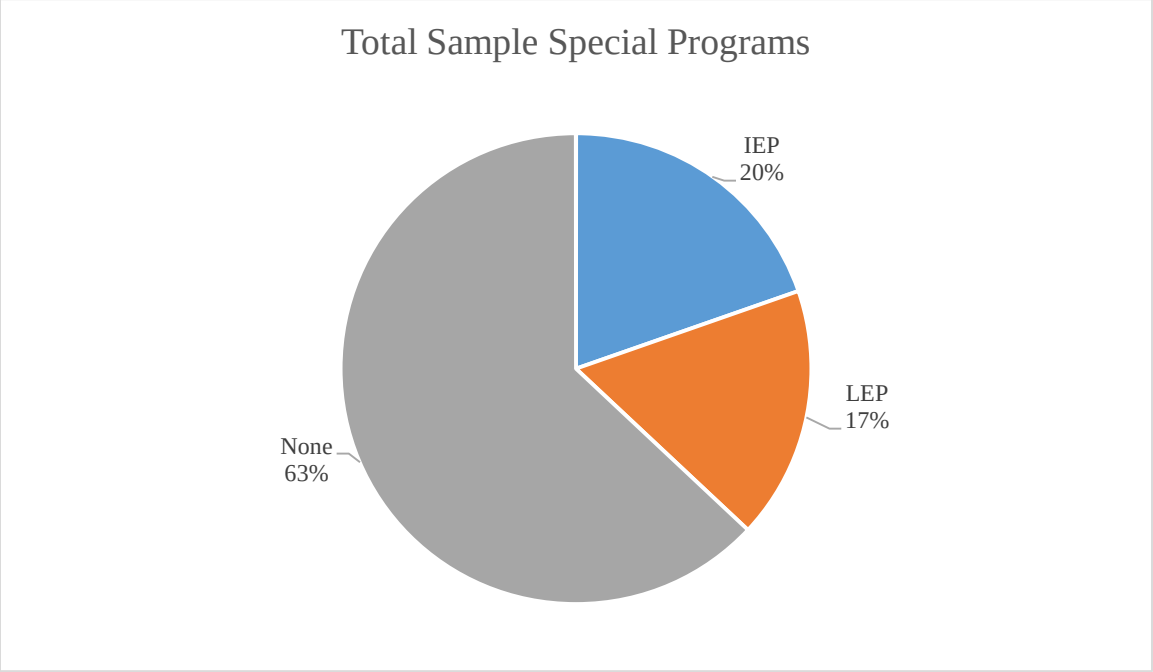


Figure 8 indicates that the majority of students were not enrolled in any additional special programs such as being on an IEP or receiving LEP services. All of the student participants receive Title I services as the school district qualifies due to the number of students that receive free and reduced lunch. Sixty-three percent of the student participants were not receiving any IEP or LEP services; whereas, 20% of the students in the study were on an IEP, and 17% were receiving LEP services as presented in Figure 9.

Figure 9

Total Sample of Students in Special Programs

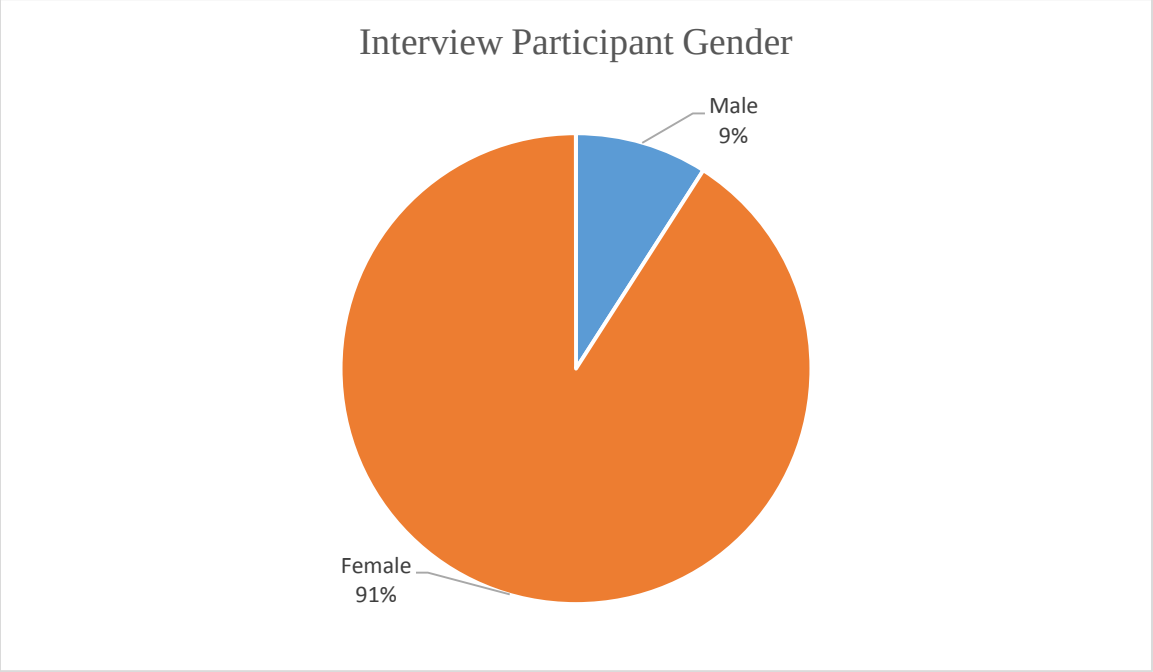


The majority of students in the sample were not receiving the support of any specialized program (63%), such as special education (20%) or LEP (17%).

School–staff focus-group participants. School–staff participants included teachers and paraprofessionals who had provided reading fluency intervention. These professionals were interviewed in either a one-to-one interview or focus-group format. All of the teachers included in the sample had at least three years of teaching experience, with the majority of the participants having taught at least 15 years. Three of the teacher participants held master's degrees in reading instruction. The paraprofessionals included in the sample ranged in years of experience from two to 25. Figure 10 details the adult participant gender. The percentages of each gender represented are located within the figure.

Figure 10

Gender of Adult Participants Included in the Sample



As shown in Figure 10, the majority of interview participants were female with 91%, and 9% were male. Figure 11 displays the ethnicity of the individual and focus-group participants included in the sample.

Figure 11

Ethnicity of Adult Participants Included in the Sample

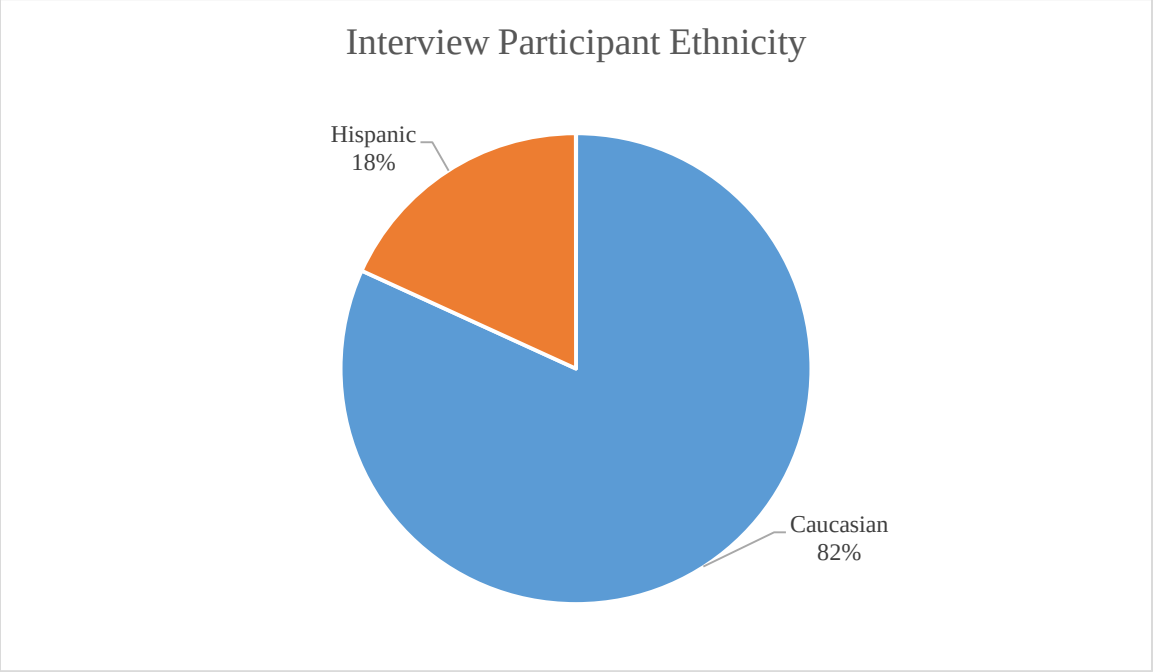
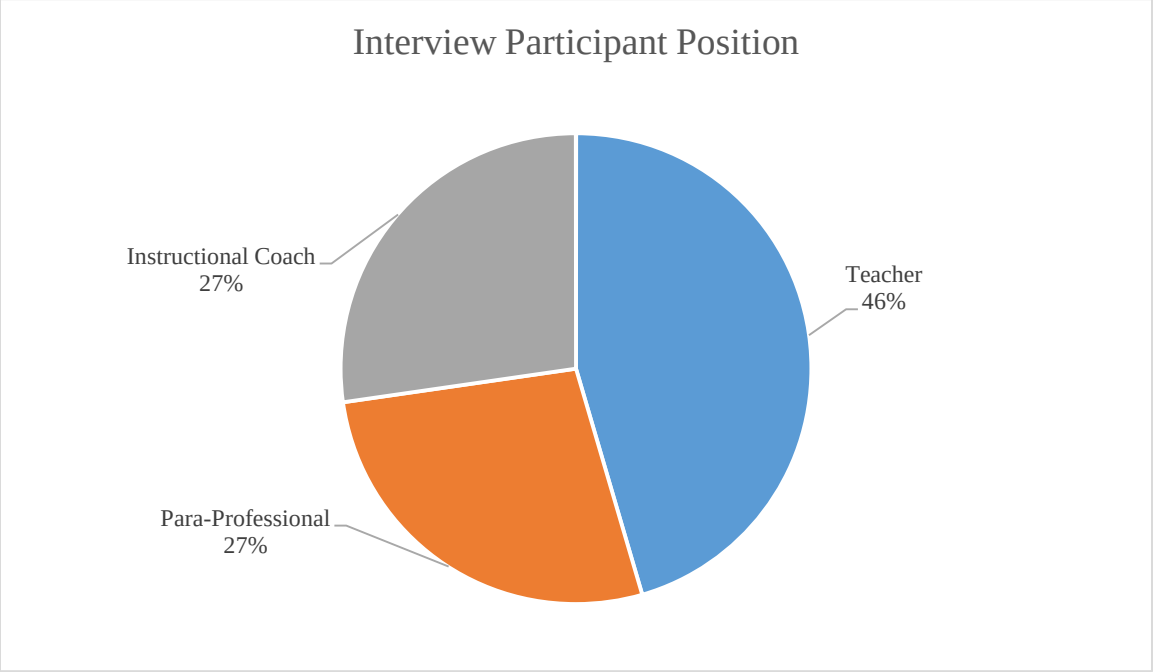


Figure 11 details the ethnicity of the adult participants who completed interviews and focus-group interviews. Eighty-two percent were Caucasian and 18% were Hispanic. Figure 12 demonstrates the different employment positions that were represented in the sample. Those included classroom teachers, paraprofessionals, and instructional coaches.

Figure 12

School Position of Adult Participants Included in the Sample



The majority of participants who completed interviews and focus-group interviews were classroom teachers (46%), with instructional coaches (27%) and paraprofessionals (27%) were evenly distributed.

Results

Research question 1. Previous studies have been conducted related to the use of specific interventions to improve reading fluency. Those studies included the examination of small-group intervention sessions led by the classroom teacher (Ritchey et al., 2012), or the repeated practice of targeted skills in a one-to-one setting with a paraprofessional (Dyson et al., 2008). There has also been research that examined the impact of computerized programs on improving basic reading skills (Chambers et al., 2011; Gibson et al., 2014). However, research is lacking in its comparison of different intervention types and overall student success and improvement of reading ability. Therefore, the first research question aimed to bridge the gap in the research: Do

second-grade reading scores as evidenced by the IRI significantly increase with the use of targeted intervention in high-poverty schools?

The first research question aimed to determine if a significant increase was noted in correct words read per minute on a one-minute timed passage given. The timed passage was the IRI assessment, and the assessment was first given to second-grade students in late August–early September 2014 and again in April 2015. After the IRI was given, students received a score of 1, 2, or 3. A score of 1 is considered intensive and indicates a lack of mastery of some or all skills. A score of 2 is considered strategic and indicates partial mastery of skills. A score of 3 is a benchmark and indicates a mastery of skills. Typically, schools choose to provide additional support and intervention to students who receive a score of 1 or 2 on the IRI. The students included in the sample were those who had received a score of 1 or 2 on the fall 2014 IRI, indicating they lacked mastery of the skills needed to be a fluent reader (Idaho State Department of Education, 2012). The difference between the total correct words read per minute in the spring of 2015 and the fall of 2014 was calculated using a paired samples *t* test to determine if there was a statistically significant difference between the two data points. The paired samples *t* test was chosen because the participants in each group were the same. The only difference within the groups was the overall change in the total number of words read correctly, or the dependent variable (Laerd Statistics, 2016; Tanner, 2012). Within Table 3, the correct words per minute indicate the correct words read per minute for the total participant group. Correct words per minute reflect the reading speed and accuracy of a passage read aloud (Abbott et al., 2012). Correct words per minute are calculated by taking the total number of words read in a timed passage and subtracting from that total the number of words read incorrectly (Abbott et al., 2012).

Table 3

Descriptive Statistics N = *173*

Sample	Mean	Standard deviation
Fall 2014 IRI correct words per minute	16.53	15.64
Spring 2015 IRI correct words per minute	63.68	33.08

Table 3 details the mean and standard deviation of each group of scores. For the fall 2014 IRI correct words per minute, the mean was 16.53 with a standard deviation of 15.64. The spring 2015 IRI correct words per minute had a mean of 63.68 with a standard deviation of 33.08.

Table 4 includes the results of the paired samples *t* test.

Table 4

Paired Samples t-*Test Results Second Grade Year*

Mean	Standard deviation	*t*	Sig. (two-tailed)
47.15	24.20	25.62	.001

Table 4 details the results of the paired samples *t* test that was completed. The mean difference in IRI correct words read per minute from fall 2014 to spring 2015 was 47.15 with a standard deviation of 24.20. With a 95% confidence interval, the *p* value of < .05 is considered significant. The *p* value of this *t* test was < .001, which indicates a statistically significant difference between fall 2014 IRI correct words read per minute and spring 2015 IRI correct words read per minute (Laerd Statistics, 2016; Tanner, 2012). The expected growth of correct

words read per minute ranges from 25.5 to 45 words (Fuchs, Fuchs, Hamlett, Walz, & German, 1993).

Research question 2. Within education, the hope is for interventions that are provided to students to have a lasting impact (Fuchs et al., 2001; Kim et al., 2010; Neddenriep et al., 2011). Teachers typically provide intervention to students and desire for the intervention to have staying power. The second research question, aimed to determine the lasting effect of reading fluency intervention, stated: Is there a significant relationship between students who receive targeted intervention in second grade and their third-grade IRI scores?

Student growth on the IRI was measured by examining students' fall 2014 IRI correct words read per minute, spring 2015 IRI correct words read per minute, and fall 2015 IRI correct words read per minute. The total number of words gained from student performance on the fall 2014 IRI correct words read per minute to the spring 2015 IRI correct words read per minute was calculated. The growth from the spring 2015 IRI correct words read per minute to the fall 2015 IRI correct words read per minute was also calculated. The overall number of words each student gained was recorded. Table 5 details the mean number of words gained. Headings are Female (F), Male (M), Caucasian (C), and Hispanic (H), Native American (N), African-American (A), those on an IEP and those with LEP.

Table 5

Overall Student Growth on the IRI From Fall 2014 to Fall 2015

	Sample	F	M	C	H	N	A	IEP	LEP
Elmore Gains	+40.9	+42.8	+39.3	+41.5	+40.7	+37	N/A	+32.1	+45.9
Latah Gains	+30.5	+31.2	+30.2	+24.6	+41	+14	+57	+9.9	N/A
Nez Perce Gains	+35.3	+29.7	+38.7	+31.1	+41.2	+10	N/A	+19.2	+51.5
Oneida Gains	+36.3	+35.5	+36.9	+32.5	+40.3	+33.5	+19	+21.8	+33.9
Total Gains	+35.8	+34.8	+36.3	+32.4	+40.8	+23.6	+38	+20.8	+43.8

Table 5 shows the mean growth and growth by school of correct words read per minute. The average growth for a second-grade student in relation to words read per minute is .85 to 1.5 words added per week (Fuchs et al., 1993). The students in this sample received intervention for 30 weeks. Therefore, according to Fuchs, Fuchs, Hamlett, Walz, and German (1993), the average student should gain 25.5 to 45 words per minute over a 30-week time frame. Table 5 reveals the mean growth of the entire sample in relation to correct words read per minute was 35.8 words. This result falls within the expected range of 25.5 to 45 words per minute (Fuchs et al., 1993). Elmore Elementary students had the largest gains with an average of 40.9 correct words per minute. Oneida Elementary and Nez Perce Elementary had similar gains with 36.3 (Oneida) and 35.3 (Nez Perce) correct words per minute. Latah Elementary had overall average gains of 30.5 correct words per minute. All of the schools had overall student growth that was within the expected range for second-grade students. Figure 13 details the percentage of students who earned a score of 1 or 2 on the fall 2014 IRI, which was below the benchmark, but then earned a score of 3 on the fall 2015 IRI, indicating a mastery of skills.

Figure 13

Percentage of Students Who Made Adequate Growth

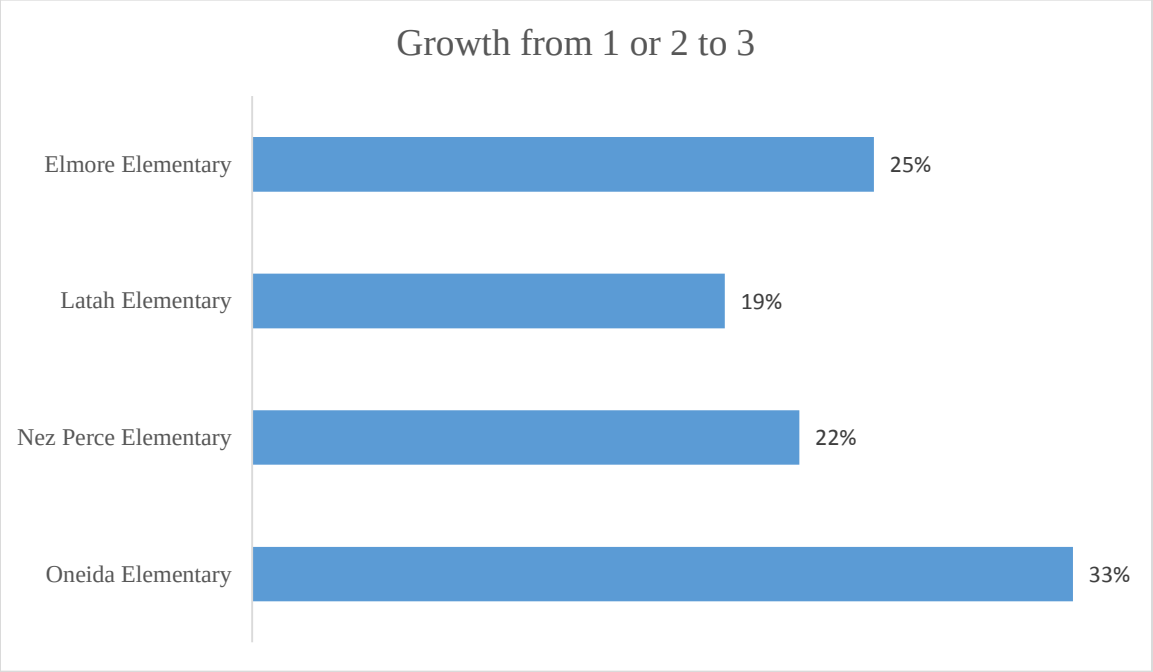


Figure 13 displays the percentage of students at each school who initially earned a score of 1 or 2 on the fall 2014 IRI but earned a score of 3 on the fall 2015 IRI. A score of 1 or 2 indicates a below-benchmark score and need for intervention (Idaho State Department of Education, 2012). A score of 3 indicates a mastery of skills or benchmark performance (Idaho State Department of Education, 2012). As indicated, Elmore Elementary had nine out of 36 students move from a score of 1 or 2 to a 3. Latah Elementary had seven out of 36 students move from a score of 1 or 2 to a 3. Nez Perce Elementary had 11 out of 51 students and Oneida Elementary had 19 out of 57 students move from a score of 1 or 2 to a 3.

To gather further information about the lasting impact of the reading fluency interventions provided, a paired samples *t* test was calculated comparing the students' overall total number of words read correctly on the fall 2014 IRI with the overall total number of words

read correctly on the fall 2015 IRI. The fall 2015 assessment occurred after students had returned from a 12-week summer break.

Table 6

Descriptive Statistics n = *173*

Sample	Mean	Standard deviation
Fall 2014 IRI correct words per minute	16.53	15.64
Fall 2015 IRI correct words per minute	36.00	21.45

Table 6 details the mean and standard deviation of each group of scores. For the fall 2014 IRI correct words per minute, the mean was 16.53 with a standard deviation of 15.64. The fall 2015 IRI correct words per minute had a mean of 35.99 with a standard deviation of 21.45. To gather more detailed information, a paired samples *t* test was conducted with the results displayed in Table 7.

Table 7

Paired Samples t-*Test Results Second to Third Grade Year*

Mean	Standard deviation	*t*	Sig. (two-tailed)
19.46	23.13	11.07	.001

Table 7 details the results of the paired samples *t* test that was completed. The mean difference in IRI correct words read per minute from fall 2014 to fall 2015 was 19.46 with a standard deviation of 23.13. With a 95% confidence interval, the *p* value of < .05 is considered significant (Laerd Statistics, 2016; Tanner, 2012). The *p* value of this *t* test was < .001, which

indicates a statistically significant difference between fall 2014 IRI correct words read per minute and fall 2015 IRI correct words read per minute (Laerd Statistics, 2016; Tanner, 2012).

Research question 3. The intent of this study was to determine if different types of reading fluency intervention led to improved reading fluency ability as measured by the IRI. The following research question sought to gather information about intervention type and overall student growth on the IRI: Is there a difference in the type of intervention that is provided as compared to student growth on the IRI?

***Reading fluency interventions*.** Students who received a 1 or 2 on the fall 2014 IRI were placed into intervention groups. Those groups varied at each school site but had similar characteristics. The students all received reading fluency intervention during the school day. Table 8 details the students who were placed into each group, the size, frequency, duration, and basic outline of curriculum used during each reading fluency intervention session.

Table 8

Reading Fluency Interventions Provided by School

School	Fall 2014 IRI Score	Intervention
Elmore Elementary	1	Daily, 6–8 students, 25-minute intervention led by classroom teacher using Great Leaps, One-Minute Solutions, Fry Phrases, and Wilson Solutions.
Elmore Elementary	2	Once a week, 20 students, 45-minute intervention led by a paraprofessional using Read Naturally.
Latah Elementary	1	Daily, 12–15 students, 30-minute intervention led by a paraprofessional using Open Court intervention.
Latah Elementary	2	Daily, 4–5 students, 30-minute intervention led by a classroom teacher using Mondo-guided reading books and high-frequency words.
Nez Perce Elementary	1	4 days a week, 6–8 students, 20-minute intervention led by a classroom teacher using SIPPS.
Nez Perce Elementary	2	4 days a week, 12–15 students, 20-minute intervention led by a para-professional using Read Naturally.
Oneida Elementary	1, 2	Daily, 6–8 students, 45-minute skill based intervention led by a classroom teacher using Open Court, Words Their Way, Readers Theatre, Quick Reads, and Read Naturally.

Elmore Elementary provided targeted reading fluency intervention to students who received a 1 or a 2 on the fall 2014 IRI. Students who received a 1 on the fall 2014 IRI received daily intervention. The intervention was led by the classroom teacher with a grouping of six to eight students and lasted for 25 minutes. The teacher used a variety of teaching materials, including Great Leaps, One-Minute Solutions, Fry Phrases, and Wilson Solutions to build each student's reading fluency ability. The students at Elmore Elementary who received a 2 on the fall 2014 IRI received intervention once a week with a group of 20 students who were led by a

paraprofessional. The intervention session lasted for 45 minutes and used Read Naturally materials.

At Latah Elementary, the students who received a 1 on the fall 2014 IRI received daily intervention for 30 minutes with a group of 12 to 15 students. The intervention used Open Court materials and was led by a paraprofessional. The students at Latah Elementary who received a 2 on the fall 2014 IRI received daily intervention for 30 minutes with a group of four to five students. This group was led by a classroom teacher using Mondo-guided reading books and high-frequency words.

At Nez Perce Elementary, the students who earned a 1 on the fall 2014 IRI received intervention four days a week, with a group of six to eight students for 20 minutes of instruction led by the classroom teacher using the SIPPS curriculum. The students who received a 2 on the fall 2014 IRI were provided intervention four days a week with a group of 12 to 15 students led by a paraprofessional using Read Naturally curriculum.

At Oneida Elementary, students who received a 1 or 2 on the fall 2014 IRI assessment were provided daily intervention that lasted for 45 minutes in a group of six to eight students. The intervention was led by the classroom teacher and involved the use of Open Court, Words Their Way, Readers Theatre, Quick Reads, and Read Naturally curriculum.

Interviews with school–staff who provided reading fluency intervention at each of the four sites in the study were conducted. In October 2015, initial e-mail correspondence was sent to each of the four principals explaining the purpose of the present study and requesting assistance to identify second- and third-grade teachers and also paraprofessionals who had provided reading fluency intervention. Responses were received from all four principals, and

face-to-face meetings were scheduled to discuss the recruitment of potential focus-group interview participants.

Meetings were held at each building and potential staff participants were identified: Elmore Elementary (9), Latah Elementary (9), Nez Perce Elementary (12), and Oneida (15). The actual number of participants were Elmore Elementary (n = 1), Latah Elementary (n = 7), Nez Perce Elementary (n = 2) and Oneida Elementary (n = 1). There were a total of two focus-group interviews completed and three individual interviews. The individual and focus-group interviews occurred with a total of three instructional coaches, three paraprofessionals, and five classroom teachers. All three of the instructional coaches had previously been classroom teachers with at least 10 years' teaching experience. One of the instructional coaches was currently providing reading fluency intervention, and the other two helped offer suggestions to teachers and para-professionals providing reading fluency intervention.

During the individual interviews and focus-group interviews, questions were asked related to training each professional had received in improving reading fluency, years of experience in the educational field, type of curriculum used during the reading fluency intervention they provided, and successes and limitations of their intervention programs. Table 9 details the coding of the responses received during the interviews and focus-group interviews.

Table 9

Coded Responses From Interviews and Focus-Group Interviews

Type of Curriculum Used	Responses
Research- and evidenced-based curriculum	15
Read Naturally	*4*
Open Court	*2*
Journeys	*2*
High-frequency words	2
Fry Phrases	*1*
Vocabulary	*1*
Typical Intervention Session Included	**Responses**
Instructional reading strategy	22
Rereads as a group	*3*
Highlighting decodables	*2*
One-to-one reading with teacher	*2*
High-frequency words	12
Sight words	*6*
Fry Phrases	*4*
High-frequency words	*2*
Research-based curriculum	6
Readers Theatre	*2*
Mondo books	*1*
Great Leaps passage	*1*
Independent reading time	5
Partner reading	*1*
Rotations in the classroom	*1*
Silent reading	*1*
Technique That Built Reading Fluency Ability	**Responses**
Practice reading text	25
Practice/miles on the page	*11*
Having errors corrected one-to-one	*2*
Reading materials at independent reading level	*2*
Engagement and reading for a purpose	8
Student engagement	*3*
Explaining purpose for reading	*2*
Goal setting	*2*

Successes of Intervention Program	Responses
Program/school specific	13
Alignment between whole and small group	*2*
Buy-in from students	*2*
Right people working with students	*1*
Curriculum-based	9
Cross-curricular materials	*2*
Interesting nonfiction stories	*1*
Text complexity rubrics	*1*

Limitations of Intervention Program	Responses
Curriculum-based	13
Level of books were not low enough for students	*4*
Limited phonics base	*4*
No access to books from other grade levels	*2*
Program/school specific	6
Not enough time for intervention	*2*
Too many students in intervention group	*2*
Students couldn't be independent	*1*

The coded responses collected from teachers and paraprofessionals, along with the information gathered related to the specific reading fluency interventions, can be compared to overall student growth to determine the most effective reading fluency intervention. Elmore Elementary had the greatest amount of overall student growth on the IRI with a mean of 40.9 correct words per minute. The expected growth is 25.5 to 45 words per minute (Fuchs et al., 1993), so 40.9 corrected words per minute is on the high end of average. Examination of the interventions provided indicate that students who had received a 1 or 2 on the IRI were provided with reading fluency intervention. The students who received a score of 1 were placed into small groups where daily practice of reading skills facilitated by their classroom teacher occurred for 25 minutes. A variety of teaching materials were utilized, including Great Leaps, One-Minute

Solutions, Fry Phrases, and Wilson Solutions, to build each student's reading fluency ability. The students at Elmore Elementary who received a score of 2 on the fall 2014 IRI received reading fluency intervention once a week with a group of 20 students who were led by a paraprofessional. The intervention session lasted for 45 minutes and used Read Naturally materials.

At Oneida Elementary, the overall growth of correct words read per minute was 36.3. Students who received a score of 1 or 2 on the fall 2014 IRI received the same intervention, which consisted of daily instruction in a small group provided by their classroom teacher that included the use of Open Court, Words Their Way, Readers Theatre, Quick Reads, and Read Naturally curriculum.

At Nez Perce Elementary, the overall growth of correct words per minute was 35.3. Students who earned a score of 1 on the fall 2014 IRI were placed into small groups and provided instruction using the SIPPS curriculum led by a classroom teacher four days a week for 20 minutes. Students who received a score of 2 on the fall 2014 IRI were provided with intervention in a group of 12–15 students led by a paraprofessional utilizing the Read Naturally curriculum.

At Latah Elementary, the overall student growth related to correct words read per minute was 30.5. The largest difference in the intervention provided at this school, as compared to the other three schools, was that the intervention provided to the students who earned a 1 on the IRI was completed by a paraprofessional instead of a classroom teacher. The students who earned a 1 on the IRI met with a paraprofessional in a group of 12–15 students daily for 30 minutes and used Open Court curriculum. Students who received a score of 2 on the IRI received daily intervention for 30 minutes in a small group led by a classroom teacher using Mondo-guided

reading books and high-frequency words. Details of the average amount of words gained by each group of students, listed by school and IRI score, are listed in Table 10. Specifics related to the person providing the reading fluency intervention is also included.

Table 10

School and Student Score on IRI as Compared to Words Gained and Person Providing Intervention

Score on IRI	Average Words Gained	Person Providing Intervention	Average Number of Hours of Intervention Received
Elmore 1's	+32	Classroom Teacher	63 hours
Elmore 2's	+44	Paraprofessional	22 hours
Oneida 1's	+32	Classroom Teacher	113 hours
Oneida 2's	+39	Classroom Teacher	113 hours
Nez Perce 1's	+32	Classroom Teacher	40 hours
Nez Perce 2's	+46	Paraprofessional	40 hours
Latah 1's	+25	Paraprofessional	75 hours
Latah 2's	+42	Classroom Teacher	75 hours

The schools in Table 10 are listed in order from the most average words gained to the least amount of average words gained. All of the students who earned a score of 1 on the fall 2014 IRI were provided intervention by a classroom teacher at Elmore Elementary, Oneida Elementary, and Nez Perce Elementary. All of those schools also had an average word gain of 32 words. At Latah Elementary, the students who received a score of 1 on the fall 2014 IRI received intervention from a paraprofessional and had an average word gain of 25 words. The students who earned a score of 2 on the fall 2014 IRI and received instruction by a classroom teacher

were Oneida Elementary with an average word gain of 39 words and Latah Elementary with an average word gain of 42 words. At Elmore Elementary and Nez Perce Elementary, the students who earned a 2 on the fall 2014 IRI received intervention from a paraprofessional. The average word gain at Elmore Elementary was 44 words and 46 words at Nez Perce Elementary. All of the students were provided reading fluency intervention during the school day.

There was large variance in the amount of average hours of intervention each group of students received. Students at Oneida Elementary who earned a score of 1 or 2 on the fall 2014 IRI received around 113 hours of intervention. Students at Latah Elementary who earned a score of 1 or 2 on the fall 2014 IRI received an average of 75 hours of intervention. Students at Elmore Elementary who earned a score of 1 on the fall 2014 IRI received an average or 63 hours of intervention, whereas students who received a score of 2 only received 22 hours of intervention. At Nez Perce Elementary, students who earned a score of 1 or 2 on the fall 2014 IRI received an average of 40 hours of intervention.

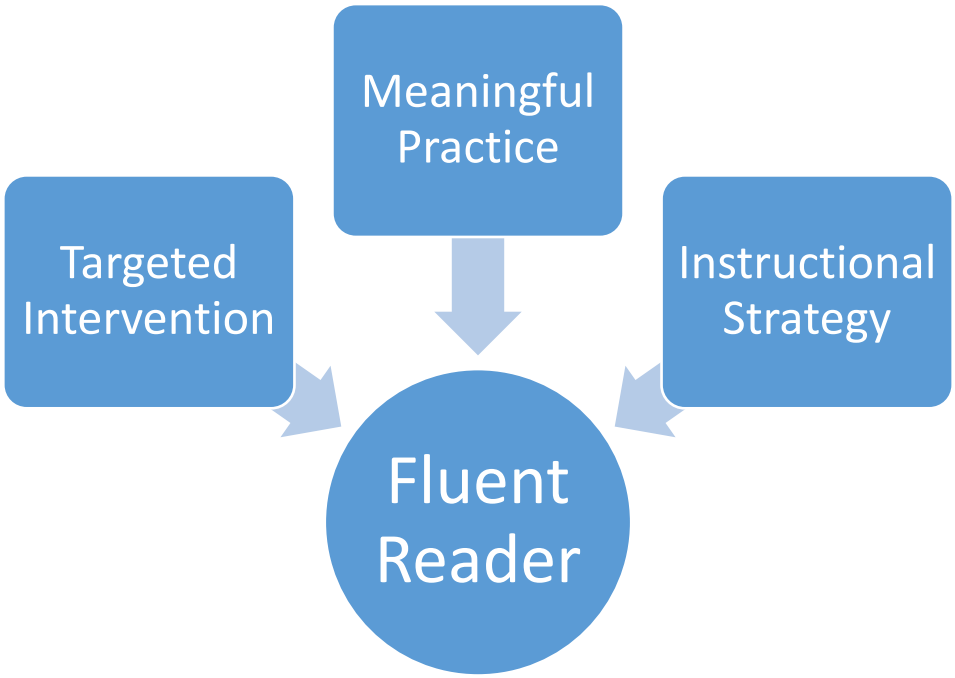
The reason for the variance in hours of intervention received was due to programming choices made by building principals. The programming choices were made due to disbursement of funds and how intervention groups were structured. At Oneida Elementary, a priority was made to provide daily intervention for at least 45 minutes, in addition to the students' literacy block. At Nez Perce Elementary, intervention was only provided four days a week because para-professionals were needed to help provide coverage to classroom teachers so they could attend special education meetings on Wednesday's. At Elmore Elementary, the focus was on the students that needed the most support, therefore students who earned a 2 on the IRI only received intervention one day a week. Latah Elementary provided daily intervention for thirty minutes, but interventionists indicated that it was challenging to provide instruction in that short amount

of time. They indicated it typically took students at least five minutes to get settled and they started cleaning up their supplies five minutes early, leaving only twenty minutes of intervention time.

The themes that emerged from the individual and focus-group interviews, as well as examination of student growth scores, indicate that fluent readers emerge when provided targeted intervention, provided with opportunities for meaningful practice, and given exposure to a variety of instructional strategies. A visual for the themes is provided in Figure 14.

Figure 14

Themes From Individual and Focus-Group Interview Data



Conclusion

Chapter 4 summarized the quantitative and qualitative testing completed in the present study. The quantitative portion involved the use of descriptive statistics, as well as a paired samples *t* test, to determine the statistical significance of student growth on the IRI measure. Results indicated a significant relationship between scores received on the fall 2014 IRI and fall

2015 IRI, indicating a positive impact of reading fluency interventions provided. Qualitative data were gathered in the form of interviews and focus-group interviews to determine specific interventions provided to students, as well as detailed accounts of intervention sessions. Teacher and paraprofessional responses to the individual and focus-group interviews were coded. From the information gathered after the data were coded, clear themes emerged. The themes included the idea that in order for a student to be a fluent reader, a student must receive targeted intervention, teachers and para-professionals must give the students time to have meaningful practice reading text, and employ the use of various instructional strategies to improve reading fluency ability.

Chapter V

Discussion

Introduction

Reading fluency is a critical topic to study because it has been documented as an important predictor of future reading success and overall reading comprehension ability (Abbott et al., 2012; Fuchs et al., 2001; Kim et al., 2010; Li & Wu, 2015; Neddenriep et al., 2011; Wise et al., 2010). Reading achievement has been highly correlated with high-poverty schools and home environments (Cunningham, 2006; Mahabir, 2010). In the present study, the participants all come from schools that serve a high percentage of students whose families meet federal poverty guidelines. The schools also have a historic pattern of high-achievement on state-mandated reading assessments. With those things in mind, the following questions guided this research study:

1. Do second-grade reading scores as evidenced by the IRI significantly increase with the use of targeted intervention in high-poverty schools?
2. Is there a significant relationship between students who receive targeted intervention in second grade and their third-grade IRI scores?
3. Is there a difference in the type of intervention that is provided as compared to student growth on the IRI?

Chapter 5 includes the interpretation of results of this study, Bronfenbrenner's overarching theoretical framework, and details implications for future research.

Summary of Results

Quantitative and qualitative methods were chosen within the framework of an embedded research design to explore effective reading fluency intervention in high-poverty elementary

schools. An embedded design involves the collection of qualitative and quantitative data concurrently; however, one form of data was used primarily in the present study, the quantitative data, with the qualitative data playing a secondary role to create a complete research design (Creswell, 2012). The quantitative data provided ex post facto information related to student performance and overall growth or lack of growth on the IRI after receiving intensive intervention. Qualitative data supported and extended information related to the specific interventions students received. The insight gained from the focus-group and individual interviews allowed the researcher to explore the unique reading fluency interventions that were provided at each school site from the perspective of teachers, paraprofessionals, and instructional coaches.

The qualitative portion of this study included data collected through focus-group and individual interviews. Focus-group interviews were the preferred format because they encourage the expression of differing opinions and ideas and can lead to in-depth discussions (Marshall & Rossman, 2016). The focus-group interviews occurred with eight total teachers and paraprofessionals who had provided reading fluency intervention to students who attended the four high-poverty elementary schools in the school district being studied. The individual interviews occurred with three teachers who had provided reading fluency intervention to students. These interviews occurred within the participating buildings to make it easier for teachers and paraprofessionals to participate in the interviews (see Appendix A). The two focus-group sessions that were conducted each lasted for 45 minutes. The three individual interviews each lasted approximately 30 minutes. During the individual and focus-group interviews, interventionists were asked questions related to the type and length of intervention they provided, the materials used to provide intervention, how student growth was measured, and how often that

measurement occurred. The audio-recordings from the individual and focus-group interviews were transcribed and read for accuracy. Emerging codes and themes were revealed within the transcribed data. Table 9 (page 77) displays the top codes that were found within the responses from individual and focus-group interviews. Several themes emerged from the codes that were created. The themes indicate that targeted intervention, meaningful practice, and instructional strategies lead to fluent reading.

Research Question #1

The first research question aimed to determine if IRI scores significantly increase with the use of targeted intervention within high-poverty elementary schools. The unique challenges of teaching in high-poverty schools can best be explained by Mrs. Hernandez, an instructional coach with eighteen years' experience, who recalled a conversation she had with a second grade teacher,

> "What? You are telling me as a second grade teacher that I need to teach phonological awareness? What? I thought that was covered in Kindergarten?" Teachers have to start getting their feet wet in the classroom and learn about poverty and how it affects students".

In order to determine if targeted intervention was effective in high-poverty elementary schools, a paired samples *t* test was completed to determine the difference between IRI scores pre-targeted and post-targeted intervention. For this study, the hypothesis being tested was

$H_o : \mu_{diff} = 0.$

The null hypothesis stated that the difference between each set of IRI scores is equal to zero. Table 4 (see p. 69) indicated the mean difference in IRI correct words read per minute from fall 2014 to spring 2015 was 47.15 with a standard deviation of 24.20. Therefore, the null hypothesis

was rejected. Fuchs et al. (1993) calculated the expected growth of correct words read per minute as ranging from 25.5 to 45 words. With a 95% confidence interval, the *p* value of < .05 is considered significant. The *p* value of this *t* test was < .001, which indicates a statistically significant difference between the fall 2014 IRI correct words read per minute and spring 2015 IRI correct words read per minute (Laerd Statistics, 2016; Tanner, 2012). This indicates that the targeted intervention had a statistically significant impact on the improvement of student IRI scores. The statistically significant difference means there was noted improvement in the majority of students who had taken the fall 2014 IRI when compared to their score on the spring 2015 IRI. This result is in agreement with Harding et al. (2012), who found that students who received targeted supplemental reading intervention showed larger amounts of growth on reading assessments. The total average growth of 47.15 correct words per minute in the present study was above the average expected range of 25.5 to 45 words (Fuchs et al., 1993). This result signifies a significant increase in IRI scores after students are provided intervention. Mrs. Nelson, a second grade teacher with fifteen years' experience shared the reading fluency growth experienced with a particular student: "I had one little girl that went from a one, to a three…it just clicked for her, and that is so exciting when that happens."

Even though the present study found that targeted intervention increases reading performance, this finding is at odds with Ritchey, Silverman, Montanaro, Speece and Schatschneider (2012), who found that students who were provided intervention did not improve on measures of reading fluency. In the present study, the students who comprised the intervention group were the students who were struggling to gain the skills necessary to become fluent readers, yet as evidenced by their growth on the IRI, they were able to go beyond the

expected growth for an average student. Mrs. Smith, a teacher with twenty-three years' experience indicated above average growth with one of her students,

> One of my little girls, she's like, "I'm getting so smart". And you know what, I don't know where it came from, but all of a sudden things are starting to click for her. Especially with the sight words as we're going over them she starts making the sounds with some of the others. So, "I'm getting so smart". Yes, you are. And it showed in her fluency this week. She started at seventeen [correct words per minute] and she's up to thirty-two [correct words per minute] since fall IRI, it has almost doubled.

However, even with the amount of growth students made, as evidenced by Figure 13 (see p. 71), only an average of 25% of the students from all four schools who initially received a score of 1 or 2 received a score of 3 after receiving targeted intervention, which indicates they met the benchmark for the IRI. Wanzek and Vaughn (2008) had a similar conclusion with none of the students in their sample meeting the required benchmark for words correctly read per minute. This could be explained by differences in student readiness for reading. Mrs. Smith, a teacher with twenty-three years' experience discussed the phenomenon of reading readiness,

> I can think of one little child right off hand, that once that window [for reading readiness] opens, and you have to be patient for some of those babies. They're not ready. But once that window opens, it's amazing what kids can do.

Even though all students did not meet the benchmark for reading fluency, they were still making growth and progressing in their acquisition of reading skills due to targeted intervention.

Research Question #2

The second research question intended to determine the lasting impact of targeted intervention through the comparison of student IRI scores earned in second grade with student

IRI scores earned for the same group of students in third grade. For this study, the hypothesis being tested was

$$H_o : \mu_{diff} = 0.$$

The null hypothesis states that the difference between each set of IRI scores is equal to zero. A paired samples *t* test was calculated comparing the students' overall total number of words read correctly on the fall 2014 IRI (second grade) with the overall total number of words read correctly on the fall 2015 IRI (third grade). The fall 2015 assessment occurred after students had returned from a 12-week summer break. Descriptive statistics in Table 6 (see p. 72) show that the mean for the fall 2014 IRI correct words per minute = 16.53 and SD = 15.64, and for the fall 2015 IRI correct words per minute = 35.99 and SD = 21.45. Table 7 (see p. 72) details the results of the paired samples *t* test that was completed. The mean difference in IRI correct words read per minute from fall 2014 to fall 2015 was 19.46 with a standard deviation of 23.13. With a 95% confidence interval, the *p* value of < .05 is considered significant (Laerd Statistics, 2016; Tanner, 2012). The *p* value of this *t* test was < .001, which indicates a statistically significant difference between fall 2014 IRI correct words read per minute and fall 2015 IRI correct words read per minute (Laerd Statistics, 2016; Tanner, 2012). Therefore, the null hypothesis was rejected. This finding indicates there is a significant relationship between students who receive targeted intervention in second grade and their subsequent third-grade IRI scores. Similar to results discovered by Vadasy and Sanders (2013), the intervention students were being provided was having a lasting positive effect on their performance on the IRI and their acquisition of reading fluency skills over time. Vadasy and Sanders (2013) also found that the treatment effects for students who received targeted reading intervention were upheld for two years after the intervention had ceased.

The statistically significant relationship found between fall 2014 IRI scores and fall 2015 IRI scores was further examined through the review of total number of correct words gained over the course of the intervention period. The average numbers of words gained for each participating school are listed in Table 5 (see p. 70). According to Fuchs et al. (1993), the average growth for a second-grade student in relation to words read per minute is .85 to 1.5 words added per week. The students in this sample received intervention for approximately 30 weeks. Therefore, according to Fuchs et al. (1993), the average student should gain 25.5 to 45 words per minute over a 30-week time frame. Table 5 (see p. 70) reveals the mean growth of the entire sample in relation to correct words read per minute was 35.8 words. This result fell within the expected range of 25.5 to 45 words per minute (Fuchs et al., 1993). Mrs. Nelson, a second grade teacher at Latah Elementary with fifteen years' experience disclosed,

> My students made some [reading fluency] gains and one thing that was exciting was they started to like to read a little bit. They started realizing, wait, there's actually a story in this book that I can get out of it because I can read some words.

Elmore Elementary students had the largest gains with an average of 40.9 correct words per minute. The intervention students received included a variety of activities, such as the review of high-frequency words, teacher modeling, repeated reading, progress monitoring, and review of basic phonological concepts. The intervention received was similar to Vadasy and Sanders' (2013) code-oriented teaching. The gains experienced at Elmore Elementary demonstrate the effectiveness of the intervention program. Their success is attributed to the type of intervention students received as well as the group size. Students who received a 1 on the fall 2014 IRI received daily intervention for twenty-five minutes, led by the classroom teacher with a grouping of 6-8 students. The teacher used a variety of teaching materials that focused on

research-based practice, timed reading fluency passages, and high-frequency words to build each student's reading fluency ability. The students at Elmore Elementary that received a 2 on the fall 2014 IRI received intervention once a week for forty-five minutes with a group of twenty students, led by a para-professional. The para-professional used a curriculum that included teacher modeling, repeated reading, and progress monitoring of reading fluency skills. Mrs. England, an instructional coach at Elmore Elementary with seventeen years' experience, revealed the reason for their success: "We had really good growth in second grade. I think that it's getting the right people in to work with the kids because, oftentimes, if you don't get the right people in, it doesn't work well." The para-professionals working with the students all had prior experience and many were in teaching training programs, or had teaching certificates but were not currently employed as teachers.

Oneida Elementary and Nez Perce Elementary had similar gains with 36.3 (Oneida) and 35.3 (Nez Perce) correct words per minute. Each school offered similar intervention programs with a focus on decoding, explicit, systematic teaching; teacher modeling; repeated reading; and progress monitoring activities. As discussed by Connor et al. (2009), the primary focus of intervention on phonics in combination with reading meaningful text has been shown to lead to greater fluency gains. Oneida Elementary had their intervention program structured so classroom teachers provided intervention to the students struggling the most. Para-professionals helped support students that were on-track or advanced with their reading fluency ability. At Nez Perce Elementary, one of the para-professionals providing intervention had over twenty-five years' experience and had the benefit of knowing a variety of techniques to use with students to improve their reading fluency ability.

Latah Elementary had overall average gains of 30.5 correct words per minute, which were the lowest of the four schools, but still a statistically significant result. Students received small-group intervention using explicit and systematic strategies incorporating high-frequency words and guided reading of text. All of the elementary schools within the study had overall student growth that was within the expected range for second-grade students. This result indicates that the effect of the interventions provided to students in second grade continued into their third-grade year, as similarly found in Vadasy and Sanders' (2013) study. The students continued to make average amounts of expected growth after being provided targeted reading fluency intervention. The variance in student growth on the IRI after receiving targeted intervention can be explained through the different modes of teaching provided, as well as Bronfenbrenner's (1979) ecological systems theory of development. Bronfenbrenner's theory explains the unique decisions and experiences that impact students. At each of the four participating elementary schools, the same core curriculum had been used, but the intervention curriculum differed. This is what Bronfenbrenner refers to as the exosystem, which incorporates policies, such as curriculum adoption, that the student is not directly involved in but impacts the information they are taught (Bronfenbrenner, 1979). Decisions outside of students' control affect the education they receive, which is reflected in the amount of growth noted on the IRI. Brofenbrenner's (1979) macrosystem is another piece of each student's life that is out of their control. The macrosystem describes the ideas and beliefs of the dominant culture. In the present study, the dominant culture that surrounds students is the culture of poverty. Another aspect of the exosystem is regarding parents making school attendance a priority. Mrs. Nelson, a teacher with fifteen years' experience, described an issue faced with one of her students which is a common difficulty within high-poverty schools,

> For whatever reason, at the beginning of the year, she didn't want to come to school and I'd have to drag her in kicking and screaming until she finally realized, wait, this isn't that bad after all. I actually like this and then she could focus on her reading.

Oftentimes, families of poverty do not value education and do not encourage their students to faithfully attend (Jensen, 2009; Payne, 1996; Payne & Slocumb, 2011). Poor attendance can have a detrimental impact on a student's ability to learn to read. Repeated practice is needed to become a fluent reader which requires daily attendance at school.

The growth students are making on the IRI is occurring even after what is referred to as summer reading setback. Research related to summer reading setback has discovered that students from high-poverty homes and communities lose several months of previously learned reading skills every summer (Allington et al., 2010). However, even with the loss of reading achievement skills over the summer break, the students in the present study were able to continue to make the expected average growth as evidenced by IRI assessment performance. This can partly be explained by the efficiency with which intervention groups are established. The fall IRI is typically administered in late August with student performance results available immediately. This allows school teams the opportunity to develop intervention groups and begin providing intervention. The reading fluency interventions also continue until school is dismissed for summer break. The immediacy of providing reading fluency intervention to students shortly after they return to school has helped off-set the impact of summer reading setback in the present study.

Research Question #3

The third research question aimed to determine if a significant difference existed between the type of intervention students received and their growth on the IRI. Individual and focus-group

interviews were held to determine details about the targeted intervention students received. As indicated in Table 10 (see p. 80), details about the average number of correct words gained per minute, person providing intervention, and average number of hours of intervention received are listed by school. Elmore Elementary had the greatest amount of overall student growth on the IRI with a mean of 40.9 correct words per minute. Students at Elmore Elementary who received a score of 1, which indicates a lack of mastery of skills, received an average of 63 hours of targeted intervention provided by a classroom teacher. At Oneida Elementary, the overall growth of correct words read per minute was 36.3. Students who received a score of 1 received an average of 113 hours of intervention provided by a classroom teacher. At Nez Perce Elementary, the overall growth of correct words per minute was 35.3. Students who received a score of 1 received an average of 40 hours of targeted intervention provided by a classroom teacher. At Latah Elementary, the overall student growth related to correct words read per minute was 30.5**.** Students who received a score of 1 received an average of 75 hours of intervention provided by a para-professional. Latah Elementary was the only school that used para-professionals to provide intervention to the students requiring intensive intervention. The other three schools used classroom teachers to provide intensive intervention and their students gained more correct words per minute. This finding emphasizes the importance of classroom teachers providing targeted intervention to see the most growth in reading fluency skills.

Further information related to interventions provided was gleaned from the individual and focus-group interviews. Themes emerged after review of the transcribed data, indicating that targeted intervention, meaningful practice, and instructional strategies lead to fluent reading. An in-depth interpretation of each theme is provided in the following section, as well as how it relates to Bronfenbrenner's (1979) ecological systems theory of development.

Theme 1: Targeted-Intervention

After completion of the individual and focus-group interviews, it was evident that a variety of different curricula were used to provide intervention in each of the four elementary schools involved in the study. However, similar components of each intervention session were noted at each school despite the different curriculum being used. Participants discussed the aspects of their intervention program that were successful as well as the necessary components of an intervention program to help build reading fluency skills. Under the overall theme of targeted intervention are the minor themes of successful elements of intervention program and necessary features of intervention program. The theme of targeted intervention connects to Bronfenbrenner's (1979) ecological systems theory of development through the influence of the exosystem and macrosystem. As evident in Figure 1 (see p. 20), the concentric circles that comprise the spheres of impact on a student's development include the exosystem and macrosystem. In the present study, the exosystem for each student included the targeted intervention each student received. The components of each intervention session were selected by trained professionals and had an impact on each student and their overall exosystem. The macrosystem, which is the impact of the culture of poverty is also an area of influence for each student in the present study. Mrs. Smith, a teacher with twenty-five years' experience revealed the impact that poverty has had on her third grade students' acquisition of basic skills:

> Kids come to us not being able to write. Meaning even able to write, I still have kids who can't write their letters or numbers and so being able to do some writing in a sentence, understanding you have spaces between words is really important.

Students are taught these basic skills within targeted intervention programs. The targeted intervention provided at the four high-poverty schools in the present study are discussed below

including successful elements of the intervention program as well as necessary components of intervention programs.

Successful elements of intervention program. During the individual and focus-group interviews, educators shared some successful elements of their targeted intervention groups. The participants noted that the successful elements of the intervention program include using a cross-curricular curriculum, the availability of an anchor and companion text, and interesting nonfiction text, and using research-based materials. Intervention groups' at all four high-poverty schools incorporated successful elements into their intervention programs as evidenced by Table 5 (see p. 70) which reveals the mean growth of the entire sample in relation to correct words read per minute was 35.8 words. One of the successful elements of the intervention program was the cross-curricular focus of the targeted intervention program, Mrs. Rogers, a teacher with three years' experience, reflected when describing the features of the program,

> Well, it's cross-curricular, which is really cool because I wasn't able to manage that in my head so much. . . . [E]very single thing we pull out and work with them through the program, like this week . . . its crops and farming, and so whether we're reading the anchor text with our whole group or whether we're reading the little trade books, everything has to do with crops and farming. And the secondary text has community gardens. And then the next week we move over to something and it changes subjects, but everything is aligned and that it so helpful. I think it helps them buy in.

Along with Mrs. Rogers, two other educators indicated an appreciation for the content of the stories to connect to all areas of instruction. For example, a story read during the literacy block could be further explored during science, mathematics, or social studies instruction. Another success of the intervention program included the anchor and companion text feature. This

included a main anchor text that the class read as a whole. The companion texts' content related to the anchor text but was typically at a lower reading level and could be used in an intervention group. Both published research, and the participants in this study emphasize the importance of aligning curricular materials for increased success (Connor et al., 2009).

Another aspect of success of the intervention program was the use of interesting nonfiction text with features that discuss heritage, language, and lifestyles. As evidenced in Figure 13 (see p. 71), students made enough growth through the course of the interventions received to move from being below-grade level to encompassing grade-level reading fluency skills. Similarly, a published research study produced growth of 1.5 grade levels in reading using non-fiction reading materials among a culturally diverse student demographic (Moore-Hart & Karabenick, 2009).

Along with published research, the participants in the study found treading intervention using research-based curriculum, which included explicit and systematic instruction in phonemic and alphabetic fundamentals lead to improved reading fluency ability for an at-risk student population (Musti-Rao & Cartledge, 2007). These intervention programs led to statistically significant growth on the IRI as displayed in Table 7 (see p. 72) and Table 10 (see p. 80). One of the participants explained the success experienced at Nez Perce Elementary. Mrs. Leon, a para-professional with twenty-five years' experience shared,

> I think I see at least ninety to ninety-five percent of our kids being successful on the reading program, as long as they have a phonetic base and if somebody stays on top of it and says, "Okay, we need to push a little bit here, push a little bit there." And we keep track of their progress.

As discussed above, the successful elements of the intervention program include using a cross-curricular curriculum, the availability of an anchor and companion text, and interesting nonfiction text, and using research-based materials.

Necessary features of intervention program. The teachers and paraprofessionals who provided reading fluency intervention shared some of the necessary features of an intervention program. Six participants noted the books need to be at a low-enough level to meet the students' needs, and the intervention program needs to have a strong enough phonics base, participants also noted the importance of communication between classroom teachers and para-professionals providing targeted intervention. With regard to the books not being low enough to accommodate all student needs, Mrs. Nelson, a second-grade teacher with 15 years' experience, expressed concern over her students making the necessary gains: "They didn't have books low enough for what I experienced in my class. I mean, we went to kindergarten books." She reported that many of her students were not reading at the second-grade level, and she needed materials that were at a much lower level. A necessary component of a targeted intervention program is access to curricula at lower levels to meet students' needs. Mrs. Hernandez an instructional coach with eighteen years' experience, shared a frustration her teachers have had,

> Our teachers have said many times this year, "I don't feel like I know where my kids are at [reading level]. I don't feel like I know where to even begin to help them and I know that the text is too hard for them, but I don't know how else or where else to go to find something that's appropriate for them".

Participants indicated that it was easier for classroom teachers to gather books that were at a lower level for their students in intervention groups. Para-professionals revealed the difficulty in

having the time to find the appropriate level of text needed for the students in their intervention group.

Another necessary component of a targeted intervention program, noted by four participants, is a strong phonics base incorporated into the program. The National Reading Panel (2000) was charged with finding the most effective methods for teaching reading through the review of over 100,000 studies related to reading. Their findings revealed one of the most effective ways to teach reading is through systematic phonics instruction. Mrs. Hernandez, an instructional coach with eighteen years' experience, detailed the importance of a strong phonics base in the intervention program, especially when that feature is missing from the reading curriculum: "The phonemic awareness piece. We're finding their phonological awareness piece for K-1 is extremely fragmented and, I think it's just weak." Therefore, teachers needed to make sure the phonics instruction occurring in the intervention program was emphasized. Mrs. Smith, a teacher with twenty-three years' experience shared the challenges faced within her third grade classroom: "And the group of kids I have in third grade, I know don't have much of a phonetic base because it was missing from the curriculum." Building a phonetic base was something that she indicated would be addressed within her targeted intervention group to help her students succeed. This was necessary because her students were missing phonemic awareness skills. She indicated this was because the previously adopted literacy curriculum did not focus on phonics-building skills. Therefore, her intervention groups were targeted on filling the missing phonics skills her students had.

The last piece the participants noted was a necessary part of a targeted intervention program is communication between classroom teachers and para-professionals. Oftentimes, para-professionals gather students into an intervention group, but do not have guidance from

classroom teachers about skills students should be learning. Mrs. Leon, a para-professional with twenty-five years' experience shared: "I personally feel like with our intervention groups, we don't get enough time to have teacher-para professional contact to say, "*I don't think this kid's cutting it*" and there is no time to problem solve on kids." Mrs. Smith, a classroom teacher with twenty-three years' experience echoed Mrs. Leon's sentiment,

> I know one of the concerns that the para-professionals had at my grade level, is making sure we get para-professionals the materials needed for intervention in the right amount of time because it's not fair to anybody, kids, paras, teachers, anybody.

Having access to books that were at students' instructional level, ensuring intervention programs have a strong phonics base, and having time to collaborate between teachers and para-professionals and plan effective targeted intervention was noted as being a necessary component of a successful reading fluency intervention program.

Theme 2: Meaningful Practice

During the individual and focus-group interviews, the theme of engaging in meaningful practice became evident. Every participant noted the importance of students having time to practice reading in order to improve reading fluency ability. Included within the major theme of meaningful practice are the minor themes of engagement, independent practice, and monitored practice. The theme of meaningful practice directly links to Bronfenbrenner's (1979) microsystem level of human development. The microsystem incorporates the students' teachers, parents, and the relationship between each of those entities (Bronfenbrenner, 1979). In order to become fluent readers, students need to be engaged in meaningful practice by reading text in all settings. The practice students receive in reading text is dependent upon the connections within each student's microsystem. Students who have strong connections between their teachers and

parents will likely be able to engage in specific, individualized practice within the home and school setting.

Engagement. Throughout the individual and focus-group interviews, eight participants highlighted the importance of keeping students engaged in order to build their reading fluency ability. Several strategies to enhance student engagement were mentioned, but the ones mentioned most often included incorporating Readers Theatre activities, clearly stating and sharing a purpose for reading, and allowing students to set goals and monitor their progress. Readers Theatre involves reading a script that has been adapted from a book and helps to develop fluency from the repeated reading and exposure of a passage of text (Moore-Hart & Karabenick, 2009). Readers Theatre, along with exposure to other types of literature such as poems and graphic novels, was reported to help encourage student engagement. Mrs. Hernandez, an instructional coach at Oneida Elementary and previous classroom teacher with eighteen years' experience shared that students enjoy using Scholastic News for reading practice,

> With a specific focus on fluency, it helps if you give kids a purpose for reading it multiple times, [students can say] so I found this paragraph really interesting and I'm going to find three people to share it with. They don't realize they're practicing fluency. It's more of a purpose for their reading.

The technique shared by Mrs. Hernandez was found to be one that yields statistically significant improvements in reading fluency ability. As evidenced by Table 10 (see p. 80), students at Oneida Elementary showed an average gain of 36 correct words per minute. Sharing a purpose for reading helps to build the engagement level for students and also strengthens the interaction between teacher and student. This strengthening occurs within each students microsystem, part of Brofenbrenner's (1979) ecological systems theory of development.

According to the National Reading Panel (2000), it is important for students to understand the purpose for learning basic phonics skills as a way to help benefit their ability to read and write. Two participants shared that giving the students a purpose and explaining why they needed to practice reading helped to improve engagement and overall growth when learning new words. This was shared by Mrs. Smith, a teacher with twenty-three years' experience who indicated when communicating with students the purpose for their reading: "Last week you read this as your goal, and I'll mark it on the paper that they have. A goal for their cold read is set and it's amazing what they will do." Two additional participants indicated that allowing students to set reading goals and monitor their own progress enhanced student engagement during the intervention sessions. The idea of goal setting was shared by Mrs. Leon, a para-professional with twenty-five years' experience,

> If they have a word that they don't know, all they have to do is click on it, the computer tells it to them and then it'll say, "You have met your goal again" or "You have met your goal" and we make them meet their goals three times.

Mrs. Smith, a teacher with twenty-three years' experience shared,

> Goal setting is so huge. If I were going to talk to a first, second, third year teacher and we were talking fluency, I would say, "Have you set goals for your kids?" Do they understand what goals mean? The goal doesn't mean if you haven't reached it, you've failed. The goal has to be attainable.

Having students set goals is a meaningful way to keep them engaged with reading fluency activities. This was evidenced in the overall growth in correct words per minute that students experienced as noted in Table 5 (see p.70). All four of the schools in the present study made

average growth that was within the expected range of 25.5 to 45 correct words per minute (Fuchs et al., 1993).

Independent practice. The participants all indicated a need for independent practice as a way to build reading fluency ability. This was noted as being especially important in high-poverty schools due to the lack of access to printed materials in many of the student's homes and limited opportunities to read books within the home setting. Included within independent practice are miles on the page, time to read a book, and reading authentic text. During the individual and focus-group interviews, a common term was used to describe the repeated practice of reading books. Three different participants shared the term "miles on the page" to describe the amount of text that students need to read to become fluent readers. A total of 11 responses related to time spent practicing reading and covering miles on the page. Mrs. Hernandez an instructional coach with eighteen years' experience shared what is meant by the term "miles on the page",

> Miles and miles covered on the page that have to be appropriate text. We can't expect them to be practicing if they're reading at a first grade reading level and they're in third grade, we've got to bring it down to their level at some point in the day for them to get fluency practice.

Mrs. Hernandez is an instructional coach at Oneida Elementary, where at least 84% of the student population qualify for free and reduced lunch. Oneida Elementary also has an historic pattern of high-achievement on state-mandated reading assessments. As evidenced by Figure 3 (see p. 55), Oneida Elementary had an average of 88% of their students meet performance benchmarks over the past five years on the state reading assessment. Having students read "miles on the page" is an effective method for increasing students in high-poverty schools overall reading achievement.

During the focus-group interviews, there was debate about whether students should practice reading below their independent reading level or at their independent reading level. Mrs. England, an instructional coach with 17 years teaching experience, shared the purpose of having the reading fluency intervention material be at a student's independent reading level: "We wanted it at their independent reading level so that they could access the material without help." This statement aligns with Connor et al.'s (2009) findings that students benefit from instruction that is specific and at their instructional level.

Another common practice shared to help build fluency was giving students time to read books or engage in silent reading, a time of reading silently to themselves without the correction or support of a peer or adult. The practice of allowing students time to silently read to themselves at school is important among students from high-poverty backgrounds because they oftentimes have limited access to printed material within the home setting (Allington et al., 2010; Jensen, 2009). Ms. Anderson, a teacher with two years' teaching experience and three years' experience as a paraprofessional, shared,

> I would say more independent reading needs to go in that intervention piece because there's just not a lot of time for it. And . . . for that fluency, they need to be practicing and they need to be practicing 20 or 30 minutes a day. And yes, we can assign that as homework, but how much of that actually gets done, and do the parents sit there and listen and correct and have them go back and try to self-correct? I think more time for them to just be able to sit and read a book of their choosing would be beneficial to them.

This was a common assertion that students are not given enough time to select a book and quietly read to themselves. Even though the participants noted this as an effective tool to build fluency,

the National Reading Panel (2000) did not find a significant relationship between large amounts of time engaged in independent reading and an overall improvement in reading fluency. The National Reading Panel (2000) further cautioned silent reading is not an effective practice when used in isolation to build fluency, particularly among students who do not have a strong phonetic base and have a limited sight-word knowledge.

Moore-Hart and Karabenick (2009) conducted an intervention program in which culturally relevant and interesting texts were used to build reading capacity among high-poverty students. They noticed significant improvement with reading skills after the intervention. One of the unique features was the use of authentic, interesting text. This was a similar sentiment shared in the present study. The use of authentic, nonfiction stories were shared as a technique to build fluency among students from high-poverty backgrounds. The use of authentic, nonfiction stories is a technique used at Latah Elementary, where at least 84% of the students qualify for free and reduced lunch. Latah Elementary as evidenced by Figure 3 (see p.55) has, over the past five years, had 91% of their student population meet state reading assessment benchmarks. Ms. Kester, an instructional coach at Latah Elementary with 15 years' experience, shared several techniques that lead to building fluency:

> I would say reading authentic text [builds fluency] because sometimes we just have kids reading phonemic or phonics type text and those things don't make sense to the kids to build that automaticity of the words and the language . . . also reading performance activities like Readers Theatre, poetry—that's helpful—tape-recording themselves, listening back.

As previously described activities surrounding independent practice include miles on the page, time to read a book, and reading authentic text.

Monitored practice. Several ideas were shared related to monitoring student practice in order to build meaningful practice into each student's intervention session. Included within monitored practice are sitting one-to-one with the teacher reading a passage and correcting errors, repeated readings, modeling of correct reading, and reading with parents. Both published research, and the participants described tutoring sessions in which students read aloud to a tutor and had their errors corrected, and the tutor provided recommendations to improve a specific skill (Ritchey et al., 2012). Within the present study, participants shared the importance of having students read aloud a passage and receive individual feedback. This practice also helps with child development and building a child's microsystem which are the interactions between the student and teacher (Brofenbrenner, 1979). Mrs. Nelson, a second-grade teacher with 15 years' experience, stated,

> Another thing that I did is I was able to have a block of time at the beginning of the day, and I tried to fit it in other times where they could come and just read a library book to me, so I could listen to them and correct them.

Mrs. Nelson, a teacher at Latah Elementary, indicated that this helped her class tremendously. Most of her students were at least one grade level below expected performance, and receiving individualized practice helped to improve their fluency scores. However, according to Figure 13 (see p. 71), 19% of the students receiving intervention at Latah Elementary went from below benchmark to mastery of skills needed to be a fluent reader.

Another alternative to reading individually with a teacher is to read at home to a parent or caregiver. Providing books for students to take home and read with a parent has been noted to improve students' overall reading ability for students from high-poverty backgrounds (Allington et al., 2010). Participants mentioned the importance of the technique of modeling how to fluently

read a passage, especially among students who are learning to read or struggle with word decoding skills. Similarly, Ritchey et al. (2012) created an intervention in which a tutor would model the fluent reading of a passage before asking students to read the passage. This allowed the students an opportunity to hear how the story should sound and familiarize themselves with any unknown words. This technique increased students' fluency scores after receiving individual intervention (Ritchey et al., 2012). Reading aloud and having errors corrected can occur within the school and home setting. However, within high-poverty schools, students having the opportunity to read aloud at home and have reading errors corrected is difficult. Mrs. Hernandez an instructional coach with eighteen years' experience detailed the importance of reading with parents or caregivers,

> If we could only get, and I've said this for years, if parents would just understand how important that reading to their kids is at the very beginning and continuing that process. I mean, as a parent myself, I've witnessed it. I can sit down and read a book with my kids. I don't have to spend a full twenty minutes for it to be successful, as teachers we say you have to spend twenty minutes reading a night and parents are, well, if I don't have twenty minutes, I'm not going to do any and even five minutes of reading pays off.

Mrs. Smith, a teacher with twenty-three years' experience also noted the confidence that students build when they are able to fluently read and are able to practice at home: "I send home the Fry phases so they're practicing, they'll come in, "*I've been practicing, I've been practicing*" and that builds confidence."

Lastly, repeated readings were mentioned multiple times as an effective way to monitor student practice and help to build reading fluency skills among students. Mrs. Nelson, a classroom teacher with 15 years' experience, stated,

> We do the decodable books and the first read; we go through and look for the high-frequency words and read it. . . . I read the page and then we go back and read it again, look for those high-frequency words and underline those. And then the next day we go back and we look for the words that have the spelling that we're working on.

Moore-Hart and Karabenick (2009) suggested the use of repeated readings among students in low-socioeconomic areas to build word identification skills. Another participant in the present study, Mr. Nash, a teacher with 15 years' experience, all at a high-poverty elementary school said,

> Those trade books that we were talking about, you know, we try to get through them at least twice, at least with my groups. And so the rereads, you know, helps them with their fluency as well, and sight words.

Repeated readings or rereads are shown to be a valuable tool to help bolster word identification, and subsequently reading fluency skills. Nez Perce Elementary, a school where at least 84% of the students qualify for free and reduced lunch had average gains of 35.3 correct words per minute as shown in Table 5 (see p. 70). Their success could be explained by the detailed approach teacher's take of making sure readers truly are fluent readers. An example of this is shared by Mrs. Smith, a teacher with twenty three years' experience who revealed her technique when recording and listening to students read,

> It is so vital to look at fluency and the words correct versus the errors to get that percent, because even though the student received a three, which is benchmark, the student has fifty-seven errors, and it's marked as proficient, it's not.

Participants shared that oftentimes when students read, they will simply look at the first letter of the word and guess as to what the word actually says. This makes it difficult to develop reading

fluency. Participants indicated that they encourage students to slow down and fully read and decode the word. In order to become a fluent reader, errors read in a passage need to be reduced to fully understand the meaning of the text.

Theme 3: Instructional Strategy

All participants in the qualitative portion of this study reported that utilizing the right instructional strategy improved reading fluency ability. The instructional strategy was chosen based upon research-based practices, personal experience, and effective use in building reading fluency for students. Under the major theme of instructional strategies were the minor themes of strategies used to build fluency, activities to build fluency, and the framework of successful reading fluency intervention sessions. The theme of instructional strategies directly relates to Bronfenbrenner's (1979) ecological systems theory of development and specifically the macrosystem. The macrosystem incorporates the customs, ideals, and beliefs of a given culture (Bronfenbrenner, 1979). Education can be viewed as a culture, and therefore instructional strategies are part of the macrosystem.

Strategies used to build fluency. There were several strategies shared that lead to fluent reading. Those strategies included highlighting decodables, previewing information in small group, partner reading, and reading one-to-one with a teacher. Several of the strategies have already been discussed above; therefore, highlighting decodables and partner reading will be discussed within this section.

Vadasy and Sanders (2013) determined that effective phonics instruction in high-poverty schools includes the incorporation of assisted reading practice with decodable texts that correspond with previously taught phonological concepts. This is in agreement with the National Reading Panel (2000), which found that this type of systematic phonics instruction greatly

benefits struggling readers and those from low socioeconomic backgrounds. Both of the characteristics of being a struggling reader and also coming from a high-poverty background match the student demographic in the present study. Mrs. Nelson, a classroom teacher with 15 years' experience, described her use of the technique of highlighting decodables:

> I think I got the idea of highlighting the decodables because another teacher sent a kid to my class with a decodable that they had, and it was highlighted, and I thought, "Oh, I could do that. That's a great idea." And then it really, you know, pinpoints what we're studying.

The procedure of highlighting decodables involves having students highlight high-frequency words or words being studied within a piece of decodable text. They can color the words a different color to help them stand out when reading the passage. This has been an intervention used at all four of the high-poverty elementary schools where as evidenced by Figure 3 (see p. 55) all four schools show historic patterns of high-achievement on standardized measures of reading achievement.

Another strategy to build reading fluency is to have students read aloud with a partner. Participants shared this strategy of matching students together and having them read to one another as a way to build fluency among students. This is similar to one of the strategies Chambers et al. (2011) employed in their study. They had students work in similar-ability pairs to help support each individual's learning and provide correction or assistance when needed. The technique of reading one-to-one with a partner or teacher was shared by Nez Perce Elementary teacher Mrs. Smith, a veteran teacher with twenty-three years' experience,

> I do progress monitoring with all of my students. I think that's very important. I know they say, "Oh, don't progress monitor all your kids all the time", but I have a problem

> with that. So I progress monitor every week and do fluency read with them. I can have other people do it, but it's not the same. I need to know what words the students are missing.

This is an effective technique as Nez Perce Elementary had average gains in correct words per minute of 35.3 as shown in Table 5 (see p.70). Mrs. Smith, also highlighted the importance of listening to students read aloud so she can notice the errors they are making: "I can really start picking up on some trends and patterns within the reading and seeing what they're doing as well as, oh man, as a group, my kids are all struggling with this."

Another strategy used to build fluency among high-poverty students, who are also struggling readers, is previewing information in small-group before it is taught during whole-group instruction. Mrs. Nelson, a classroom teacher with fifteen years' experience noted:

> In my intervention group I can introduce what we're going to be working on that afternoon [with the entire class]. The students have a little heads up, and they know what we're going to be working on later and I tell them that they can be the people that answer my questions if they remember what we discussed. We review the high frequency words, we look at the vocabulary words and I think it gives them confidence during whole group discussion.

The following strategies were recommended for building fluency: highlighting decodables, previewing information in small group, partner reading, and reading one-to-one with a teacher.

Activities to build fluency. Participants described activities used to build reading fluency ability, such as sequencing activities, reviewing word families, word play, word attack, and improving decoding skills. These activities are found within the literature as effective methods

for building fluency (Gibson et al., 2014; National Reading Panel, 2000; Taub & Szente, 2010; Wanzek & Vaughn, 2008). Explicit instruction in phonological awareness, such as word play and word attack activities, benefits students' reading abilities (Taub & Szente, 2010). Mrs. Smith a teacher noted the focus of her intervention sessions,

> I will have a whiteboard as well and I'll say, "Okay, our word is 'was'"…they will write it down on their white board and I say, "Okay, let's check it. Spell it with me"…we'll spell it together and they'll write it at the top of their board. We do ten words a day and after they have done those words they go back and I'll have them write sentences with each of those words.

Decoding skills were found to be one of the most important skills needed to help children learn to read (National Reading Panel, 2000). Mrs. Smith a teacher highlighted the value of focusing on high-frequency words: "We're hitting high-frequency words. We're hitting Fry phrases and they're really starting to gain a little bit more with their Fry phrases. I'm doing a lot with word families both short and long vowel." This technique helps students to identify similarities and differences among word families and word patterns. Fry phrases are high-frequency words that are frequently found in reading passages. If students can identify and master those words, they are more likely to become a fluent reader. Incorporated into each intervention session, Wanzek and Vaughn (2008) had students practice word family patterns, such as fin, pin, and tin. Mrs. Hernandez, an instructional coach with eighteen years' experience indicated the structure of intervention sessions,

> The lessons, it's just all word manipulation and so it would all be oral if it was focused on the phonological awareness. So, say they were working on deletion of the initial sound. I

> have the word maple, if I take the 'mmm' away, what word would I have? And the kids would say "aple"; so just word play, a lot of word play.

These studies all used activities mentioned by participants in the present study such as sequencing activities, reviewing word families, word play, word attack, and improving decoding skills to help build students' reading skills.

Framework of successful reading fluency intervention sessions. There are many different methods to use to build successful intervention sessions. Participants shared some of their own personal success through the practice of making the intervention session fun, helping students find the joy in reading, gaining buy-in from the students, providing alignment between whole-group and small-group activities and instruction, allowing for a small group size, and encouraging carryover of skill practice at home. Mrs. England, an instructional coach with 17 years' experience, shared,

> We kind of sell it as something that's fun, not something that they have to do. And to me, that creates a better piece of success because the kids have a buy-in to it. They think it's fun and it's not just something, one more thing, they have to do.

Mrs. England highlighted a point that does not appear in the literature (Connnor et al., 2009; Gibson et al., 2014; Ritchey et al., 2012; Taub & Szente, 2010; Wanzek & Vaughn, 2008), which is to remember to have fun and make the intervention session an activity that students look forward to each day. Mrs. England found that by making it exciting and fun for the students, the intervention improved their overall fluency ability. Mrs. Leon, a para-professional with twenty five years' experience indicated a way to help keep students buy into the intervention program,

> The students have a sticker chart so that they can visually see their growth because they're not going to get in and see it on the computer at all. We do two things this year:

one, you finish your story, you met your questions, put up a sticker. If you got all your questions right, I'll give you a Skittle too.

Conclusions

The questions examined in this mixed-methods study were:

1. Do second-grade reading scores as evidenced by the IRI significantly increase with the use of targeted intervention in high-poverty schools?
2. Is there a significant relationship between students who receive targeted intervention in second grade and their third-grade IRI scores?
3. Is there a difference in the type of intervention that is provided as compared to student growth on the IRI?

All of the elementary schools in the study have a historical pattern of high-achievement on state mandated reading assessments despite all serving student populations where at least 84% of the students qualify for free and reduced lunch. The theoretical framework for the present study was developed from Brofenbrenner's (1979) ecological systems theory of development. The theory explains how children develop in the context of different situations they may face. The impact of poverty and specific reading fluency interventions are two of the main factors explored utilizing the framework of Brofenbrenner's (1979) ecological systems theory of development. Within the present study, it was evident from paired samples *t*-test results that second grade reading scores do significantly increase with the use of targeted intervention. There was also a statistically significant relationship between students who receive targeted intervention in second grade and their third-grade IRI scores. This was also confirmed through the use of a paired samples *t*-test. This is an important verification that reading fluency interventions are successful among students from high-poverty backgrounds.

Even though results indicated that targeted intervention leads to growth on the IRI, the person providing the intervention and the amount of time students receive intervention in a week make a considerable difference on overall reading fluency ability. The schools that had classroom teachers as opposed to para-professionals provide targeted intervention had the most overall growth. In these classrooms, the students that were struggling the most had the most highly educated professionals working with them to improve their reading skills. Certified classroom teachers have the skillset to determine why a student is struggling to read and target that basic reading skill to lead to improvement. Para-professionals that were interviewed for the study lamented the fact that they did not have time to spend collaborating with teachers and building an intervention program specific to each student's needs. This finding reiterates the importance of teachers or highly trained and experienced para-professionals providing intervention to struggling readers (Dyson et al., 2008; MacDonald & Figueredo, 2010; Moore-Hart & Karabenick, 2009; Vadasy & Sanders, 2012).

Another important finding was that the amount of time students spent receiving intervention impacted their reading fluency ability (Adler & Fisher, 2001; Dyson et al., 2008). Oneida Elementary students received on average 113 hours of intervention and had the second largest total gains. Students received at least forty-five minutes of additional, daily intervention in reading fluency strategies and techniques. This daily intervention was provided by their own classroom teacher. In contrast, at Latah Elementary, the students received an average of 75 hours of intervention, or about thirty minutes per day, however the students that required the most intensive instruction received support from a para-professional rather than a classroom teacher. This indicates two important findings. The first is that students that receive intervention from a classroom teacher achieve greater levels of reading fluency growth than those that receive

intervention from a para-professional. The second is that the amount of time students spend receiving intervention matters. Even fifteen minutes of additional intervention a day can lead to significant amounts of growth in reading fluency skills.

Further information related to reading fluency interventions was discovered through individual and focus-group interviews were held with teachers, para-professionals, and instructional coaches that had provided reading fluency intervention to second and third grade students. The themes that emerged from the transcribed and coded data revealed that targeted intervention, meaningful practice, and instructional strategies lead to fluent readers. Under the theme of targeted intervention were the subthemes of successful aspects of the intervention program as well as necessary components for an intervention program. Several different types of curriculum were used to provide intervention, indicating that instructional strategies and targeted intervention leads to greater outcomes than a prescribed curriculum (Cunningham, 2006; Reeves, 2003; Tivnan & Hemphill, 2005). The theme of meaningful practice included the minor themes of engagement, independent practice, and monitored practice. These themes align with published research that sees the value in high-quality time spent reading and receiving individualized feedback (Connor et al., 2009; Moore-Hart & Karabenick, 2009; National Reading Panel, 2000; Ritchey et al., 2012). Students from high-poverty backgrounds lack reading materials within the home setting and often do not have access to an adult that can monitor their reading. Finding time during the day for teachers and other school staff to listen to students read aloud and provide feedback is crucial to becoming a fluent reader. Finally, the theme of instructional strategies encompassed the subthemes of strategies used to build fluency, activities to build fluency, and the framework of successful reading fluency interventions. Participants noted the importance of students having buy-in to the intervention program by having them set goals and

monitor their progress. It is also imperative that students receive intervention to build their basic phonics skills so they can improve their decoding skills and overall reading ability. All of these themes were similar to published research that has revealed the importance of instructional strategies in build reading fluency (Connnor et al., 2009; Gibson et al., 2014; Ritchey et al., 2012; Taub & Szente, 2010; Wanzek & Vaughn, 2008). The themes all revealed information about the high-poverty schools and how they have created successful reading fluency intervention programs.

Recommendations for Further Research

Recommendations for further research include investigating the dynamic of high-poverty, high-achieving rural schools versus high-poverty, high-achieving urban schools. Multiple studies have been conducted in urban settings (Denton et al., 2010; Harding et al., 2012; Jacobson et al., 2007; MacDonald & Figueredo, 2010), but fewer have been conducted in rural settings (Brown et al., 2009). The present study was conducted within a rural setting which creates a unique dynamic. Many of the students and families within the present study are employed or impacted by agricultural industries which is different than students in urban settings. Families also live in sprawling areas spread over a large expanse of land. Further research should explore whether the reading fluency intervention techniques and student groupings used in the present study have similar student results when applied to an urban setting.

Another recommendation for further research is to explore a different student demographic. The majority of the students in the present study were represented by Caucasian and Hispanic backgrounds. Many students received LEP services due to Spanish being the initial language learned. Further research should explore the growth in reading fluency skills with other

student demographics and other LEP students to see if the results are universal and transferable to another student demographic.

The fidelity of implementation of intervention programs is also a topic for further research. The present study did not investigate the actual intervention sessions and determine which intervention strategies were being implemented. The information gathered was from interviews with the professionals. Observations of intervention sessions (Kennedy, 2010; Tivnan & Hemphill, 2005) are recommended in future research studies. This would allow the researcher the opportunity to determine if the interventions were being implemented as intended and the impact that decision had on building student reading fluency skills.

Lastly, research has suggested that successful reading fluency interventions are maximized when para-professionals receive ongoing professional development throughout the school year (MacDonald & Figueredo, 2010). If para-professionals are going to be used to provide reading fluency intervention, further research should determine the impact of professional development on improving student reading fluency skills. Para-professionals in the present study received limited, if any, professional development, therefore, this is an area of further research that is needed.

Implications for Professional Practice

The results of this dissertation have applications and implications for educators in high-poverty educational settings. The current study explores reading fluency interventions and the growth that struggling readers can make given targeted intervention. Results indicate that targeted intervention can lead to the improvement of reading fluency skills in high-poverty schools. The findings also reveal that students who received intervention from a classroom teacher had greater growth than those that received intervention from a para-professional. This

indicates that teachers should be providing intervention to the students that are struggling the most. The impact on reading fluency skills and the importance of having classroom teachers provide reading fluency interventions to students can not be overstated. Unfortunately, it is a common practice for struggling readers to receive intervention from para-professionals (Dyson et al., 2008; MacDonald & Figueredo, 2010; Moore-Hart & Karabenick, 2009; Vadasy & Sanders, 2012). All of the schools, except one, used para-professionals to provide intervention to at least some of their struggling readers. If policy makers continue to use para-professionals to provide reading fluency to struggling students, it is recommended that para-professionals receive proper preparation and support from classroom teachers as noted in Musti-Rao & Cartledge (2007). Scheduled time is needed for para-professionals and classroom teachers to meet and plan lessons and problem solve teaching strategies among students in intervention groups. This practice was applied in Cunningham (2006) with results that indicated above average performance on state mandated assessments in high-poverty schools. A time for collaboration was noted among teachers and para-professionals was noted among several participants. Teachers and para-professionals alike indicated a desire for time throughout the day to meet and discuss student progress. Effective collaboration and time for intervention planning is needed to maximize the benefits of intervention for students (Adler & Fisher, 2001; Cunningham, 2006; Kennedy, 2010).

Also, as indicated in the present study as well as published research, students who receive a greater number of hours of intervention perform better than those that received less time in targeted intervention (Adler & Fisher, 2001; Dyson et al., 2008). The students in the present study that made the most growth, received approximately four extra hours of reading fluency intervention per week in addition to a 90-minute literacy block. This extra reading fluency intervention allowed the struggling students to gain the skills necessary to become fluent readers.

This time was carved out of each student's school day and was priority was given to literacy and building reading fluency skills. Policymakers should explore mandating specific amounts of protected time for literacy and reading fluency during each school day.

Implications are also made for the type of activities used in building fluency. Participants indicated a need for a strong phonics base in order for students to be successful readers. Several different activities were recommended to improve fluency including increasing student engagement, use of varied materials such as Readers' Theatre, Scholastic News, and providing students with one-to-one support and feedback when reading aloud. Students need to have time to read text which is meaningful (Kennedy, 2010; Moore-Hart & Karabenick, 2009) and receive individualized feedback on their reading progress (Moore-Hart & Karabenick, 2009; Ritchey et al., 2010; Vadasy & Sanders, 2012) to improve their reading ability. Research-based instructional strategies need to be used to ensure students are receiving the caliber of instruction required to improve their reading ability (Dyson et al., 2008; Reeves, 2003; Tivnan & Hemphill, 2005). These findings align with published research which indicates that specific curriculum does not lead to development of skills, rather appropriate instructional strategies given by trained teachers lead to student growth (Adler & Fisher, 2001; Cunningham, 2006; Reeves, 2003; Tivnan & Hemphill, 2005). Policymakers need to allow trained teachers the opportunity to choose which research-based curriculum best meets each student's needs, especially during reading fluency intervention time. If each student needs a different curriculum, varying materials should be used to help students become fluent readers, rather than a one-size-fits-all approach to the adoption of mandated literacy curriculum.

References

Abbott, M., Wills, H., Miller, A., & Kaufman, J. (2012). The relationship of error rate and comprehension in second and third grade oral reading fluency. *Reading Psychology, 33*(1), 104-132. doi: 10.1080/02702711.2012.630613

Adler, M.A., & Fisher, C.W. (2001). Center for the improvement of early reading achievement. *The Reading Teacher, 54*(6), 616-619.

Allington, R. L., McGill-Franzen, A., Camilli, G., Williams, L., Graff, J., Zeig, J., . . . Nowak, R. (2010). Addressing summer reading setback among economically disadvantaged elementary students. *Reading Psychology, 31*(5), 411–427. doi:10.1080/02702711.2010.505165

Amatea, E. S., & West-Olatunji, C. A. (2007). Joining the conversation about educating our poorest children: Emerging leadership roles for school counselors in high-poverty schools. *Professional School Counseling, 11*(2), 81–89.

Apthorp, H., Randel, B., Cherasaro, T., Clark, T., McKewon, M., & Beck, I. (2012). Effects of a supplemental vocabulary program on word knowledge and passage comprehension. *Journal of Research on Educational Effectiveness, 5*(2), 160–188. doi:10.1080/19345747.2012.660240

Baker, S. K., Smolkowski, K., Katz, R., Fien, H., Seeley, J. R., Kame'enui, E. J., & Beck, C. T. (2008). Reading fluency as a predictor of reading proficiency in low-performing, high-poverty schools. *School Psychology Review, 37*(1), 18–37.

Benner, A. D., & Mistry, R. S. (2007). Congruence of mother and teacher educational expectations and low-income youth's academic competence. *Journal of Educational Psychology, 99,* 140–153.

Borjas, G. J. (2011). Poverty and program participation among immigrant children. *The Future of Children, 21*(1), 247–266.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design.* Cambridge, MA: Harvard University Press.

Brown, R., Copeland, W. E., Costello, E. J., Erkanli, A., & Worthman, C. M. (2009). Family and community influences on educational outcomes among Appalachian youth. *Journal of Community Psychology, 37*(7), 795–808. doi:10.1002/jcop.20331

Brown, E. D., & Low, C. M. (2008). Chaotic living conditions and sleep problems associated with children's responses to academic challenge. *Journal of Family Psychology, 22*(6), 920–923. doi:10.1037/a0013652

Burney, V. H., & Beilke, J. R. (2008). The constraints of poverty on high achievement. *Journal for the Education of the Gifted, 31*(3), 295–321.

Carlisle, J. F., Kelcey, B., & Berebitsky, D. (2013). Teachers' support of students' vocabulary learning during literacy instruction in high poverty elementary schools. *American Educational Research Journal, 50*(6), 1360–1391. doi:10.3102/0002831213492844

Chambers, B., Slavin, R. E., Madden, N. A., Abrami, P., Logan, M. K., & Gifford, R. (2011). Small-group, computer-assisted tutoring to improve reading outcomes for struggling first and second graders. *The Elementary School Journal, 111*(4), 625–640.

Connor, C. M., Piasta, S. B., Glasney, S., Schatschneider, C., Crowe, E., Underwood, P., . . . Morrison, F. J. (2009). Individualizing student instruction precisely: Effects of child x instruction interactions on first graders' literacy development. *Child Development, 80*(1), 77–100.

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson Education.

Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches* (3rd ed.). Los Angeles, CA: Sage.

Cunningham, P. (2006). High-poverty schools that beat the odds. *The Reading Teacher, 60*(4), 382–385. doi:10.1598/RT.60.4.9

Davidson, M. R., Fields, M. K., & Yang, J. (2009). A randomized trial study of a preschool literacy curriculum: The importance of implementation. *Journal of Research on Educational Effectiveness, 2*(3), 177–208. doi:10.1080/19345740902770028.

Denton, C. A., Solari, E. J., Ciancio, D. J., Hecht, S. A, & Swank, P. R. (2010). A pilot study of a kindergarten summer school reading program in high-poverty urban schools. *The Elementary School Journal, 110*(4), 423–439.

Duncan, G. J., Ziol-Guest, K. M., & Kalil, A. (2010). Early-childhood poverty and adult attainment, behavior, and health. *Child Development, 81*(1), 306–325. doi:10.1111/j.1467-8624.2009.01396.x

Dyson, L., Miller, M., & Gagne, M. (2008). The effects of a literacy intervention program on primary-grade children in schools in low-income neighbourhoods in Canada. *The International Journal of Learning, 14*(11), 85–91.

Familiesusa. (2016). *Federal Poverty Guidelines 2016* [Data file]. Retrieved from http://familiesusa.org/product/federal-poverty-guidelines

Fuchs, L. S., Fuchs, D., & Compton, D. L. (2004). Monitoring early reading development in first grade: Word identification fluency versus nonsense word fluency. *Exceptional Children, 71*(1), 7–21.

Fuchs, L. S., Fuchs, D., Hamlett, C., Walz, L., & German, C. (1993). Formative evaluation of academic progress: How much growth can we expect? *School Psychology Review, 22*(1), 27–48.

Fuchs, L. S., Fuchs, D., Hosp, M. K., & Jenkins, J. R. (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical, and historical analysis. *Scientific Studies of Reading, 5*(3), 239–256.

Gibson, L., Cartledge, G., Keyes, S. E., & Yawn, C. D. (2014). The effects of a supplementary computerized fluency intervention on the generalization of the oral reading fluency and comprehension of first-grade students. *Education and Treatment of Children, 37*(1), 25–51.

Gorski, P. C. (2013). Building a pedagogy of engagement for students in poverty. *Phi Delta Kappan, 95*(1), 48–52.

Harding, H. R., Harrison-Jones, L., & Rebach, H. M. (2012). A study of the effectiveness of supplemental educational services for Title I students in Baltimore city public schools. *The Journal of Negro Education, 81*(1), 52–66.

Horst, M. D., & Martin, B. N. (2007). A case study: Leadership and its effects on achievement of children from poverty in a rural setting. *The Rural Educator, 28*(3), 33–40.

Hunley, S. A., Davies, S. C., & Miller, C. R. (2013). The relationship between curriculum-based measures in oral reading fluency and high-stakes tests for seventh grade students. *Research in Middle Level Education, 36*(5), 1–8.

IBM SPSS. (2015). SPSS statistical software. Retrieved from http://www-01.ibm.com/software/analytics/spss/

Idaho State Department of Education. (2012). *Idaho Reading Indicator (IRI)* [Data file]. Retrieved from http://www.sde.idaho.gov/site/reading_indicator/docs/admin/IRITestingGuide2012-2013.pdf

Idaho State Department of Education. (2016). *Report Card* [Data file]. Retrieved from https://apps.sde.idaho.gov/reportcard

Jacobson, S. L., Brooks, S., Giles, C., Johnson, L., & Ylimaki, R. (2007). Successful leadership in three high-poverty urban elementary schools. *Leadership and Policy in Schools, 6*, 291–317. doi:10.1080/15700760701431553

Jensen, E. (2009). *Teaching with poverty in mind: What being poor does to kids' brains and what schools can do about it.* Alexandria, VA: Association for Supervision and Curriculum Development.

Kannapel, P. J., & Clements, S. K. (with Taylor, D., & Hibpshman, T.). (2005). *Inside the black box of high-performing high-poverty schools.* Lexington, KY: Prichard Committee for Academic Excellence.

Kearney, W. S., Herrington, D. E., & Aguilar, D. V. (2012). Beating the odds: Exploring the 90/90/90 phenomenon. *Equity & Excellence in Education, 45*(2), 239–249. doi:10.1080/10665684.2012.661248

Kennedy, E. (2010). Improving literacy achievement in a high-poverty school: Empowering classroom teachers through professional development. *Reading Research Quarterly, 45* (4), 384–387. doi:10.1598/RRQ.45.4.1

Kiernan, K. E., & Mensah, F. K. (2011). Poverty, family resources and children's early educational attainment: The mediating role of parenting. *British Educational Research*

Journal, 37(2), 317–336. doi:10.1080/01411921003596911

Kim, Y. S., Petscher, Y., Schatschneider, C., & Foorman, B. (2010). Does growth rate in oral reading fluency matter in predicting reading comprehension achievement? *Journal of Educational Psychology, 102*(3), 652–667. doi: 10.1037/a0019643

Knapp, M. S., Turnbull, B. J., & Shields, P. M. (1990). New directions for educating the children of poverty. *Educational Leadership, 48*(1), 4–8.

Krashen, S. (2005). The hard work hypothesis: Is doing your homework enough to overcome the effects of poverty? *Multicultural Education, Summer 2005,* 16–19.

Lam, G. (2014). A theoretical framework of the relations between socioeconomic status and academic achievement of students. *Education, 143*(3), 326–331.

Laerd Statistics. (2016). Laerd Statistics Premium [Test Selector]. Retrieved from https://statistics.laerd.com/premium/pstt/paired-samples-t-test-in-spss.php

Lauen, D. L., & Gaddis, S. M. (2013). Exposure to classroom poverty and test score achievement: Contextual effects or selection? *American Journal of Sociology, 118*(4), 943–79.

Li, L., & Wu, X. (2015). Effects of metalinguistic awareness on reading comprehension and the mediator role of reading fluency from grades 2 to 4. *PLoS One, 10*(3), 1–16. doi: 10.1371/journal.pone.0114417

MacDonald, C., & Figueredo, L. (2010). Closing the gap early: Implementing a literacy intervention for at-risk kindergarteners in urban schools. *International Reading Association, 63*(5), 404–419. doi:10.1598/RT.63.5.6.

Mahabir, I. K. (April, 2010). *Exploring educational material needs and resources for children living in poverty.* Paper presented at the annual meeting of the American Educational Research Association, Denver, Colorado.

Marshall, C., & Rossman, G. B. (2016). *Designing qualitative research: Sixth edition.* Thousand Oaks, California: Sage.

Miller, P., Vortruba-Drzal, E., & Setodji, C. M. (2013). Family income and early achievement across the urban-rural continuum. *Development Psychology, 49*(8), 1452–1465. doi:10.1037/a0030244

Mistry, R. S., & Wadsworth, M. E. (2011). Family functioning and child development in the context of poverty. *The Prevention Researcher, 18*(4), 11–15.

Moore-Hart, M., & Karabenick, S. A. (2009). Becoming successful readers: A volunteer tutoring program for culturally diverse students. *Literacy Research and Instruction, 48*(2), 149–171.

Murley, L. D., Keedy, J. L., & Welsh, J. F. (2008). Examining school improvement through the lens of principal and teacher flow of influence in high-achieving, high-poverty schools. *Leadership and Policy in Schools, 7,* 380–400. doi:10.1080/15700760701746612

Musti-Rao, S., & Cartledge, G. (2007). Effects of a supplemental early reading intervention with at-risk urban learners. *Topics in Early Childhood Special Education, 27*(2), 71–85.

National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups.* Bethesda, MD: National Institute of Child Health and Human Development.

Neddenriep, C. E., Fritz, A. M., & Carrier, M. E. (2011). Assessing for generalized improvements in reading comprehension by intervening to improve reading fluency. *Psychology in the Schools, 48*(1), 14–27. doi: 10.1002/pits.20542

Nielsen, D. C., & Friesen, L. D. (2012). A study of the effectiveness of a small-group intervention on the vocabulary and narrative development of at-risk kindergarten children. *Reading Psychology, 33,* 269–299. doi:10.1080/02702711.2010.508671

Orthner, D. K., Cook, P. G., Rose, R. A., & Randolph, K. (2002). Welfare reform, poverty and children's performance in school: Challenges for the school community. *Children & Schools, 24*(2), 105–121.

Payne, R. K. (1996). *A framework for understanding poverty.* Highlands, TX: aha! Process.

Payne, R. K. (2008). *Under-resourced learners: 8 strategies to boost student achievement.* Highlands, TX: aha! Process.

Payne, R. K., & Slocumb, P. D. (2011). *Boys in poverty: A framework for understanding dropout.* Bloomington, IN: Solution Tree Press.

Picucci, A. C., Brownson, A., Kahlert, R., & Sobel, A. (2004). Middle school concept helps high-poverty schools become high-performing schools. *Middle School Journal, 36*(1), 4–11.

Ramalho, E. M., Garza, E., & Merchant, B. (2010). Successful school leadership in socioeconomically challenging contexts: School principals creating and sustaining successful school improvement. *International Studies in Educational Administration, 38,* 35–56.

Razza, R. A., Martin, A., & Brooks-Gunn, J. (2010). Associations among family environment, sustained attention, and school readiness for low-income children. *Developmental Psychology, 46*(6), 1528–1542. doi:10.1037/a0020389

Reeves, D. B. (2003). High performance in high poverty schools: 90/90/90 and beyond. *Center for Performance Assessment,* 1–20.

Ritchey, K. D., Silverman, R. D., Montanaro, E. A., Speece, D. L., & Schatschneider, C. (2012). Effects of a tier 2 supplemental reading intervention for at-risk fourth-grade students. *Council for Exceptional Children, 78*(3), 318–334.

Rouse, H. L., Fantuzzo, J. W., & LeBoeuf, W. (2011). Comprehensive challenges for the well being of young children: A population-based study of publicly monitored risks in a large urban center. *Child Youth Care Forum, 40,* 281–302. doi:10.1007/s10566-010-9138-y

Schibli, K., & D'Angiulli, A. (2011). The neuroscience of poverty: Implications for teaching. *Education Canada, Spring 2011,* 17–20.

Schroeder, J. (2007). Full-day kindergarten offsets negative effects of poverty on state tests. *European Early Childhood Education Research Journal, 15*(3), 427–439. doi:10.1080/13502930701679734

Southern Education Foundation. (2010). *The worst of times: Children in extreme poverty in the South and nation* (Research and Policy Report). Retrieved from Southern Education Foundation website: http://www.southerneducation.org

Suber, C. (2011). Characteristics of effective principals in high-poverty South Carolina elementary schools. *International Journal of Educational Leadership Preparation, 6*(4), 1–15.

Tanner, D. (2012). *Using statistics to make educational decisions.* Los Angeles, CA: Sage.

Taub, G. E., & Szente, J. (2012). The impact of rapid automatized naming and phonological awareness on the reading fluency of a minority student population. *Journal of Research in Childhood Education, 26*(4), 359–370. doi: 10.1080/02568543.2012.712084

Taylor, J. A. (2005). Poverty and student achievement. *Multicultural Education, 12*(4), 53–55.

Tienken, C. H. (2012). The influence of poverty on achievement. *Kappa Delta Pi Record, (July–Sept 2012),* 105–107.

Tivnan, T., & Hemphill, L. (2005). Comparing four literacy reform models in high-poverty schools: Patterns of first-grade achievement. *The Elementary School Journal*, *105*(5), 419–441.

U.S. Department of Education. (2004). *Title I Paraprofessionals* [Data file]. Retrieved from https://www2.ed.gov/policy/elsec/guid/paraguidance.pdf

U.S. Department of Education. (2014). *Title I Part A* [Data file]. Retrieved from http://www2.ed.gov/programs/titleiparta/index.html

Vadasy, P. F., & Sanders, E. A. (2013). Two-year follow-up of a code-oriented intervention for lower-skilled first-graders: The influence of language status and word reading skills on third-grade literacy outcomes. *Reading and Writing*, *26*(6), 821–843. doi:10.1007/s11145-012-9393-4

Valencia, S. W., Smith, A. T., Reece, A. M., Li, M., Wixson, K. K., & Newman, H. (2010). Oral reading fluency assessment: Issues of construct, criterion, and consequential validity. *Reading Research Quarterly*, *45*(3), 270–291. doi: 10.1598/RRQ.45.3.1

Wanzek, J., & Vaughn, S. (2008). Response to varying amounts of time in reading intervention for students with low response to intervention. *Journal of Learning Disabilities, 41*(2), 126–142.

White, M. (2010). *Poverty and education: A teacher's perspective* (Research Report Section V. 2012-El-01). Retrieved from British Columbia Teachers' Federation website: http://www.bctf.ca

Whitney, S. D., Maras, M. A., & Schisler, L. J. (2012). Resilient schools: Connections between districts and schools. *Middle Grades Research Journal*, *7*(3), 35–50.

Wise, J. C., Sevcik, R. A., Morris, R. D., Lovett, M. W., Wolf, M., Kuhn, M., . . . Schwanenflugel, P. (2010). The relationship between different measures of oral reading fluency and reading comprehension in second-grade students who evidence different oral reading fluency difficulties. *Language, Speech, and Hearing Services in Schools, 41*, 340–348.

Wrigley, T. (2012). Poverty and education in an age of hypocrisy. *Education review*, *24*(2), 90–98.

Appendix A

Focus-Group Interview Questions

Title of interventionist: (certified teacher, paraprofessional)

How long have you been in this position?

Amount of training received in reading fluency training:

Number of students in second-grade reading fluency intervention group:

Frequency of second-grade reading fluency intervention group:

Duration of second-grade reading fluency intervention group:

Type of curriculum used for reading fluency intervention: (SIPPS, Open Court, SuccessMaker, etc.)

How is student growth determined?

How often is student growth measured?

What does your typical intervention session include (type of activity, student response, etc)?

What technique do you think leads to improved reading fluency ability?

What are some successes of your intervention program?

What are some limitations of your intervention program?

If you could change something about your intervention program, what would it be and why?

Appendix B

Parental Opt-Out Form

DATE
Dear [School name] Families,

I am completing a doctoral program at Northwest Nazarene University and have an opportunity to conduct research at your child's school. The study has been reviewed by the Human Research Review Committee at Northwest Nazarene University and has been successfully approved. The benefits that may result from the research include understanding and improving reading fluency interventions.

The procedures are as follows:
Idaho Reading Indicator (IRI) data will be gathered related to your child's performance on the test when your child was in second grade during the fall and spring of the 2014–2015 school year, as well as when your child was in third grade for the fall of the 2015–2016 school year.

I anticipate that there is minimal risk involved for your child by having their data gathered and used confidentially in this study. You may opt-out of having your child's IRI performance data included in this study by signing the form below.

All information that is obtained during this research project will be kept strictly secure. The results of this study may be used for a research paper and presentation. Pseudonyms or codes will be submitted for the names of children and the school. This helps to protect confidentiality. In the space at the bottom of this letter, please indicate if you would like to opt-out of having your child's data related to IRI test scores included in this study. If I do not hear back from you, I assume you are giving permission for your child's data to be included in this study.

If you have any questions, please feel free to contact me.

Sincerely,

Ashley Fowers-Coils
Northwest Nazarene University
xxx-xxx-xxxx
afowers-coils@nnu.edu

****

I have read the form and would like to opt-out of my child's data being included in this study.
Child's printed name: _____
Parent/Guardian printed name: _____
Parent/Guardian signature: _____
Date: _____

Appendix C

Electronic Notice

Greetings!

My name is Ashley Fowers-Coils and I am a doctoral student at Northwest Nazarene University, studying reading fluency interventions in high-poverty schools. You are receiving this survey because you either currently provide reading fluency intervention to students or you formerly have provided reading fluency intervention to students.

I am looking for a sample of teachers and paraprofessionals to participate in two focus-group interviews with me this fall. The questions will center around the type and length of intervention you provided to students, as well as the curriculum and material used to provide the reading fluency intervention. Each focus-group interview will be around 45–60 minutes.

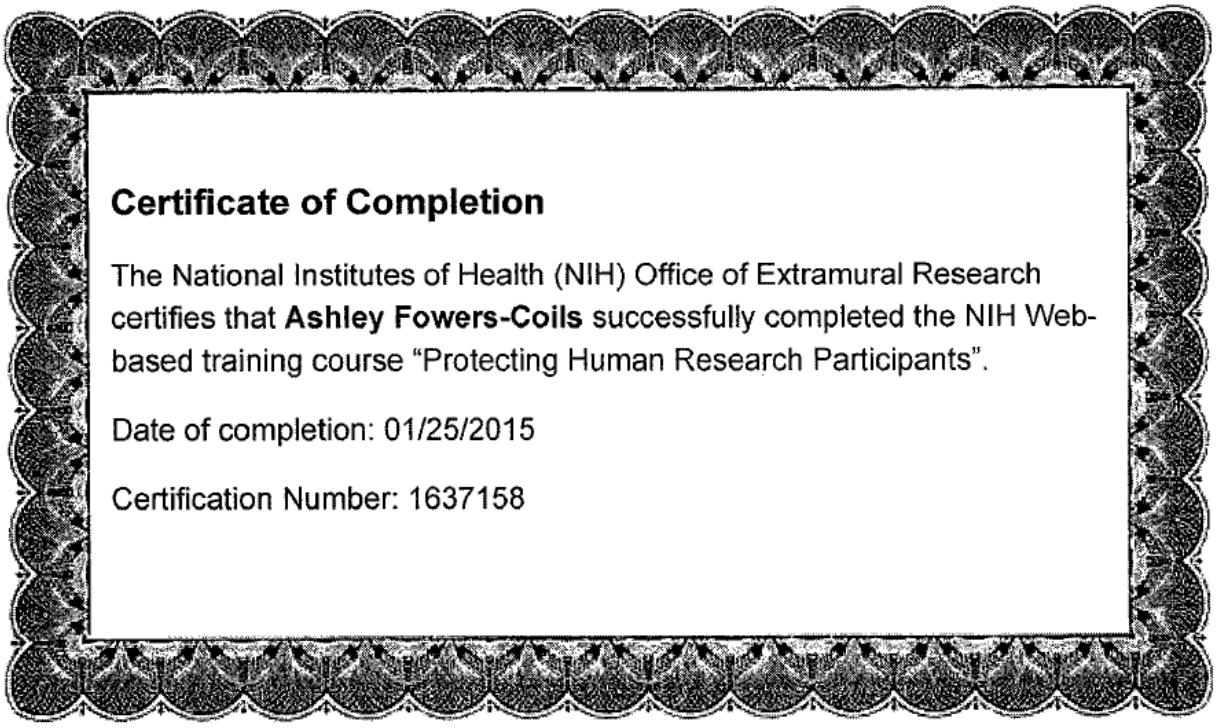
If you are willing to participate in this study, please e-mail me back at afowers-coils@nnu.edu if you are interested.

I believe that your responses will provide valuable information for teachers and administrators as we endeavor to better understand how to help students be successful with building reading fluency skills. Thanks for considering your part in my study.

If you have any questions, please don't hesitate to contact me: afowers-coils@nnu.edu or xxx-xxx-xxxx.

Appendix D

National Institute of Health Certification for Research



Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Ashley Fowers-Coils** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 01/25/2015

Certification Number: 1637158

Appendix E

School District Research Approval

February 25, 2015

Northwest Nazarene University
Attention: HRRC Committee
Helstrom Business Center 1st floor
623 S University Boulevard
Nampa, ID 83686

RE: Research Proposal Site Access for Mrs. Ashley Fowers-Coils

Dear HRRC Members:

This letter is to inform the HRRC that the administration in the [redacted] has reviewed the proposed dissertation research plan including subjects, proposed data and collection procedures, data analysis, and purpose of the study. Mrs. Fowers-Coils has permission to conduct her research based upon student achievement data available at [redacted] Elementary School, [redacted] Elementary School, [redacted] Elementary School, and [redacted] Elementary School. She also has permission to administer a survey to staff at the above listed schools. The authorization dates for this research study are August 2015 to April 2016.

Respectfully,

[redacted]

Superintendent

Appendix F

Human Research Review Committee Approval

Joseph Bankard **<jabankard@nnu.edu>** Apr 28

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Thanks Ashley. These changes look good. You received "Full Approval." You may begin your research.

.

Appendix G

Informed Consent

A. Purpose and Background

Ashley Fowers-Coils, Ed.S., a doctoral student in Educational Leadership at Northwest Nazarene University, is conducting a research study related to reading fluency interventions provided to students who receive a score of 1 or 2 on the Idaho Reading Indicator. With this study, we hope to improve interventions that are provided for students who need reading fluency intervention. We believe that teachers and paraprofessionals are vital to understanding the success of the interventions that are provided. We appreciate your involvement in helping to improve reading fluency interventions.

You are being asked to participate in this study because you currently provide or formerly have provided reading fluency intervention to students.

B. Procedures

If you agree to participate in the study, the following will occur:

1. You will be asked to sign an Informed Consent Form, volunteering to participate in the study.
2. You will meet with Ashley Fowers-Coils, primary researcher, for two face-to-face focus groups or interviews.
3. You will be asked to answer a series of interview questions about your experience with providing reading fluency intervention to students. The interview will be audio taped, and it will last up to an hour.
4. You will be asked to reply to an e-mail at the conclusion of the study, asking you to confirm the data gathered during the research process.

These procedures will be completed at a location mutually decided upon by the participant and the primary researcher and will take a total of about 60 minutes.

C. Risks/Discomforts

Some of the interview questions may make you uncomfortable or upset, but you are free to decline to answer any questions you do not wish to answer or to stop participation at any time.

Confidentiality: Participation in research may involve a loss of privacy; however, your records will be handled as confidentially as possible. No individual identities will be used in any reports or publications that may result from this study. All data from notes, audio tapes or files will be encrypted and password protected, which is known only by the primary researcher. In compliance with the Federalwide Assurance Code, data from this

study will be kept for three years, after which all data from the study will be destroyed (45 CFR 46.117).

D. Benefits

There will be no direct benefit to you from participating in this study. However, the information you provide may help educators to better understand reading fluency interventions and interventions that lead to the most student improvement of reading fluency scores.

E. Payments

There are no payments for participating in this study.

F. Questions

If you have questions or concerns about participation in this study, you should first talk with the researcher. Ashley Fowers-Coils can be contacted via e-mail at afowers-coils@nnu.edu and via telephone at (208) xxx-xxxx. If for some reason you do not wish to do this, you may contact Dr. Heidi Curtis, Doctoral Committee Chair at Northwest Nazarene University, via e-mail at hlcurtis@nnu.edu, via telephone at (208) xxx-xxxx, or in writing: 623 University Drive, Nampa, Idaho, 83686.

G. Consent

You will be given a copy of this form to keep.

Participation in Research Is Voluntary. You are free to decline to be in this study or to withdraw from it at any point. Your decision as to whether or not you participate in this study will have no influence on your present or future status as an educator in the Nampa School District

I give my consent to participate in this study:

_____ _____

Signature of Study Participant **Date**

I give my consent for the interviews to be audio taped in this study:

_____ _____

Signature of Study Participant **Date**

I give my consent for direct quotes to be used in this study. No identifying information will be used in the report from this study:

_____ _____

Signature of Study Participant **Date**

_____ _____

Signature of Person Obtaining Consent **Date**

THE NORTHWEST NAZARENE UNIVERSITY HUMAN RESEARCH COMMITTEE HAS REVIEWED THIS PROJECT FOR THE PROTECTION OF HUMAN PARTICIPATION IN RESEARCH.

Appendix H

Verbatim Instructions

Hi _____!

Thank you for your willingness to participate in this study.

Semistructured, Audio-Recorded, Focus-Group Interviews
One semistructured, audio-recorded, focus-group interview will be conducted with each group of participants. These procedures will be competed at a public location mutually decided upon by the participants and the investigator and will take a total time of about 45–60 minutes.

This process is completely voluntary and you can select to suspend your involvement at any time. You can select to answer questions that are of comfort to you and are not obligated to answer all of the questions.

Do you have any questions or can I clarify anything?

Thank you for your participation.

Appendix I

Member-Checking E-mail

Date

Dear---

Thank you for your participation in the study this past semester. I wanted to let you know some of the themes that resulted from the focus-group interviews of all participants (see below). Please let me know if these accurately depicted our conversation. If you have any suggestions or modifications, please let me know as well.

The main themes from the interviews that emerged were that the use of a research-based curriculum, meaningful practice with reading, and specific instructional strategies all lead to a fluent reader.

Within the theme of using a research-based curriculum, several minor themes emerged. Those include the specific curriculum that is being within your school such as Journeys, Read Naturally, SIPPS, and Mondo. The success of each curriculum was shared which included teacher-friendly materials, cross-curricular applications, anchor and companion text, and interesting non-fiction text. The limitations of the curriculum include that the books weren't low enough to meet the needs of all students, the curriculum did not have a strong phonics base, you were not able to pull books from other grade levels, and a need for a wider variety of materials.

Within the theme of meaningful practice there were several minor themes that emerged. Those include ensuring engagement of students through reader's theatre, sharing the purpose for reading, and goal setting. Independent practice is another minor theme which incorporates the ideas of miles on the page, practice at independent reading level, practicing below independent level, time to read a book, reading authentic text, listening to tape recordings of student reading, and reading challenging books. Another minor theme includes monitored practice which involves sitting one-on-one with a teacher and student and having errors corrected, re-reads, modeling, read alouds, choral reading, and reading with parents.

The last theme was instructional strategy. The first minor theme included strategies used to build fluency such as guided reading, and echo reading. The second minor theme involved activities used to build fluency such as word families, word play, and decoding practice. The third minor theme involves successful fluency sessions which include gaining buy-in from kids, practicing at home, and small group size.

If these ideas do not reflect your experience, please let me know. Thank you again for your help, and I look forward to hearing from you.

Ashley Fowers-Coils
Doctoral Student
Northwest Nazarene University

afowers-coils@nnu.edu
Telephone: (208) xxx-xxxx
HRRC Approval# TBA