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A Mixed-Methods Study on Student Achievement in Reading and Teacher Professional Development in a K-2 Urban Public School Setting

Michelle Chism
Lindenwood University

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by

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A Dissertation submitted to the Education Faculty of Lindenwood University

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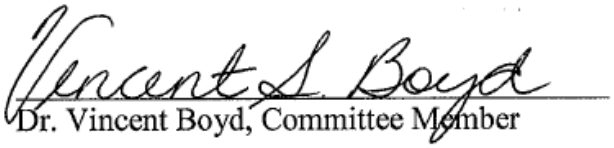
Dr. Lynda Leavitt, Dissertation Chair — 10/07/2016 Date



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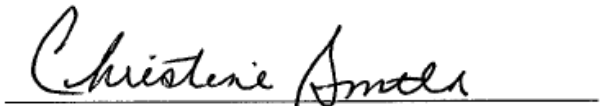

Ms. Christine Smith Committee Member — 10/07/2016 Date

Declaration of Originality

I do hereby declare and attest to the fact that this was an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Michelle Chism

Signature: Michelle Chism Date: 10/7/14

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Abstract

To determine if a relationship existed between teacher professional development and student reading achievement for grades K-2, the researcher conducted a mixed-methods study to examine reading achievement and teacher professional development in a Midwest urban school district. If the researcher was able to show a relationship between teacher professional development and student reading achievement, recommendations could be made on research-based professional development models proven to increase student academic achievement and improve instructional practices within an underachieving school district. To determine if a relationship existed between the above-mentioned variables, the researcher examined student standardized reading achievement scores and teacher survey responses during winter 2015 and winter 2016. In addition, the researcher examined professional development contact hours and student reading scores. Through quantitative analysis of 30 participants, the findings indicated a relationship between reading achievement and teacher professional development. The researcher used qualitative observational data to determine how teachers applied instructional practices after participation in professional development. Using Guskey's Five Levels of Professional Development Evaluation and the Professional Practice Observation Tool, results indicated no change in teacher instructional practices after participation in professional development. Study results revealed professional development should occur with teacher involvement in the planning process and collaboration during professional learning communities. In addition, the researcher concluded professional development experiences should focus on training teachers in the pedagogy of foundational reading skills.

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Chapter One: Introduction

Background of the Study

In 1983, the report *A Nation at Risk* brought widespread attention to the literacy crisis in the United States and stressed the importance of basic literacy skills for competitiveness in a global society. Additionally, the report encouraged immediate action for improving literacy skills for children and adolescents. Overall, the United States made little progress towards the goal of improving the literacy skills of our nation's youth (Haynes, 2011), specifically within urban school districts (Cooter, 2004). This specific type of school district faced increased pressure to improve student academic achievement while addressing issues of high poverty, inadequately trained teachers, high student mobility and high teacher turnover. Urban districts dealt with change and pressure from the community to improve student academic achievement in reading (Cooter, 2004).

Research Setting

Socio-economic barriers. The families of the researched school district faced numerous socio-economic obstacles. Carterville School District located in an urban area near the Mississippi River consisted of concentrated poverty, where 100% of students in the district qualified for free/reduced priced lunch (Carterville SD 189, n.d., para. 2). In addition, nearly a third of the families lived on less than $7,500 a year and 75% of the residents lived on welfare of some form (Kozol, 1991). The poverty level in the researched school district was more than three times the level for the state of Illinois, and the city had no obstetric services, no regular trash collection, and few jobs (Kozol, 1991). The U.S. Department of Housing and Urban Development (as cited in Kozol, 1991)

described Carterville as the most distressed small city in America and the local press referred to Carterville as a city without hope (Police Target Carterville's Vulture Alley, 2014).

In 2012, the researcher observed children who rode the yellow school buses twice daily past shuttered buildings, fire-gutted structures, empty lots, trash burning in large cans, and scantily clad women walking the streets. Recent to the time of this writing, city officials turned off the stoplights and replaced them with stop signs, because as cars stopped for red lights, unemployed, angry youth attacked drivers. Housing in the city consisted primarily of public housing complexes plagued with gang violence and crime (Neighborhood Scout, n.d., p. 1). Single parent homes, grandparents as guardians, high unemployment, and poor health, caused in part by pollutants and toxins that filled the air, water, and ground soil in the environment where the young children of the researched school district lived and struggled to learn, were a part of the environment. Despite these obstacles, children developed the skills necessary to deal with their difficult circumstances (Kozol, 1991)

The Carterville School District was among the most impoverished school districts in the state of Illinois. The researched school district lacked diversity, with over 98% of students self-identified as African-American (see Table 1) (Carterville SD 189, n.d., p. 1). The Carterville School District consisted of one early childhood center, six elementary schools, two middle schools, one detention home, one high school, and one alternative high school (Carterville SD 189, n.d., p. 1). Approximately 6,300 students attended school in the district, and there were about 400 teachers (Carterville SD 189,

n.d., p. 1). At the time of this study, the city's violent crime rate was 35.34%, as compared to the state average of 3.80% (Neighborhood Scout, n.d., p. 1).

These high crime statistics further supported the need for top-notch educational services for Carterville students. In the opinion of the researcher, the Carterville School District lacked the resources to provide the necessities for academics, let alone enrichment and support services. Due to these economic barriers, teachers and students lacked access to interventions that would improve academic achievement. Local revenues were unable to sustain the school district while the surrounding community's lack of property wealth created an almost total reliance on state and federal funding, as well as competitive grants (Kozol, 1991).

Table 1

Racial/Ethnic Background of Carterville School District and State of Illinois

	White	Black	Hispanic	Asian	Native Hawaiian/Pacific Islander	American Indian	Two or More Races
District	0.5	98.4	0.9	0.0	0.0	0.0	0.2
State	50.6	17.6	24.1	4.3	0.1	0.3	3.0

Recognizing that extreme poverty posed a barrier to learning, it was no surprise that academic performance in Carterville School District was consistently low. In 2015, the state of Illinois piloted the Partnership for Assessment of Readiness for College and Careers (PARCC) test, and only 3% of Carterville students met proficiency requirements in reading and math (Carterville SD 189, n.d., p. 1). In 2014, only 16% of the researched school district students met or exceeded state standards in literacy on the Illinois Student Achievement Test as compared to the state average of 59% (Carterville SD 189, n.d., p. 6). In addition, data from the 2011-2012 and 2012-2013 academic years showed students scored far below the state average on all standardized tests in reading and math (see

Table 2). In 2011, only 66% of 6th-grade students and only 27% of students with disabilities met standards in reading (Carterville SD 189, n.d., p. 9). Furthermore, the number of students proficient in reading and math decreased as students advanced through school. These numbers illustrated the need for improvement of instruction for students in the researched school district (Carterville SD 189, n.d., p. 6). As a result, the district failed to meet the No Child Left Behind (NCLB) requirements and recent to this writing, failed to meet the requirements of the Every Student Succeeds Act (ESSA) of 2015 in reading and math (U.S. Department of Education [USDOE], 2002, 2015). The district was also in poor financial condition and non-compliance with special education laws and regulations (Carterville, SD 189, n. d., p. 1). Due to the researched school district's persistent poor performance in reading and math over a nine-year period, the researcher observed the state of Illinois take control of the researched school district. The state superintendent implemented a five-year plan, with the goal of restructuring the failing school district and regain financial solvency (Carterville SD 189, n.d., p. 1).

Table 2

Overall Student Performance on State Standardized Tests in Reading and Math

2011-2012	2012-2013
State Percentage 57.0	State Percentage 78.0
District Percentage 18.1	District Percentage 58.2

In particular, Carterville School District needed a strong early literacy foundation to build confident, successful, readers with a robust vocabulary in grades K-2 (Sobolak, 2011). Without a solid foundation in reading, students struggled to learn in all subjects, English language arts (ELA), science, mathematics and social studies; resulting in disruptions, suspensions, dropouts, and extreme lack of preparation for post-secondary education and the workforce at the time (Carterville SD 189, n.d., p. 2). Researchers

demonstrated students who were reading below grade level and did not receive academic interventions by the end of first grade continued to fall behind as they advanced through the grades (Foster & Miller, 2007). More importantly, the academic achievement gap widened as students progressed through school (Turner, 2012). To neglect the task of building a strong literacy foundation for children, in the researched school district, was equivalent to denying children their right to participate fully and meaningfully in the economy of the day (Kozol, 1991).

Purpose of the Study

The purpose of this study was to investigate a possible relationship between teacher professional development and reading achievement in an urban setting in which the school district researched faced environmental challenges. In addition, this study explored teacher perception of professional development related to reading. Furthermore, the study examined the application of teacher professional development using Guskey's (2002b) framework for professional development, applied to the K-2 grade levels in reading (Guskey, 2002b). The researcher chose this grade level for several reasons; early literacy played an ongoing role in a student's future success in reading achievement, and teacher professional development in reading influenced student achievement in the early years (Cottingham et. al., 2008). In addition, teacher perception of the professional development experience influenced instructional practices (Kersiant, Borman, Boydston & Sadler, 2001). Teacher professional development and student achievement in reading research was limited for early literacy and then-current studies focused on teacher professional development, and studies of student achievement in reading for primary grades were also limited (Porche, Pallante & Snow, 2012). The researcher aimed to add

to the existing body of research by providing information, current at the time, on teacher professional development and student achievement in reading for K-2 grade levels in an urban environment. The researcher also sought to investigate and provide research on teacher perception of professional development and student achievement in reading on the K-2 grade levels. Furthermore, the researcher hoped to use data from the study to make recommendations to district and school leaders on professional development models that enhance student achievement in reading and teacher instructional practices.

Rationale

Reading achievement and teacher professional development were key components of reading instruction observed by the researcher in her role as an Early Literacy Administrator in a K-2 urban public school setting. A review of then-current literature revealed gaps in the research regarding teacher professional development and a possible relationship between reading achievement for primary grades, more specifically within an urban setting (Cottingham et al., 2008; Duncan, Lee, Scarloss, Shapley & Yoon, 2007). Intensive, content driven, professional development allowed schools to make informed decisions about teacher professional development and student achievement. Professional development focused within the content areas, such as reading, writing, and language was critical in shaping instructional practices (Cottingham et al., 2008). This study focused specifically on a possible relationship between teacher professional development and reading achievement for the primary grades within an urban school setting.

Research Question and Hypotheses

The researcher investigated the following three hypotheses for the study:

Hypothesis 1: There is a relationship between teacher perception of professional development and student achievement in reading, K-2 grade levels.

Hypothesis 2: There is a relationship between the number of hours that teachers participate in professional development and student achievement in reading, K-2 grade levels.

Hypothesis 3: There is a difference between the teachers' ratings of the professional development experience according to Guskey's Five Levels of Professional Development (FLPD).

The researcher explored the following research question for the mixed methods study:

Research Question: How are teacher instructional practices and strategies applied after participation in professional development in reading, K-2 grade levels?

Limitations

There were several limitations in the study. Teachers hired during the second semester received limited training and professional development. The researched school district conducted additional hiring of elementary school teachers during the second semester, and as a result, new teachers did not attend training on the Daily Five Framework nor had the benefit of the professional development opportunities as the other K-2 teachers. In addition, during the fall semester, the teachers went on strike and the researcher was unable to obtain classroom observational data during that time. Furthermore, of the 30 pre-test surveys distributed to teachers, only 21 were completed and returned. After re-opening the survey response timeline, the remaining nine teachers completed and returned the survey.

Definition of Terms

Achievement tests "are designed to measure the knowledge and skills students learn in school to determine the academic progress they have made over a period of time" (Achievement tests, 2013, para. 1).

Assessment specialist*:* For the purpose of this study, the person hired to collect and upload student Northwest Evaluation Association (NWEA) assessment data into the school district's server.

Benchmark assessments are a specific type of assessment aligned to academic standards given at various points. The purpose was to see if students mastered grade level skills (Nicotera & Wong, 2007).

Early literacy included reading, writing, and language skills for kindergarten through second grade.

Effect size*:* Quantified the difference between two groups and emphasized the size of the difference on a continuum (Hattie, 2009, p. 6).

English language arts content specialist*:* For the purpose of this study, is a full-time credentialed teacher who provided literacy coaching and instructional support to K-12 teachers.

English language arts shifts*:* are literacy standards for grades K-5 that included using text evidence to support findings for literary and informational text, providing a 50-50 balance in reading of fiction and non-fiction text for grades K-5, and daily practice with academic vocabulary words (The Shifts, 2015).

Lexile range "is a score (displayed as 150-point range) resulting from a correlation between NWEA's RIT score and the Lexile Score that helps identify reading

material that is at an appropriate difficulty level for an individual student" (Northwest Evaluation Association [NWEA], 2011, p. 4).

Likert scale*:* "A self-reporting instrument in which an individual responds to a series of statements by indicating the extent of agreement. Each choice was given a numerical value and the total score was presumed to indicate the attitude or belief in question" (Fraenkel, Wallen & Hyun, 2012, p. G-4). For the purpose of this study, the researcher chose the following terms for the observation tool used in the study: Distinguished (4 points), Proficient (3 points), Basic (2 points), and Below Basic (1 point). The researcher chose the following terms for the surveys used in the study: Strongly Agree (4 points), Agree (3 points), Disagree (2 points), and Strongly Disagree (1 point).

Measures of academic progress*:* Assessments used by NWEA to assess academic progress, based on Common Core State Standards (CCSS) (NWEA, 2011, p. 3).

Northwest Evaluation Association: An organization that provided adaptive CCSS aligned assessments (NWEA, 2011).

Oral reading fluency is accuracy and reading speed, combined to obtain fluency (Spafford & Grossner, 2010).

Phonemes*:* Beginning sounds associated with the alphabet (Cunningham et al., 1998)

Phonemic awareness "generally refers to an understanding about the smallest units of sound that make up the speech stream: phonemes" (Cunningham et. al., 1998, p. 3).

Phonics is the relationship between letters and sounds (Griffith & Mesmer, 2005).

Professional Learning Communities*:* "A group of educators who continuously seek and share learning, and act on their learning" (Bullough, 2007, p. 168).

Professional Practice Observation Tool*:* For the purpose of this study, the researcher developed this instrument, which measured K-2 teachers' instructional practices in reading.

Rasch UnIT (RIT) Score*:*

> RIT stands for Rasch UnIT, which is a measurement scale developed to simplify the interpretation of test scores. The RIT score relates directly to the curriculum scale in each subject area. It is an equal-interval scale, like feet and inches, so scores can be added together to calculate accurate class or school averages. RIT scores range from about 100 to 300. (NWEA, 2011 p. 7)

Reading comprehension*:* Reading for understanding and meaning (Horowitz, 2014).

Site-based professional development*:* For the purpose of this study, site-based or job-embedded professional development takes place on-site at schools and/or in classrooms.

Standardized test*:*

> any form of test that (1) requires all test takers to answer the same questions, or a selection of answers from a common bank of questions in the same way, and that (2), was scored in a standard or consistent manner. (The Glossary of Education Reform, 2013, para. 1)

Standards*:* "statements developed by states or districts of what students should know and be able to do, related to specific academic areas" (NWEA, 2011, p. 7).

Teacher professional development is a learning opportunity provided to teachers and other educational professionals through their schools or districts (Sawchuck, 2010).

Vocabulary: For the purpose of this study, vocabulary is one of the five areas of reading instruction for early readers.

Summary

The researcher aimed to provide the background, purpose, and definitions for this study on teacher professional development in reading, K-2 grade levels. The researcher aspired to add to the existing research on early literacy and teacher professional development in reading, specifically within an urban setting. In addition, the researcher hoped to make recommendations to district and school leaders about professional development and literacy instruction.

In Chapter Two, the researcher explores research on the National Staff Development Council (NSDC) Standards for teacher professional development, in addition to teacher perceptions, attitudes, and beliefs. The researcher also reviewed literature on Guskey's FLPD evaluation, the Five Components of Early Literacy (phonics, phonemic awareness, vocabulary, comprehension, and fluency) for grades K-2, and early literacy in an urban environment. Chapter Three describes the research tools, methodology, participants, and research process. In Chapter Four the researcher presents data for the hypotheses and research question. The final chapter, Chapter Five, discusses

the research findings, implications, program recommendations, and future research recommendations.

Chapter Two: The Literature Review

Introduction

Researchers studied early literacy and teacher professional development with little emphasis on the link between grades kindergarten through two. Teacher perceptions of professional development, beliefs and attitudes influenced instructional practices in the classroom (Morewood & Bean, 2011). The NCLB Act of 2001 and more recently, the ESSA Act of 2015 created a sense of urgency with educators to improve professional development practices and student literacy skills (Kim, Petscher, Schatschneider & Foorman, 2010; USDOE, 2002, 2015).

Organization of the Literature Review

Review of the then-current literature included: professional development standards developed by the NSDC (2001), teacher attitudes, beliefs and perceptions of professional development, Guskey's (2002a) FLPD evaluation for teacher professional development, and research on early literacy for grades K-2 and student achievement. In addition, the researcher included a discussion on The Big Five, vocabulary, phonics, phonemic awareness, fluency, and comprehension, and research on reading achievement in an urban environment, with an emphasis on early literacy.

Teacher Professional Development Standards

Sawchuck (2010) defined teacher professional development as learning opportunities provided to teachers and other educational professionals through their schools and district. Weathersby and Harkreader (1999) defined professional development as "an organized learning opportunity for teachers to acquire knowledge and skills to help them become more effective teachers" (p. 4). The NSDC added staff

development should allow educators to improve their skills and knowledge base with the goal of maximizing student learning (National Staff Development Council [NSDC], 2001). Professional development focused on content, such as reading, writing, and language, each critical in shaping instructional practices (Cottingham et al., 2008; Kersiant et. al., 2001; Kindle, 2013). Wolff, McClelland, and Stewart (2010) concluded schools with high-quality professional development were more successful than schools with low-quality professional development.

The NSDC developed 12 standards for teacher professional development (2001, para.1). The goals of the standards was to provide a blueprint of high-quality professional development for educators with the 12 standards focused on both the process and subject-specific content of professional development (NSDC, 2001, para.1). Holler, Callendar and Skinner (2007) added the standards shifted professional development from a one-day workshop model to a sustained, ongoing process. By contrast, Timperley, Wilson, Barrar, and Fung (2007) discovered in their meta-analysis, teachers who participated in extended professional development opportunities were no more successful than teachers who participated in one or two-day workshops.

The NSDC designed standards to maximize student learning, improve instructional teaching practice, and provide a framework for teacher professional development (see Table 3) (NSDC, 2001; Thompson, 2008). In addition to the NSDC standards, 40 states developed standards centered on high-quality professional development programs (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009, p. 3).

Table 3

National Staff Development Council Standards

Standard Number	Name	Purpose
1.	Learning Communities	Teacher collaboration
2.	Leadership	Guide professional development
3.	Resources	Support collaboration and teacher professional development
4.	Data-Driven	Professional development priorities based on student test data
5.	Evaluation	Use of a combination of sources to determine professional development
6.	Research-Based	Teachers use of research in instructional decision-making
7.	Design	Utilization of strategies based on instructional aims
8.	Learning	Application of information about change and learning
9.	Collaboration	Providing educators with skills and training necessary to collaborate in professional learning communities
10.	Equity	Create safe learning environments and set high expectations for student success
11.	Quality Teaching	Increase teachers' content Knowledge
12.	Family Involvement	Provide educators with strategies to increase parental/family involvement

Similarly, the NCLB Act of 2001 included a section on professional development and recommended the following: "Give teachers, principals, and administrators the knowledge and skills to provide students with the opportunity to meet challenging state

academic content standards and student academic standards" (USDOE, 2002, p. 1963). In addition NCLB required teacher professional development be: "High quality, sustained, intensive, and classroom-focused in order to have a positive and lasting impact on classroom instruction as well as the teacher's performance in the classroom" (p. 1963). Top quality, ongoing professional development, and qualified teachers, were key elements in student academic success and teacher instructional practices (Plair, 2013).

Highly qualified teachers. A trained, highly qualified teacher was essential for student success in the classroom since teachers were the biggest factor in student learning (Hattie, 2012; Morewood & Bean, 2011). Professional development offered a way for teachers to improve and provide the best instruction to students. In addition, high quality, ongoing professional development was necessary to improve student success (Hattie, 2012). Altun and Cengiz (2012) added school improvement started with the teacher; when the teacher improved, then the school improved. Yoon, Duncan, Lee, and Shapley (2008) concluded, "Professional development affects student achievement through three steps. First, professional development enhances teacher knowledge, skills, and motivation, second, better knowledge, skills and motivation improves classroom teaching and third, improved teaching raises student achievement" (p. 3).

Furthermore, how school districts conducted professional development sessions also influenced student achievement. Weathersby and Harkreader (1999), Joyce and Showers (1995), and Moss and Noden (1994) each pioneers in teacher professional development, believed staff development must be ongoing and focused to improve student achievement and teacher instructional practices. NCLB added professional development should not be short-term experiences, but should occur over time (USDOE,

2002). Hattie (2009) in 72 studies discovered teachers who participated in professional development for an extended time had higher achievement for their students *d* (effect size) = 0.66 than those who did not (p. 120). This data demonstrated teachers who participated in extended professional development sessions resulted in an equivalent of one year's growth of student achievement (Hattie, 2009).

Darling-Hammond and Richardson (2009) agreed teachers who participated in professional development between 30 and 100 hours over an extended time demonstrated improvements in student achievement. While Opfer and Pedder (2011) concluded teachers who participated in continuous, intensive, professional development had a bigger influence on improving instructional practice than teachers who participated in short-term professional development experiences. On the other hand, teachers who attended less than 14 hours of professional development did not show improvements in student achievement (Darling-Hammond & Richardson, 2009, p. 3). Kindle (2013) argued the professional development model where a facilitator came in for a day and conducted the sessions with no follow-up for teachers, did not have a lasting change in teacher instructional practices. Liljedahl (2014) agreed, not only were the single workshop sessions unsuccessful in changing instructional practices, the workshops did not improve student academic achievement.

Increased student achievement and improvement of instructional strategies occurred when facilitators tailored professional development sessions to meet the needs of staff members and teachers implemented practices learned from professional development in the classroom (Joyce & Showers, 1995; Thompson, 2008). Emphasis areas for professional development included content and follow up activities for teachers

along with content centered on pedagogical practices of how teachers teach and students learn. In addition to the initial 30 hours of professional development, follow-up activities included job-embedded coaching, co-teaching, and modeling (Guskey & Yoon, 2009, p. 497; Plair, 2013).

Student achievement. Researchers explored different staff development models and discovered a relationship between student achievement and staff development (Hattie, 2009; Joyce & Showers, 1995; Thompson, 2008). In addition, researchers suggested the use of these models for at-risk students, and on a large scale to determine validity and reliability. Joyce and Showers (1995) conducted an analysis of several district and school-wide initiatives on the relationship between teacher professional development and student achievement. The initiatives included four common themes, when analyzed, revealed a positive relationship between teacher professional development and student achievement: focused professional development on content, technology, or school improvement had a positive influence on student achievement, teacher development and implementation training, inclusion of teachers and other staff members in the decision-making processes, and learning goals or targets for students.

Similarly, Hattie (2009) added a theme for teacher professional development. Professional development that provided teachers the time to learn new material and instructional strategies were an essential function of successful professional development. Hattie also concluded teacher professional development had a $d = 0.62$ effect size on student achievement (2009, p. 120). Furthermore, teachers who participated in high-quality professional development demonstrated improved instructional strategies (Gokmenoglu & Clark, 2015).

A cornerstone study within a Pittsburgh school district's high school, The Schenley Project, trained teachers to become professional development leaders using a train-the-trainer model. The district personnel selected the most talented teachers from the pool of applicants for the final project, located in a high poverty, low socioeconomic area and became a model professional development center for the district and teachers (Thompson, 2008; Wallace, LeMahieu & Bickel, 1990). The district teachers spent several weeks observing the teachers instruct students and then trained with mentor teachers on various instructional best practices. Student achievement improved for students in Schenley School as measured by their standardized test scores in eight curricular areas (Thompson, 2008; Wallace et al., 1990). Pomerantz and Pierce (2013) advocated for a coaching model similar to the one utilized in the Schenley School in which teachers who participated in the coaching sessions incorporated what they learned into their instructional practices, while the other teachers did not.

Researchers conducted The Augusta Project, an early study centered on teacher professional development initiatives designed to improve student achievement. The major areas studied included professional development, instructional practices and collaboration among the staff members (Andrews & Rothman, 2002; Joyce, Murphy, Showers, & Murphy, 1989; Thompson, 2008). Staff members at three schools trained using a train-the-trainer model and then trained teachers throughout the district. Students at nine of the schools who participated in the project showed gains on the (ITBS) Iowa Test of Basic Skills Test (Joyce et al., 1989, p.71). By contrast, Patrick (2009) advocated for teachers working together, observing one another, and reflecting on instructional

practices. In addition, colleague observations allowed teachers to gain insight on their teaching and student achievement.

Content characteristics. By contrast, Guskey and Sparks (2002) proposed a model of professional development focused on content characteristics, process variables, and context characteristics. The content characteristics described the professional development and centered on participants learning during the sessions. Blank and Alas (2010) added in a meta-analysis of 16 studies, design as a common thread in successful professional development programs (p. 27). The study revealed programs focused on content (what to teach) and context (how to teach) showed improvement in student achievement. Process variables consisted of how facilitators conducted professional development regarding planning, organization and follow-up activities (Guskey & Sparks, 2002). Honawar (2008) concluded high-quality professional development was essential to student academic success. Guskey and Sparks (2002), outlined context characteristics, as "who, when, where, and why of professional development. They include traits of the particular group of educators involved in the professional development activities, the environment in which they work, and the students they serve" (p. 2). Content characteristics, process variables, and context characteristics made up the essential elements of effective professional development designed to improve student achievement. Content characteristics, process variables, and context characteristics led to high-quality professional development and improved student outcomes (see Table 4) (Guskey & Sparks, 2002). Additionally, Desimone (2011) viewed professional development as critical in enhancing instructional practices as well as content knowledge and included five essential features.

Table 4

Guskey and Sparks Professional Development Model

Professional Development Elements
Content Characteristics
Process Variables
Context Characteristics
Quality of Professional Development
Improved Student Learning Outcomes

Desimone, Porter, Garet, Yoon, and Birman (2012) added reform type as a sixth feature. These features emphasized the quality of professional development and the participants' role. Desimone et al. (2012) divided the features into structural and core elements (see Table 5).

Table 5

Features of Professional Development

Professional Development Feature	Professional Development Focus
Content	Emphasizes what and how students learn
Active Learning	Getting teachers actively involved in professional development activities
Coherence	Connecting professional development experiences to school policy and teacher beliefs
Duration	Teachers participating in a minimum of 20 hours of professional development
Collective Participation	Teachers in the same grade level or content area collaborating during professional development sessions
Reform type	How the professional development activity is organized (study group, individual project, traditional model, mentor/mentee, committee task force

Teacher Perceptions of Professional Development

Teacher perceptions about professional development influenced literacy instruction. Morewood and Bean, (2011) and Salinas (2010) noted teachers' beliefs and attitudes were critical components in transferring professional development learning experiences into instructional practices and included teacher assumptions believed to be true regarding professional development (Klieckman, Trobst, Jonen, & Moller, 2016). Guskey (2002a) asserted the primary goal of professional development was to change the beliefs and professional practices of school personnel toward an agreed upon end. For the teacher beliefs to change, the professional development needed to be relevant and a valuable use of teacher's time (Sawchuck, 2010). Furthermore, the professional development experience met the needs of the individual school (Kennedy & Shiel, 2010). In addition to the needs of the school, Guskey (2002a) and Opfer and Pedder (2011) asserted teachers were attracted to professional development opportunities when teachers believed the experiences would enhance their teaching practices. Bayar (2014) noted sessions which met the needs of the teachers, were long term, actively involved participants, and included teachers in the planning process with high-quality facilitators. Parise, Finkelstein, and Alterman (2015) agreed teachers benefitted when included in professional development planning Hattie (2012) concluded teacher beliefs about teaching and learning influenced instructional practices. Researchers believed a change in the structure of professional development led to a change in teacher beliefs (Salinas, 2010).

Teacher beliefs about professional development. Kennedy and Shiel (2010) conducted a study centered on job-embedded professional development in literacy and

teacher beliefs. The researchers examined teacher professional development in an urban environment and used Guskey's (1986) change model over a two-year period. Key elements of the professional development included intensive, on-site professional development over an extended period with sessions conducted on full and half days for the teachers. During the professional development experiences, teachers received research-based literature on best instructional practices so teachers could own the process (Kennedy & Shiel, 2010). Guskey (2002a) added participants' reactions as an important element of the teacher beliefs about the professional development experience. Teachers' based instructional practices on professional beliefs that an activity was appropriate for their students. Professional development programs that addressed teacher beliefs were essential for beliefs to change (Kersiant et al., 2001).

In a like manner, The Early Literacy Initiative professional development project illustrated beliefs were important in changing instructional practices. The Early Literacy Initiative professional development project began with one teacher and grew to 200 teachers in 30 schools grades Pre-K through three (Elliott & Langlois, 2002, p. 40). Students' scores went from below level to at or above grade level on standardized tests and after the first year, five additional teachers signed up for the Early Literacy Initiative project (Elliot et al., 2002, p. 40). The project used Guskey's evaluation model and job-embedded structures for professional development (Elliot et al., 2002).

Kleickman, Trobst, Jonen, Vehmeyer, and Moller (2016) concluded for a significant change in teacher instructional practices, teacher beliefs and attitudes about professional development had to change. According to Lotter, Rushton, and Singer (2013) professional development programs focused on the link between teacher beliefs

and instructional practices were highly successful. Furthermore, teacher beliefs influenced implementation of instructional reforms in the classroom (Kleickman, Trobst, Jonen, Vehmeyer, & Moller, 2016; Lotter, Rushton, & Singer, 2013).

Teacher attitudes about professional development. Nasser and Romanowski (2011) conducted a study with 40 teachers from two schools on educator perceptions of the professional development experience (p. 159). The teacher participants taught in grades 1-6 and 7-9 and attended a minimum of 50 hours of professional development throughout the school year (p. 159). Results revealed an overwhelmingly low number of teachers believed they learned new information in the professional development sessions. The findings suggested many of the workshops were repetitive, lacked alignment with the national standards and did not improve their instructional practices (Kersiant et al., 2001; Nassar & Romanowski, 2011).

Similarly, Altun and Cengiz (2012) examined teacher perceptions of the professional development experience in the upper primary grades. The findings indicated teachers had minimal time to engage in professional development due to the curriculum and other factors. In addition, the teachers believed professional development offered at their school did not enhance or improve their instructional practices (Altun & Cengiz, 2012). Gokmenoglu & Clark (2015) experienced similar results in a study on teacher professional development, change and reform. The study involved 1730 K-8 teachers in 352 Turkish schools (p. 447). According to study results, teachers described current professional development models as sub-standard and did not meet their needs (Gokmenoglu & Clark, 2015).

Alternatively, The Project for School Innovation (PSI) Initiative, a collaboration between charter and public K-8 urban teachers in the Boston area, offered an opportunity for teachers to reflect and offer input on instructional practices using Desimone's (2011) model of professional development. "At the end of the program, some 90% of participants reported they were confident in their ability to apply new ideas" (Andrews & Rothman, 2002, p. 508). Additionally, many of the participants discovered learning from their peers was a good way to learn new ideas and instructional strategies (Desimone, 2011). Teachers reported a benefit from collaboration and valued instructional strategies learned from their colleagues (Parise, Finkelstein, & Alterman, 2015). Kersiant, Borman, Boydston, and Sadler, (2001) added teachers gained more from collaborating and working with their peers than in isolation. By contrast, Parise et al. (2015) believed professional development to be less beneficial when teachers were not involved in the activities of collaborating, observing, and learning from each other.

A study on the Kansas State University Partnership in 2009 experienced similar results, in which teachers in grades K-16 collaborated and reflected on their instructional practices during professional development sessions. As a result, teachers made significant gains from pre to post-test on a survey designed to assess the application of strategies learned (Shroyer & Yahnke, 2012). In the same way, Steeg and Lambson (2015) examined collaborative professional development at Hermosa Elementary School. Key elements of the professional development model included teachers taking charge of their learning and learning from each other. Teachers responded positively to collaborative professional development and continued to use the model until the end of the 2010 school year (Steeg & Lambson, 2015).

In a like manner, Holler et al. (2007) directed a study on the site-based professional development model. The Grafton School restructured their professional development practices and provided time for staff development during school hours using a train the trainer model where teachers participated in staff development four days a month during their preparation period (Holler et al., 2007). Teachers responded positively to the professional development structure and found practical applications in the sessions (Holler, Callendar, Skinner, 2007). Kennedy & Sheil, (2010) added teachers involved in site-based professional development benefitted more when the facilitators based sessions on the needs of the schools.

Similarly, Fisher, Frey and Nelson (2012) studied 44 elementary schools in Southern California on their professional development practices in literacy (p. 551). The schools provided an instructional framework for literacy and restructured the professional development. The restructuring included job-embedded training, coaching, co-teaching and modeling and teachers responded positively to the professional development experiences (Fisher, Frey, & Nelson, 2012). As a result, student achievement improved with all 44 of the schools after implementing the instructional framework. (Fisher et al., 2012, p. 551). The Duval County School District experienced similar results. Teachers engaged in 84 hours of professional development in literacy for the school year and experienced higher academic gains than teachers who did not participate in the professional development sessions (Honawar, 2008, p. 9). Likewise, in a study at Crownpoint High School, Boone, Hartzman, and Mero (2006) discovered site-based professional development yielded academic gains in the areas of reading and math for

ninth and eleventh-grade students. In addition, an examination of the Lawrence Public Schools produced similar results.

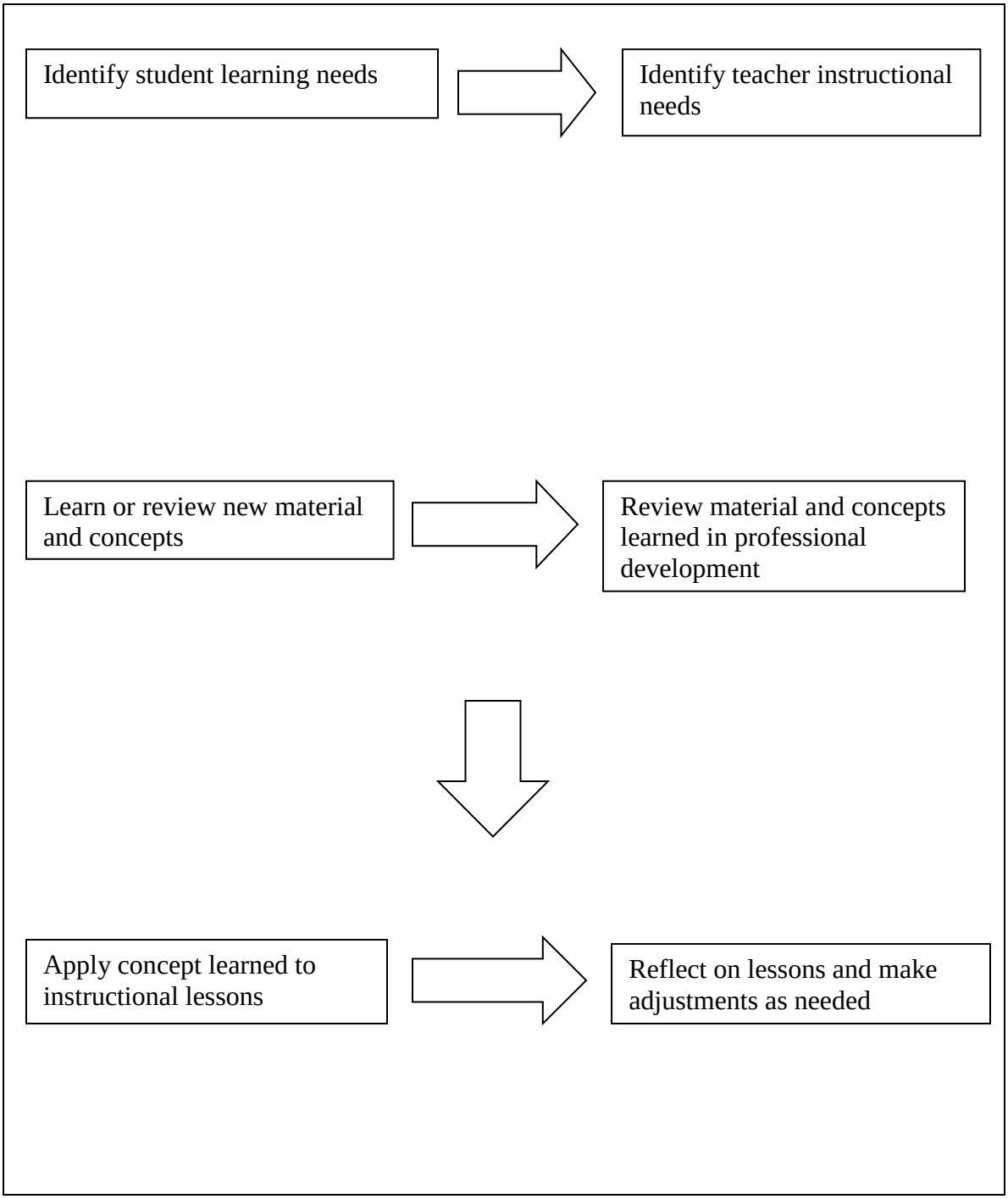

Figure 1. Professional development cycle for ongoing improvement. Adapted from Stewart (2014, p. 29). Figure created from information in the article.

Crowther (1998) reviewed the key elements of the Lawrence Public School system and found site-based professional development was important for the district's success. All 25 of the schools demonstrated gains in academic achievement in at least one area on standardized exams (Crowther, 1998, p. 34). Steeg and Lambson (2015) advocated for site-based professional development and collaboration between teachers as a means to improve student achievement.

Professional learning communities. Stewart (2014) argued for a shift from professional development to professional learning. High-quality professional development led to improved instructional practices and student achievement: the goal of professional learning communities PLCs (Darling-Hammond et al., 2009). Stewart (2014) also believed professional development should follow an ongoing cycle.

In a like manner, Roseler and Dentzau (2013) supported the shift from professional development to professional communities and reported teachers benefitted the most when as equal partners in the learning community. Research has proven the top-down approach to professional development did not provide optimal results in student or teacher learning. According to Salinas (2010) and Darling-Hammond et al. (2009) participants in PLCs focused on specific content, collaboration, and active learning, led to improvement in instructional strategies. Also student learning progressed as teacher instructional practices improved when teachers participated in PLCs (Bullough, 2007; Roselar et al., 2013; Stewart, 2014). Darling-Hammond et al. (2009) asserted PLCs promoted collegiality, collaboration and promoted instructional shifts beyond the classroom. Thessin (2015) recommended providing different supports based on the needs of the schools. Thessin's (2015) study focused on high functioning and struggling PLCs

and the researcher learned schools had varied needs and required different supports. Furthermore, the researcher suggested targeting professional development to meet the needs of the specific schools (Thessin, 2015).

Alternatively, Adams and Vescio (2015) believed individual learning in PLCs was just as important as group learning and critical in improving teacher practice and student learning. The researchers established three principles to enhance individual knowledge in PLCs: connecting student learning to the individual teacher's classroom, enhancing teaching strategies through group learning, and improving group norms and procedures to encourage diversity of thought (Adams & Vescio, 2015). By contrast, individual learning in PLCs either supported or hindered individual growth through the following stages in PLCs: breaking away from isolation, discussions about student learning, improvement of instruction and professional development. The manner in which the individual progressed through the stages determined professional growth (Hadar & Brody, 2015).

Guskey's Five Levels of Professional Development Evaluation

Guskey (2002b) identified FLPD evaluation for educators and questions addressed at each level (see Table 6). Each of the levels of evaluation addressed specific questions related to the professional development experience (Elliot et al., 2002; Guskey, 2002b).

Crowther (1998) added to Guskey's model; a teacher self-assessment as part of the staff development program and a fifth level focused on student achievement scores on assessments to address student learning outcomes (Guskey, 2002b).

Table 6

Guskey's Five Levels of Professional Development Evaluation

Evaluation Level	Questions Addressed
1. Participants' Reaction	Did participants' enjoy the professional development experience? Did the participants understand the material presented? Was the professional development experience a valuable use of time and relevant to participants? Was the facilitator knowledgeable and helpful to participants? Was the room the correct temperature? Were the chairs comfortable?
2. Participants' Learning	Did the participants learn what was intended from the professional development experience?
3. Organization Support and Change	Was implementation supported by building and/or district administration? Did administrators make their support publicly known to staff members? Were problems addressed in an efficient and timely manner? Were resources adequate and made readily available to staff members? Did the professional development influence the school or district's climate and culture?
4. Participants' Use of New Knowledge and Skills	Did participants apply what they learned from the professional development experience?
5. Student Learning Outcomes	Did the professional development experience improve student learning and achievement? Did the professional development improve student emotional or physical health? Are students more self-assured learners? Is student attendance getting better? Is the student dropout rate decreasing?

Note. Adapted from Guskey (2002b). Table created from information in the article.

Guskey (2002b) addressed the FLPD model in various ways; questionnaires addressed the participants' reaction at the end of each professional development session, a written assessment, classroom observations and/or demonstrations gauged participants' learning, organization support and change required analysis of school records and alignment of the professional development to the school's goals or mission, portfolios, observations and personal reflections from participants provided an assessment of their use of new knowledge and skills.

When it came to planning for professional development, Guskey reversed the FLPD and argued professional development facilitators and planner's major focus should be on the process and not the result. Consequently, professional development was not a success due to the lack of direction. Professional development planning that started with the student outcomes and ended with ideal learning activities demonstrated optimal results (Guskey, 2014).

Early Literacy

The National Reading Panel (2000), in their report, sparked a renewed interest in best practices for early literacy and consisted of the "Big Five": phonics (oral language), phonemic awareness, fluency, vocabulary and comprehension (Brown, 2014; National Reading Panel, 2000; Therrien & Hughes, 2008). Haryono (2011) defined early literacy as "an activity performed by children to develop their language skills, including the ability to read and write, done from an early age" (p. 1). Additionally, early literacy included reading, writing, and language skills for kindergarten through second grade. (Cassidy, Valadez & Garrett, 2010; Vesay & Gischlar, 2013). Allor and McCathren (2003) and Pullen and Justice (2003) categorized early literacy as oral language,

phonological awareness, and concepts of print. Students needed to reach proficiency in the five components of early literacy to become successful readers (Ellery, 2014).

In addition to the five elements of reading instruction, researchers viewed knowledge development as an important sixth element (Cervette & Hiebert, 2015). Brown (2014) added children followed a series of steps in learning to read from phonological and phonemic awareness to phonics and recognizing words. Similarly, Whyte (2016) concluded early literacy followed a reading continuum and started with concepts of print and ended with sight words (see Figure 2). In addition, Whyte (2016) believed these pre-reading skills were essential to student success in reading. Early literacy skills were the building blocks for future success in school (Stancel-Piatak, Mirazchiyski & Desa, 2013) and students needed several opportunities to practice new literacy skills for learning to occur (Brown, 2014).

In addition to early literacy skills, Edmond-Long (2016) believed instructional reading strategies were crucial in developing phonics, fluency, phonemic awareness, and reading comprehension skills (see Table 7). Each direct (explicit) instructional technique addressed literacy skills for grades K-2.

Vesay and Gischlar (2013) conducted a study of early childhood teachers in New Jersey and Pennsylvania on teacher knowledge and training in early literacy instruction with an emphasis on the five big ideas in reading instruction. The results of this study revealed teachers had the most training in phonological awareness and the least in vocabulary instruction (2013).

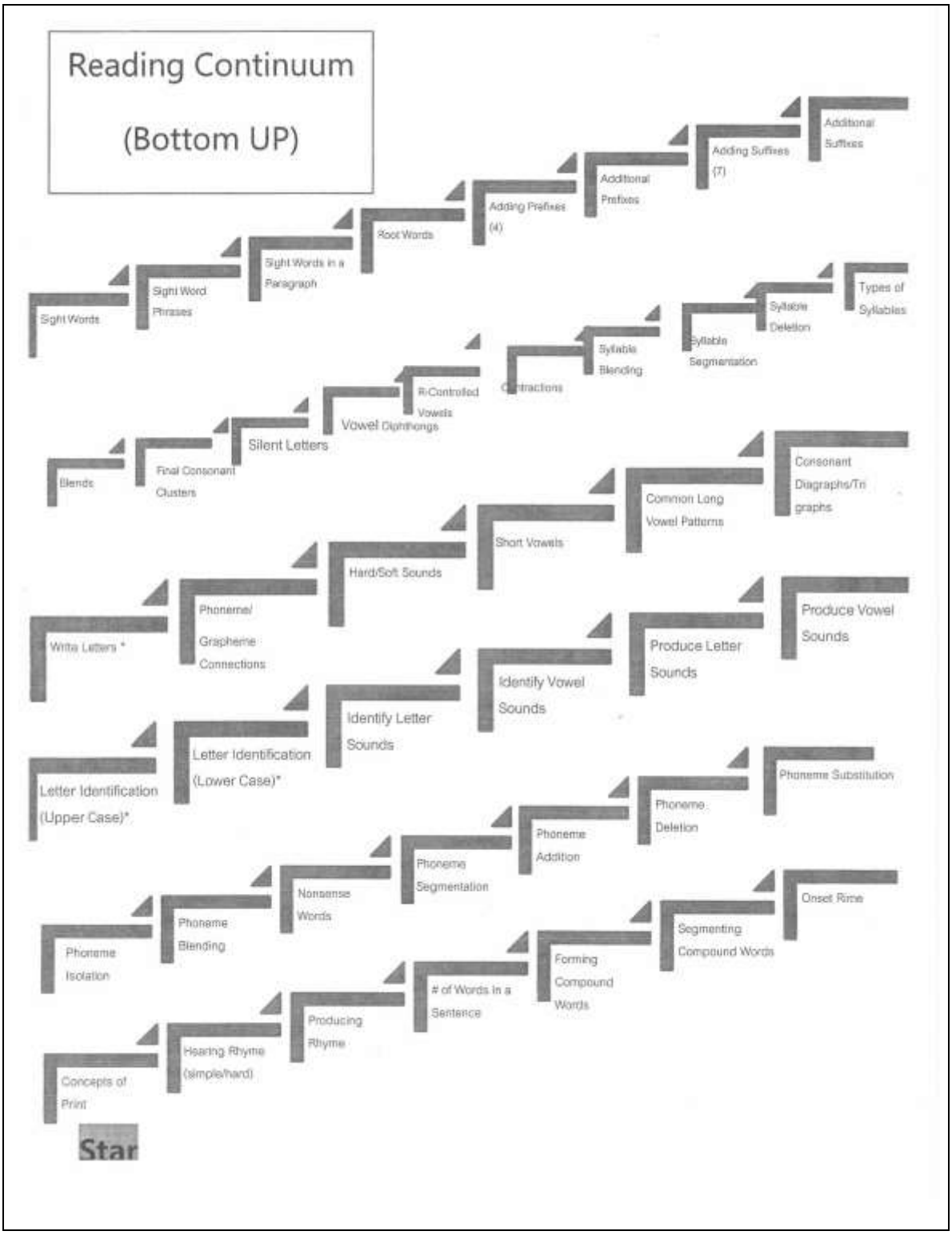

Figure 2. Screen shot of Donna Whyte's Reading Continuum, by D. Whyte, 2016. Reprinted with permission, see Appendix F.

Table 7

Early Literacy Reading Techniques

Reading Strategy	**Skill**
Choral Cloze Procedure	Fluency
Shadow Reading	Phonemic Awareness
Guided Group Reading	Phonics and Fluency
Choral (Group) Reading	Fluency and Comprehension
Partner Reading	Fluency
Silent Reading (with monitoring)	Comprehension
Echo Reading	Fluency
Round Robin Reading	Fluency
Popcorn Reading	Fluency

Note. Adapted from Edmond-Long (2016). Table created from information in the handout.

Preschool teachers required intensive, ongoing, professional development for improvement of strategies in early literacy skills instruction, centered on phonemic awareness for student success (Musti-Rao & Cartledge, 2007). Children who lacked literacy skills at an early age were more susceptible to fall behind in reading during elementary school (Da Costa, Haughey & Snart 2001; Kaminski, Powell-Smith, Hommel, McMahon & Aguayo, 2015; Stancel-Piatak et al., 2013). Sparks, Patton, and Murdoch (2014) asserted early exposure to print and early literacy skills influenced student achievement over time (p. 189). At the conclusion of the study, researchers discovered students who had early exposure to print and strong early literacy skills were more successful readers than students with weak early literacy skills (Sparks et. al., 2013). In a like manner, Wanzek, Roberts, Otaiba, and Kent (2014) believed literacy instruction in kindergarten led to academic gains in elementary school. In addition, students who entered kindergarten at-risk for reading problems were also at-risk for reading difficulties

in elementary school (Allor & McCathren, 2003; Wanzek Roberts, Otaiba, & Kent, 2014).

By contrast, Cunningham and Carroll (2011) discovered no differences in reading achievement for students exposed to print and taught to read at ages four and five than those who were taught at ages six and seven. The researchers found no difference in reading comprehension or letter recognition and only a small difference in phonological skills for the two age groups (Cunningham & Carroll, 2011). Da Costa, Haughey, and Smart (2001) concluded students who experienced failure in school at an early age were at risk for continued failure, without phonemic awareness foundational reading skills. Foster and Miller (2007) added students reading below grade level and lacking phonemic awareness in first grade were 88% more likely to read below grade level by the fourth grade (p. 173). Cihon, Gardner, Morrison, and Paul (2008) asserted early literacy skills were necessary for student academic success (p. 138).

Phonemic awareness. Phonemic awareness, one of the Big Five foundational components of early literacy, best described as the ability for students to manipulate phonemes in oral language (Cassidy et al., 2010; Cihon, Gardner, Morrison, & Paul, 2008). Whyte (2016) added phonemic awareness consisted of the students' ability to "notice, think about, and work with the individual sounds in spoken words" (para. 1). Musti-Rao and Cartledge (2007) conducted a study with kindergarten students on phonemic awareness, the alphabetic principles and early reading skills, and discovered teachers who spent more instructional time engaged in direct instruction on the alphabetic principles and phonemic awareness experienced more success in teaching early literacy skills than those who did not (Cassidy et al., 2010; Musto-Rao & Cartledge, 2007).

Snider (1997) added training teachers in explicit instruction in phonemic awareness increased student achievement in reading. In addition, Cassidy et al. (2010) believed a students' level of phonemic awareness was one of the most important factors for success in early literacy and reading skills. Farkas (2000) noted students who lacked skills in phonemic awareness in first grade were at risk of not reading on grade level by the end of the school year. Callaghan and Alison (2012) asserted kindergarten phonemic awareness skills were predictors of student achievement in first grade. According to findings in a longitudinal study, significant differences in student achievement existed between students who had phonemic awareness skills in kindergarten and those that did not (Callaghan & Alison, 2012). However, Windsor and Pearson (1992) found phonemic awareness alone was not enough for students to experience success in learning to read and noted repeated readings, writing, and spelling practice were essential for student success in reading.

Reading skills were dependent on phonemic awareness along with reading practice (Windsor & Pearson, 1992). Clay (1991) added, "Gaining skills in reading and phonological awareness may work interactively throughout the acquisition of both" (p.15). Similarly, in the 2000 National Reading Panel's (2000) report, a meta-analysis of 52 studies found phonemic awareness had a compelling influence on student achievement in reading, writing and spelling (as cited in Anthony & Francis, 2005, p. 255). In a like manner, Hattie (2009) in his meta-analysis discovered phonemic awareness had an effect size of $d = 0.86$, on overall reading achievement ($d = 0.53$) (p. 133). Also, teaching students to manipulate phonemes by using letters showed greater improvements in

student achievement than teaching students to manipulate phonemes without using letters (Hattie, 2009).

Snider (1997) explored the relationship between reading achievement and phonemic awareness in kindergarten and second-grade students' reading achievement and found students who lacked phonemic awareness skills in the second-grade were at risk for reading failure. As a result, in 2010, 67% of fourth-grade students in the United States were reading below grade level (Ding, Richardson, & Schnell, 2013, p. 132). Bushink (1997) agreed students who lacked early literacy and phonological awareness skills were more likely to experience continued difficulties with reading than those students with strong phonological awareness skills.

Vocabulary. Muter, Hulme, Snowling, and Stevenson (2004) described vocabulary as "the ability to understand the meanings of individual words" (p. 665). Vocabulary included the meaning of words and their relationship to concepts of print (Neuman & Dwyer, 2009). Muter et al. (2004) and Manyak et al. (2014) agreed vocabulary development played an integral role in reading comprehension and phonemic awareness skills. Similarly, Ding et al. (2013) and Sparks (2013) noted, vocabulary skills were essential in learning to read. In addition, students needed to develop vocabulary skills at an early age, because vocabulary influenced academic success in literacy as students progressed through school (Boulware-Gooden, Carreker, Thornhill, & Joshi, 2007; Christ & Wang, 2010; Neuman & Dwyer, 2009). Wright and Neuman (2013) believed vocabulary influenced oral language, reading fluency and comprehension. While Hattie (2009) noted vocabulary as a critical factor in developing reading comprehension and literacy skills.

The NCLB Act, formerly the Elementary and Secondary Education Act (ESEA) of 1965 reinforced the role of vocabulary instruction and early literacy (Berne & Blachowicz, 2008). Neuman and Dwyer (2009), in their meta-analyses of 61 studies, discovered a correlation between kindergarten vocabulary development, instruction, and reading achievement two years later (p. 385). In addition, Hairrell, Simmons, Rupley, and Vaughn (2011) found teachers who participated in high-quality professional development and dedicated more instructional time to vocabulary instruction demonstrated higher academic gains than teachers who did not attend the professional development sessions. Also explicit vocabulary instruction from teachers was necessary for students to comprehend text (Hairrell, Simmons, D., Rupley, & Vaughn, 2011). Beck and McKeown (2007) conducted two studies on direct instruction for kindergarten and first grade students; one focused on the number of words students learned while receiving direct instruction, and the second study focused on the number of hours teachers engaged in the direct instruction of vocabulary. In both studies, students who received direct and additional instruction in vocabulary yielded larger gains from pre-to-post-test than students who received implicit (indirect) vocabulary instruction (Beck & McKeown, 2007).

A meta-analysis of 37 studies of vocabulary instruction for students in grades Pre-K-12 produced similar results (Elleman, Lindo, Morphy, & Compton, 2009, p. 6). Findings indicated students who received direct instruction demonstrated higher academic gains (d = 1.23) than those who did not receive direct instruction (d = 0.39) (Elleman et al., 2009, p. 1). Cohen and Byrnes (2007) asserted direct instruction enhanced the reading achievement of struggling students. In an action research project

with third-grade students, results confirmed students with reading difficulties learned more vocabulary words than students without reading difficulties (Cohen & Byrnes, 2007). In addition, direct instruction over an extended time produced enhancements in student vocabulary development for kindergarten students (Coyne et al., 2010). Researchers also advocated for more instructional time devoted to vocabulary, direct instruction, and student interaction with vocabulary words in different contexts (Beck & McKeown, 2007; Coyne et al., 2010).

In addition to extended vocabulary instruction, Sobolak (2011) believed the instructional strategies were critical to student vocabulary development. Questioning, clarifying, read-alouds, and repeating when necessary were essential elements for early vocabulary development. Study results indicated students who received robust instruction demonstrated gains in vocabulary over the control group (Sobolak, 2011). In a like manner, Hattie (2009) explored vocabulary in his meta-analysis and ranked vocabulary at number 15 on his list of 138 influences on student achievement (p. 297). Hattie's research produced an overall effect size of $d = 0.67$ (p. 297). On the other hand, Marzano's (2015) research produced an effect size of $d = 1.2$ for first grade and $d = 0.50$ for kindergarten (para. 1). Boulware-Gooden et al. (2007) examined the use of meta-cognitive strategies in direct instruction and the link between vocabulary and comprehension development. Meta-cognitive instructional strategies, such as summarizing, graphic organizers, text talk, and questioning allowed for students to actively engage with the text. The research centered on 119 third-grade students from two schools over a five-week period in which the intervention group demonstrated a 20% gain over the control group in reading comprehension and a 40% gain over the control

group in vocabulary development (Boulware-Gooden et al., p. 76). Similarly, Blamey and Beauchat (2011) found direct instruction and the meta-cognitive strategy text talk to be beneficial in student vocabulary development.

Marzano (2005) developed a six-step vocabulary process for direct instruction (see Table 8). The first three steps, used as a set, ensured teachers appropriately introduced a new term and helped students develop an initial understanding of the term. The last three steps described different types of multiple exposures students experienced over time to help shape and sharpen their understanding of the terms (Marzano, 2005, p. 14).

Table 8

Marzano's Vocabulary Instructional Strategies

Six Step Instructional Process	
Step 1	Describe, explain and give an explanation of the new terms
Step 2	Ask students to explain or describe the new terms in their own words
Step 3	Ask students to draw a picture, symbol, or other graphic to explain the terms.
Step 4	Allow students multiple opportunities to engage in activities to expand their knowledge of the term.
Step 5	Ask students to talk about the terms with their peers
Step 6	Allow students to play games and engage in activities to learn the new terms.

Note. Adapted from Marzano & Pickering (2005, p. 14).

Manyak et al. (2014) advocated for vocabulary instruction in context and multiple exposures by teaching the individual word along with strategies to remember the word. Beck, McKeown, and Kucan (2013) agreed on the introduction of vocabulary in context

(while reading a story) and vocabulary instruction explanations in more detail after reading. Child-friendly definitions, frequent review of the words, and multiple examples were also important in vocabulary achievement for young students (Beck et al., 2013; Manyek et al., 2014: Wilcox & Morrison, 2013). In a like manner, Wilcox and Morrison (2013) added connections to student experiences in addition to multiple exposures and teaching vocabulary instruction in context. In addition, actively engaging students in vocabulary instruction increased academic achievement (Blamey & Beachant, 2011; Wilcox & Morrison, 2013). Beck et al. (2013) directed a study designed to measure the connection between robust vocabulary instruction and reading comprehension of kindergarten and first-grade students. Participants who received robust vocabulary instruction demonstrated significant gains in comprehension activities from pre-to-post-test than students who did not (Beck et al., 2013).

Alternatively, Khamesipour (2015) included both explicit (direct) and implicit (indirect) instruction as important elements in student vocabulary development. Khamesipour (2015) also argued both methods increased student vocabulary and explicit instruction alone did not improve student vocabulary (2015). In Khamesipour's (2015) research, students who received direct and indirect instruction experienced similar results on their pre and post-tests (p. 1620). Damhius, Segers, and Verhoeven (2014) agreed on the importance of explicit and implicit vocabulary instruction, but disagreed on how each method improved student vocabulary for kindergarten students. Explicit and implicit instruction improved the breadth of vocabulary development, but explicit instruction alone improved students' depth of vocabulary knowledge (Damhius et al., 2014).

Comprehension. Comprehension, one of the foundational skills in early literacy, was defined by Clay (1991) as the process of using hints to understand written materials. Horowitz (2014) added comprehension-involved reading for understanding and meaning. Throughout the then-current literature teaching reading comprehension presented a major problem for teachers. According to Liang and Dole (2006), "Many teachers are still not sure about how to teach comprehension. When we ask them what they do, we find they are always looking for more ideas and more concrete ways to improve their students' comprehension skills" (p. 743). The National Reading Panel report (2000) suggested the use of explicit (direct) instruction along with reading comprehension strategies to enhance literacy skills. Scharlach (2008) agreed and added a variety of meaningful reading strategies, which aided students in gaining reading comprehension skills. In addition, guided reading played an important role in student literacy success (Pressley, 2001). Direct instructional strategies that enhanced students' comprehension skills included questioning, clarifying, summarizing, and predicting (Biancarosa, 2005). These strategies actively involved the reader with the text and improved students' reading comprehension, specifically when teachers modeled and demonstrated when to use a particular strategy (Biancarosa, 2005; Clark & Graves, 2005). Onofrey and Theurer (2007) examined comprehension instruction, noticed teachers were not utilizing explicit instruction, and identified visualization as a key strategy for direct comprehension instruction. The researchers suggested student modeling and sharing of mental images to help create student images as student's read (Onofrey & Theurer, 2007).

According to Block and Pressley (2003), "Many students require repeated instruction, using a wide variety of genres and hands-on manipulative exercises before

they can visualize concrete and, later, abstract concepts as they read" (p. 116). In a like manner, Clark & Graves (2005) advocated for direct instructional scaffolding and focused on two instructional strategies: Direct Explanation of Comprehension Strategies (DECS) and reciprocal teaching. DECS started with the teachers' description and modeling of the strategy, followed by prediction, collaboration, and a student's independent use of the strategy. Reciprocal teaching was most advantageous when used with scaffolding, since this allowed students to read grade-level material critically and understand the purpose of their reading (Clark & Graves, 2005). Scharlach (2008) added comprehension instruction should occur while students were engaged in reading instead of isolation.

In addition to direct instruction, Boushey and Moser (2012) believed extended opportunities to practice reading improved comprehension and built reading stamina. Comprehension influenced vocabulary development, decoding, and fluency in early literacy (Christ & Wang, 2010). Damhius et al. (2014) agreed and discovered a link, specifically between comprehension and vocabulary, in their study on kindergarten students.

In a two-year longitudinal study, Muter et al. (2004) discovered that phonemic awareness and vocabulary had a significant influence on students' reading comprehension skills. Results revealed improvements in reading comprehension from pre-to-post-assessment (Muter, Hulme, Snowling, & Stevenson, 2004). In a like manner, Boulware-Gooden et al. (2007) experienced similar results in their study of third-grade students reading comprehension and vocabulary instruction. Carlson, Jenkins, Li, and Brownell (2013), in a longitudinal study, discovered a link between phonemic awareness,

vocabulary, and reading comprehension. Research results indicated a moderate relationship between reading comprehension and vocabulary from age five to six (0.62) and a moderate link between vocabulary and phonemic awareness from age five to six (0.16) (p. 125).

Kendeou, White, Van den Brock, and Lynch (2010) examined four and six-year-old students' oral language and decoding skills and the connection to reading comprehension. Results indicated oral language and decoding skills had an influence on student reading comprehension. Students who scored high on the decoding and oral language assessments also scored high on the comprehension assessment (Kendeou et al., 2010). Hattie (2009) ranked comprehension programs at number 28 on his list of 138 influences related to student achievement, with an overall effect size of $d = 0.58$ (p. 297). Similarly, Kim, Petscher, Schtschneider, and Foorman (2010) evaluated the growth rate in oral reading fluency for students and its relationship to reading comprehension. The Florida study followed K-3 students over a four-year period (Kim et al., 2010), and the results indicated students who demonstrated accelerated growth in oral reading fluency also showed significant growth from pre-to-post-test and either met or exceeded grade-level benchmarks (Kim et al., 2010).

Fluency. Fluency and oral language played an important role in student success in reading, as one of the essential skills in early literacy (Henning, McIntosh, Arnott & Dodd, 2010; Wright et al., 2013). Cassidy et al. (2010) defined fluency as "efficient, effective word recognition skills that permit a reader to construct meaning of text" (p. 651). Fluency allowed students to shift from decoding to gaining meaning from text (Ellery, 2014). "Three constructs are normally applied to determine whether someone is

reading fluently. In general these constructs are (a) automatic and (b) accurate recognition of words and, if reading aloud, (c) the proper use of prosody (reading with expression)" (Turner, 2012, p. 264). In addition, Ellery (2014) and Rasinki (2010) believed students needed phonemic awareness and phonics skills to develop fluency skills. Hattie (2009) and Marzano (2015) agreed oral language and fluency were essential to the reading success of students and created a link between comprehension and phonics. Marzano's (2015) research focused on initial sound fluency, while Hattie's (2009, 2012) research focused on overall fluency. Hattie (2009) ranked fluency at number 16 with an effect size of $d = 0.67$ on his list of 138 influences on student achievement (p. 297), while Marzano (2015) assigned an effect size of $d = 0.42$ for initial sound fluency of first-grade students (para. 2). The future academic success of children relied on their ability to comprehend and read with fluency. Furthermore, fluency and comprehension were of critical importance in the elementary grades to prevent further reading difficulties, as students progressed through school (Hausheer, Hansen, & Doumas, 2011).

Cassidy et al. (2010) believed there was an important link between fluency and reading comprehension and advocated using repeated oral reading practice and independent reading to improve student fluency. Alber-Morgan (2006) directed a study with combined repeated readings as instructional strategies and discovered when students had multiple opportunities to read orally the same text; students made significant improvements in reading fluency. The researchers also believed in the use of repeated reading instruction with other instructional practices for best results (Alber-Morgan, 2006; Vadasy & Sanders, 2008). A study recent to this writing, conducted on repeated

reading and listening-while-reading strategies, produced mixed results (Hawkins, Marsicano, Schmitt, McCallum, & Musti-Rao 2015). The researchers examined four students in fourth grade, over a 12-week period, and at the conclusion of the study three students showed improvements with repeated reading and listening-while-reading and one student demonstrated gains in repeated reading only (Hawkins et al., 2015, p. 49). Similarly, Boushey and Moser (2012) viewed listening to reading as an essential element in improving reading fluency of students and also believed listening to reading enhanced students' reading comprehension and vocabulary development. Vedasay and Sanders (2008) described the repeated reading model as useful for short-term intervention with struggling readers, and study results indicated first and third-grade students who received repeated reading instruction showed gains in word reading and fluency.

By contrast, Therrien and Hughes (2008) discovered inconsistent results on repeated reading and student achievement. Although the researchers agreed reading comprehension and fluency were connected, they disagreed about the effectiveness of repeated reading instruction (Therrien & Hughes, 2008; Therrien, Wickstrom & Jones, 2006). In addition, a meta-analysis indicated a moderate relationship between repeated reading and reading comprehension. The research also indicated repeated reading did not always transfer to new reading or improve student comprehension (Therrien et al., 2006). In another study, Kuhn et al. (2006) found no difference in student achievement with repeated reading, along with scaffolding and a wide range of texts. On the other hand, the same researchers found improvements in student automatic word recognition and accuracy. Therrien and Hughes (2008) concluded that the relationship between reading fluency and reading comprehension needed additional research.

Phonics. Phonics, one of the five pillars of reading instruction, was defined by Hattie (2009) as the ability to use the alphabet code to read words. Griffith and Mesmer (2005) described phonics as the relationship between letters and sounds. In addition, phonics and phonological awareness included the ability to understand the "relationship between the sounds of words and parts of words" (Whyte, 2016, para. 4). In Hattie's (2009) meta-analysis, phonics and phonological awareness skills factored heavily on students' ability to read, with effect sizes of $d = 0.73$ and $d = 0.70$ for phonological awareness and $d = 0.60$ for phonics instruction (p. 133). Hattie believed instruction in phonics had a significant influence on a student's ability to read and ranked phonics at number 22 on his list of influences on student achievement (p. 132). Similarly, Marzano (2015), in his meta-analysis, ranked phonics instruction with an effect size of $d = 0.66$ on student achievement (para. 2). Cassidy et al. (2010), in their study, revealed instruction in phonics had the greatest influence at the kindergarten and first-grade levels. Students received foundational skills in phonics in kindergarten and first grade; so, students could read on grade level (Callaghan & Alison, 2012; Cassidy et al., 2010). Deacon (2012) believed phonological awareness skills in preschool were linked to student achievement in reading, and the study specifically examined phonological awareness and orthographic processing for first and third-grade students. Findings demonstrated early literacy and phonological skills in preschool were critical for student success in first and third grade (Deacon, 2012).

In a like manner, Pae, Sevcik, and Morris (2010) found a strong relationship between phonological awareness and student achievement in reading. The students who exhibited strong phonological awareness and phonics skills performed better than

students who had poor phonological skills (Pae, Sevcik, & Morris, 2010). Similarly, Olofsson (2000) believed in a significant link between phonological awareness and reading. The research results supported phonological awareness skills were a stronger predictor of early reading achievement than rapid object naming (Olofsson, 2000). Pullen and Justice (2003) asserted children who lacked phonological skills also experienced difficulties decoding words.

Bianco et al. (2012) examined the relationship between oral language, phonological awareness and reading for three and four-year-olds over a three-year period. At the conclusion of the study, researchers were able to show a positive relationship between phonological awareness, oral language skills, and student reading comprehension (Bianco et al., 2012). Likewise, Hilbert and Eis (2013) discovered a similar link between phonological skills, reading comprehension, and vocabulary in an urban setting.

Reading Achievement in an Urban Environment

Early literacy and student achievement presented teachers and administrators with challenges when examining student academic achievement in reading. Teachers of at-risk students generally lacked professional development training, exhibited high teacher turnover, and administrator turnover rates, as well as had limited resources available to improve student achievement in reading (Amendum & Fitzgerald, 2013; Kaminski et al., 2015). As a result, urban teachers were often in a school climate of decreased morale and substandard student expectations, and these factors allowed students in an urban environment to fall behind their counterparts in school (Johnson & Fargo, 2010). Guskey (2002a) added teachers who were unsuccessful in teaching in an urban environment

believed students were incapable of achieving excellence in the classroom. In addition, district and building administrators expected teachers in an urban environment to teach critical thinking skills, while focusing on basic skills (Haberman, 2004).

Low academic achievement was not just a problem in the United States. Students in urban schools across the world faced serious challenges influenced by reading progress (Burroughs-Lange & Douetil, 2007). One major challenge included students in urban settings who lacked the same exposure to literature as their counterparts (Amendum & Fitzgerald, 2013). Norwalk, DiPerna, Wu, and Lei (2012) asserted "children who enter school with deficits in language and early literacy skills often fail to catch up to their peers and are at a higher risk for subsequent reading failure" (p. 170). Farkas (2000) added students from low-income urban areas had the ability to reach a high level of success in reading. The problem arose when low-income students in urban areas entered first grade with no skills in decoding, phonemic awareness, phonics, and writing. Furthermore, "research has shown that low-income minority, and less skilled readers fall behind their high-income, white and more skilled peers during the summer months when they are not in school" (White & Kim, 2008, p. 117). Henning, McIntosh, Arnott, and Dodd (2010) and Cassidy et al. (2010) believed students from urban low-income backgrounds, who entered school significantly below their peers with phonological awareness and oral language skill deficits, were at a greater risk of failure. As a result, students continued to fall behind as they progressed through elementary school (Burroughs-Lange, & Douetil, 2007; Elleman et al., 2009; Farkas, 2000).

Vocabulary development played an important part in academic success for students in an urban environment (Christ & Wang, 2010; Manyak et al., 2014; Sobolak,

2011). Students from an urban environment acquired an average of 3000 root words in contrast to their affluent counterparts who acquired approximately 7100 root words when they entered school (Boulware-Gooden et al., 2007, p. 72). Additionally, students who entered school from a low socioeconomic background learned about 6000 fewer words than their peers (Sobolak, 2011, p. 15). Sparks (2013) added children from low-income households entered school knowing 10,000 fewer words than the other students (p. 1). Foster and Miller. (2007) believed in the importance of closing the achievement gap for students when they entered kindergarten, for continued success in school.

The ESSA of 2015 sought to improve early reading achievement of pre-school and elementary school urban students. In response to the literacy crisis, school districts implemented Title 1 intervention literacy and math programs for urban students at-risk of failure in reading or math (Kainz & Vernon-Feagans, 2007, USDOE, 2015). Reading First, a federal grant program that began in 2004, enabled urban students in grades K-3 to improve foundational reading skills in the areas of vocabulary, phonics, phonemic awareness, comprehension, and fluency (USDOE, 2002). To improve student academic achievement and literacy skills, other countries established similar programs, such as Reading Recovery (Burroughs-Lange, & Douetil, 2007).

Alternatively, Henning et al. (2010) discovered no long-term differences between student achievement for students who received early literacy intervention services in pre-school and students who did not receive intervention services (p. 231). Wanzek et al. (2014) concluded low socioeconomic students were less likely than their affluent peers to participate in early literacy intervention programs. In addition to Title 1 programs, researchers examined various models of professional development in an urban setting.

Professional development schools. Klinger, Ahwee, Van Garderen, and Hernandez (2004) explored the Professional Development School (PDS) model in an urban setting over an eight-year period. Researchers developed the PDS model to improve the relationship between K-12 educators and university teachers in urban schools. Carpenter and Sherretz (2012) viewed a professional development school as an organization geared towards enhancing professional practice of new, veteran teachers and university professors through collaborative efforts. From 1993 until 2001, university teachers paired with K-12 teachers to improve student achievement at Carter Elementary School where students demonstrated growth on the Stanford Achievement Test and Florida Comprehensive Achievement Tests as compared to schools with similar demographics (Klinger, Ahwee, Van Garderen, & Hernandez, 2004).

Similarly, Jarrett, Evans, Dai, Williams and Rogers (2010) studied the relationship between student achievement in reading and professional development in a PDS elementary school. Findings indicated students showed gains in reading on the Developmental Reading Assessment during the 2003-2004 and 2004-2005 school years (Jarrett, Evans, Dai, Williams, & Rogers, 2010). Alternatively, Hayes and Robnolt (2007) experienced mixed results in a two-year study at an elementary school focused on K-4 students' achievement on standardized tests in phonics, phonemic awareness, comprehension, vocabulary and phonemic awareness. Additionally, the study focused on teacher professional development designed on data analysis of student areas for growth. At the end of the two-year study, K-4 students did not meet their academic goals in some areas but succeeded in others (Hayes & Robnot, 2007).

Job-embedded coaching and professional development. Camburn (2010) explored job-embedded coaching and professional development, as compared to traditional professional development in an urban setting. Specifically, the study examined teacher attitudes regarding the different types of professional development experiences for 80 schools in a longitudinal study (p. 467). Findings indicated participants favored job-embedded coaching and professional development over traditional experiences. "Nearly 88% of all teachers agreed or strongly agreed their learning experiences [provided] knowledge or information that is very useful to me in the classroom" (Camburn, 2010, p. 468). In a similar study, Cramer, Gudwin, and Salazar (2007) investigated job-embedded professional development in an urban school district. The study involved 140 schools with two targeted schools and six teachers for job-embedded professional development, over a two-year period (pp. 27-28). Although, all schools demonstrated progress towards meeting Adequate Yearly Progress, the targeted schools showed greater academic gains than other schools (Cramer, Gudwin, & Salazar, 2007). Furthermore, teachers reported positive comments towards the professional development experience and expressed the experience helped to improve instructional practices (Cramer et al., 2007). Johnson and Asera (1999) found similarities in their study of nine high-performing urban schools. Principals in the high-performing schools ensured a common time for teachers to plan and collaborate during the school day. In addition, job-embedded professional development incorporated into the staff development plan was an essential element in the schools' success (Johnson & Asera et al., 1999). Pomerantz and Pierce (2013) directed a study at Williams Elementary School, grades K-5. Findings showed coaching/job-embedded professional development to be a

useful model for underperforming schools in an urban environment. As an illustration, students at Williams Elementary School demonstrated improvement in the areas of math and English on the state standardized exams (Pomerantz & Pierce, 2013).

Griffith, Kimmel, and Biscoe (2010) examined the Optimal Learning Sector (OLS) model that utilized job-embedded professional development coaching and progress monitoring to inform instructional practices in an urban pre-school setting. "Within the OLS, teachers' knowledge and skills increase, and children's learning accelerates" (Griffith et al., 2010, p. 3). At the end of the three-year study, pre-school student achievement in early literacy skills improved from pre-to-post-test (Griffith et al., 2010). In addition, Akhavan (2005) conducted a study at Lee Richmond school with similar results. The school implemented coaching and job-embedded professional development to change instructional practices, and as a result the school met or exceeded growth goals for two years (Akhavan, 2005). However, the coaching model warranted additional research on its overall effectiveness (Pomerantz & Pierce, 2013).

In a like manner, Johnson and Fargo (2010) directed a longitudinal study on the Transformative Professional Development model incorporated during a two-week summer institute with job-embedded coaching and professional development in an urban setting. The goals of the project were to improve teacher instructional practices and student achievement. Six of the eight teachers demonstrated a change in instructional practices and student standardized test scores improved from pre-to-post-test (Johnson & Fargo, 2010). Klein and Riordan (2009) examined the Expeditionary Learning Schools Outward Bound model of professional development. The model consisted of coaching, training, extended time for professional development, and reflection with colleagues. The

researchers believed these essential elements linked professional development to instructional practice and student achievement (Klein & Riordan, 2009).

Summary

This researcher examined professional development standards developed by the NSDC (2001), teacher perceptions, beliefs, and attitudes about professional development, and Guskey's (2002b; 2014) FLPD evaluation and planning. Additionally, the researcher explored early literacy and included a discussion on reading achievement in an urban environment. In Chapter Three, the researcher describes the study's purpose, hypotheses, and research question. The researcher also details the methodology, research tools, participants, data gathering measures, and limitations of the study.

Chapter Three: Methods

Introduction

Student proficiency achievement scores within the researched school district, specifically in reading, was 16% compared to the state average of 59% (Carterville SD 189, p. 2). Due to the previous work of Marzano (2015), Hattie (2009), and Guskey (2002b), the researcher investigated a possible relationship between teacher professional development and student achievement in reading on the K-2 grade levels in an urban setting. In addition, the researcher investigated teacher perception of professional development and student achievement in reading one the K-2 grade levels in an urban setting. Of particular interest were teacher attitudes and beliefs about professional development.

Purpose

The purpose of this study was to investigate a possible relationship between teacher professional development and reading achievement in an urban setting. In addition, this study explored teacher perception of professional development related to reading. Furthermore, the study examined how teacher professional development was applied using Guskey's framework for professional development (2002b) on the K-2 grade levels in reading. The researcher examined the data during the winter semester of 2015 and winter semester of 2016. The researcher selected this grade level for several reasons. Early literacy played an ongoing role for a student's future success in reading achievement, and teacher professional development in reading influenced student achievement in the early years (Cottingham et. al., 2008). In addition, teacher perception of the professional development experience influenced teacher instructional practices

(Kersiant et al., 2001). Study results on teacher professional development and student achievement in reading research was limited in early literacy and studies available at the time of this writing focused on teacher professional development and student achievement for primary grades were also limited (Porche et al., 2012). The researcher aimed to add to the existing body of research by providing information, current at the time, on teacher professional development and student achievement in reading for K-2 grade levels in an urban environment. The researcher also sought to investigate and provide then-current research on teacher perception of professional development and student achievement in reading on the K-2 grade levels.

Instruments

The researcher utilized a mixed-methods approach. Maxwell (2013) defined mixed-methods as "the joint use of qualitative and quantitative methods in a single study" (p. 102). By using a mixed-methods approach, the researcher hoped to gain a better understanding of the research question and possible relationship between teacher professional development in reading and student achievement on the K-2 grade levels. The researcher used pre and post-literacy surveys, student NWEA test data, and classroom observations as data gathering tools. The surveys provided information on teacher perception of professional development, student achievement in reading, and the relationship between the number of hours that teachers participated in professional development and student achievement. The student NWEA test data also provided information on student achievement before, during, and after teacher participation in professional development. The Professional Practice Observation Tool (PPOT) and Guskey's FLPD provided data on how teachers applied instructional practices and

strategies after participation in reading professional development. The researcher designed the PPOT, as well as the teacher literacy surveys, and sent the tools to the district's instructional coaches to test for reliability and validity before distributing to teachers (Maxwell, 2013). The researcher chose to use observations and Guskey's FLPD to obtain reliable and valid data on how teachers applied instructional practices (Fraenkel et al., 2012).

Surveys

After the researcher received approval from the participating school district and the University Institutional Review Board (see Appendix A) the participants completed pre and post-survey questions electronically through Survey Monkey, during the winter semesters of 2015 and 2016 (see Appendix B). The researcher included: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD), for survey category response choices. The researcher developed the survey based on the researched district's curriculum framework for literacy and CCSS shifts for English Language Arts for grades K-5. Participants received 30 pre-surveys during the winter semester 2015; however, only 21 originally returned the surveys completed. After re-opening the survey response timeline, the remaining nine participants completed the survey.

Research Question and Hypotheses

The researcher investigated the following three hypotheses for the study:

Null Hypothesis 1: There is no relationship between teacher perception of professional development and student achievement in reading, K-2 grade levels.

Null Hypothesis 2: There is no relationship between the number of hours that teachers participate in professional development and student achievement in reading, K-2 grade levels.

Null Hypothesis 3: There is no difference between the teachers' ratings of the professional development experience according to Guskey's Five Levels of Professional Development.

The researcher explored the following research question for the mixed methods study:

Research Question: How are teacher instructional practices and strategies applied after participation in professional development in reading, K-2 grade levels?

Research Context

The researcher recruited teachers in a Midwest urban school district. The researcher specifically recruited teachers who instructed K-2 reading for participation in the study. In particular, the researcher recruited participants from five elementary schools and one kindergarten center in a Midwest urban school district.

The researcher requested assistance from the district's English Language Arts (ELA) content specialist to post flyers (see Appendix C) in each elementary school, regarding participation in the research project. This colleague also served as the contact person throughout the recruitment process. The identity of the participants remained anonymous to the researcher and were identified as teacher 1, teacher 2, etc. (see Appendix C). In addition, secondary student data remained anonymous to the researcher and were identified as student 1, student 2, etc. In addition to recruitment, the ELA

content specialist also served as the contact person for collection of surveys and questionnaires.

Research Participants

The sample size for secondary achievement data consisted of 145 students, based on 10% of the target population of students enrolled in the K-2 grade levels within the researched school district. The sample size for the teacher participants was 30, based on 10% of the K-2 target population of teachers. The researcher chose this sample size as an optimal number for a mixed-methods study, as noted by Terrell (2012). In addition, this sample size enabled the researcher the opportunity to generalize the results to the total district's K-2 student and teacher populations. The researcher chose two-stage random sampling, so that all schools were represented by teachers and K-2 students (Fraenkel et al., 2012). In addition, the researcher chose purposeful selection, because the participating K-2 teachers possessed information unique to the researcher's question and hypotheses (Maxwell, 2013).

Research Participant Demographics

Thirty teachers participated in the study, and 100% were female. Approximately 86% of respondents taught grades one and two, and 14% taught kindergarten. Seventy percent of respondents self-identified as African American, and 30% identified as Caucasian.

Relationship to Participants

The researcher served as the participant's supervisor during the time of the study and reduced coercion by arranging for participant identity to remain anonymous throughout the research process. The participants volunteered to participate in the study,

knowing the researcher was the investigator in the study (Appendix H). All responses remained anonymous, and the researcher had no access to data collected until after the non-evaluative ELA content specialist scrubbed all identifiers.

Limitations

There were several limitations in the study. Teachers hired during the second semester received limited training and professional development. The researched school district conducted additional hiring of elementary school teachers during the second semester; and as a result, new teachers did not receive training on the Daily Five Framework nor did they have the benefit of the same professional development opportunities as the other K-2 teachers. The late hiring of teachers affected both the professional development received and the number of hours of participation received by each teacher. The teachers completed sign-in sheets and evaluation forms for each professional development session, which the researcher used to keep a record of the number of professional development participation hours. Additionally, during the fall semester, the teachers went on strike and the researcher was unable to obtain classroom observational data during that time. Furthermore, a third factor to consider was completion of the teacher surveys. Of the 30 pre-surveys distributed to teachers, only 21 were initially completed and returned. After re-opening the pre-survey, the researcher received the nine remaining surveys.

Methodology

The ELA content specialist, who served in a non-evaluative role, collected both qualitative and quantitative data from participants in the study for the researcher. The specialist administered the teacher professional development surveys to participants to

obtain baseline and post-data on teacher perceptions of professional development in reading, then-current semester professional development contact hours, and instructional applications from professional development activities. A staff member collected baseline survey data in the winter of 2015 and post survey data in the winter semester of 2016.

The literacy professional development was new to all participants during the 2014-2015 school year, with an emphasis on literacy, writing, textbook implementation (related to reading), the Daily Five, literacy centers, and CCSS ELA Shifts for grades kindergarten through five. The district's literacy consultant delivered the Daily Five, classroom management, and literacy center professional development training during the 2014-2015 and 2015-2016 school years. The district's ELA content specialist, along with a district teacher, facilitated the textbook professional development training sessions during the 2014-2015 and 2015-2016 school years, and the district's elementary school instructional coaches delivered the CCSS ELA Shift training. The researcher used Guskey's FLPD evaluation in assessing the professional development sessions. Guskey's FLPD included: (1) Participants' Reactions, (2) Participants' learning, (3) Organization, Support and Change, (4) Participants' Use of New Knowledge and Skills, and (5) Student Learning Outcomes (Guskey, 2002b). The researcher assessed the incorporation of ideas presented during the professional development sessions at the end of winter semester 2015 to establish baseline data and at the end of winter semester 2016 for post-data (see Appendix D).

The researcher, along with the ELA content specialist, conducted classroom observations using the PPOT (see Appendix E) to gather baseline data on instructional practices in reading. Research participants were aware the researcher and content

specialist were conducting the observations. Gathering this type of information was an ongoing component of the researcher's responsibilities as a district administrator. The staff member and researcher conducted observations in winter 2015, spring 2015, fall 2015, and winter 2016 for research purposes of gathering data. The staff member and researcher observed 30 teachers during the morning literacy block for 30 to 45 minutes, for each visit. The researcher and staff member examined learning objectives, complexity of task and thinking, engagement, content, instruction, and assessment, as outlined in the PPOT. In addition, the researcher continued to conduct observations as part of her daily roles and responsibilities, after the original data collection period ended. These observations were not evaluative in nature and the researcher used them for instructional purposes only.

The researcher used student NWEA reading scores as secondary data for K-2 students. Students took the NWEA MAP Assessments three times during each of the 2014-2015 and 2015-2016 school years. The district's assessment specialist made data accessible to the researcher when NWEA testing concluded. The district's assessment specialist uploaded reading scores to the district's server from student participants during the winter semester 2015 for baseline data and winter semester 2016 for post-study data (see Table 9), first scrubbing the data of all identifiers before the researcher received the data.

Quantitative Analysis. The researcher compiled the NWEA reading data, teacher professional development survey data, Guskey's professional development assessment data, and the PPOT data for analysis. The researcher applied a Pearson Product Moment Correlation Coefficient (PPMCC) regression and analysis for Null H1

and Null H2 (Bluman, 2013). For Null H3, the researcher utilized a *z*-test for difference, at a 95% confidence level (large sample size), to determine a whether a statistical difference between the teacher's ratings of the professional development experience according to Guskey's FLPD from winter semester 2015 to winter semester 2016 exited. After analyzing each hypothesis separately, the researcher then synthesized the data to complete the quantitative portion of the analysis.

Qualitative Analysis. The qualitative component of the study allowed the researcher to obtain teacher perceptions on how teachers applied instructional practices, after participating in professional development (RQ1). First, the researcher tabulated the observational data results by category, according to the PPOT. Next, the researcher coded for themes using Guskey's FLPD assessment, open-ended survey responses, and data from the PPOT (Fraenkel et al., 2012).

Table 9

Time Line and Order of Procedures

Research Question/Hypotheses	Measurement Tool (s)	Frequency
Null H1: There is no relationship between teacher perception of professional development and student achievement in reading, K-2 grade levels.	Student NWEA test data Teacher professional development surveys	**Twice Per Year** Winter Semester 2015 and Winter Semester 2016 student NWEA test data One pre-participation survey to establish baseline data at the end of winter semester 2015 and a post-participation survey at the end of winter semester 2016.
Null H2: There is no relationship between the number of hours that teachers participate in professional development and student achievement in reading, K-2 grade levels	Student NWEA test data Teacher professional development surveys	**Twice Per Year** Winter 2015 and Winter 2016 student NWEA test data One pre-participation survey to establish baseline data at the end of winter semester 2015 and a post participation survey at the end of winter semester 2016.
		Continued.

Table 10. *Continued*

Null H3: There is no difference between the teacher's ratings of the professional development experience according to Guskey's Five Levels of Professional Development.	Classroom Observation Tool	**Eight Times Per Year** Four classroom observations at the end winter semester 2015 and four classroom observations at the end of winter semester 2016
	Guskey's Five Levels of Professional Development Evaluation	**Twice Per Year** One pre-participation assessment to establish baseline data at the end of winter semester 2015 and a post-participation survey at the end of winter semester 2016.
RQ 1: How are teacher instructional practices and strategies applied after participation in professional development in reading, K-2 grade levels?	Classroom Observation Tool	**Eight Times Per Year** Four classroom observations at the end of winter semester 2015 and four classroom observations at the end of winter semester 2016.
	Guskey's Five Levels of Professional Development Assessment	**Twice Per Year** One pre-participation assessment to establish baseline data at the end winter semester 2015 and a post-participation assessment at the end of winter semester 2016.
	Teacher Professional Survey open-ended questions	**Twice Per Year** Winter Semester 2015 and Winter Semester 2016 student NWEA test data One pre-participation survey to establish baseline data at the end of winter semester 2015 and a post-participation survey at the end of winter semester 2016.

Summary

This chapter began with background information on the researched school district and literacy research. First, the researcher outlined the study's design and provided a thorough description of the purpose, method, participants, and data collection

instruments. The purpose of the mixed-methods study was to explore a possible relationship between teacher professional development and student achievement in reading, K-2 grade levels. The researcher used surveys, NWEA student MAP scores, classroom observations, and Guskey's FLPD as measurement tools. Next, the researcher compiled the teacher professional survey data, PPOT data, and Guskey's professional development assessment data for analysis. In the last portion of the research, the researcher coded for themes (RQ1). Lastly, the researcher reviewed the results and analyzed Null H1, Null H2, and Null H3, RQ1, and triangulated data to determine if the methods supported the conclusions (Maxwell, 2013).

Chapter Four explores the findings of the mixed-methods study. In addition, this chapter presents the data for each hypothesis separately and for the research question results. Chapter Five discusses a summary of the research findings and implications, along with program recommendations and recommendations for future research.

Chapter Four: Presentation of the Data

Introduction

The analyses in Chapter Four aim to explore a possible relationship between teacher professional development and student achievement in reading for grades K-2. The analyses also examine teacher perception of professional development and teachers' application of instructional strategies, after participation in staff development experiences. In addition, the researcher sought to determine whether data analysis results rejected the null hypotheses. Research participants received and completed pre and post-surveys on the perception of literacy professional development in winter semesters 2015 and 2016. Once the ELA content specialist scrubbed all data, the survey results and observational notes, the researcher analyzed and stored the data in a password-protected file. The researcher then uploaded and analyzed de-identified student NWEA data for winter semester 2015 and winter semester 2016 and triangulated the information.

Research Question and Hypotheses

The researcher investigated the following three hypotheses for the study:

Null Hypothesis 1: There is no relationship between teacher perception of professional development and student achievement in reading, K-2 grade levels.

Null Hypothesis 2: There is no relationship between the number of hours that teachers participate in professional development and student achievement in reading, K-2 grade levels.

Null Hypothesis 3: There is no difference between the teachers' ratings of the professional development experience according to Guskey's Five Levels of Professional Development.

The researcher explored the following research question for the mixed methods study:

Research Question: How are teacher instructional practices and strategies applied after participation in professional development in reading, K-2 grade levels?

Null Hypothesis 1

The researcher analyzed student NWEA test data and the teacher professional development survey responses to determine if there was a relationship between teacher perception of professional development and student achievement in reading, K-2 grade levels. The survey responses focused on the participants' perceptions of the professional development, as it related to student reading achievement, the CCSS ELA shifts, and the Daily Five Framework. The individual scores for each response on the survey statements ranged from 4, which was the highest, to 1, which was the lowest. The scores for each response were calculated and tabulated for an overall individual score for each participant. Next, the researcher calculated the individual scores for each category to calculate the mean score (Table 10; Table 11). To investigate Null H1, the researcher used a PMCC and descriptive regression analysis to test the relationship between teacher perception of professional development and student achievement in reading (Bluman, 2013).

Null Hypothesis 1: There is no relationship between teacher perception of professional development and student achievement in reading, K-2 grade levels.

In the initial testing of Null H1 for this study, the researcher analyzed the winter 2015 participant responses from the winter 2015 pre-survey (see Table 10). Thirty

teachers responded to the survey statements and questions regarding their perception of the professional development experience.

Table 11

Teacher Pre-Survey Questions by Response Percentage

Question	1-10	11-20	21-30	31-40	41-50
5. How many hours of professional development sessions in reading have you participated in this year?	40%	23%	10%	13%	13
Statements	SA	A	D	SD	M
6. The professional development sessions are relevant to my instruction in reading.	30%	63%	6%	0%	3.2
7. The professional development sessions meet my needs for instruction in reading.	23%	57%	20%	0%	3.0
8. I am knowledgeable about The Daily Five and The Common Core ELA shifts in reading.	27%	73%	0%	0%	3.2
9. I am prepared to implement The Daily Five and Common Core ELA shifts in reading into my daily instructional practices.	41%	59%	0%	0%	3.4
10. As a result of my participation in professional development/reading, students will increase their reading skills.	24%	62%	14%	0%	3.1
11. As a result of my participation in professional development/reading, students will increase their reading scores on the NWEA assessments.	13%	63%	23%	0%	2.9

Note. SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree M = Mean

Overall, teachers responded positively in their implementation and incorporation of the Daily Five and CCSS ELA shifts (3.4 & 2.9), exhibited in student NWEA achievement scores increasing as a result of teacher participation in professional development activities.

The researcher analyzed the winter 2016 teacher responses from the winter 2016 post-survey (see Table 11). Thirty teachers responded to the survey statements and questions regarding their perceptions of the professional development experience.

Table 12

Teacher Post-Survey Questions by Response Percentage

Question	1-10	11-20	21-30	31-40	41-50
5. How many hours of professional development sessions in reading have you participated in this year?	22%	33%	28%	11%	6%
Statements	SA	A	D	SD	M
6. The professional development sessions that I attended were relevant to my instruction in reading	29%	65%	12%	0%	3.1
7. The professional development sessions that I attended met my needs for instruction in reading.	23%	65%	12%	0%	3.1
8. I have demonstrated new knowledge or skills in the classroom about The Daily Five and Common Core ELA shifts as a result of participation in teacher professional development in reading.	28%	61%	11%	0%	3.1
9. I have gained new knowledge or skills as a result of participation in teacher professional development in reading.	28%	67%	5%	0%	3.2
10. As a result of my participation in professional development/reading, students have increased their reading skills.	19%	69%	12%	0%	3.0
11. As a result of my participation in professional development/reading, students have increased their reading scores on the NWEA assessments	24%	53%	23%	0%	3.0

Note. SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree M = Mean

The responses were slightly different from pre-survey answers, and the mean score was consistent across all statements. Teachers responded positively to gaining new skills or knowledge after participating in professional development, and noted the

sessions were relevant to reading instruction. In addition, teachers were optimistic about student achievement scores increasing after participation in professional development activities. The researcher used a PPMCC and descriptive regression analysis to determine a relationship between student NWEA scores for winter 2015 and teacher perceptions of the professional development experience (see Figure 3).

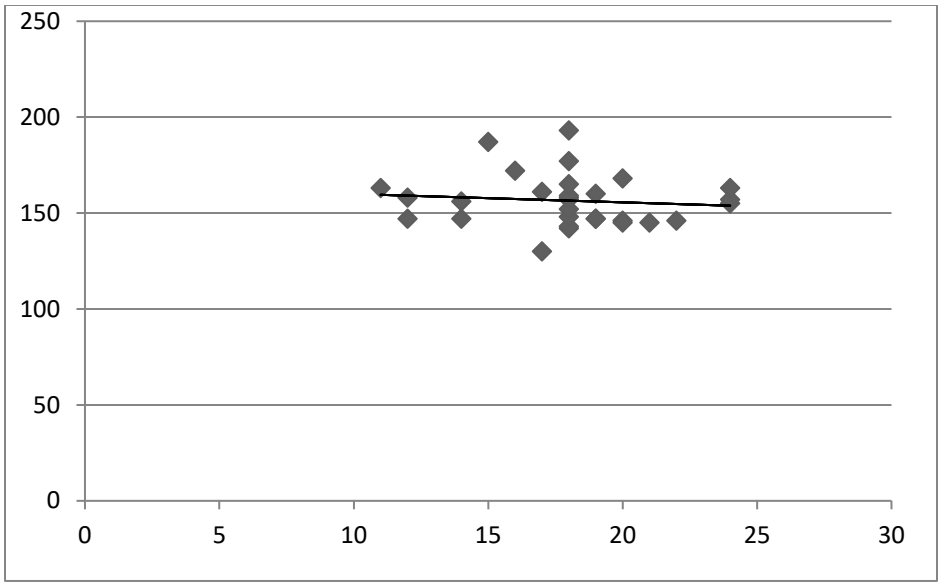

Figure 3. Student NWEA scores and teacher pre-survey responses. Pearson Product Moment Correlation Coefficient and descriptive regression analysis. N = 30; r = -0.107

Individual teacher scores ranged from one to 25, and student Rausch Unit (RIT) achievement scores ranged from 130 to 200. The *r*-score was -0.107 for analysis between teacher perception of the professional development experience and student reading achievement. An *r*-score of 1 would indicate a strong positive relationship; an *r*-score of -1 would show a strong inverse relationship; and an *r*-score of 0 or would confirm no correlation (Bluman, 2013, p. 533). The r-value, compared to the critical value of 0.333, did not support the rejection of the null H1. Therefore, the researcher found there was not enough evidence to support Hypothesis 1, and there was not a statistically significant relationship between student achievement and teacher perception of the professional

development experience. According to the data and *r*-score for winter 2015, there was an observable weak inverse relationship between pre-study student achievement and pre-study teacher perception of the professional development experience.

The results from winter 2016 student NWEA and teacher survey responses were different from the pre-survey and student 2015 achievement test data. The findings from the post-survey and winter 2016 student NWEA are displayed in Figure 4.

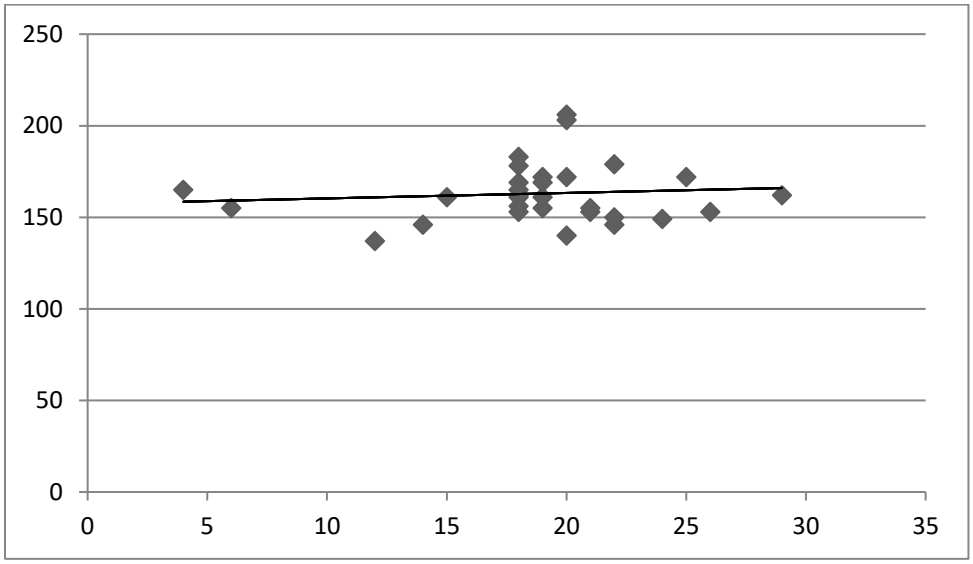

Figure 4. Student NWEA scores and teacher post-survey responses. Pearson Product Moment Correlation Coefficient and descriptive regression analysis. N = 30; r = 0.09

The NWEA and post-survey scores were located around the regression line on the scatter plot, which indicated a relationship between the two variables. Overall results demonstrated an observable very weak positive relationship (r = 0.09) between student achievement in reading and teacher perception of professional development, though not statistically significant. The *r*-value, compared to the critical value of 0.333, supported the non-rejection of the null H1. Therefore, the researcher found there was not enough evidence to reject the null hypothesis, and data did not support a statistically significant

relationship, with regard to NWEA post-study student achievement and post-study perceptions of professional development.

Null Hypothesis 2

The researcher examined the relationship between the number of hours that teachers participated in professional development activities and student achievement in reading, K-2 grade levels.

Null Hypothesis 2: There is no relationship between the number of hours that teachers participate in professional development and student achievement in reading, K-2 grade levels.

The purpose of this hypothesis was to analyze for a possible relationship between the number of professional development hours and student achievement in reading, based on NWEA assessment data. The results could reveal a positive, negative, or no relationship between student reading achievement and teacher professional development contact hours (see Figure 5).

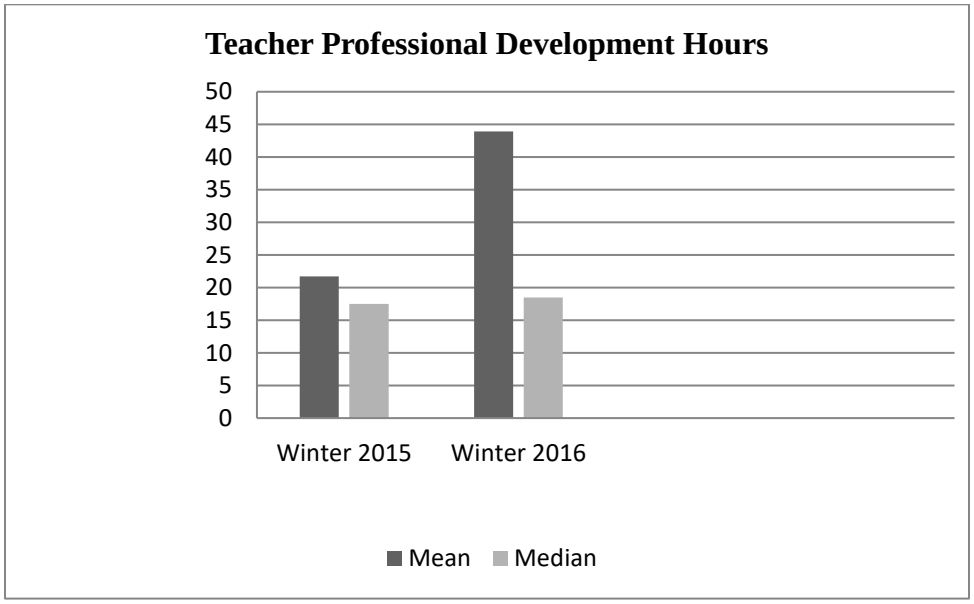

Figure 5. Teacher professional development hours.

First, the researcher examined individual teacher professional development hours from the pre and post-survey responses. Next, the researcher compared the cumulative average of professional development hours for winter 2015 and 2016, based on teacher survey responses. Participant professional development hours ranged from one to 60, for pre and post-survey responses. However, the average number of professional development hours for winter 2015 was lower by 50% than the winter 2016 average.

The researcher analyzed student NWEA assessment scores from winter 2015 to winter 2016 to determine a possible difference in student scores. If there was a difference in scores from pre-to-post-test, the test-value could indicate a possible relationship between student achievement in reading and professional development (see Figure 6).

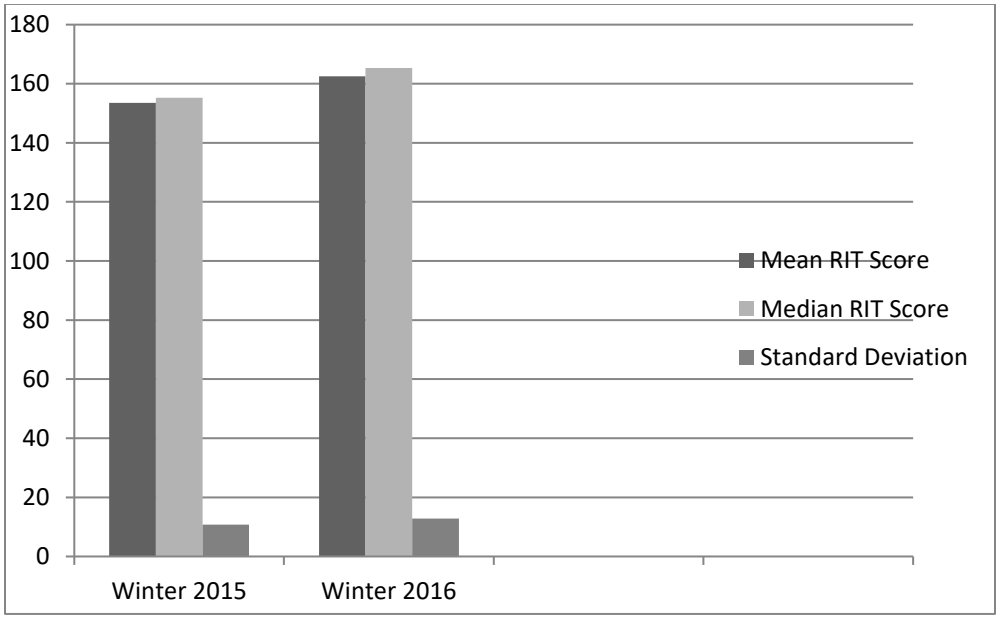

Figure 6. Student NWEA reading scores for grades K-2

The results demonstrated no observable difference, and therefore no statistically significant difference, in overall scores. The mean RIT score was 155 for winter 2015 and 161 for winter 2016, and the median was similar for both years.

The researcher used a PPMCC and descriptive regression analysis to determine a possible relationship between the numbers of professional development participation hours and student achievement in reading based on their NWEA scores for winter 2015 (see Figure 7).

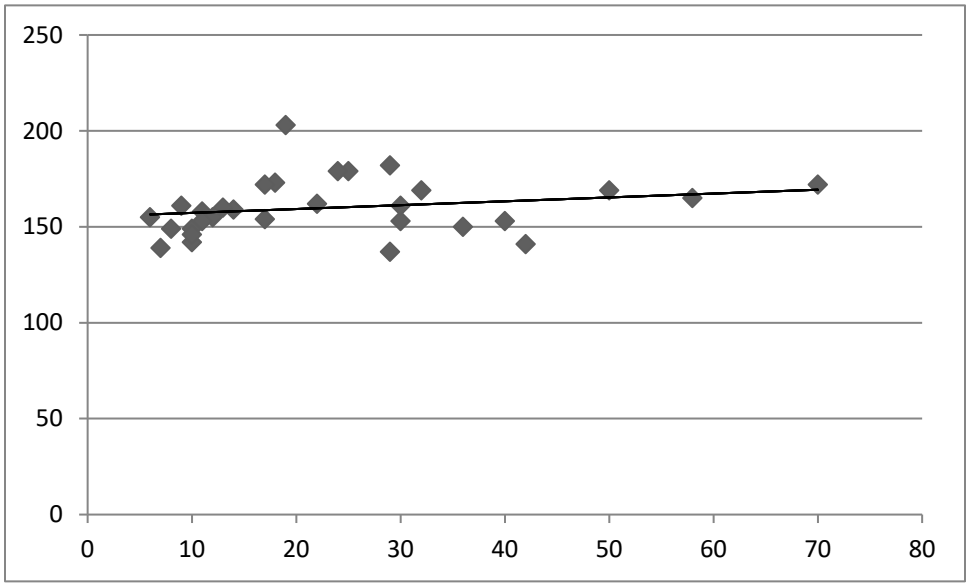

Figure 7. Student NWEA pre-test scores and teacher pre-survey hours. Pearson Product Moment Correlation Coefficient and descriptive regression analysis. N = 30; r = 0.436

Since the scores plotted around the regression line, this illustrated a correlation between the student NWEA pre-test scores and student NWEA hours. The *r*-score was 0.436, which indicated a moderate positive correlation between student NWEA pre-test scores and teacher professional development hours (Bluman, 533). The *r*-value, compared to the critical value of 0.333, supported the rejection of the null hypothesis. Therefore, data supported a significant moderate, positive relationship between student NWEA pre-test scores and teacher pre-survey professional development hours.

The researcher used a PPMCC and descriptive regression analysis to determine a possible relationship between student achievement and teacher literacy professional

development hours for winter 2016 (see Figure 8), and the results were similar to the winter 2015 data.

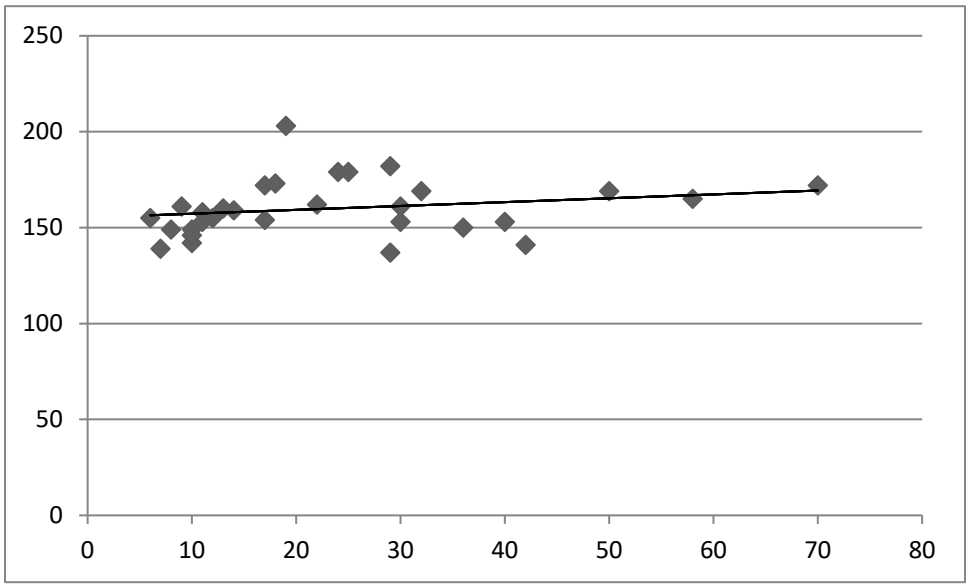

Figure 8. Student NWEA post-test scores and teacher post-survey hours. Pearson Product Moment Correlation Coefficient and descriptive regression analysis. N = 30; r = 0.221

The scatter plot showed the NWEA student post-test scores and teacher survey hours with 17 of the scores surrounding the regression line. The results of the PPMCC and descriptive regression analysis ($r = 0.221$) signified an observable weak positive relationship between teacher professional development hours and student achievement based on NWEA winter 2016 scores. The r-value, compared to the critical value of 0.333, did not supported the rejection of the null hypothesis. Therefore, data did not support a significant relationship between post-study student achievement and post-survey teacher literacy professional development hours. Data from student NWEA pre and post-scores, and teacher professional development hours illustrated a moderate-to-weak relationship between pre-study professional development and pre-study student reading achievement, and the researcher found there was enough evidence to reject the

null hypothesis, with regard to the pre-study data. Therefore, a significant moderate-to-weak relationship was established between pre-study student achievement and pre-study teacher literacy professional development hours. However, the opposite was found for examination of a possible relationship between post-study student achievement and post-study teacher literacy professional development hours. Data supported an observable weak positive relationship between teacher professional development hours and student achievement based on NWEA winter 2016 scores. This relationship was not statistically significant for comparison of post student achievement to post-study professional development hours.

Null Hypothesis 3

The researcher explored the teacher's ratings of the professional development experience according to Guskey's Five Levels of Professional Development Evaluation.

Null Hypothesis 3: There is no difference between the teachers' ratings of the professional development experience according to Guskey's Five Levels of Professional Development.

The researcher examined teachers' ratings of the professional development experience to determine a possible difference in teacher ratings over time. As described in Chapter Three, data from winter 2015 (four observations) and winter 2016 (three observations), were used in this portion of the study (see Figure 9).

The results demonstrated no observable difference in overall teacher observational scores in the individual categories of the PPOT. The data from the four observations in winter 2015 were similar to data from winter 2016, and findings indicated teachers scored the highest in reading and the lowest in critical thinking/text complexity.

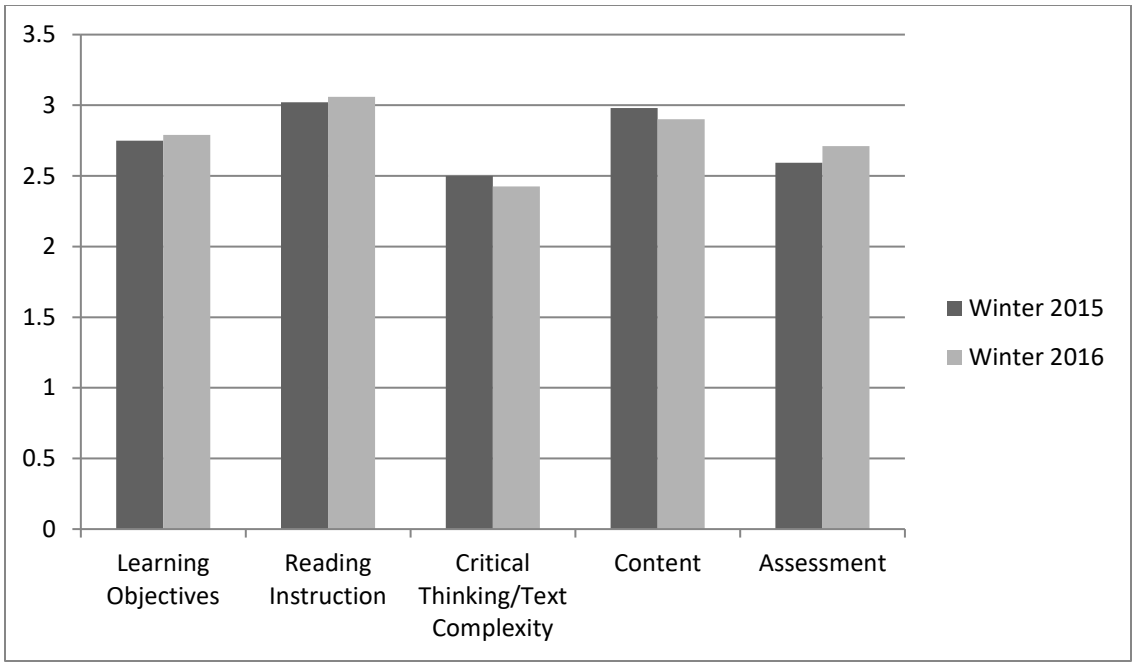

Figure 9. Professional Practice Observation mean scores.

For the final analysis of H3, the researcher analyzed the mean cumulative scores from the PPOT to see if there was a possible difference in teachers' overall ratings of professional development. In addition, the researcher wanted to know how teachers scored overall for the pre and post-observations. The researcher used a *z*-test at a 95% confidence level for comparisons of means between winter 2015 and winter 2016 teacher observational scores (see Table 12). The researcher used a two-tailed test, and the value must fall outside of the critical regions marked by ±1.96 to reject the null hypothesis (Bluman, 2013, pp. 471-472).

Table 13

Professional Practice Observational Data 2015-2016

Observations 1-4	Observations 1-7	Significance
μ 2.76	μ 2.78	N
S 0.56	S 0.60	N
σ 0.30	σ 0.59	N

Note: Critical Value = 1.96 S = Sample Standard Deviation σ = Population Standard Deviation μ = Population Mean

The *z*-test results demonstrated no statistical difference in teachers' ratings. The *z*-score was -0.487 and there was enough evidence for the researcher to fail to reject the null hypothesis, and data did not support Hypothesis 3 in establishing a difference between overall ratings of teacher perceptions.

Research Question

How are teacher instructional practices and strategies applied after participation in professional development in reading, K-2 grade levels?

Overall, the individual teacher scores on the PPOT did not observably change after participating in professional development (see Table 13).

Observations. Some of the teachers who scored high on the first four observations also scored high on the last three observations, and the same was true for teachers who received moderate or low scores. Twelve teachers (40%) demonstrated improvement from the first four observations to the last three, and fourteen teachers' (46%) scores decreased, while four teachers' (14%) scores remained the same. The findings indicated no change in instructional strategies after participation in professional development.

Open-ended surveys. The researcher analyzed and coded the open-ended survey questions. The researcher designed the survey questions to capture how teachers applied instructional strategies and their perceptions of the professional development experience. Through participant responses, the researcher also sought to learn how professional development influenced teaching and student learning.

A few teachers were optimistic about applying instructional strategies after participation in professional development. One teacher stated, 'Please continue to

provide D5 and Reading Wonders PD [professional development] for continued instructional development.' A second teacher said, 'Professional development is needed for added growth.' 'Please continue professional development that affects student learning,' stated another teacher. 'Relevant, practical, useful,' concluded one teacher.

Table 14

Professional Practice Observations

Teacher	Observations 1-4	Observations 5-7	Mean Score
Teacher 1	3.1	3.55	3.32
Teacher 2	3.6	3.8	3.7
Teacher 3	3.1	3.4	3.25
Teacher 4	2.1	2.15	2.12
Teacher 5	2.8	3.4	3.1
Teacher 6	2.5	3.65	3.07
Teacher 7	3.25	2.95	3.1
Teacher 8	3.45	3.1	3.27
Teacher 9	2.4	2.05	2.22
Teacher 10	2.6	2.45	2.52
Teacher 11	2.85	3.25	3.05
Teacher 12	3.25	2.7	2.97
Teacher 13	3.35	3.05	3.2
Teacher 14	2.3	2.45	2.37
Teacher 15	2.35	2.05	2.2
Teacher 16	2.25	2.5	2.37
Teacher 17	3.45	3.3	3.37
Teacher 18	2.7	2.45	2.57
Teacher 19	2	1.9	1.95
Teacher 20	2.8	2.15	2.47
Teacher 21	2.2	2.45	2.32
Teacher 22	2.2	1.8	2.0
Teacher 23	2.0	2.1	2.05
Teacher 24	2.75	2.75	2.75
Teacher 25	3.85	3.85	3.85
Teacher 27	2.35	2.4	2.37
Teacher 28	3.5	2.8	3.15
Teacher 29	2.95	3.15	3.05
Teacher 30	2.5	2.4	2.45

Ongoing professional development was also a common theme for teachers. According to one teacher, 'Training should be ongoing.' 'Also, don't rush through the presentation and hope teachers master everything in one day,' another teacher explained. 'I would like the training to be on-going.' and 'I would like for the professional development to be ongoing throughout the school year,' two teachers commented.

Teachers expressed an interest in job-embedded or site-based professional development. 'I also feel that more time should be given to practice during work hours instead of a quick 'crash course' and then you are expected to just go do it,' one teacher noted. Another teacher added, 'It would be nice to go visit classrooms where the teacher has mastered the Daily Five.'

Some teachers expressed concerns about how to apply instructional strategies after participation in professional development. One comment was,

> PD implemented by the school district is very repetitive and serves no immediate need in the classroom with the level of paperwork and instructional knowledge need by teachers repetitive [*sic*] PD takes away from student learning, planning time, data analysis, and curriculum pacing.

Another teacher expressed similar ideas regarding professional development and applicability to the classroom setting. 'Not really, it was informative but not enough focus on struggling readers.' 'Ask the teachers what they are struggling with and then have PD,' stated one teacher. One teacher commented, 'Those who perform well in class perform well on NWEA. Those who could care less about instruction rush through and this is not an adequate measure for teacher performance despite numerous PD hours.' A third teacher added, 'I don't feel that the professional development sessions does not play a major part

of improvement.' Although some of the teachers applied instructional strategies after participation in professional development, some of the teachers were critical of instructional strategies, professional development, and the link to student achievement.

One teacher believed the CCSS and Daily Five strategies and skills were essential but encouraged teaching foundational reading skills for instructional practices in reading.

> I understand that we are trying to get students, college and career ready, but I do feel as though we need to go back to the basics in elementary school. It's wonderful that my students are tech savvy, and know how to sight [*sic*] text evidence however some of our lower students have not mastered basic sight words. I need to spend more time teaching my students the basics. I know everything changes but let's not forget about refocusing our instruction on the basics of reading, writing, and arithmetic.

Another teacher stated, 'I know we are responsible for teaching the curriculum, but our students come to us with low skills and we need to focus on teaching beginning reading skills.'

'Create a climate that fosters analytic, evaluative, and reflective thinking. Teach children to write in multiple forms (stories, information, poems). Model enjoyment of reading,' one teacher concluded.

Summary

The researcher presented findings and analysis for Null H1, Null H2, Null H3 and RQ1 in Chapter Four. The data analysis revealed realities about teacher perception of professional development experiences, student reading achievement, and teachers' application of instructional strategies in the researched school district. This mixed-

methods study showed an observable weak relationship for pre-study comparison and an observable very weak relationship for post-study comparison between teacher perception of the professional development experience and student achievement in reading for grades K-2. Neither observable relationship was statistically significant. The survey results indicated mixed results regarding teacher satisfaction with the researched district's professional development. Although some teachers responded positively to the professional development, there was not a statistically significant improvement in student NWEA test results, and a non-significant observable weak relationship between professional development and student achievement in reading. In addition, the research data illustrated a weak or moderate relationship between teacher professional development participation hours and student NWEA test scores. The findings also indicated no difference in teachers' ratings of the professional development experience according to Guskey's FLPD.

With the exception of Null H2 data support for a moderate relationship between pre-study student achievement in reading and pre-survey teacher professional development hours, the researcher consistently rejected the null hypotheses, except for pre-survey teacher PD hours compared to student NWEA scores. The qualitative observational data demonstrated no observable change in how teachers applied instructional strategies after participation in professional development. Chapter Five provides a discussion on data presented in Chapter Four and suggestions for district and building administrators for professional development in reading K-2 grade levels.

Chapter Five: Discussion and Reflection

Introduction

This study began with a question of how teachers applied instructional strategies after participation in professional development and what might be the potential relationship between student achievement and teacher professional development. The researcher also examined teacher professional development and student achievement in reading for grades kindergarten through two in an urban environment to determine if a relationship existed. In addition, the researcher analyzed a possible relationship between teacher perception of professional development and student reading achievement. The researcher believed if the study was able to show a relationship between student achievement in reading and teacher professional development for grades K-2, the findings could possibly aid school district administrators in decision-making processes for professional development in reading. Then-current literature at the time of this study revealed a relationship between teacher professional development and student achievement in reading (Fisher et al., 2012). However, there were limited studies on the relationship between professional development and student literacy achievement for grades K-2 (Porche et al., 2012). Based on data gathered in this study, teacher perceptions, attitudes, and beliefs about professional development were key factors in influencing student achievement and enhancing instructional strategies. Furthermore, the researcher regarded high-quality professional development as a feasible method for improving teacher instructional strategies and student achievement.

To gain a better understanding of a possible relationship between teacher perception of professional development, student reading achievement, (H1) the

researcher emailed teachers literacy pre and post-surveys (winter 2015 and winter 2016) via Survey Monkey. For this portion of the study, the researcher compared the pre and post-survey question responses to student NWEA assessment data. For additional quantitative analysis, the researcher hoped to find a relationship between teacher participation hours in professional development and student NWEA reading achievement scores (H2). To determine a difference in ratings of teacher professional development experience, (H3) the researcher analyzed the scores from the PPOT, according to Guskey's FLPD Evaluation. In addition, the researcher examined and analyzed student NWEA data from winter 2015 and 2016 and descriptively compared the scores. As part of the qualitative component of research, the researcher, along with the ELA content specialist, conducted observations using the PPOT, open-ended questions from the pre and post-survey, and Guskey's FLPD evaluation to determine how teachers applied instructional strategies after professional development.

Research Question and Hypotheses

The researcher investigated the following three hypotheses for the study:

Hypothesis 1: There is a relationship between teacher perception of professional development and student achievement in reading, K-2 grade levels.

Hypothesis 2: There is a relationship between the number of hours that teachers participate in professional development and student achievement in reading, K-2 grade levels.

Hypothesis 3: There is a difference between the teachers' ratings of the professional development experience according to Guskey's Five Levels of Professional Development.

The researcher explored the following research question for the mixed methods study:

Research Question: How are teacher instructional practices and strategies applied after participation in professional development in reading, K-2 grade levels?

Discussion

Hypothesis 1: There is a relationship between teacher perception of professional development and student achievement in reading, K-2 grade levels.

Through analysis of results from winter 2015 student NWEA data and teacher survey questions, the researcher concluded that teachers experienced mixed feelings about the professional development experience and the relationship between student achievement and teacher perception of professional development was weak. The PMCC and descriptive regression analysis data demonstrated an observable weak, inverse relationship between perceptions of teacher professional development and student NWEA Scores for the pre-survey. As the teacher survey scores went higher, the student NWEA reading scores either stayed the same or decreased. The researcher noted the weakest area on the teacher survey questions was student achievement and teacher professional development. Although 63% agreed and 13% strongly agreed participation in PD would increase student achievement scores, 23% believed students reading scores would not increase. As discussed in Chapter Two, teacher attitudes and beliefs about professional development were important elements in transferring professional development into daily instructional practices (Klieckman et al., 2016). Guskey (2002a) added the main goal of professional development was to change the beliefs to an agreed upon ending status. Furthermore, beliefs and attitudes played an important role for

teachers in an urban environment. Teachers who believed they were not successful in teaching in an urban environment sometimes believed students were incapable of excelling in the classroom (Haberman, 2004). Possible recommendations for future research would be to examine teacher beliefs and attitudes about professional development and work towards changing the beliefs (Guskey, 1986).

Through analysis of results from winter 2016 student NWEA data and teacher survey questions, the researcher discovered the results were slightly different from the pre-survey findings. Overall, teachers responded positively to professional development and a higher percentage strongly agreed (24%), and 53% agreed students increased their reading scores on NWEA assessments. Research supported findings on the link between teacher beliefs and instructional strategies (Holler et al., 2007). The post-survey results indicated teachers held strong belief in the ability to implement instructional strategies to improve student achievement in reading (Shroyer & Yahnke, 2012). Similar to winter 2015 results 23% of teachers responded students did not improve on their NWEA assessments. As cited in Chapter Two, teachers were attracted to professional development activities when they perceived the experience would enhance instructional practices (Opfer & Pedder, 2011). The PMCC and descriptive regression analysis indicated a weak observable positive relationship between student reading achievement and teacher professional development. As teacher scores increased, so did the student scores. Beliefs and attitudes played a significant role for teachers' perceptions of the professional development experience (Guskey, 2002a). The researched district could potentially use this data to guide professional development planning and the

incorporation of teacher attitudes, beliefs, and perceptions when designing professional development opportunities.

Hypothesis 2: There is a relationship between the number of hours that teachers participate in professional development and student achievement in reading, K-2 grade levels.

After careful analysis and comparison of the student NWEA winter 2015 and 2016 scores, the researcher did not find a difference in scores from pre-to-post-test. The average RIT scores were 155 and 161 respectively. The researcher attributed the scores to the district's issue of low fundamental skills in the early grades. Research has shown basic pre-reading skills played a critical role shaping early literacy skills (Ellery, 2014; Whyte, 2016). Furthermore, to learn pre-reading skills, students needed multiple opportunities to practice reading (Brown, 2014). The researched district could use this data to guide decisions regarding early literacy and focus teaching efforts on improving early literacy skills.

The researcher examined and compared the total number of teacher professional development hours for winter 2015 and 2016. The overall mean number of professional development hours for winter 2015 ($n = 22$) and winter 2016 ($n = 43$) exhibited a 50% difference, and the median number of hours were similar ($n = 17$) for both years. As discussed in the literature review, the number of professional development hours was important in shaping instructional practices. Darling-Hammond and Richardson (2009) recommended participation from 30-to-100 hours over an extended time for improvements in student achievement to occur. Teachers who participated in less than 14 hours of professional development did not demonstrate improvements in student

achievement (Darling-Hammond & Richardson, 2009, p. 3). More importantly, the quality of the professional development experience was essential in influencing instructional practices and student achievement (Joyce & Showers, 1995).

This researcher conducted a PMCC and descriptive regression analysis to determine if a relationship existed between the number of professional development hours and student NWEA reading scores. For winter 2015 (pre-study), findings indicated a moderate positive correlation ($r = 0.436$) between student scores and teacher professional development hours. The scores surrounded the regression line, and indicated a relationship between the two. The student scores and teacher survey responses were similar with a minor change. The majority of the respondents participated in less than 30 hours of professional development for winter 2015. In addition to professional development, researchers suggested follow-up activities, coaching, and co-teaching to enhance instructional practices (Guskey & Yoon, 2009; Plair, 2013).

For the final analysis of H2, the researcher conducted a PMCC and descriptive regression analysis to determine a relationship between the number of professional development hours and student NWEA reading scores for winter 2016 (post-study). Unlike the winter 2015 results, which found a significant relationship between student achievement and teacher professional development hours, winter 2016 data illustrated no significant relationship between student NWEA reading scores and teacher professional development contact hours. Although the mean number of professional development hours increased, results showed a weak positive relationship ($r = 0.221$) between student reading scores and teacher professional development hours. The researcher attributed the

weak relationship to teachers not having the time to learn instructional strategies after participating in professional development and no follow-up after professional development sessions.

As described in Chapter Two, coaching and job-embedded training are integral parts of a successful staff development program. Content characteristics, process variables, and context characteristics improved the quality of professional development, which led to improvements in student learning (Guskey & Yoon, 2009). The researched district could potentially use this data to refine professional development with an emphasis on the process as well as context and content.

Hypothesis 3: There is a difference between the teachers' ratings of the professional development experience according to Guskey's Five Levels of Professional Development.

Through careful analysis and examination of the mean cumulative scores from the PPOT, the researcher discovered no difference between winter 2015 and winter 2016 scores. The *z*-score findings showed there was not a significant difference in teachers' ratings. Due to the second year's implementation of the Daily Five Framework and CCSS shifts in ELA, the researcher anticipated a statistically significant difference in teacher ratings from 2015 to 2016. The results reiterated the need for teacher training on phonics, phonemic awareness, fluency, vocabulary and comprehension (Musti-Rao & Cartledge, 2007).

Through examining the teachers' scores on the PPOT for winter 2015, the researcher discovered that the mean score was 2.72 for observations 1-4. The researcher also noted that teachers scored lowest in critical thinking/text complexity (n = 2.5) and

highest in reading instruction (n = 3.0). Research showed that teaching students how to learn was an important consideration for professional development, Desimone (2011) included how students learn under content; one of the six features of professional development.

Through examining the teachers' scores on the PPOT for winter 2016, results revealed a mean score of 2.78 for observations # five through seven, which was similar to the 2015 scores. Overall, participants scored highest in reading instruction (n = 3.1) and lowest in critical thinking/text complexity (n = 2.3). This result spoke to the need for literacy professional development that focused on how to teach critical thinking/text complexity for educators. Research showed the dilemma between teaching critical thinking skills, while focusing on foundational skills, to be problematic in urban schools (Haberman, 2004). As stated in Chapter Three, participants utilized the Daily Five Framework in reading, and the overall high score in reading instruction spoke to the consistency of the framework usage. However, due to the lack of foundational skills and slow progress for kindergarten through grade two students on NWEA assessments, the researcher discovered a lack of connection between teachers and early literacy instruction. Research showed that pre-reading skills were essential to student success in reading and the building blocks for future academic success (Stancel-Piatek et al., 2013; Whyte, 2016).

Furthermore, students who lacked early literacy skills were more likely to fall behind in elementary school (Da Costa et al., 2001; Kaminski et al., 2015; Stancel-Piatek et al., 2013) Research on teachers who received ongoing, intensive training on 'The Big Five' experienced success in teaching students foundational pre-reading skills (Vesay et

al., 2013). The data reinforces the importance of early literacy skills, and the district could potentially use the information to guide professional development and train kindergarten through grade two teachers on how to teach foundational pre-reading skills to students.

Research Question. Through analysis of The PPOT and open-ended survey questions, the researcher examined how teachers applied instructional strategies after participation in professional development. Several themes emerged from data analysis of the research question and included a need for ongoing professional development, job-embedded or site based professional development, collaboration, applicability to the classroom setting, and foundational reading skills. As a whole, the participants' scores did not change and were consistent after participating in professional development. The researcher attributed the stagnant scores to individual teacher needs not identified, no time to learn new information, need for review materials, apply concepts learned in professional development sessions, and reflection on lessons (Stewart, 2014). One teacher commented

> I believe that if we had video clips of the presented information in action dealing with the students that we service it will be more beneficial in the implementation of the materials we are presented with and expected to implement in our classroom.

Two teachers advocated for collaboration to 'try to start workshops a week before school starts so that they [teachers] have time to work with grade level teams.' An additional comment was, 'Please allow time for teachers to collaborate during and after participation in professional development.' As discussed in the literature review, specific

content, active learning, and collaboration were essential elements of professional development (Darling-Hammond et al., 2009; Salinas, 2010). In addition, the NSDC included collaboration was one of the 12 standards for professional development (2001).

As discussed in Chapter Four, teachers who scored high on the first four observations (40%) also scored high on the last three, and the same was true for teachers who received moderate (14%) or low scores (46%). Although some teachers demonstrated improvement from pre-to-post-observation, the researcher concluded teachers were consistent in their instructional practices, based on their beliefs about professional development. The researcher also concluded because the structure of the professional development sessions did not change, teacher instructional practices did not change. Research supported teachers benefitted most when they were involved in the professional development planning (Alterman, 2015). Furthermore, a change in the professional development structure led to a change in teacher beliefs and instructional strategies (Salinas, 2010).

Summary of Findings and Implications

The study began in February of 2015 and concluded in February of 2016. The study involved 30 participant (K-2) teachers in a Midwestern school district. Teachers completed pre and post-survey questions, which included open-ended responses. Overall, the response rate was large enough to conduct the study, but difficult at first to gather all pre-survey data. After re-opening the pre-survey, the researcher was able to retrieve all completed surveys from those teachers who volunteered to participate. For the most part, teachers responded positively to the researched district professional development sessions and the researcher was surprised at the close range of participant

scores. The open-ended survey questions provided some valuable information on perception of the professional development experience and teachers' application of instructional strategies after participation in professional development. Participant observations occurred four times in winter of 2015 and three in winter 2016. Since each observation was 30-to-45 minutes for 30 teachers, this presented a challenge for the observers. The researched district went on strike during the month of October, which further added to the problem of completing the observations by the deadline. As a result, the researcher did not obtain observational data during the strike and ended the data collection with three observations for winter 2016.

Results on the perception of teacher professional development and student achievement in reading provided surprising data to the researcher. The researcher was surprised to discover an observable weak inverse relationship, which was not statistically significant, between teacher perception of professional development and student achievement on the pre-survey and NWEA assessment. The researcher thought there would be a moderate or strong positive relationship between student achievement and teacher perception of professional development. The researcher also expected the student NWEA reading scores to improve from winter 2015 to 2016 and was disappointed to see no improvement and a difference of only a few points. As a result, the researcher concluded students lacked early literacy skills, which transferred to poor performance on standardized assessments. As cited in the literature review, students needed to reach proficiency in the five areas of reading to become successful readers (Ellery, 2014; Pullen & Justice, 2003). The researcher anticipated that the winter 2016 post-survey results and NWEA responses and findings would indicate a strong moderate positive relationship

between teacher perception of professional development and student reading achievement. However, the researcher expected a wide range of scores for teachers on the pre and post-survey, but the scores were close, and the lowest score was a six only because the respondent did not answer all of the survey questions. The range of scores was also close for student NWEA pre and post-assessments, which indicated no significant improvement in student reading scores.

The researcher believed there would be a stronger correlation between the number of teacher professional development hours and student reading achievement. Results showed moderate and weak correlations between professional development hours and student reading achievement for data provided during the winter of 2015; however, found no statistically significant relationship in examination of data provided during the winter of 2016. In addition, the researcher discovered that more professional development hours did not automatically enhance student achievement, and quality of the experience was essential in improving student achievement and instructional strategies. Research supported a link between quality professional development and student achievement. Joyce and Showers (1995) and Moss and Nodan (1994) believed that staff development must be focused and ongoing to enhance student achievement and improve instructional practices. Quality professional development was especially important in urban settings, as many of the students began school academically behind their affluent peers (Norwalk et al., 2012).

During the 2014-2015 and 2015-2015 school years, the researched school district developed an extensive plan for professional development in literacy, and as a result, the researcher expected an increase in teacher ratings from pre-to-post-observation. The

researcher was surprised to find no difference in scores and the similarity in scores for individual categories. Furthermore, the observers noted during classroom observations that teachers were consistent and did not change instructional strategies after participation in professional development.

Although the observations were time-consuming (30-45 minutes) and the strike hindered the process, the researcher was pleased with the outcome. The observers were able to gain valuable information on individual kindergarten and grade two teachers' instructional strategies, which guided teachers and instructional coaches on next-steps for coaching and professional development. The observations also aided the ELA content specialist in developing a plan for assessing K-2 students in early literacy skills and tailoring teacher professional development on foundational skills pedagogy. At the end of the 2015-2016 school year, the ELA content specialist utilized data from the observations, to assess all K-2 on foundational literacy skills using Whyte's reading continuum (see Figure 2) (Whyte, 2016). The data was available for all teachers, with the goal of informing student literacy levels. In addition, the data pinpointed areas for growth to guide teacher instructional practices. According to the PPOT, the teachers were skilled in the Daily Five Framework, but needed additional training in teaching foundational reading skills, and the researched district leaders were developing a plan to address the issue. The open-ended survey questions also provided insight on how teachers applied instructional strategies. Even though the survey questions were voluntary, some participants chose to respond, and the researcher gained useful information about teacher instructional practices. The researcher noted one disappointment as the lack of improvement in teacher scores on the PPOT. The absence

of change in the teacher scores illustrated the researched school district's need to re-evaluate the then-current literacy professional development plan. In addition to the extensive literacy professional development plan, the district piloted a job-embedded professional development plan for struggling teachers during the 2015-2016 school year, and perhaps more teachers could benefit from job-embedded professional development.

The study data provided the researcher with insight on the relationship between student reading achievement and teacher professional development for grades K-2. The first alternative, Hypothesis 1 was not supported by data; however, the second alternative Hypotheses 2 provided mixed results, yet was ultimately not supported by data. Additionally, the researcher found no difference and did not reject the null for the third hypothesis, and therefore, did not support the third alternative, Hypothesis 3. For the research question, the researcher discovered no change in how teachers applied instructional strategies after participating in professional development experiences. Through observational data, the researcher also discovered that a majority of teachers needed more training on teaching foundational reading skills. Evidence from the hypothesis analysis provided the researcher with opportunities for future research and recommendations for the researched school district.

Program Recommendations

This research study revealed no correlation between teacher perception and student reading achievement, for both winter 2015 and winter 2016. The researcher had recommendations for the researched school district on teacher perception, beliefs, and attitudes regarding professional development. When developing and planning professional development experiences, teachers should be included in the planning,

implementation, and overall process. Research showed the top-down approach to professional development was not conducive to engaging teachers in the process. Furthermore, being a part of the professional development process allowed teachers to take ownership and value in the experience (Joyce & Showers, 1995). The researcher recommended using a train-the-trainer the model for professional development. With a train-the-trainer model for professional development, teachers see value in the experience and become local educational experts in the content area or grade level (Holler et al., 2007). As a result, all staff members feel empowered and are receptive to professional development experiences, when given the opportunity to learn from their peers (Thompson, 2008; Wallace et al., 1990). The research results revealed a weak or moderate positive relationship between teacher professional development hours and student reading achievement, for pre-study student achievement and pre-survey teacher professional hours. The researcher recommended devoting more time to collaboration during professional development experiences. Research favored collaboration as an important element in high-quality professional development (see Table 5) (Desimone, 2011). In addition, collaboration provided teachers the chance to learn from each other and shift from professional development to professional learning. Teachers gained the most when they were equal partners in the learning community (Roselar et al., 2013). As cited in the literature review, collaboration allowed teachers to enhance their pedagogical and content strategies, which transferred to improved student achievement (Gokmenoglu & Clark, 2015). Furthermore, the researcher believed collaboration would enhance the overall quality of professional development for teachers in the researched school district.

The researcher also recommended connecting professional development to student learning by providing professional development opportunities for teachers that meet their needs. Teacher reflection on instruction, coaching, and observations, with frequent feedback, are important elements in connecting professional development to student learning. Involving teachers in the professional development process is also important to linking professional development to student learning and instructional practice

The researcher recommended ongoing professional development in literacy for teachers. Data from this study demonstrated a need for ongoing professional development experiences for teachers in the researched district. By contrast, the professional development plan outlined in the researched district did not provide for ongoing professional development in literacy. In addition, topics varied in each session with no follow-up after the professional development sessions. Teachers needed time to learn the new information, use instructional strategies in their classroom, and reflect. Ongoing professional development also ensured fidelity of implementation, because teachers were able to practice and utilize instructional strategies in the classroom. As described in the literature review, research supported ongoing professional development as a measure for improving instructional practices and boosting student academic achievement (Bayar, 2014). NCLB (USDOE, 2002) added, professional development opportunities should not be short-term or one-day workshops, but should be sustained activities.

The researcher also believed job-embedded professional development in literacy would improve teacher instructional practices in literacy. The researched school district

piloted a program of job-embedded professional development with targeted teachers who needed additional instructional support during the 2015-2016 school. As a result, the researcher noted improvements in instructional practices and student reading achievement for teachers involved in the pilot program. Although students did not make significant gains in reading, there was some improvement in reading scores from fall 2015 to spring 2016. Even though research on job-embedded coaching and professional development was limited, there was value in the model. As discussed in Chapter Two, job-embedded professional development incorporated into the school-wide professional development was critical in the overall school's success (Johnson & Asera, 1999; Kennedy & Sheil, 2010).

Another recommendation from the researcher was to focus on PLCs. During the 2014-2015 school year the researched school district began grade-level PLCs for the elementary schools and kindergarten center. The grade-level teams met once a week and the literacy consultant met with the team periodically to provide professional grade-level professional development. Overall, teachers responded positively to the sessions and saw value in the meetings. In addition, PLCs allowed teachers to review data, collaboratively plan lessons, and reflect on instructional practices. As cited in Chapter Two, the goal of PLCs was to improve instructional practices and student achievement (Darling-Hammond et al., 2009). The researcher believed PLCs to be vital in enhancing teacher instructional practices and student reading achievement and recommended the researched school district continue implementing PLCs.

In conclusion the researcher recommended an emphasis on professional development that focused on training all K-2 teachers in foundational skills. The

researcher believed this focus would improve the academic performance of students who lacked early literacy skills. Based on the study findings, questions arose regarding pre-reading skills, which prompted literacy assessments of all K-2 students. The foundational reading skill assessment results revealed a large number of K-2 students with early literacy skill deficiencies. Research supported the importance of pre-reading skills for future success in school (Cihon et al., 2008). Furthermore, the researcher believed training on foundational reading skills would assist teachers in targeting reading instruction for struggling readers.

Future Research Recommendations

The research study revealed an observable relationship between student reading achievement and teacher perception of professional development, as well as a significant relationship between professional development contact hours and student achievement in pre-study reading achievement. The researcher recommended future research, on teacher professional development and early literacy.

Since the study results indicated only an observable relationship between teacher perception of professional development and student reading achievement, the researcher recommended future research on a possible relationship between the two. Specifically, the researcher would like to see more up-to-date research on student reading achievement, K-2 grade levels, and teacher perception of the professional development experience. The importance of such studies would provide evidence on the importance of teacher beliefs, attitudes and perceptions, and student achievement in reading.

Although the researcher discovered some then-current research on reading achievement in an urban environment, the literature was beyond the expected five years

and specifically focused on reading achievement for grades K-2 in an urban environment. The researcher recommended additional research on reading achievement in an urban environment, because reading achievement in an urban environment presented unique challenges that warranted additional investigation. According to research, students in an urban environment began school knowing about 10,000 fewer words than affluent students and about 3000 root words, while affluent students knew about 7000 root words (Boulware-Gooden et al., 2007; Sparks, 2013). As a result, many of the urban students continued to fall behind as they progressed through school. Future studies, such as the one described in this paragraph would be beneficial to K-2 educators working in an urban environment.

The researcher recommended future studies on job-embedded literacy professional development in an urban environment. As stated earlier in Chapter Five, the researched school districted piloted a program in the 2015-2016 school year, with selected teachers receiving job-embedded professional development. At the end of the school year the researched school district administrators had access to student pre-assessment and post-assessment scores to compare for selected teachers to gauge the success of job-embedded professional development. As discussed in the literature review, Fisher (et al., 2012) studied 44 elementary schools that implemented job-embedded professional development in southern California and experienced success. However, it was unclear how many of the schools were located in an urban environment. In a like manner, Boone (et al., 2006) discovered site-based professional development to be valuable for high school student reading achievement. Overall, the model was shown to help some teachers improve instructional strategies in the researched school district;

the researcher recommended additional studies within an urban environment. Furthermore, the researcher would also like to see more research on job-embedded professional development. Job-embedded or site-based professional development emerged as a notable professional development model for teachers.

Another recommendation for future studies is continued research on PLCs in an elementary school environment. The researcher believed additional research in an elementary school setting would provide useful information for school districts implementing, or in the planning stages of, PLCs. In particular, the researcher would like to see more studies on literacy and PLCs. Although the researcher located then-current literature on PLC's, the researcher was unable to find then-current research that focused specifically on PLC's and student reading achievement for grades K-2. Because of the benefits of collaboration, the researcher believed elementary teachers would find PLCs valuable to their instructional practices and student learning.

The researcher recommended future studies on professional development contact hours and student reading achievement, K-2 grade levels. According to the literature review, professional development contact hours ranged from 30 to 100. The researcher was unable to find an exact number that experts recommended to enhance instructional practices, and concluded a relationship between the professional development hours and high-quality staff development experiences. Furthermore, future research on professional development contact hours, along with high quality professional development could assist district administrators in connecting professional development with professional practice.

A final recommendation was continued research on 'The Big Five' foundational skills and pedagogy for teachers. Then-current literature was available on foundational skills individually, but not as much research on the pedagogy of 'The Big Five' as a whole. Through this study, the researcher discovered some teachers in the researched school district struggled with teaching foundational skills and would benefit from further research on early literacy. The literature, current at the time of this study, highlighted best practices and strategies for individual foundational skills; the researcher believed the researched school district and other urban school districts would benefit from continued studies on foundational skills.

Conclusion

This research added to the body of knowledge on teacher professional development and student reading achievement by providing an update to the then-current data on the relationship between the two. In addition, the research also added to the body of research on teacher perception, attitudes, and beliefs about professional development, and the data showed that teacher perception of professional development influenced students' reading achievement. The findings also revealed how teachers applied instructional strategies after participation in professional development. The study further explored the relationship between teacher professional development hours and student achievement in reading and demonstrated high-quality teacher professional development was a worthwhile means to enhance student achievement. This research served as a resource to guide professional development practices for school and district administrators. According to the literature review, teachers engaged in the best

professional development sessions when teachers became active participants in ongoing professional development, with time for reflection and collaboration (Desimone, 2011).

Students who possessed basic literacy skills literacy skills were successful and competitive in a global society. The CCSS in English widened the gap between students in an urban environment and their counterparts. An added challenge for teachers in an urban environment was an ability to balance instruction in foundational skills with state standards for English Language Arts. As a measure to ensure equity among students, the ESSA provided all students (grades PreK-12) an opportunity to be successful in school. Through job-embedded training and ongoing professional development in foundational reading skills, teachers can enable students to reach their maximum potential. Furthermore, high-quality teacher training in urban schools was crucial in improving student academic achievement and closing the achievement gap.

Districts could no longer depend on the traditional method of professional development to enhance instructional strategies. Collaboration, active participation, follow-up, and focused professional development are essential elements of high-quality professional development that leads to improved student academic performance.

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Appendix A: Research Permission

May 20, 2014,

Dear Mr. Culver,

My name is Michelle Chism and I work as the Early Literacy Administrator for the East Saint Louis School District. In addition, I manage the IAL/Early Literacy Grant for grades k-2. For the past year and a half I have been completing doctoral studies at Lindenwood University and am nearing the research phase of my dissertation program. The university requires that I obtain permission before conducting research. I am writing to request permission to conduct research in the school district for grades k-2. No students will be included in the research. However, I would like to use student NWEA assessment data in my research. The teacher participants will remain anonymous, as well as the student data. Attached is a copy of my research prospectus which outlines the study. My hope in completing this project is that it will provide current information on student achievement in reading, k-2 grade level and teacher professional development. Thank you for your time and consideration.

Sincerely,
Michelle Chism
Michelle Chism, Early Literacy Administrator
East Saint Louis School District 189
(618)646-3071 michelle.chism@estl189.com

Superintendent's name Mr. Arthur Culver
Superintendent's signature Arthur R. Culver

Appendix B: Survey Questions

Professional Development Pre-Survey/Reading

Grades K-2

The purpose of this survey is to identify teacher satisfaction with the district's professional development opportunities. All responses are confidential and anonymous. We appreciate your honest and thoughtful responses. Answer each question by providing the response that describes your ideas about professional development. Thank you!!!

Please check (√) the box or fill in the blank with the best answer for each statement:

At which school (s) are you employed? _____

What is your position? _____

What is your gender? ___ Female ___ Male

What is your race / ethnicity?

—— Asian ___ Hawaiian Pacific Islander ___ Other Pacific Islander

___ American Indian / Alaska Native ___ African American ___ Caucasian / White

___ Hispanic ___ Mixed Ethnic ___ Other _____

How many hours of professional development sessions in reading have you participated in this school year? _____

Please rate the following statements by circling your responses using the scale below:

SA = Strongly Agree **A** = Agree **D** = Disagree **SD** = Strongly Disagree

_____

_____

1. The professional development sessions are relevant to instruction in reading.
   SA A D SD

2. The professional development sessions meet my needs for instruction in reading.
   SA A D SD

3. I am knowledgeable about The Daily Five and The Common Core ELA shifts in reading.
   SA A D SD

4. I am prepared to implement The Daily Five and Common Core ELA shifts in reading in my daily instructional practices. SA A D SD

5. As a result of my participation in professional development/reading, students will increase their reading skills.
   SA A D SD

6. As a result of my participation in professional development/reading, students will increase their reading scores on the NWEA assessments.
   SA A D SD

Please share anything you wish about the professional development sessions in reading, including suggestions for improvement.

Thank you for completing this survey!

Professional Development Post-Survey/Reading

Grades K-2

The purpose of this survey is to identify teacher satisfaction with the district's professional development opportunities. All responses are confidential and anonymous. We appreciate your honest and thoughtful responses. Answer each question by providing the response that describes your ideas about professional development. Thank you!!!

Please check (√) the box or fill in the blank with the best answer for each statement:

At which school (s) are you employed? _____

What is your position? _____

What is your gender? ___ Female ___ Male

What is your race / ethnicity?

—— Asian ___ Hawaiian Pacific Islander ___ Other Pacific Islander

___ American Indian / Alaska Native ___ African American ___ Caucasian / White

___ Hispanic ___ Mixed Ethnic ___ Other _____

How many hours of professional development for reading have you participated in this school year? _____

_____

_____

Please rate the following statements by circling your responses using the scale below:

SA = Strongly Agree **A** = Agree **D** = Disagree **SD** = Strongly Disagree

_____

_____

1. The professional development sessions that I attended were relevant to my instruction in reading.
   SA A D SD

2. The professional development sessions that I attended met my needs for instruction in reading. SA A D SD

3. I have demonstrated new knowledge or skills in the classroom about the Daily Five and Common Core ELA shifts as a result of participation in teacher professional development in reading.

   SA A D SD

4. I have gained new knowledge or skills as a result of participation in teacher professional development in reading.

   SA A D SD

5. As a result of my participation in professional development/reading, students have increased their reading skills.

   SA A D SD

6. As a result of my participation in professional development/reading, students have increased their reading scores on the NWEA assessments.

   SA A D SD

Did the professional development sessions that you attended align with your goals for instruction in reading K-2 grade levels? Why or why not?

Please describe three highlights of the professional development sessions that you attended this semester.

Please share anything you wish about the professional development sessions in reading, including suggestions for improvement.

Thank you for completing this survey

Appendix C: Research Participation Flyer

Early Literacy Research Project

Who: K-2 Teachers

Where: East Saint Louis School District 189

Kindergarten, first, and second grade teachers are invited to participate in the Early Literacy Research Project. Please contact Mrs. Antionette Johnson, ELA Content Leader at (618) 646-3035 or antionette.johnson@estl189.com for more information.

Thank you for your participation and interest in the Early Literacy Research Project.

Appendix D: Guskey's Five Levels of Professional Development Evaluation

Guskey's Five Levels of Professional Development Evaluation

Evaluation Level	Questions Addressed
1. Participants' Reaction	Did participants' enjoy the professional development experience? Did the participants understand the material presented? Was the professional development experience a valuable use of time and relevant to participants? Was the facilitator knowledgeable and helpful to participants? Was the room the correct temperature? Were the chairs comfortable?
2. Participants' Learning	Did the participants learn what was intended from the professional development experience?
3. Organization Support and Change	Was implementation supported by building and/or district administration? Did administrators make their support publicly known to staff members? Were problems addressed in an efficient and timely manner? Were resources adequate and made readily available to staff members? Did the professional development influence the school or district's climate and culture?
4. Participants' Use of New Knowledge and Skills	Did participants apply what they learned from the professional development experience?
5. Student Learning Outcomes	Did the professional development experience improve student learning and achievement? Did the professional development improve student emotional or physical health? Are students learners that are more self-assured? Is student attendance getting better? Is the student dropout rate decreasing?

Appendix E: Professional Practice Observation Tool

Professional Practice Observation Tool

Observer: _____ Date: _____Time:_____

School: _____ Grade Level:_____

Learning Objectives

1. The teacher verbally or visually communicated the learning objectives to students.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
2. The students understood the learning objectives.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
3. The instructional activities were aligned to the learning objectives.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
4. The teacher referred to the learning objectives throughout the lesson.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)

Learning objective comments:

Reading instruction

1. The teacher chose and implemented instructional strategies to meet the needs of all students.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
2. The teacher used multiple strategies in reading instruction.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
3. The instruction was aligned with learning objectives for the students.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
4. The teacher effectively used instructional resources.
   Distinguished (D-4) Proficient (P-3)

Reading instruction comments:

Critical Thinking/Text Complexity

1. The teacher encourages critical thinking and requires students to think at high levels.

Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)

2. The teacher requires students to answer higher order questions.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
3. The teacher requires students to read grade level text with support as needed.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
4. The teacher requires students to close read text for meaning.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)

Critical Thinking/Text Complexity comments:

Content

1. The teacher based delivery of instructional content on one or more of the Illinois State Learning Standards for reading.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
2. The teacher adjusted content delivery to meet the needs of all students.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
3. The teacher appeared knowledgeable about the subject matter/reading.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
4. The teacher made connections whenever possible, to student real-life experiences.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)

Content comments:

Assessment

1. The teacher created assessments based on student needs.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
2. The teacher used questioning techniques to gauge student understanding of concepts taught.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
3. The teacher provided feedback to students verbally or in writing.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)
4. The teacher used informal strategies throughout the lesson to check student understanding of concepts.
   Distinguished (D-4) Proficient (P-3) Basic (B-2) Unsatisfactory (U-1)

Assessment comments:

Appendix F: Permission to use D Whyte's Reading Continuum

East St. Louis School District 189

Michelle Chism <michelle.chism@estl189.com>

permission to use your reading continuum
3 messages

Michelle Chism <michelle.chism@estl189.com> Tue, Feb 9, 2016 at 12:14 PM
To: Donna Whyte <mrswhyte@thesmartiezone.com>

Hi Donna,

I finally remembered to email you a request for permission to use your reading continuum. Stay warm today and be careful on the roads out there. It was a slick ride the whole way for me this morning. Take care and I will see you at Bush tomorrow afternoon.

Michelle C

--
Michelle Chism
Early Literacy Administrator
East Saint Louis School District 189
(618)646-3071
michelle.chism@estl189.com

TheSmartieZone <mrswhyte@thesmartiezone.com> Tue, Feb 9, 2016 at 1:15 PM
To: Michelle Chism <michelle.chism@estl189.com>

You have my permission to use my reading continuum. I am the original author. Donna J. Whyte

Sent from my iPad
[Quoted text hidden]

Michelle Chism <michelle.chism@estl189.com> Tue, Feb 9, 2016 at 1:29 PM
To: TheSmartieZone <mrswhyte@thesmartiezone.com>

Thanks Donna:-)
[Quoted text hidden]

Appendix G: NIH Certification

Certificate of Completion

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

Date of completion: 04/11/2014

Certification Number: 1447962

Appendix H: Informed Consent

LINDENWOOD

INFORMED CONSENT FOR PARTICIPATION IN RESEARCH ACTIVITIES

A Mixed Methods Study on Student Achievement in Reading and Teacher Professional Development in a K-2 Urban Public School Setting

Principle Investigator _Michelle Chism_____
Telephone: 818-481-3354 E-mail: mlc271@lionmail.lindenwood.edu
Participant_____ Contact info _____

1. You are invited to participate in a research study conducted by Michelle Chism under the guidance of Dr. Lynda Leavitt. The purpose of this research is to investigate a possible relationship between teacher professional development and student achievement in reading.

2. a) Your participation will involve
   - Completion of a pre and post survey on teacher professional development in reading
   - Participation in classroom observations during the literacy block
   - Participation will involve eight observations (two per quarter) 45 minutes for each observation

   b) The amount of time involved in your participation will be one year. You will receive a gift card for 10 dollars for your participation.
   Approximately 30-40 adults will be involved in this research. The total number of sites included in the research project is five elementary schools and the kindergarten center.
3. There are no anticipated risks associated with this research.

4. There are no direct benefits for you participating in this study. However, your participation will contribute to the knowledge about teacher professional development and student achievement in reading.

5. Your participation is voluntary and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw.

6. We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from

this study and the information collected will remain in the possession of the investigator in a safe location.

7. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Michelle Chism at (818)481-3354 or the Supervising Faculty, Dr. Lynda Leavitt at (636)949-4756. You may also ask questions of or state concerns regarding your participation to the Lindenwood Institutional Review Board (IRB) through contacting Dr. Jann Weitzel, Vice President for Academic Affairs at 636-949-4846.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my participation in the research described above.

_____	_____
Participant's Signature Date	Participant's Printed Name
_____	_____
Signature of Principal Investigator Date	Investigator Printed Name

Vitae

Michelle Chism

Experience

Early Literacy Administrator
2013-present E. St. Louis School District 189

- *Work with K-5 teachers and administrators on implementation of Literacy Programs in the school district.*
- *Manage all aspects of the Innovative Approaches to Literacy Grant.*
- *Assisted in development, implementation, and monitoring of the curriculum for kindergarten and first grade in the East Saint Louis School District.*

English Teacher
2010-2011 E St. Louis Senior High School, E St. Louis, IL.

- *Teach English Literature and composition to high school students.*

Title 1/Intervention Coordinator
2005-2010 Granada Hills Charter High School, Granada Hills, CA.

- *Coordinate and implement academic intervention programs for high school students with a total school population of 4200.*
- *Designed, implemented and monitored the Saturday School academic program.*
- *Designed, implemented and monitored after school and homework help tutoring programs.*
- *Developed and monitored the 9th grade Skills for Success curriculum.*
- *Coordinated, implemented and monitored the Summer Transition Academy for incoming 9th grade students.*

English Teacher
2001-2005 Culver City High School, Culver City, CA.

- Teach English Literature and composition to high school students.

English Teacher
2000-2001 Kirby Junior High School, Hazelwood, MO.

- Teach Language Arts to middle school students.

Education

2013-present Lindenwood University, St. Charles, MO.

- Ed.D. Instructional Leadership, expected date of completion Fall, 2016

2002-2005 California State University Northridge, Northridge CA.

- M.A. Educational Administration June, 2005

1994-1996 University of Missouri St. Louis St. Louis, MO.

- M.Ed in Secondary Education June, 1996

1991-1993 Southern Illinois University Edwardsville, IL.

- B.S. English June, 1992

Certifications

Administrative and teaching certifications: Illinois, California, and Missouri.