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THE IMPACT OF TARGETED PROFESSIONAL DEVELOPMENT OF ELEMENTARY TEACHERS AND THEIR STUDENTS' LITERACY ACHIEVEMENT

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ABSTRACT

THE IMPACT OF TARGETED PROFESSIONAL DEVELOPMENT OF ELEMENTARY TEACHERS AND THEIR STUDENTS' LITERACY ACHIEVEMENT

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The purpose of this quasi-experimental study was to examine the relationship between targeted professional development delivered to select teachers and their students' literacy achievement. The study involved a nonequivalent control group design in which one group received the treatment. The participants were conveniently selected from two elementary schools in a Title I district in the Northeastern area of the United States. There were 18 teacher participants and 266 students from Grades 3, 4, and 5. There was a balance of gender for students. All students actively engaged in balanced literacy instruction, which is the main teacher-driven instructional program used in this district to instruct students in literacy. The treatment group received something extra, as their teachers participated in targeted professional development for 12 weeks, whereas teachers in the control group were only exposed to balanced literacy instruction. Student participants' literacy was assessed using the i-Ready Diagnostic in six areas: phonics, phonological awareness, vocabulary, high-frequency words, comprehension of informational text, and comprehension of literary text. The diagnostic was administered twice, once as a pretest and once as a posttest. Teacher participants were administered a pre and post self-assessment of balanced literacy knowledge. Descriptive and inferential statistics were performed. The results indicated targeted professional development

delivered to teachers did not affect students' literacy scores, as both the treatment and control groups of students made significant gains as reflected in their i-Ready scale scores. However, the treatment group did outperform the control group based on their i-Ready scale scores. The methodology and design of this research are worth replicating over a longer duration of time with the same targeted grade levels to determine whether targeted professional development of teachers does affect students' literacy scores.

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CHAPTER 1: INTRODUCTION

Teachers' professional development and students' achievement have a symbiotic relationship—the two entities work in conjunction. Teacher participation in ongoing professional development has been shown to be a major contributor to improvements in students' performance in public schools (Blank & de las Alas, 2009). In fact, in their meta-analysis, Blank and de las Alas (2009) discovered teacher preparation or in-service programs and the foci of increasing the teacher's impact on student learning in the classroom are also instrumental in the overall improvement of performance in public schools. It is by intentionally focusing on these three components (teacher participation in ongoing professional development, teacher preparation in college, and focus on increasing teacher's impact on student learning) that researchers can explore the relationship between teachers' professional development and students' performance.

Some researchers have found that a relationship can be established between teacher professional development and student achievement. Yoon et al. (2007) produced a comprehensive report based on over 1,300 research studies that examined the impact of teacher professional development on student achievement between the years of 1996 and 2003. The researchers examined the studies based on stringent standards set by the What Works Clearinghouse in the areas of reading/English language arts, math, and science. The researchers ultimately found nine research studies that met the rigor of the What Works Clearinghouse evidence standards, and only six that focused on reading/English language arts solely (Cole, 1992; Duffy et al., 1986; McCutchen et al., 2002; McGill-Franzen et al., 1999; Sloan, 1993; Tienken, 2003). This indicates there is not adequate

peer-reviewed research conducted on the relationship of teacher professional development and the literacy of elementary students.

The six studies that Yoon et al. (2007) found were major influences on the report's overall findings. The individual findings of the studies based on the stringent evidence standards developed by the What Works Clearinghouse enabled the researchers to make some major claims about the impact of teacher professional development on increasing student achievement. They stated teacher pedagogy increases based on professional development and manifests in better classroom teaching by the educator. The researchers stated that as the teacher's pedagogy improves, so does the academic success of their students. The triad of teacher professional development, seeing the teachers' professional development reflected in classroom practices, and increased student achievement is a powerful instructional paradigm that can be used to reshape future public-school classrooms based on the increase in student achievement.

A definition of ongoing professional development and the establishment of criteria for effective professional development are necessary to foresee an increase in students' literacy achievement. Darling-Hammond et al. (2017) clearly defined professional development in their report based on rigorous studies conducted over the last 30 years and stated effective professional development is a paradigm of learning where there is an increase in teachers' pedagogy and classroom application of skills as well as in their students' achievement. Thus, an increase in a teacher's knowledge that is reflected in their classroom practices leads to growth in students' learning. The researchers outlined seven tenets of effective ongoing professional development: targets content, comprises "active learning," is collaborative, "uses models of effective practice," has a

component of "coaching," provides "feedback and reflection," and gives participants adequate time to learn and practice. They ultimately found 35 studies that met their methodological criteria, yet only 16 met all seven tenets of effective ongoing professional development (Buysse et al., 2010; Carpenter et al., 1989; Doppelt et al., 2009; Finkelstein et al., 2010; Gallagher et al., 2017; Gersten et al., 2010; Heller et al., 2012; Johnson & Fargo, 2014; Kleickmann et al., 2016; Landry et al., 2006; Landry et al., 2009; May et al., 2016; Newman et al., 2012; Powell et al., 2010; Roth et al., 2011; Taylor et al., 2017). This indicates there is a dearth of peer-reviewed research studies on professional development that meets the seven tenets of effective ongoing professional development, reflecting a need for future research in this area.

A strong, targeted professional development plan that meets the criteria established by researchers can move students forward academically, though this direct link between teacher and student is not easily established. It is important to ensure the three components are working together—teachers' skills are increased because of professional development, teachers' instruction in the classroom can be improved because of professional development, and better teacher pedagogy increases students' academic achievement. When these three factors are working in tandem, students will make significant gains academically (Yoon et al., 2007).

Statement of the Problem

Students' competency in literacy skills is a major issue for educators throughout the United States (Genlott & Grönlund, 2016). Finding a way to improve students' literacy scores would demonstrate that preparations are being made for the younger generation's future. Students' literacy scores have remained stagnant for years. The

National Assessment of Educational Progress (NAEP) reports fourth-grade reading scores dating back to 1992 annually. Students' performance nationally in reading has remained on average in the cut score range of 217 based on a scale of 0–500 (NAEP, 2019). Moreover, students who performed in the lower percentiles have scores that range from 160 to 170 (NAEP, n.d.). The scores for struggling readers are below normed expectations, and it is imperative to find a way to improve these students' reading scores.

Elementary students have been struggling with literacy, especially with the onset of the COVID-19 pandemic in March 2020 (Kuhfeld & Tarasawa, 2020). Kuhfeld and Tarasawa (2020) noted in the Northwest Evaluation Association's brief on the COVID-19 slide that students would be behind at the start of the Fall 2020 year and this loss would be more than what would be seen in the typical summer slide. The researchers used a large national sample of students in Grades 3–8 and gathered their Measures of Academic Progress (MAP) growth data from 2017–2018 to make growth trajectories by grade level. Then they made projections for academic loss based on two different scenarios: the COVID-19 slide, in which children showed learning loss because of the summer slide and "an extended closure," and the COVID-19 shutdown where "students' academic achievement" was at the exact "level" when schools shut down. Ultimately, the researchers predicted that students would be behind in literacy in the upper-grade levels for the Fall 2020 school year.

Some school districts, like the one featured in the current study, started the 2020–2021 school year in late September with a hybrid and remote instructional program for students. In-person instruction is the optimal environment for students to learn (Oster et al., 2021). Direct contact and interaction with educators make a significant difference in

student learning. The hybrid and remote instructional paradigms have less of a positive effect on students' academic achievement than the former (Oster et al., 2021). Oster et al. (2021) noted the gap in learning mode access among K–12 students during the COVID-19 pandemic based on race. They found that minority students had less access to direct instruction than did White students. Thus, the pandemic highlighted a clear disparity in learning access between races, which also could encompass socioeconomic differences.

The return to full in-person instruction differed across the United States. There were schools that returned to full in-person instruction and some that continued hybrid learning. From January 2021 to April 2021, a significant number of students returned to in-person instruction across the board. Oster et al. (2021) stated 39% of students in elementary school had the means to access "full-time in-person learning" (p. 955). Yet, in the district used in the current research, full in-person access to all students was not granted until late May 2021.

As a result of the loss of education, there was a noticeable discrepancy in upper elementary students' literacy achievement in the district used as the site for this research. Students who were subjected to the hybrid and remote instructional program appeared to be behind in literacy performance in comparison to past years. Based on comparative data from the i-Ready Diagnostic, it is evident that upper elementary students suffered a learning loss. The October to December 2020 diagnostic results showed slight inflation, which could be attributable to the discrepancy in the time frame of the administration of the exam. Yet, the mid-year diagnostic results revealed the learning loss based on comparative years. Table 1 shows the comparative data of the i-Ready Diagnostic of a Title I school in the Northeastern United States for 4 consecutive school years.

Table 1

Comparative i-Ready Diagnostic Results by Proficiency

Grade	2017 Sept–Nov	2018 Sept–Nov	2019 Sept–Nov	2020 Oct–Dec	2021 Sept–Nov	2017 Jan–Mar	2018 Jan–Mar	2019 Jan–Mar	2020 Feb–Mar
Third	35%	20%	28%	30%	17%	50%	40%	46%	38%
Fourth	18%	15%	17%	20%	12%	30%	29%	25%	20%
Fifth	13%	14%	22%	21%	18%	23%	20%	32%	20%

Note. i-Ready scores retrieved from i-Ready Educator Dashboard (https://login.i-ready.com).

These students were not getting the same quality education as students who received in-person teaching by a certified educator according to the results. Therefore, there is a need for all students to return to full-time in-person instructional programs delivered by an educator as soon as possible to mitigate learning loss.

To make up for any loss already incurred, data should drive the professional development of teachers. Educators need to address the instructional losses of their students because of COVID-19. It has been shown that providing successfully targeted professional development to teachers can improve students' achievement (Buysse et al., 2010; Carpenter et al., 1989; Doppelt et al., 2009; Finkelstein et al., 2010; Gallagher et al., 2017; Gersten et al., 2010; Heller et al., 2012; Johnson & Fargo, 2014; Kleickmann et al., 2016; Landry et al., 2006; Landry et al., 2009; May et al., 2016; Newman et al., 2012; Powell et al., 2010; Roth et al., 2011; Taylor et al., 2017). Therefore, the current research study involved the use of a targeted professional development plan for identified teachers

in a quasi-experimental design to determine how the training affected students' literacy achievement in the upper elementary grade levels for Winter 2022.

Theoretical Framework

The theories that support this research were Bandura's social learning theory and Vygotsky's socio-cultural theory. These two theories support the importance of professional development for teachers and increasing students' literacy achievement. Social learning theory captures the essence of the teacher as a role model for students to copy. Marić et al. (2017) conducted extensive research on Bandura and his social learning theory and validated the importance of the role model. They stated learning from a role model occurs when select behavior is copied by the observer to the extent that the observer imitates the role model. This paradigm of copying the teacher is a common instructional methodology used in many schools. Similarly, when students have a knowledgeable, engaging educator who actively participates in professional development and it is reflected in their teaching practices, these students will show improvements in their learning (Yoon et al., 2007).

Another aspect of the social learning theory is the incorporation of the cognitive approach. The theory is not solely behavioristic (McLeod, 2016). McLeod (2016) conducted extensive research on the theory and discovered how the cognitive component is integrated within the theory. He stated that for the imitator to copy a behavior, that person must engage in the "mediation processes." Four processes occur before a behavior is copied: attention, retention, reproduction, and motivation. A student must be interested, and the content must engage them in learning. As it pertains to this research, the teacher must engage in literacy instruction that commands the students' attention to the

pedagogy. In addition, the students must see the modeled behavior a few times before it is retained. In the teachers' targeted professional development, the Elementary Literacy Consultant (ELC) modeled the desired teaching behavior, and the teachers copied the behavior. Having frequent times to perform the modeled behavior is also paramount to copying the behavior. Students must have opportunities to apply the skill being modeled. The final process is motivation. The students must see that by copying the modeled behavior, there are more rewards than negative consequences. Once students see the rewards by copying the modeled behavior, the behavior modeled will be imitated.

Although social learning theory supports the students' role, it has applicability to the educators who engaged in the professional development in the current study. For this research, part of the professional development incorporated the observation of the best teaching practices for literacy instruction based on research. It was expected that the teachers would also engage in the four processes of attention, retention, reproduction, and motivation to copy the behaviors modeled by the exceptional educator they observed (McLeod, 2016).

The targeted professional development the teachers received in this study was also supported by Lev Vygotsky's socio-cultural theory. A key component of this theory is the more knowledgeable other (MKO; McLeod, 2018), or a person who has a better depth of knowledge, ability, and experience within an area or realm. The MKO in the current study was the ELC who led the professional development provided to the teachers. The MKO provided the targeted professional development the teachers needed to increase their competency and practice in the classroom to ultimately enable their students to have higher achievement.

Purpose of the Study

Based on theories and research supporting that effective targeted professional development increases teachers' knowledge and performance in the classroom, the purpose of this study was to explore how a targeted professional development program for teachers affected upper elementary students' literacy achievement. This inquiry was designed to highlight whether there was a relationship between teachers' professional development and students' literacy achievement.

Research Questions

The following overarching question guided the study:

- How does targeted professional development of teachers affect upper elementary students' literacy achievement?

The null hypothesis was that there would be no significant difference between the control and experimental groups concerning literacy achievement when only the experimental group's teachers were exposed to targeted professional development.

Another question within this study was:

- Do teachers who receive targeted professional development self-report on the balanced literacy knowledge assessment more knowledge than the teachers in the control group?

The null hypothesis was that there would be no significant difference between teachers' self-reporting of their balanced literacy knowledge and whether they received treatment or control conditions.

Definition of Terms

Balanced literacy instruction – an instructional pedagogy that involves the use of two approaches to teaching students to read: "emergent literacy practices" are balanced with "explicit skills instruction" (Peregoy & Boyle, 2017). Shaw and Hurst (2012) stated teachers who are using a comprehensive balanced literacy approach engage in daily read aloud, guided reading, shared reading, interactive writing, and individual and group student conferences. Students also have daily opportunities to practice the skills taught by engaging in independent reading and writing. Balanced literacy has a significant metacognitive component as the educator models how they think and use skills while reading and the students get to apply what they observed during the shared reading, writing, and mini-lessons. There eventually is a gradual release of responsibility from the teacher to the students during this instructional approach (Daly, 2009).

Good Habits, Great Readers – a "comprehensive reading program" that has "focus lessons on reading comprehension instruction" (Frey, 2006, p. 2). It employs the gradual release of responsibility model within the instructional program. The program does have many of the components of the balanced literacy approach built in (Frey, 2006).

Guided reading – an approach in which students are introduced to a wide array of texts that are often at or above their instructional level. They are afforded the chance to apply strategies and practice reading behaviors while the teacher is present as instructional support (Daly, 2009).

Independent reading – provides an opportunity for the child to practice the learned reading strategies and behaviors on their own. Students choose their own books,

and the intent is to build their reading stamina and confidence as well as challenge them as a reader. Individual or small group conferences are held with the teacher during this reading block of time (Daly, 2009).

Independent writing – an activity in which the student has an opportunity to create a writing piece using the skills that were previously taught. Individual or small group conferences with the teacher occur during this writing block time (Daly, 2009).

Interactive writing – a collaborative process in which students and teacher write and create based on the children's background knowledge and experiences. It is often referred to as "passing the pen." Students learn writing format and grammar from the teacher during this activity (Daly, 2009; Patterson et al., 2008).

i-Ready – "an online personalized instruction program aligned to college and career ready standards that includes engaging multimedia instruction and progress monitoring into online lessons" (Swain et al., 2020, p. 2). Curriculum Associates suggests students engage in the computerized platform for at least 45 minutes per week.

i-Ready Diagnostic – a computer adaptive test used to measure students' literacy performance in six areas: phonics, phonological awareness, high-frequency words, vocabulary, comprehension of informational text, and comprehension of literary text (Colorado Department of Education, 2020).

Mini-lessons in reading and writing – skill or strategy lessons provided by the teacher in a short amount of time. The skill or strategy is explicitly taught to the students by the teacher within the context of a story or a written piece. Mini-lessons usually precede students' engagement in independent reading and writing blocks of time (Daly, 2009; Shaw & Hurst, 2012).

Shared reading – an activity in which literacy skills and strategies are taught by the teacher. There is a modeling component by the teacher as well as opportunities for the children to apply and practice the skill. Some researchers believe this activity constructs "a community of readers" (Daly, 2009, p. 7).

Shared writing – is like shared reading in that the teacher models how to write. The educator focuses on writing strategies and skills and calls upon the students to participate following the demonstration. There is also a gradual release of responsibility from the teacher to the students (Daly, 2009).

Targeted professional development – comprehensive professional development that is created based on the participants' background, knowledge, and experiences. Targets of learning are established based on data and the participants' needs (Hirsch et al., 2018).

Word work – opportunities for students to learn foundational rules and skills of phonics and spelling (Daly, 2009).

CHAPTER 2: REVIEW OF LITERATURE

Introduction

The focus in this review is on literature about the relationship between teacher professional development and student achievement in public schools. It highlights best research-based practices in teacher professional development and how these practices can influence student achievement in content areas. Research on effective targeted professional development and student achievement was also examined. Most of the research in this area was in other content areas. Research on students who suffered learning loss due to COVID-19 restrictions during the 2020–2021 school year was explored. All of this focused research helped establish the importance of targeted professional development of teachers and its impact on elementary students' literacy achievement to mitigate students' learning loss. This research was also designed to address whether or not teachers' self-reported knowledge of balanced literacy affects students' literacy achievement.

Organization of the Literature

This literature review is used to establish the understanding that providing ongoing professional development to elementary teachers can positively affect their students' literacy scores. It begins with a comprehensive report by researchers who were able to establish a direct relationship between teacher professional development and student achievement. It then moves to a discussion of research associated with the tenets of effective professional development of teachers and how that positively affects student achievement in content areas. Finally, the review covers the limited research on the targeted professional development provided to elementary teachers in the area of literacy,

and the impact of targeted professional development delivered to teachers on students' literacy achievement in the context of students who experienced significant learning loss due to COVID-19.

Professional Development and Student Achievement

Some researchers have linked the professional development of teachers to positive student achievement (Blank & de las Alas, 2009; Darling-Hammond et al., 2009; Darling-Hammond et al., 2017; Yoon et al., 2007) based on a few factors working in conjunction with each other. Yoon et al. (2007) stated professional development must be provided directly to teachers and should be designed to increase their knowledge and skills as reflected in the educators' classroom teaching. Based on these two factors, students' achievement will most likely improve. The conjoining of these three tenets (i.e., providing professional development directly to teachers, professional development's intent being to increase teachers' knowledge, professional development knowledge should be reflected in teachers' classroom teaching) formulates a direct relationship between the professional development of teachers and positive student achievement.

The professional development provided to teachers differed across the studies included in Yoon et al.'s. (2007) research. They examined over 1,300 research studies from 1996–2003 and matched them against the What Works Clearinghouse evidence standards. These evidence standards required that the research studies include professional development that was taught consistently and with high expectations and studies that had "measures" that gauged teachers' pedagogy, classroom practices, and students' learning. The standards were also inclusive of studies that had "analytic models [that were] well-specified and statistical methods must be appropriate" (p. 5). In the end,

the researchers found nine studies that met the standards (Carpenter et al., 1989; Cole, 1992; Duffy et al., 1986; Marek & Methven, 1991; McCutchen et al., 2002; McGill-Franzen et al., 1999; Saxe et al., 2001; Sloan, 1993; Tienken, 2003). Carpenter et al. (1989) provided elementary teachers with professional development concerning problem-solving skills in addition and subtraction. Cole (1992) presented fourth-grade teachers with 14 training modules that were in the Mississippi Teacher Assessment Instrument (MTAI) of reading, language, and mathematics. Duffy et al. (1996) worked with fifth-grade teachers who taught low readers and trained the teachers on how to implement "explicit explanations into their ongoing reading skill instruction" (p. 244). Marek and Methven (1991) had elementary teachers participate in a summer science in-service workshop on life cycles supported by the National Science Foundation. McCutchen et al. (2002) conducted a summer institute with elementary teachers that focused on the significance "of explicit instruction in phonological and orthographic awareness" (p. 69) with students who have learning disabilities. McGill-Franzen et al. (1999) gave kindergarten students books and provided parents and teachers with professional development that focused on elements that are important when doing read alouds, such as strategies for doing an interactive read aloud and the significance of read aloud. Saxe et al. (2001) provided mathematical professional development to two groups of intermediate elementary teachers and a third group received no professional development. The teachers who were in the Integrated Mathematics Assessment (IMA) group received a reform program that increased their knowledge of fractions and helped them discover how students think and are encouraged while trying to solve fractions. The teachers who were in the Collegial Support (SUPP) group received consistent facilitator support in

professional development in the reform curriculum that the IMA group used; however, in the SUPP group, the teachers directed the professional development sessions. Sloan (1993) provided professional development using a direct instruction model to fourth- and fifth-grade teachers. Tienken (2003) trained fourth-grade teachers on how to effectively use a rubric when teaching students how to do narrative essays. Teachers learned how to ignite in students "higher-order reflective questions as a self-monitoring and reflective device" (p. 11). Even though the professional development provided to the educators in these studies positively affected students' learning, the types of professional development and populations of students differed tremendously.

The content areas of the professional development differed among the studies included in Yoon et al.'s (2007) research as well. Four of the studies focused on English language arts and reading (Duffy et al., 1986; McCutchen et al., 2002; McGill-Franzen et al., 1999; Tienken, 2003); one study concentrated on science (Marek & Methven, 1991); three studies focused on mathematics (Carpenter et al., 1989; Cole, 1992; Saxe et al., 2001); and one study focused on all three content areas of reading, math, and science (Sloan, 1993). Based on the content areas of these studies, reading and English language arts professional development was the priority.

The amount of time educators receive professional development and how it is delivered is instrumental in students' achievement. Yoon et al. (2007) found through their comprehensive research that approximately 49 hours of professional development delivered to teachers can raise "students' achievement by about 21 percentile points" (p. iii). This assertion by the researchers established a foundation upon which professional developers can build. Yoon et al. based this finding on the various ways in which the

professional development was delivered. Six of the studies had summer professional development for teachers and professional development throughout the school year (Carpenter et al., 1989; Marek & Methven, 1991; McCutchen et al., 2002; McGill-Franzen et al., 1999; Saxe et al., 2001; Sloan, 1993). The remaining had professional development over the school year, and results still showed positive gains in student achievement (Cole, 1992; Duffy et al., 1986; Tienken, 2003). The delivery of the professional development to teachers differed, yet the students in these studies excelled academically.

The methodological designs of the studies in the Yoon et al. (2007) study were another major factor in the positive student outcomes. Six of the studies used randomized control trials (Carpenter et al., 1989; Cole, 1992; Duffy et al., 1986; McGill-Franzen et al., 1999; Sloan, 1993; Tienken, 2003), whereas the remaining three used a quasi-experimental design (Marek & Methven, 1991; McCutchen et al., 2002; Saxe et al., 2001). Both research designs produced outcomes that showed students' learning increased, which was a desired outcome of the researchers.

Three out of the five studies included in Yoon et al.'s (2007) research that focused on English language arts produced statistical significance in students' literacy achievement based on the professional development provided to the treatment educators (Cole, 1992; McCutchen et al., 2002; McGill-Franzen et al., 1999). Cole (1992) set out to determine whether a 1-year staff development program affected fourth-grade students' achievement test scores. They exposed six random teachers and their students to a treatment condition. The teachers received professional development from the training modules derived from the Mississippi Teacher Assessment Instrument (MTAI) in

reading, language, and mathematics. The researchers used the Stanford Achievement Test (SAT) as the dependent variable. Students whose teachers participated in the professional development significantly outperformed the control group students in reading.

McCutchen et al. (2002) conducted a quasi-experimental design to examine kindergarten and first-grade teachers' participation in a 2-week professional development institute, three follow-up sessions, and frequent observations throughout the school year by the researchers from an affiliated university. The focus of the professional development was to deepen the teachers' knowledge of phonology and orthography. The researchers also taught educators effective strategies for teaching phonology and orthography to their students. In this study, teachers who participated in the treatment group were tested in phonology before the summer institute and again after the treatment or professional development. These teachers showed increased knowledge based on the testing in phonology and their students' outcomes were also favorable. Students in the treatment group showed statistical significance in the Gates-MacGinite Word Reading Subtest, concepts about print, and letter identification. Results of McGill-Franzen et al.'s (1999) study also rendered significant student outcomes. These researchers focused on select kindergarten teachers and their students' parents. They supplied the teachers and parents with professional development regarding the importance of read alouds and how to do an interactive read aloud with kids. Teachers also learned about how to design the classroom and how to set up book displays. In addition, both the students of these teachers and the educators received books. The researchers found the students in the treatment group did significantly better than the control group in letter names knowledge, Ohio Word Test, writing vocabulary, and concepts about print.

The remaining two studies from the Yoon et al. (2007) research that focused on literacy yielded opposing results (Duffy et al., 1986; Sloan, 1993). Sloan (1993) targeted fourth- and fifth-grade students and teachers. Five teachers were exposed to the direct instruction model, which is a transformative instructional design in which content is taught directly to students in a specific format that consists of clear established academic goals that are aligned with structured activities and materials that are readily available during the lessons. Moreover, in this design, teachers initiate the lesson with low-level questioning before spiraling up. The students of the teachers who received the direct instruction model professional development outperformed the control students in reading. Duffy et al.'s (1986) study produced insignificant student outcomes with fifth-grade students who were in the lowest reading groups. The researchers randomly assigned the teachers of these students to a control and treatment condition. The treatment teachers received professional development on how to implement "explicit explanation into their ongoing reading skill instruction" (p. 244). These teachers learned how to teach reading skills and strategies explicitly using teacher talk and sharing the processes with the students using their basal readers. Both the teachers and students were observed a few times and the students were also interviewed. The results of the study indicated there was no difference in student achievement in reading between the control and treatment groups.

Duffy et al. (1986) presented several limitations that may explain the insignificant student outcomes. The researchers believed they should have focused on how the students applied the strategies taught directly instead of relying on a standardized test. This researcher validates this limitation and believes there should be a direct relationship.

Yet, it is also important to have a standardized measure. The researchers also found that a few of the treatment teachers did not use the newly taught skills and strategies consistently because the new skill set did not fit in their repertoire of teaching strategies and skills. They only implemented the strategies when they knew they were going to be observed. The inconsistency in the teachers' use of the new skill set was detrimental to the study and the students' outcomes.

There appeared to also be a design flaw in Duffy et al.'s (1986) study. The researchers stated "the number of students in the low reading groups in the 22 classrooms varied from a low of 4 to a high of 22, with an average group size of 11.76" (p. 241). Low readers should not be in large groups averaging 11 students. Researchers who have been successful with low-achieving students in literacy recommend 1:1 or really small groups (Foorman & Torgesen, 2001). It appears Duffy et al.'s (1986) research was missing the tenets of effective professional development and the importance of consistently seeing the application of the new knowledge in teachers' teaching practices.

Effective Professional Development

There are specific components of effective professional development that have a major influence on student outcomes. Darling-Hammond has conducted extensive research in this area. Darling-Hammond et al. (2009) set out to give a status report on professional learning in the context of education around the world. They analyzed the research surrounding professional learning "that has been shown to positively affect"? teacher practice and increases student outcomes. The researchers came up with important findings based on the research that ultimately provided the groundwork for effective professional development for educators (Darling-Hammond et al., 2009). Darling-

Hammond et al. (2017) extended their research to devise a comprehensive guide to what constitutes effective teacher professional development. The researchers presented seven tenets (i.e., content focus, active learning, collaboration, use of models and modeling, coaching and expert support, feedback and reflection, sustained duration) that are necessary for effective professional development and identified research studies that meet those tenets (Darling-Hammond et al., 2017).

According to the research, there are major criteria that must be met within professional development for students to gain positive outcomes. Darling-Hammond et al. (2009) stated professional development must be continuous and heavily concentrated in content to positively affect students' learning. There must be collaboration in professional learning that reaches beyond a teacher's classroom. The collaboration ends with strong bonds among the teachers. In addition, a focus on students' work should be a component that drives professional development. The researchers also stated in their report that school-based coaching and mentoring for new teachers are enhancements that could improve professional development design.

Knowing what constitutes skilled professional development based on research is only the beginning. Darling-Hammond et al.'s (2017) research on the seven tenets of professional development and the studies that employ them represented a major contribution to what constitutes effective professional development. Their research articulated clear pillars that must be included for professional development to be effective. The researchers stated effective professional development must be focused on content and accompanied by effective teaching strategies for that content in the context of the teacher's classroom setting. Professional development must be an active process for

all. It should be interactive, especially for the teacher participants, and it should contain artifacts and strategies that are directly connected to the content being taught. The professional development must be continuous over a long period and offer opportunities for the teachers to learn in several ways around the concept. Collaboration is another major tenet of effective professional development highlighted in Darling-Hammond et al.'s research. The researchers presented the importance of including exemplars or models of effective practice, and they indicated that coaching and expert support are necessary to effectively develop teachers. They ended by noting professional development must provide opportunities for feedback and reflection and be implemented over a period where there is enough time for teachers to attain, practice, and incorporate the feedback into their daily instruction. The researchers outlined the seven necessary tenets that must be included when designing effective professional development.

Identifying studies that included Darling-Hammond et al.'s (2017) pillars of effective development is a way to highlight how effective development should appear in research studies. Darling-Hammond et al. scoured the research in search of rigorous studies that showed a positive effect on student outcomes based on effective professional development. All the studies were in peer-reviewed journals and were received by federal agencies for review. The final count was 16 articles that met the seven tenets (Buysse et al., 2010; Carpenter et al., 1989; Doppelt et al., 2009; Finkelstein et al., 2010; Gallagher et al., 2017; Gersten et al., 2010; Heller et al., 2012; Johnson & Fargo, 2014; Kleickmann et al., 2016; Landry et al., 2006; Landry et al., 2009; May et al., 2016; Newman et al., 2012; Powell et al., 2010; Roth et al., 2011; Taylor et al., 2017).

The 16 studies that incorporated Darling-Hammond et al.'s (2017) seven tenets had different content focus but all yielded positive student outcomes. Buysse et al. (2010) researched 55 teachers and 193 pre-kindergarten students in a dual language program in the Eastern United States. The experimental teachers were exposed to professional development based on the Nuestros Niños: Early Language and Literacy program. This program embodies strategies to teach language and literacy skills to pre-K students. The researchers assessed the language proficiency and phonological awareness of the students and found the students' Spanish results were favorable. The students in the treatment group outperformed the control group significantly in phonological awareness and rhyme matching. Carpenter et al. (1989) examined mathematical professional development provided to first-grade teachers and the impact on students' outcomes in math. Doppelt et al. (2009) looked at eighth-grade teachers and students in science to determine whether the professional development would equate to positive student achievement, which it did.

Finkelstein et al. (2010) researched a different content area. They focused on 12th-grade economics teachers who professionally developed a problem-based economics curriculum. Gallagher et al. (2017) trained high school teachers in Grades 7–10 in the National Writing Project's College-Ready Writers Program, and Gersten et al. (2010) focused on first-grade teachers and improving their knowledge of reading comprehension and vocabulary. They implemented a teacher study group as a professional development design. Heller et al. (2012) examined fourth-grade teachers' knowledge of science and wanted to build upon it through professional development to get better student results on standardized tests. Johnson and Fargo (2014) were also interested in science. They worked with elementary students and wanted better science

results for their students. Kleickmann et al. (2016) focused on elementary science. The professional development program they provided was entitled education curriculum materials and was embedded in social constructivism. Landry et al. (2006) and Landry et al. (2009) focused on a different area. They researched preschoolers in language and literacy skills. May et al. (2016) also studied literacy. They taught their elementary teachers about Reading Recovery, a reading intervention program, and their goal was for students in the treatment group to do better on the Iowa Test of Basic Skills than the control group. Newman et al. (2012) researched fourth- to eighth-grade teachers and students in math, science, and technology. The professional development was aligned to those areas in conjunction with classroom practices and state standards. Powell et al. (2010) studied expert literacy coaches providing support to preschool educators. Roth et al. (2011) was another group of researchers who focused on professional development in science. They worked with elementary educators and used a special professional development design entitled Science Teachers Learning through Lesson Analysis (STeLLA). Taylor et al. (2017) also used STeLLA with fourth- through sixth-grade educators. All 16 studies yielded positive student outcomes although the content areas differed.

The content area integral to the current study is literacy. There were seven studies (Buysse et al., 2010; Gallagher et al., 2017; Gersten et al., 2010; Landry et al., 2006; Landry et al., 2009; May et al., 2016; Powell et al., 2010) that addressed this specific area and met Darling-Hammond et al.'s (2017) seven tenets of effective professional development. Only one of the seven addressed the literacy area of this research, yet did not target the exact population, age group, or professional development model. Gersten et

al. (2010) targeted 81 first-grade teachers and 468 students in a large urban district. The professional development model employed was a teacher study group in which participants focused on students' reading comprehension and vocabulary instruction. They studied at-risk students and the research associated with how to effectively teach this group. The teachers met for 16 sessions for 75 minutes per session over 9 months. The researchers found the teachers' knowledge and practices were positively correlated to students' literacy achievement.

Though the professional development models of the seven studies were successful with the teachers and students, they differed. Gersten et al. (2010) used a teacher study group in which the participants researched, collaborated, planned together, reflected, and worked as a unit. Buysse et al. (2010) and Landry et al. (2006) used a summer introduction and then professional development delivered throughout the year in which teachers collaborated and worked with coaches. May et al. (2016) had teachers attend a full-year university graduate-level course on Reading Recovery and receive the support of literacy coaches who taught and supported them with implementation. Powell et al. (2010) also used literacy expert coaches to teach their teachers as well as support them with implementing the new instructional strategies. Gallagher et al. (2017) focused on a 2-year professional development program for their teachers on the National Writing Project. The professional development was mainly collaborative with components that included curricular resources and how to use the formative assessment tool. Over the 2 years, teachers spent 90 hours in total. Landry et al. (2009) used an online platform for professional development delivery. Teachers participated in Ecircle, a course that addressed language and literacy pedagogy. In addition, these teachers received 2 hours of

on-site mentoring sessions by a coach twice monthly. The professional development layout differed in the seven studies, yet all studies yielded positive student outcomes. This current study built upon Landry et al.'s (2009) study, specifically the online delivery of professional development, to explore the impact on students' literacy outcomes.

Targeted Professional Development

There is a dearth of research on targeted professional development (Aiken et al., 2021; Hirsch et al., 2018; Miller & Kastens, 2018; Simonsen et al., 2017; Simonsen et al., 2020; Smith, 2015; Varghese et al., 2016). Moreover, there is even less research concerning targeted professional development in elementary literacy. Most of the research on targeted professional development was in other areas. Miller and Kastens (2018) and Smith (2015) focused on science, and Simonsen et al. (2017) concentrated on classroom management. There were only two studies that came close to the current research focus and these researchers focused on a targeted reading intervention (Aiken et al., 2021; Varghese et al., 2016). Aiken et al. (2021) focused on the four guiding principles of targeted reading intervention. They believed reading instruction should be individualized learning led by the teacher where the heart of the instruction is differentiating the reading instruction based on each reader's individual literacy needs. They asserted that continually moving the child through the levels is key because 100% mastery is not the goal. The researchers also noted it is important that the teacher explicitly teaches the skills first and then allows students to do the work of applying the skill with productive struggle. The guiding principles of targeted reading instruction are in direct alignment with the tenets of effective professional development as outlined in Darling-Hammond et al.'s (2017) research.

Based on this limited research, it appears there is a valid need for targeted professional development in literacy for elementary teachers, as its is not represented in past or current research. Targeted professional development, as defined by Hirsch et al. (2018), includes the seven tenets of effective professional development and the added feature of using data to target the content of professional development. Thus, in other words, targeted professional development is driven by data to focus on where the professional development is heading; however, the professional development includes collaboration, happens over a sustained duration, involves active learning, provides participants with models of effective practices, incorporates the support of coaching and expert support, makes time for feedback and reflection, and concentrates on teachers' individual needs.

The targeted professional development in the existing research did not focus on elementary literacy (Miller & Kastens, 2018; Simonsen et al., 2017; Simonsen et al., 2020; Smith, 2015). Yet, the existing studies included elements of targeted professional development that were used to guide the current research. These researchers sought out a starting place by measuring teachers' knowledge. Miller and Kastens (2018) conducted classroom observations of the teachers around their current science instructional practices around models in science. They conducted observations for a year before introducing the teachers to the actual professional development design. Smith (2015) met with all participants in their schools before the professional development began, which allowed the researcher time to solicit participants' input into the professional development design. Both of Simonsen et al.'s (Simonsen et al., 2017; Simonsen et al., 2020) studies included gathering baseline data before introducing the intervention of professional development.

The fact that these researchers incorporated the educators' prior knowledge was instrumental in the positive student outcomes.

Measuring teacher knowledge using a pre- or post-instrument was a key element in the research on targeted professional development. Miller and Kastens (2018) interviewed teacher participants before selecting them for their study. These researchers wanted to include educators who taught earth science and knew about using models when teaching "phases of the moon, causes of the seasons, and sedimentary deposition" (p. 11). They qualitatively measured teachers' application of new knowledge attained through classroom observations.

Simonsen et al. (Simonsen et al., 2017; Simonsen et al., 2020) administered a Teacher Professional Development Acceptability Questionnaire (TPDAQ) to their teacher participants at the end of the study. This instrument was based on the Intervention Rating Profile-15 created by Martens et al. (1985). Smith (2015) also used a teacher questionnaire devised by Pell and Jarvis (2003). The first part of the questionnaire had to do with the teachers' background information and the second part focused on teacher confidence in teaching science. The researcher also did pre and post self-reporting balanced literacy knowledge assessments for teacher participants. Having a measurement of teacher knowledge attainment was pivotal in the research studies having to do with targeted professional development and positive student outcomes.

Classroom observations of educators teaching the new content was another major part of the research on targeted professional development (Miller & Kastens, 2018; Simonsen et al., 2017; Simonsen et al., 2020; Smith, 2015). Miller and Kasten (2018) observed teachers for "43 class periods" of about 40 minutes per period (p. 11). Simonsen

et al. (Simonsen et al., 2017; Simonsen et al., 2020) trained behavioral observers to do daily observations of the teachers during the agreed-upon teacher instructional portion of a lesson to record the frequency of teacher-delivered praise during daily 15-minute teacher directed instructional sessions. The researchers established a baseline phase, intervention phase, and follow-up phase. Smith (2015) conducted three classroom observations of three teachers at three different points in the year to see the impact of the Western Seaboard Science Project (WSSP) on the educators' instruction. Having a classroom observational component to studies on targeted professional development ensures there is teacher applicability of the new knowledge.

Research on the targeted professional development of elementary teachers in literacy was not found when searching the Google Scholar search engine and Education Resource Information Center (ERIC), yet there was research in other areas. The four studies that focused on other content areas presented a framework on which to build the current study. The researchers from those studies found that tapping into teachers' prior knowledge is paramount. They used measures to gauge teachers' knowledge attainment and incorporated a classroom observational component to support teacher applicability. These research findings were incorporated into the methodology of the current research.

Learning Loss During COVID-19

During the onset of the COVID-19 pandemic in March of 2020 in the United States, many educators believed students suffered a learning loss (Kuhfeld & Tarasawa, 2020; Oster et al., 2021). The amount of learning loss differed based socioeconomic status and racial demographics. Oster et al. (2021) asserted in their research that minority students suffered more learning loss than White students because of a lack of access to

technology. The researchers reported that over the period between January and April of 2021, 74.6% of White students had returned to full-time in-person learning compared to 64.4% of Black and 58.9% of Hispanic students. This reflects a huge disparity among students based on their racial demographics.

Some researchers equated the learning loss during COVID-19 to the summer slide. Research on the summer slide indicates it is the decrease in learning approximately 2o to 3 months during the summer (Kuhfeld & Tarasawa, 2020). Kuhfeld and Tarasawa (2020) used the concept of summer reading loss to create projections on how much learning loss students suffered due to COVID-19. The projections were dismal. The researchers projected that the students beginning the 2020 school year in the fall would only have "70% of the learning gains in reading relative to a typical year" (p. 2).

The district I studied for this research did not reinstate full in-person learning until May 2021. Some researchers believed the best way for students to learn during the COVID-19 pandemic was through in-person teacher-led instruction (Oster et al., 2021). Students in the district used in this research started the 2020 school year at 70% learning gains in literacy, and they continued to lose throughout the year because they were exposed to a hybrid or remote format until May 2021, which was near the end of the school year. Therefore, the students who participated in this research suffered a significant learning loss.

Summary

Throughout the literature above, empirical research studies established the existence of a causal link between professional development and positive student outcomes. Studies were presented that incorporated the seven tenets of effective

professional development as outlined in Darling-Hammond et al.'s (2009) research. Next, studies that focused on targeted professional development were critically examined. Finally, the concept of learning loss, particularly in literacy, was presented. This context of literacy learning loss supports the need for targeted professional development to address the loss and help move students forward academically. It was the intent of this researcher to provide targeted professional development to elementary teachers in literacy and determine its impact on students' literacy learning.

CHAPTER 3: METHODS AND PROCEDURES

The purpose of this quasi-experimental study was to determine whether providing targeted professional development in literacy to elementary teachers affected their students' literacy achievement. The independent variable in the study was the targeted professional development provided to select teachers. The dependent variables were students' literacy scores and teachers' knowledge. The following questions guided this study:

1. How does targeted professional development of teachers affect upper elementary students' literacy achievement?
2. Do teachers who receive targeted professional development self-report on the balanced literacy knowledge assessment more knowledge than the teachers in the control group?

Quasi-Experimental Design

The research was conducted in two Title I elementary schools in one district in the Northeastern United States. To determine the impact of providing targeted professional development to teachers, it is effective to observe the targeted professional development within its natural context. Therefore, the researcher chose a quasi-experimental design, and specifically a nonequivalent control group design. Creswell and Creswell (2018) defined this design as one in which the control and experimental groups take a pretest and posttest, yet only one group (i.e., the experimental group) receives the treatment. The quasi-experimental design was deemed most suitable to answer the question of whether targeted professional development delivered to teachers affects their students' literacy scores.

Social Development Paradigm

The theories that support this research were Bandura's social learning theory and Vygotsky's socio-cultural theory. Targeted professional development was delivered to teachers as a social activity predicated on learning from each other. To enhance the experience, the researcher added a more knowledgeable other, the ELC. The MKO was instrumental in explicitly modeling strategies and supporting the teachers. It was through this theoretical framework that the targeted professional development was delivered to teachers with the intent of making a difference in students' literacy scores.

Research Site

The selected site was two public elementary schools in a low socioeconomic suburban neighborhood in the Northeastern region of the United States. The public school district and the two elementary schools are Title I. One elementary school served 637 students in Grade 1 through Grade 5, and the other school served 630 students in Grade 1 through Grade 5. The targeted population for this study was 266 intermediate students: one elementary school had 132 student participants and the other elementary school had 134 student participants. Students with various classifications were included in this study, such as regular education, special education, and English language learners (ELLs).

Teacher Participants

Eighteen teachers participated in this research: nine teachers were selected from the treatment school and nine teachers were selected from the control school. In each school, there were three teachers from each grade level (i.e., third, fourth, and fifth). All teachers participated in the research for 12 weeks and completed pre- and post-self-

assessments of their balanced literacy knowledge. Nine of the 18 teachers selected for the study received targeted professional development from the ELC. The nine treatment teachers had a collaborative role in determining what targeted professional development was delivered by the ELC based on student data from the i-Ready Diagnostic pretest and the resource text from Fisher et al. (2019) entitled, *This is Balanced Literacy Grades K-6*. Treatment teacher participants met with the ELC for approximately 9 hours of professional development over the 12 weeks of the study.

Student Participants

Intermediate elementary education students from Grades 3, 4, and 5 were selected for this study. The students ranged in age from 7 to 11 years and were conveniently sampled based on their teachers' participation in the research. Therefore, all 266 students came from the classrooms of teachers who consented to participate in the research. Data were collected twice over the 12 weeks for all students who participated in the study. There were 89 Grade 3 students, 88 Grade 4 students, and 89 Grade 5 students. Most of the students were Hispanic at 90%, Black at 5%, White at 2%, and multi-racial at 1%. The researcher sought an even balance of male and female students.

Procedures

The researcher distributed consent forms (see Appendix A and Appendix B) on St. John's letterhead containing pertinent information about the study to teachers at two different elementary schools. Once the consent forms were received and the Institutional Review Board (IRB) approved the research, all participating teachers took the Balanced Literacy Self-Assessment (Tulsa Public Schools, 2013; see Appendix C). This determined how much knowledge the teachers had regarding balanced literacy and

identified areas to increase their learning. The treatment teachers used student assessment data to collaboratively design with the ELC the targeted professional development. The treatment teachers participated in 9 hours of targeted professional development throughout the research. The ELC held grade-level targeted professional development sessions with the nine teachers, and each session was based on the teachers' data targets from i-Ready or their needs based on the resource book entitled, *This is Balanced Literacy Grades K-6* (Fisher et al., 2019). During the 12th week of the study, all students were administered the i-Ready Diagnostic in reading and all teacher participants took the Balanced Literacy Self-Assessment again.

Quantitative Data Collection

Procedures used with the 18 teacher subjects included the administration of the Balanced Literacy Self-Assessment twice during the research to assess teachers' knowledge of five components of balanced literacy: read aloud, shared reading, guided reading, independent reading, and word study (Tulsa Public Schools, 2013). The assessment uses a 4-point scale and the higher the number, the better the knowledge level and implementation. All items in the assessment were put together as a total score, and an average was calculated.

For the 266 students, the main literacy data came from the i-Ready Reading Diagnostic. This computer-based, adaptive assessment measures students' literacy in six areas: phonics, phonological awareness, vocabulary, high-frequency words, comprehension of informational text, and comprehension of literary text (Curriculum Associates, 2020).

Both the teachers' and the students' assessments were used as pre- and postmeasures. This showed whether progress was made after the delivery of the targeted professional development. In addition, the Balanced Literacy Self-Assessment was correlated with the students' literacy results.

Instruments

The data collection instruments in this research were the (a) Balanced Literacy Self-Assessment (Tulsa Public Schools, 2013) and (b) scale scores on the i-Ready Reading Diagnostic. The Balanced Literacy Self-Assessment was created by Tulsa Public Schools in 2013 to allow educators to rate themselves on their implementation of the balanced literacy approach in the classroom based on the clear tenets of balanced literacy. The assessment includes five specific areas of balanced literacy instruction: read aloud, shared reading, guided reading, independent reading, and word study. The researcher's reasoning for using this tool was to establish a baseline of teachers' knowledge. The methodology of establishing a baseline to rate teachers' knowledge differed in the empirical research from interviews to questionnaires (Marek & Methven, 1991; McCutchen et al., 2002; Miller & Kastens, 2018; Simonsen et al., 2017; Simonsen et al., 2020; Smith, 2015).

For this research, using i-Ready scale scores to measure students' literacy achievement was a functional, methodological choice. Both elementary schools have used the i-Ready computer-based program for at least 4 years. It is a research-supported program that is aligned with state standards (Curriculum Associates, 2020). The students' i-Ready results are calculated in six areas: phonics, phonological awareness, vocabulary, high-frequency words, comprehension of informational text, and comprehension of

literary text. The data targets helped drive the needed targeted professional development for the treatment teachers.

The i-Ready Diagnostic and balanced literacy instruction delivered by the teachers were suitable for answering the research question of how targeted professional development delivered to teachers affects the literacy scores of students. The targeted professional development that was delivered in this research was based on the best instructional strategies associated with balanced literacy instruction and was facilitated by the ELC. In addition, the resource book that the treatment teachers and the ELC used to supplement the targeted professional development was titled, *This is Balanced Literacy Grades K-6* (Fisher et al., 2019).

Data Analysis

IBM SPSS Version 27.0 was for compute statistical computations, which included generating frequency distributions, descriptive statistics, and correlations. It is through this statistical platform that the answer to the overarching question of how providing targeted professional development to teachers affected students' literacy scores was answered. For this research, calculating the means, percentages, and standard deviations of students' scores on the pre- and postdiagnostics in reading was crucial. The actual i-Ready scale scores were also used. Also in this research, *t* tests were conducted with the control and treatment student groups' i-Ready Diagnostic scores to determine whether one group outperformed the other.

The statistical computations for the teachers were similar to those done with the students' data. SPSS Version 27.0 was used to answer the research question of whether teachers' self-reporting of their balanced literacy knowledge affected students' literacy

achievement. The teachers' pre- and postscores on the Balanced Literacy Self-Assessment were totaled and averaged, and *t* tests were conducted to determine whether one group's mean (treatment) outperformed or self-reported more balanced literacy knowledge than the other group's mean (control). Statistical significance was also sought.

Reliability and Validity

The research design of the study was quasi-experimental. Students were studied in their natural environment—the classroom. Student participants were selected based on convenience sampling because the researcher had access to the teachers. Unfortunately, by following this design, an immediate threat to validity appeared specifically in terms of participant selection. Convenience sampling is not representative of the larger population. Therefore, it is challenging to generalize the results to a larger population (Creswell & Creswell, 2018).

In addition, this research followed a nonequivalent pretest and posttest control group design. Creswell and Creswell (2018) noted this is a popular approach in which "only the experimental group receives the treatment" (p. 168). In reviewing the research, several studies employed a quasi-experimental design and ultimately had positive student outcomes (Landry et al., 2006; Landry et al., 2009; Marek & Methven, 1991; McCutchen et al., 2002). Therefore, this research was in alignment with other research studies that used a quasi-experimental design.

In this research, there were minimal threats to validity. The threat of instrumentation was small. The i-Ready Diagnostic test is adaptive, meaning students rarely get the exact test items. Yet, for the teachers, the Balanced Literacy Self-

Assessment was the same. Unfortunately, this was where the threat to instrumentation existed.

There also was a threat of researcher bias. This researcher was the principal of the treatment school and had a role in delivering targeted professional development to the treatment teachers. The researcher was present for 6 of the 9 hours of professional development. It is part of the researcher's occupational role to be an instructional leader and ensure the teachers in the school deliver high-leverage instruction to the students daily. It is important to recognize the researcher's competing roles in this research because they had the potential to influence the results. One of the ways the researcher maintained transparency was by employing researcher reflexivity throughout the research. The researcher kept a detailed daily account of events, feelings, and thoughts throughout the research. Reflexivity is common practice in qualitative studies; however, it was important to review the daily accounts recorded by the researcher before completing the research to reduce the threat posed by researcher bias.

CHAPTER 4: FINDINGS

The purpose of this study was to determine whether providing targeted professional development to select teachers affected their students' literacy achievement. The researcher enlisted the support of 18 teachers and 266 students from two Title I schools from one district in the suburban Northeast United States. Following a nonequivalent control design, the treatment group within this research was nine teachers who participated in targeted professional development for 12 weeks. They taught 132 students from their school. The control group within this research was nine teachers from the other school who continued daily practices of balanced literacy instruction over the 12 weeks with their students (n = 134). Both groups of students took the i-Ready Diagnostic as a pretest and posttest.

The study also involved examining whether teachers who received targeted professional development self-reported on the Balanced Literacy Self-Assessment that they had more knowledge of balanced literacy than the teachers in the control group. There were nine teachers in the treatment group and nine teachers in the control group. All 18 teacher participants took the Balanced Literacy Self-Assessment as a pretest and posttest. Based on the results, both research questions were addressed.

Data Analysis Process

Data were collected from the 18 teacher subjects from two administrations of the Balanced Literacy Self-Assessment: pretest and posttest. The Balanced Literacy Self-Assessment was designed to assess teachers' knowledge of five components of balanced literacy: read aloud, shared reading, guided reading, independent reading, and word study (Tulsa Public Schools, 2013). The assessment uses a 4-point scale and the higher the

number, the better the knowledge level of balanced literacy and its implementation. All items in the assessment were added together as a total score and an average was calculated.

Teachers completed the Balanced Literacy Self-Assessment at the beginning and end of the study in the environment that was most comfortable and conducive to them. The nine treatment teachers received copies of their Balanced Literacy Self-Assessment in their office mailbox at their school. The nine teachers in the control group received their copies via school district interoffice mail both times. All 18 teacher participants were given the option of emailing their completed Balanced Literacy Self-Assessment to the researcher within 5 school days; however, only three participants used this option. The majority of the teacher participants used a confidential envelope and delivered their responses via interoffice mail or hand delivery to the researcher's office mailbox.

The literacy data for the 266 students came from the i-Ready Reading Diagnostic. This computer-based, adaptive assessment measures students' literacy in six areas: phonics, phonological awareness, vocabulary, high-frequency words, comprehension of informational text, and comprehension of literacy text (Curriculum Associates, 2020). The students' pre- and posttest scores were averaged for the purposes of statistical analysis. Students were administered the pretest and posttest i-Ready Diagnostic in their classrooms under normal conditions and took the assessments on their district-issued laptops. In addition, all students took the test at their desks, which were separated by 3 feet (Rosa, 2021). Teachers allowed students time to take the i-Ready Diagnostics, usually not more than 45 minutes per day (Curriculum Associates, 2022a).

Demographic data were collected on both the students and teachers. The students' demographic data were compiled from the i-Ready administrative dashboard, as the researcher had access to the dashboards for both schools. The dashboards extracted student information, including gender, academic level, and ethnicity. The information was then input into SPSS 27 and demographic tables were developed based on the results. Teacher demographic data were also collected. The researcher contacted the district's human resource departments, and they provided the ethnicity and level of education of all 18 teacher participants at the two schools. That information was also input into SPSS 27 and demographic tables were created from the results.

Both teachers' and the students' assessments were administered as pretests and posttests and means were calculated. Therefore, *t* tests were a viable statistical analysis. Independent sample *t* tests of the treatment and control groups were conducted through SPSS 27. This analysis was done because the treatment group of students and control group of students did not have the same number of participants.

Paired sample *t* tests were used to show the comparison of the means of the treatment group pre and post as well as control group pre and post. Huck (2012) stated that correlated samples must have the same number of participants for data sets to be paired. Thus, the treatment and control means were calculated and then compared between the two groups. Pearson correlation was then computed through SPSS 27 to determine whether relationships existed between the control and treatment groups' pre- and posttest scores. Finally, the three inferential statistical analyses of paired sample *t* tests, independent *t* tests, and Pearson correlation were done for the teachers' pre and post-assessment data and the students' i-Ready Diagnostic pre- and post-data.

i-Ready Diagnostic Tool

Curriculum Associates, a tech company based in Massachusetts, created the i-Ready Diagnostic tool. The company has been in existence since 1969 (Swain et al., 2020). The i-Ready Diagnostic is a computer adaptive test designed to measure students' literacy performance in six areas: phonics, phonological awareness, high-frequency words, vocabulary, comprehension of informational text, and comprehension of literary text. Curriculum Associates suggests students, especially upper elementary students, take the i-Ready Diagnostic in multiple sessions over a few days (Curriculum Associates, 2022a).

Once students complete the diagnostic, an overall scale score is calculated. Scale scores are calculated in the six domains or areas as well. The overall score that is computed is assigned a grade level based on the i-Ready Diagnostic scale score placement table (Curriculum Associates, 2022b). Figure 1 is the most recent copy of the i-Ready Diagnostic scale score placement table.

Figure 1

i-Ready Diagnostic Grades K-12 Scale Score Placement Table (2022–2023) Literacy

Student Grade

	Emerging K	Grade K	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
Grade K	100-361	362–395 396–423 424-479	480-536	537-560	561-800				
Grade 1	100-346	347-433	434–457 458–479 480–536	537-560	561-602	603-800			
Grade 2		100-418	419-488	489–512 513–536 537–560	561-602	603-629	630-800		
Grade 3		100-418	419-473	474-510	511–544 545–560 561-602	603-629	630-640	641-800	
Grade 4		100-418	419-473	474-495	496–556	557–578 579–602 603–629	630-640	641-653	654-800
Grade 5		100-418	419-473	474-495	496-541	542-580	581–608 609–629 630–640	641-653	654-669

Color Legend
Mid, Late, Above Grade Level
Early On Grade Level
One Grade Level Below
Two Grade Levels Below
Three or More Grade Levels Below
Score at this grade level not possible (N/A)

The i-Ready Diagnostic scale scores are normed and correlated with the New York State Testing Program scores as well as reading Lexile (Curriculum Associates,

2016, 2020). Based on extensive research conducted by Curriculum Associates in 2018, there is a high average correlation (r = .78) between the i-Ready Diagnostic scale and the New York State Testing Program. This correlation was based on 54,000 students in Grades 3–8 (Curriculum Associates, 2020). Therefore, the i-Ready Diagnostic scale score is a valid instrument that is predictive of students' literacy achievement.

Findings From Analysis of Quantitative Data

Research Question 1. How does targeted professional development of teachers affect upper elementary students' literacy achievement?

To address this question, the researcher used a quasi-experimental non-equivalent design. The treatment group of nine teachers from one school received 9 hours of targeted professional development and taught 132 students. Both the teachers and students comprised the treatment group in this research. The other nine teachers and 134 students hailed from another school about 150 feet away. This group of teachers and students comprised the control group. They did not receive anything additional. The control group continued, throughout the research, with daily balanced literacy instruction. Table 2 displays the demographic data for both the treatment and control samples of students.

Table 2

Demographic Data of Treatment Versus Control Sample of Students

	Treatment $n = 132$		Control $n = 134$	
	N	%	*N*	%
Gender				
Male	61	46.2%	64	47.8%
Female	71	53.8%	70	52.2%
Academic level				
Regular education	88	66.7%	113	84.4%
Special education	12	9.1%	7	5.2%
ELLs	32	24.2%	14	10.4%
Ethnicity				
Latino	119	90.2%	111	82.8%
African American	9	6.8%	19	14.2%
White	3	2.3%	2	1.5%
Asian	0	0%	1	.7%
Multi-racial	1	.8%	1	.4%

Note. ELL = English language learners.

As illustrated in Table 2, the demographic data for the treatment and control groups were converted to percentages. The two samples had some commonalities and disparities. Both samples had a similar ratio of males and females and a significant number of Latino students. However, the treatment sample had double the number of ELLs than the control group (24.2%) and a higher percentage of special education students (9.1%) than the control group (5.2%).

The disparities in the two samples would suggest that the control group would outperform the treatment group. However, that was not the case. Table 3 shows the

results of an independent sample *t* test used to compare the two samples. Determining whether the means of the two different groups were similar or different was necessary. The treatment group's posttest i-Ready mean score ($M = 546.64$) was higher than the control group's posttest i-Ready mean score ($M = 536.92$). In addition, the researcher used independent *t* tests to compare the means of the treatment group pretest ($M = 539$) and the control group pretest ($M = 532$), and the results indicated the means were significantly different: $t(265) = -1.25$, $p < .05$. Therefore, from the onset, the scores for the two groups of students were different. This poses a challenge when extending the results to a larger population because the two groups of students (treatment vs. control) were not similar based on their pretest mean scores. Nonetheless, the treatment and control groups' posttest results showed no significant difference.

Table 3

Independent Sample t Tests for i-Ready Students' Scores

Sample	*M*	*SD*	*t*	*df*	*p*
Treatment pretest	539	43.02	-1.25	264	.031*
Control pretest	532	47.96			
Treatment posttest	546.64	45.17	-1.67	264	.096
Control posttest	536.92	49.61			

Note. The results for the treatment sample ($n = 132$) and the results for the control sample ($n = 134$).
*$p < .05$.

The relationships between the pretest i-Ready Diagnostic scores and posttest i-Ready Diagnostic scores yielded strong correlations and significance. Table 4 shows the Pearson correlation for the treatment group's scores was $r = .89$, $p < .01$. This indicated a

very strong, positive significant relationship between the pretest i-Ready Diagnostic and the posttest i-Ready Diagnostic for the treatment group. The control group also had a strong correlation and significance, $r = .87$, $p < .01$. This meant a solid positive significant relationship existed between the pretest i-Ready Diagnostic scores and the posttest i-Ready Diagnostic scores for the control group. Therefore, the two different i-Ready Diagnostic scores for both samples established strong, positive relationships between the pre- and posttests.

Table 4

Treatment Posttest and Control Posttest

Variable		
1. Treatment scale scores	.89**	
3. Control scale scores		.87**

Note. The results for the treatment sample ($n = 132$) and the results for the control sample ($n = 134$) are shown above the diagonal.
*$p < .05$. **$p < .01$.

In this study, the null hypothesis indicated there would be no differences between the control and experimental groups concerning literacy achievement when only the experimental group's teachers were exposed to targeted professional development. The research studies in which results showed targeted professional development affected students' achievement had a longer treatment time and more extensive targeted professional development (Miller & Kastens, 2018; Simonsen et al., 2017; Smith, 2015). This research was conducted on a smaller scale; therefore, it was postulated that no differences would be found.

There was no significant difference between the control and treatment groups concerning literacy achievement when only the treatment group's teachers were exposed

to targeted professional development. Table 5 shows the results of the paired sample *t* tests conducted for both the treatment and control groups. Paired sample *t* tests were conducted to compare the means of treatment pretest and posttest as well as the means of the control pretest and posttest. Thus, two different paired sample *t* tests had to be calculated (treatment vs. control). The results were then input into a table for comparison. The results indicated the treatment group, which received targeted professional development ($n = 132$), had statistical significance between the pretest i-Ready Diagnostic scores and the posttest i-Ready Diagnostic scores, $t(131) = -4.01$, $p \leq .01$. In addition, the control group, which did not receive targeted professional development ($n = 134$), attained statistical significance with their pretest i-Ready and posttest i-Ready scores, $t(133) = -2.21$, $p \leq .05$. Therefore, the researcher failed to reject the null hypothesis that there would be no significant difference between the control and treatment groups concerning literacy achievement when only the treatment group's teachers were exposed to targeted professional development.

Table 5

Paired Sample t Tests for Students' i-Ready Scores

Sample	*M*	*SD*	*t*	*df*	*p*
Treatment pretest	539	43.02	-4.09	131	<.001**
Treatment posttest	546.64	45.17			
Control pretest	532	47.96	-2.20	133	.029*
Control posttest	536.92	49.61			

Note. The results for the treatment sample ($n = 132$) and the results for the control sample ($n = 134$).
*$p < .05$ **$p < .01$.

Research Question 2. Do teachers who receive targeted professional development self-report on the balanced literacy knowledge assessment more knowledge than the teachers in the control group?

Eighteen teachers participated in this study. Nine were in the treatment group and nine were in the control group. All teachers took the Balanced Literacy Self-Assessment developed by Tulsa Public Schools in 2013. The purpose of this tool is to measure the amount of knowledge educators report having about balanced literacy in six areas: read aloud, shared reading, guided reading, independent reading, word study, and writing. The assessment uses a 4-point scale. The higher the evaluator rates themselves, the more balanced literacy knowledge they possess (Tulsa Public Schools, 2013). The researcher used this tool because it is a proven way to get a sense of an educator's balanced literacy knowledge. Unfortunately, the Balanced Literacy Self-Assessment is not normed and is no longer used by Tulsa Public Schools because they are currently using a reading program aligned to the science of reading (D. Neves, personal communication, November 29, 2021).

Table 6 displays the demographic data for the teachers who participated in this research. There were slight differences and similarities. The control group had more diverse educators and more male teachers than the treatment group. The control group had two Latino educators and three male teachers compared to the treatment group, which had all White educators and one male teacher. Moreover, all educators attained a master's degree as it is a state requirement for permanent certification (New York State Department of Education, Office of Teaching Initiatives, n.d.).

Table 6

Demographic Characteristics of Teachers in the Treatment Versus Control Samples

	Treatment $n = 9$		Control $n = 9$	
	N	%	*N*	%
Gender				
Male	1	11.1%	3	33.3%
Female	8	89.9%	6	66.7%
Academic level				
Master's degree	9	100%	9	100%
No master's degree	0	0%	0	0%
Ethnicity				
Latino	0	0%	2	33.3%
White	9	100%	7	66.7%
African American	0	0%	0	0%
Asian	0	0%	0	0%

Table 6 also showcases the conversion to percentages to enhance the participants' differences. In the treatment group, all of the educators were White (100%). The control sample had some diversity with 33.3% of the teachers being Latino. Another discrepancy occurred in terms of gender. The control group (33.3%) had significantly more male teachers than the treatment group (11.1%).

The Balanced Literacy Self-Assessment measures teachers' balanced literacy knowledge in six critical areas: read aloud, shared reading, guided reading, independent reading word study, and writing (Tulsa Public Schools, 2013). The higher the overall point value a teacher self-reports, the more balanced literacy knowledge they possess. The need to measure a teacher's knowledge is supported in the research (Miller &

Kastens, 2018; Simonsen et al., 2017; Simonsen et al., 2020; Smith, 2015). Based on the research, this study measured teachers' balanced literacy knowledge using an assessment that Tulsa Public Schools created. It was hypothesized that there would be no significant difference between treatment and control teachers concerning their self-reporting of their balanced literacy knowledge. The findings failed to reject the null hypothesis, as there were no differences.

Table 7 indicates the control group self-reported more balanced literacy knowledge on the pretest and posttest compared to the treatment group. The finding was different than what was initially suggested. The treatment group received 9 hours of targeted professional development on balanced literacy instruction as well as a copy of *This is Balanced Literacy* (Fisher et al., 2019). The professional developer was the ELC from their school. During two of the sessions, teachers had the opportunity to set the professional development agenda. Interestingly, the teachers in the treatment condition did not self-report higher levels of balanced literacy knowledge than the control group. One reason for this is that after receiving the book, *This is Balanced Literacy*, these teachers realized there were components of balanced literacy that they did not implement, such as shared writing, independent reading, and word study. The treatment teachers were honest in the professional development sessions with the ELC about their strengths and weaknesses in the area of balanced literacy implementation. This researcher witnessed the teachers' honesty while participating in two of the three professional development sessions with the teachers in the treatment group led by the ELC. The control teachers had no professional development in balanced literacy and they continued to teach as usual. Table 7 showcases the independent *t* test results comparing the pretest

and posttest means for the teachers' Balanced Literacy Self-Assessment. Independent *t* tests were used because there were two different populations of teachers from different schools. The results indicated that when comparing the two different groups, their means were not significantly different: treatment pretest (M = 100.33, SD = 15.79) and control pretest (M = 110.33, SD = 19.11), $t(16) = -1.21$, $p = .244$. Therefore, the two different populations of teachers had similar means for self-reporting.

Table 7

Independent Sample t Tests for Teachers' Self-Reporting on Balanced Literacy Tool

Sample	*M*	*SD*	*t*	*df*	*p*
Treatment pretest	100.33	15.79	-1.21	16	.244
Control pretest	110.33	19.11			
Treatment posttest	119.33	18.60	-.211	16	.835
Control posttest	121.33	21.47			

Note. The results for the treatment sample (n = 9) and the results for the control sample (n = 9).

The relationships between the teachers' pretest and posttest Balanced Literacy Self-Assessment scores yielded strong correlations and significance. Table 8 shows the treatment group's Pearson correlation was $r = .69$, $p < .05$. This indicated there was a strong, positive significant relationship between the treatment teachers' pretest and posttest Balanced Literacy Self-Assessment scores. The control group also had a very strong correlation and significance. Therefore, the two groups of teachers established strong, positive relationships between their pretest and posttest self-reporting of balanced literacy knowledge.

Table 8

Correlation of Treatment Teacher Posttest and Control Teacher Posttest Results

Variable		
1. Treatment self-report	.69*	
3. Control self-report		.97**

Note. The results for the treatment sample (n = 9) and the results for the control sample (n = 9) are shown above the diagonal.
*p < .05. **p < .01.

To determine whether there was significance between the pretest and posttest assessments within the same populations, paired sample t tests were used. Table 9 shows there was statistical significance between the treatment teachers' pretest (M = 100.33, SD = 15.79) and posttest scores (M = 119.33); $t(8)$ = -4.12, p < .01. It also indicates there was statistical significance between the control teachers' pretest and posttest scores.

Table 9

Paired Sample t Tests for Teachers' Self Report on Balanced Literacy Tool

Sample	*M*	*SD*	*t*	*df*	*p*
Treatment pretest	100.33	15.79	-4.12	8	.003**
Treatment posttest	119.33	18.60			
Control pretest	110.33	19.10	-5.54	8	<.001**
Control posttest	121.33	21.47			

Note. The results for the treatment sample (n = 9) and the results for the control sample (n = 9).
**p < .01.

Both groups reported possessing more knowledge by the end of the study. Yet, based on the results, the researcher failed to reject the null hypothesis that there would be no differences between teachers in terms of their self-reported balanced literacy

knowledge whether they received targeted professional development or not. In addition, both groups' means attained statistical significance, which indicates there were no differences between treatment and control teachers concerning self-reporting balanced literacy knowledge on the assessment.

Conclusion

This research evolved because of the stagnating student literacy scores over the past 3 decades (NAEP, 2019). Moreover, with the surge of the COVID-19 pandemic beginning in 2020, researchers noticed students' literacy scores declined beyond the typical summer slide (Kuhfeld & Tarasawa, 2020; Oster et al., 2021). Therefore, it was important that students' literacy needs be addressed for the 2021–2022 school year. There were still COVID guidelines in effect during the school year, like everyone staying 3 feet apart and the optional wearing of masks (Rosa, 2021).

One of the most effective ways to address students' literacy needs is through providing effective professional development to teachers (Darling-Hammond et al., 2017; Yoon et al., 2007). This study incorporated some of the characteristics and tenets found within the research and reports by Yoon et al. (2007) and Darling Hammond et al. (2017) into the professional development delivered to the nine treatment teachers: teacher setting the agenda, professional developer providing modeling and exemplars, the collaboration of participants in the professional development, and reflection. In addition, this research used two measures to address the research questions. The Balanced Literacy Self-Assessment was used as a pretest and posttest with the 18 teacher participants and the i-Ready Reading Diagnostic was used as a pretest and posttest with the 266 student participants. Using statistical analysis, both descriptive and inferential, the findings

yielded some significant results. Significant results were found for the pretest and posttest i-Ready Diagnostic for the 266 students. In addition, significant results were found between the pretest and posttest Balanced Literacy Self-Assessment for the 18 teachers. Yet, the significant results were for both samples, treatment and control, which indicated there were no differences between the two groups. The treatment students did outperform the control students on the i-Ready Diagnostic. However, a direct relationship between a teacher's targeted professional development and their students' literacy growth could not be established. The next chapter will delve into the interpretation of these results and their alignment with recent research as well as the limitations of the study. It concludes with suggestions for future studies on the topic of targeted professional development.

CHAPTER 5: DISCUSSION

This chapter provides a summary of the quantitative results of the study followed by a discussion. The quantitative results include descriptive statistics, correlations, and *t* tests. The researcher employed a quasi-experimental design to address the research questions. Studying the participants in their natural environment was paramount to this research and served as a viable context for producing results that can be generalized to a larger population.

Summary of Quantitative Results

Research Question 1: How does targeted professional development of teachers impact upper elementary students' literacy achievement?

This research was designed to investigate whether providing targeted professional development in balanced literacy instruction to upper elementary teachers would affect their students' literacy achievement. The research followed a quasi-experimental design in which only one group of participants received the treatment. The treatment group comprised nine teachers who received targeted professional development delivered by the building's ELC for 9 hours over 12 weeks. The ELC used Darling Hammond et al.'s (2017) seven tenets of effective professional development as the framework. The ELC ensured the professional development focused on content and was accompanied by effective teaching strategies of that content in the context of the classroom setting. She created three comprehensive PowerPoint presentations for each 3-hour session that contained content relevant to balanced literacy with exemplar videos embedded. This researcher attended two of the three sessions. The first session was not attended because the researcher wanted the ELC, who was a teacher on special assignment, to connect with

her audience of colleagues. In one slide in the first PowerPoint presentation, the ELC asked the teachers to please share how guided reading was going in their classroom and she wrote on the slide for them to be honest.

The ELC ensured professional development was an active process for all. The researcher was a participant in two of the three sessions. Small collaborative group work, applying the strategy activities, and honest feedback were witnessed firsthand. The ELC brought in anchor charts and chaining cards that were directly connected to the latest content being taught. She promoted and had the full collaboration of teachers throughout the professional development sessions. The ELC presented and included exemplars and models of effective practice via videos, and she demonstrated how she would function as a coach as the participants began to implement these practices in their daily classroom instruction. At the end of the professional development sessions delivered by the ELC, she solicited feedback from the nine teachers (Darling-Hammond et al., 2017).

The control group, on the other hand, followed the district's adopted reading program entitled Good Habits, Great Readers (Frey, 2006). This program adheres to the balanced literacy instructional approach, which is a pedagogy that uses two approaches to teaching students to read: "emergent literacy practices" are balanced with "explicit skills instruction" (Peregoy & Boyle, 2017). Teachers engage with their students daily through read aloud, guided reading, shared reading, interactive writing, and individual and group student conferences. Students also have daily opportunities to practice the skills taught by engaging in independent reading and writing (Shaw & Hurst, 2012). Balanced literacy has a significant metacognitive component, as the educator models how they think and use skills while reading and students apply what they observed during the shared reading,

writing, and mini-lessons. There eventually is a gradual release of responsibility from the teacher to the students during this instructional approach (Daly, 2009).

To address Research Question 1, both descriptive and inferential statistics were analyzed. The descriptive statistics showed how both the treatment and control samples originated. The pretest scores and demographic data indicated more similarities than differences from the start. The researcher used *t* tests and correlations for both the treatment and control samples. The *t* tests resulted in significance for both the treatment and control samples, which indicated there were no differences in students' literacy achievement when their teachers were engaged in targeted professional development on balanced literacy instruction. Therefore, the null hypothesis failed to be rejected.

The results from this research on targeted professional development are in alignment with recent research. The students of teachers who received targeted professional development made significant academic gains (Miller & Kastens, 2018; Smith, 2015). Moreover, this study built upon the existing research because it focused on literacy and used a quasi-experimental design.

Similar to existing research with quasi-experimental studies, this study's results indicated the treatment group of students outperformed the control group (Marek & Methven, 1991; McCutchen et al., 2002; Saxe et al., 2001). McCutchen et al. (2002) were the only researchers who focused on literacy in their study. They studied kindergarten and first-grade teachers' knowledge of phonology and orthography. Their goal was to increase the teachers' knowledge and have it implemented through classroom practice. The researchers conducted this study over a year. They began with a 2-week summer institute and provided additional professional development throughout the year for the

experimental group. The researchers found the experimental teachers outperformed the control teachers on several measures and attained significance. Based on the results, the researchers made three claims: it is possible to increase teachers' knowledge of phonology and orthography; teachers can take those gains and implement them in the classroom; and with the increase in teachers' knowledge and classroom implementation, there will be changes in students' increased knowledge (McCutchen et al., 2002).

Research Question 2: Do teachers who receive targeted professional development self-report on the balanced literacy knowledge assessment more knowledge than the teachers in the control group?

To address this research question, the researcher analyzed descriptive statistics (demographic data) and inferential statistics (*t* tests). The 18 participant teachers took the Balanced Literacy Self-Assessment (Tulsa Public Schools, 2013). This assessment measures teachers' knowledge in six areas: read aloud, shared reading, guided reading, independent reading, word study, and writing. The teachers in both the treatment sample ($n = 9$) and the control sample ($n = 9$) took a pretest at the beginning of the research and a posttest at the end of the 12 weeks. They used the same instrument: the Balanced Literacy Self-Assessment.

The demographic data yielded unbalanced findings from the start. The treatment group had predominantly female teachers, whereas the treatment group had about 30% male teachers. All 18 participants earned their master's degree in elementary education or Teachers of English to Speakers of Other Languages (TESOL). Moreover, the control group reported before, during, and after the research a greater amount of knowledge possessed and gained about balanced literacy than the treatment group. Both groups

taught literacy using the same balanced literacy program daily by Frey (2006) entitled Good Habits, Great Readers; however, the treatment group received 9 hours of targeted professional development in balanced literacy and obtained a book titled *This is Balanced Literacy* by Fisher et al. (2019). Yet, the results showed the control group still reported more balanced literacy knowledge even though they did not have any professional development on the topic during the 12 weeks of the study.

The *t*-test results indicated both the treatment and the control groups reported more knowledge. This substantiated the null hypothesis that there would be no differences when teachers self-reported their balanced literacy knowledge. These results were in alignment with relevant research (McCutchen et al., 2002; Smith, 2015).

Researchers such as McCutchen et al. (2002) found educators who increased their knowledge and changed their classroom practices also increased student learning. Teachers report more learning after undergoing professional development. In this research, treatment teachers self-reported knowing more about balanced literacy at the end of the research. Moreover, this research had a control group that self-reported knowing more about balanced literacy at the end of the study. Nevertheless, the treatment group's students outperformed the control group's students.

Following effective professional development, teachers reported more skilled in content (Smith, 2015). In Smith's (2015) study, the teachers reported an increase in their confidence to deliver more inquiry-based lessons in science as a result of their professional development. In addition, their classroom practices changed. Similarly, the teachers in the current study who participated in professional development self-reported gaining more knowledge in balanced literacy and their students did make significant

gains in literacy. However, this research did not measure the changes in classroom practices, which is a recommendation for future studies.

Limitations

There were several limitations to this study. The participant selection process, instrumentation, length of study, and researcher bias influenced the quantitative results. Nonetheless, there was a strong effort in this research to minimize the impact of these limitations.

Participants were selected for this research based on convenience sampling. The researcher had easy access to the teachers and students. Random selection of participants is a more effective selection process that allows for more generalizability of research findings based on the sample.

The instrumentation used with the teacher participants was another limitation. The teachers completed the Balanced Literacy Self-Assessment to assess their balanced literacy knowledge (Tulsa Public Schools, 2013). They completed this measure at the beginning and end of the study. It was the same instrument so there was participant familiarity. Kirk (1982) warned researchers that a pretest could negatively affect a participant's openness to the "topic" and that could be a detriment to the "treatment."

The length of the study was a considerable limitation of this research. This research was conducted over 12 weeks. All students made significant gains and the treatment group of students outperformed the control group of students. Research studies where participants attended extensive professional development like summer professional development and received ongoing training throughout the school year had results that

indicated the professional development had an impact on students' achievement (McCutchen et al., 2002; McGill-Franzen et al., 1999).

Researcher bias was another limitation, as the researcher was the principal of the treatment school. He was present for 6 of the 9 hours of professional development delivered by the ELC. The researcher kept a daily account of his thoughts and observations regarding the research process during the 12 weeks. The intent was to be reflective and ensure objectivity.

At the onset of the study, the researcher had to follow recommendations stipulated by the St. John's University IRB. All follow-up emails for recruitment had to be sent out and managed by the researcher's mentor. During the 12-week research period, treatment teachers attended three professional development sessions presented by the ELC. These two protocols established more objectivity and exclusivity in this research.

Recommendations for Future Research

This research was designed to explore whether targeted professional development delivered to select teachers would affect their students' literacy scores. A quasi-experimental design was followed and only the treatment group received the targeted professional development in literacy over the 12 weeks. These teachers received 9 hours of targeted professional development over the research period.

Future researchers should investigate the impact of targeted professional development on students' literacy achievement based on two-time factors: time of delivery of professional development and time frame of the research. The amount of professional development that should be delivered to teachers demonstrate an increase of approximately 21 percentage points is 49 hours (Yoon et al., 2007). This research

involved delivering 9 hours of targeted professional development to teachers based on students' extreme literacy needs during the pandemic. Future researchers should increase the amount of professional development delivered to educators. Research studies that covered at least one school year and more were able to isolate that the professional development provided to the teachers was significantly related to student achievement (Gersten et al., 2010; McCutchen et al., 2002).

Another area to explore in future studies in addition to targeted professional development is instructional coaching. Adding the coaching component is a tremendous support to educators. Studies that used extensive professional development and coaching yielded significant gains in students' achievement (Landry et al., 2006; May et al., 2016).

An additional suggestion for future studies focused on targeted professional development in literacy and its impact on student achievement is to add classroom observations. Having professional developers observe teachers implement lessons following professional development sessions will validate or show whether the teachers understood the content and are able to implement it successfully. Research studies that employed classroom observations along with coaching had significant student gains (Buysse et al., 2010; McCutchen et al., 2002).

Other recommendations for future research based on this investigation of the impact of targeted professional development of teachers on their students' literacy achievement in the upper elementary grades are as follows:

- Replicate the study in a rural educational setting.
- Replicate the study with kindergarten students.
- Replicate the study with middle school students.

- Replicate the study across more than two schools.
- Replicate the study with schools in which the researcher is not the principal.
- Replicate the study using a mixed methods design.
- Replicate the study using a 2-year cohort and use additional measurement tools besides i-Ready.
- Replicate the study using targeted professional development in other areas, such as science, technology, engineering, and mathematics (STEM).

Conclusion

A significant relationship between targeted professional development in the area of literacy and a positive impact on students' literacy achievement was not established. This research was unable to attribute the students' literacy gains to the targeted professional development. Nonetheless, the result of treatment teachers' students outperforming control teachers' students was consistent with other relevant research studies.

The students and teachers in this research were possibly affected by the COVID-19 pandemic and the protocols that were in place at the time. Students were academically more deficient than the typical summer slide (Kuhfeld & Tarasawa, 2020; Oster et al., 2021). This research built upon this gap and targeted a group of upper elementary students who do not appear in the existing research. The study was based on the most successful tenets of effective professional development as researched and comprehensively reported by Yoon et al. (2007) and Darling-Hammond et al. (2017). This research employed an ELC who delivered professional development to the treatment teachers. She held three professional development sessions for 3 hours per session. The

ELC prepared three comprehensive PowerPoint presentations for each of the three sessions. Each PowerPoint was full of anchor charts, research, and embedded videos. The sessions had opportunities for the teachers to apply the strategy. Nonetheless, the results of this research showed all teachers' students made significant growth in literacy based on their i-Ready scores.

The methodology of this research is worth replicating. Using the quasi-experimental non-equivalent design was instrumental in yielding positive, significant results. Beginning with a pretest to ensure the groups are equally matched is crucial. In this research, the pretest yielded a significant difference between the treatment students (n = 132) and the control students (n = 134). This discrepancy limits the generalizability of the results to the larger population because the two student sample groups were significantly different from the start of the study.

In addition, a relationship between teachers receiving targeted professional development and self-reporting more knowledge than the control group was not established. Both groups did report more knowledge of balanced literacy. Their pre- and posttest scores were significant. The control group self-reported more balanced literacy knowledge than the treatment group at the beginning and the end of the study. A reason for this could be the lack of oversight in the administration of the survey. All teachers completed it in a conducive setting for themselves, which meant the researcher did not have control over the administration. Moreover, as the treatment teachers attended professional development sessions with the ELC, they discussed and worked on increasing their balanced literacy knowledge. Therefore, treatment teachers may have had a better sense of what knowledge they possessed and could self-report more accurately as

opposed to the control teachers who did not participate in any balanced literacy professional development over the 12-week research period. It is worth exploring whether additional professional development over a longer duration would affect how teachers self-report their balanced literacy knowledge in the future.

This study investigated the relationship between targeted professional development of upper elementary teachers and their students' literacy achievement. It also measured the teachers' self-reported balanced literacy knowledge possessed and attained throughout the study. Both treatment and control groups yielded significant positive results. Based on these findings, this research concludes that targeted professional development of teachers does not affect their students' literacy scores.

APPENDIX A CONSENT FOR TEACHERS (TREATMENT)

Consent Form

You have been invited to take part in a research study to learn more about Teachers' knowledge of Balanced literacy and the impact on students' literacy scores. This study will be conducted by Eric Snell, a student from the department of Education Specialties, St. John's University. The study is part of his doctoral dissertation coursework. Roger Bloom Ed.D., faculty sponsor, is an Adjunct Associate Professor in the School of Education: the Department of Education Specialties.

If you agree to be in this study, you will be asked to do the following:

- Take part in a self-assessment of Balanced Literacy Knowledge in week 1.
- Teach your children literacy through a Balanced Literacy Approach. You will use the district adopted Balanced Literacy program entitled Good Habits, Great Readers.
- Participate in 9 hours of Targeted Professional Development within your contracted teacher day over the course of the twelve-week study.
- Administer the i-Ready Diagnostic (mid-year) to your students when the researcher sets the time.
- In week 12, take the self-assessment of Balanced Literacy Knowledge.

Participation in this study will involve your participation for twelve weeks. There are no known risks associated with your participation in this research beyond those of everyday life. Although you will receive no direct benefits, this research may help the investigator understand if there is a direct link between teachers' knowledge of Balanced Literacy Instruction and their students' literacy achievement.

Confidentiality of the research records will be strictly maintained by keeping consent forms separate from data to make sure that the subject's name and identity will not become linked with any information they have provided. Your responses will be kept confidential with the following exception: the researcher is required by law to report to the appropriate authorities, suspicion of harm to yourself, to children, or to others. Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. For questionnaires or surveys, you have the right to skip or not answer any questions you prefer not to answer. Nonparticipation or withdrawal will not affect your grades or academic standing.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish
to report a research-related problem, you may contact Eric Snell at Eric.Snell18@my.stjohns.edu or the faculty sponsor, Dr. Roger Bloom at bloomr@stjohns.edu.
For questions about your rights as a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair dgiuser@stjohns.edu 718-990-1955 or Marie Nitopi, IRB Coordinator, nitopim@stjohns.edu 718-990-1440.

You have received a copy of this consent document to keep.

Agreement to Participate

_____ _____

Subject's Signature Date

APPENDIX B CONSENT FOR TEACHERS (CONTROL)

Consent Form

You have been invited to take part in a research study to learn more about Teachers' knowledge of Balanced literacy and the affect on students' literacy scores. This study will be conducted by Eric Snell, a student from the department of Education Specialties, St. John's University. The study is part of his doctoral dissertation coursework. Roger Bloom Ed.D., faculty sponsor, is an Adjunct Associate Professor in the School of Education.
If you agree to be in this study, you will be asked to do the following:

- Take part in a self-assessment of Balanced Literacy Knowledge in week 1.
- Teach your children literacy through a Balanced Literacy Approach. You will use the district adopted Balanced Literacy program entitled Good Habits, Great Readers.
- Administer the i-Ready Diagnostic (mid-year) to your students when the researcher sets the time.
- In week 12, take the self-assessment of Balanced Literacy Knowledge.

Participation in this study will involve your participation for twelve weeks. There are no known risks associated with your participation in this research beyond those of everyday life. Although you will receive no direct benefits, this research may help the investigator understand if there is a direct link between teachers' Balanced Literacy Knowledge and their students' literacy achievement.

Confidentiality of the research records will be strictly maintained by keeping consent forms separate from data to make sure that the subject's name and identity will not become linked with any information they have provided. Your responses will be kept confidential with the following exception: the researcher is required by law to report to the appropriate authorities, suspicion of harm to yourself, to children, or to others. Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. For questionnaires or surveys, you have the right to skip or not answer any questions you prefer not to answer. Nonparticipation or withdrawal will not affect your grades or academic standing.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may

contact Eric Snell at Eric.Snell18@my.stjohns.edu or the faculty sponsor, Dr. Roger Bloom at bloomr@stjohns.edu.

For questions about your rights as a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair dgiuser@stjohns.edu 718-990-1955 or Marie Nitopi, IRB Coordinator, nitopim@stjohns.edu 718-990-1440.

You have received a copy of this consent document to keep.

Agreement to Participate

_____ _____

Subject's Signature Date

APPENDIX C TEACHER SELF-REPORT TOOL

Balanced Literacy Self-Assessment

Tulsa Public Schools

Office of Curriculum & Instruction

Balanced Literacy Self- Assessment

1. Read Aloud: Rate your current level of implementation for each of the following elements of a Read Aloud lesson.					
	This element does not occur in my classroom. **0 pts.**	This element occurs occasionally, but not on a regular basis. **1 pt.**	I have made substantial progress on this element and practice it daily. **2 pts.**	This is a well-implemented component of my literacy program. **3 pts**.	**SCORE**
I read aloud to my students for 10-15 each day.					
The books are selected to build student knowledge about a theme or content, or to model a particular comprehension strategy.					
I pre-read the book.					

I select vocabulary words to teach explicitly.					
I decide in advance where I will stop to model comprehension strategies through think alouds.					
I plan the questions I will ask in advance.					
I provide opportunities for students to think about and share their responses to the read aloud.					
				TOTAL	

2. Shared Reading: Rate your current level of implementation for each of the following elements of a Shared Reading lesson.					
	This element does not occur in my classroom. **0 pts.**	This element occurs occasionally, but not on a regular basis. **1 pt.**	I have made substantial progress on this element and practice it daily. **2 pts.**	This is a well-implemented component of my literacy program. **3 pts**.	**SCORE**
I use a variety of instructional methods to engage students in reading the text (choral reading, echo reading, partner reading, reader's theater, etc.).					
I introduce reading behaviors during the lesson (book and print awareness, phonics, reading accurately and fluently, using comprehension strategies, etc.).					

I model the use of reading behaviors during the lesson (book and print awareness, phonics, reading accurately and fluently, using comprehension strategies, etc.).					
I guide students in practicing the use of reading behaviors during the lesson (book and print awareness, phonics, reading accurately and fluently, using comprehension strategies, etc.).					
I provide the necessary level of support so all students are successful with the text selected for the lesson.					

I walk around the room, listening to students as they read together.					
I provide opportunities for students to respond to the text through discussion or writing.					
				TOTAL	

3. Guided Reading: Rate your current level of implementation for each of the following elements of a Guided Reading lesson.

	This element does not occur in my classroom. **0 pts.**	This element occurs occasionally, but not on a regular basis. **1 pt.**	I have made substantial progress on this element and practice it daily. **2 pts.**	This is a well-implemented component of my literacy program. **3 pts**.	**SCORE**

My students are assigned to small groups based on instructional need.					
Data is used to determine student groups.					
Student groups are flexible and change based on the needs of the students.					
Each group works with text on their instructional level (90% accuracy).					
I meet with 3 groups a day for 15-20 minutes each.					

Each lesson is planned specifically for the students in that group based on their needs.					
Students read the text aloud while I monitor and take notes on individual students.					
I ask students to respond to the text, revisit difficult passages, work with words or language from the text, or demonstrate understanding of their reading.					
I collect new data on students and their reading performance weekly.					

Students who are not in the Guided Reading group are working independently or with partners on literacy tasks.					
Literacy tasks are directly related to previous instruction.					
Literacy tasks provide meaningful practice that helps students develop into better readers and/or writers.					
Literacy tasks are multilevel and can be completed independently by all students.					
Literacy tasks are engaging to students.					
Procedures and expectations are clear to students and are followed.					
				TOTAL	

4. Independent Reading: Rate your current level of implementation for each of the following elements of Independent Reading.					
	This element does not occur in my classroom. **0 pts.**	This element occurs occasionally, but not on a regular basis. **1 pt.**	I have made substantial progress on this element and practice it daily. **2 pts.**	This is a well-implemented component of my literacy program. **3 pts**.	**SCORE**

My students read independently for 20 minutes each day (Kindergarten/ First Grade: 10-15 minutes-may include "picture reading" or partner reading)					
Students read books on their independent level (95% accuracy).					
Students choose their own books to read.					
The books in my classroom are organized by genre, reading level, or series so students can easily find a book.					
My students can visit the school library to exchange books as needed.					
Students keep several "just right books" in a box or bag for easy access and transporting from school to home.					
During independent reading, I confer with individual students or complete formal or informal assessments.					
My students use journal writing to track their thinking and monitor their comprehension while reading independently.					

TOTAL	

5. Word Study: Rate your current level of implementation for each of the following elements of Word Study.					
	This element does not occur in my classroom. **0 pts.**	This element occurs occasionally, but not on a regular basis. **1 pt.**	I have made substantial progress on this element and practice it daily. **2 pts.**	This is a well-implemented component of my literacy program. **3 pts**.	**SCORE**
I have specific knowledge of how spoken and written English is constructed and can teach it explicitly to my students.					
I systematically teach students to articulate and manipulate sounds and use sound-spelling correspondences and patterns to read and spell.					
Grades PK-2nd: I use a variety of methods to build phonological and phonemic awareness including rhymes, riddles, alliteration, scrambled sentences, syllables, initial and final phoneme identification, blending, and segmenting.					

Grades PK-2nd: I explicitly and systematically teach students the relationships between sounds and letters, how to blend sounds together to decode unfamiliar words, and provide practice through word building and word sorting activities.					
1st grade: I teach compound words, simple contractions, and important end-ings like -ed and -ing.					
Grades 2-4: I teach root words, simple prefixes and suffixes (like re- and -er, homophones, complex contractions, and syllable types (open and closed).					
Grades 3-6: I teach complex prefixes and suffixes (like bi- and -tious).					
Grades 3-6: I teach the Greek and Latin roots of English words.					
				TOTAL	

6. Writing: Rate your current level of implementation for each of the following elements of Writing instruction.

	This element does not occur in my classroom. **0 pts.**	This element occurs occasionally, but not on a regular basis. **1 pt.**	I have made substantial progress on this element and practice it daily. **2 pts.**	This is a well-implemented component of my literacy program. **3 pts**.	**SCORE**
My students have opportunities to apply their expanding understanding of sound-symbol relationships and English language conventions as they write letters, words, sentences, and paragraphs (mechanics).					
My students have opportunities to apply their expanding understanding of the writing process to communicate ideas, messages, and stories with others (content).					
I plan units of study around a genre (such as narrative or persuasive), identify the skills I want the students to master, and plan lessons to teach students how to incorporate those skills into their writing.					
I teach my students how to use the writing process (brainstorm, draft, revise, edit, publish) effectively.					

I teach mini-lessons that provide direct instruction and model exactly what the students must do independently.					

While students write independently, I conference with individual writers.					
Grades PK-1: I conduct interactive writing lessons in which students share the pen with the teacher and add letters, words, or pieces of punctuation to class writing.					
				TOTAL	

APPENDIX D LETTER FOR INSTITUTIONAL APPROVAL

Brentwood Union Free School District

Brentwood, NY 11717
Telephone 631-434-2115
Fax: 631-273-6575

October 29, 2021

Dr. Raymond DiGiuseppe, Ph. D
IRB Chair
St. John's University

Dear Dr. DiGiuseppe,

I am authorizing Eric Snell, a Ph.D. candidate in the Education Specialties program at St. John's University, to do his dissertation research here in the Brentwood School District. He is employed as an Elementary Principal and has been in the role for 18 years. Mr. Snell's tasks outlined in his proposed research are within his scope and responsibilities in his current role as principal. He is the instructional leader of Laurel Park Elementary School and delivers high quality professional development to his teachers and staff. Mr. Snell utilizes data to drive his professional development, so this work is in line with his commitments to improving outcomes for students.

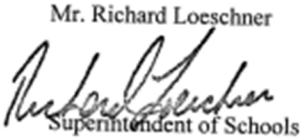
As a valued member of our team, I am thrilled that Mr. Snell will conduct action research and administer the Balanced Literacy Self-Assessment to all consenting teacher participants. He will also have access to the i-Ready Dashboard for his school and the neighboring Loretta Park Elementary School which will enable him to retrieve student data for comparative analysis. I trust that Mr. Snell will adhere to confidentiality standards and remove all student and teacher personal identifiable information and will not share data publicly.

Finally, Mr. Snell will work closely with the Offices of Language Arts and Bilingual/ENL and our District ELA (English Language Arts) staff developer to engage teachers in professional learning experiences that are aligned with students' needs. Mr. Snell is a valued member of the Elementary Leadership Team and we could not be more proud of his accomplishments. He has my unwavering support and commitment.

Should you need any further information, please do not hesitate to contact me.

Educationally Yours,

Mr. Richard Loeschner



Superintendent of Schools

APPENDIX E IRB APPROVAL

Date: 9-27-2022

IRB #: IRB-FY2022-100
Title: THE IMPACT OF TARGETED PROFESSIONAL DEVELOPMENT OF ELEMENTARY TEACHERS AND THEIR STUDENTS' LITERACY ACHIEVEMENT
Creation Date: 9-29-2021
End Date: 1-5-2023
Status: Approved
Principal Investigator: Eric Snell
Review Board: St John's University Institutional Review Board
Sponsor:

Study History

Submission Type Initial	**Review Type** Expedited	**Decision** Approved

Key Study Contacts

Member Roger Bloom	**Role** Co-Principal Investigator	**Contact** bloomr@stjohns.edu
Member Eric Snell	**Role** Principal Investigator	**Contact** eric.snell18@stjohns.edu
Member Eric Snell	**Role** Primary Contact	**Contact** eric.snell18@stjohns.edu

APPENDIX F PERMISSION FOR TEACHER TOOL

RE: Balanced Literacy Self-Assessment

Neves, Danielle <nevesda@tulsaschools.org>

Mon 11/29/2021 1:19 PM

To: Eric Snell <eric.snell18@my.stjohns.edu>

* External Email *

Good afternoon Mr. Snell,

Thank you for your inquiry. Tulsa Public Schools no longer utilizes or supports the Balanced Literacy Self-Assessment. We know only utilize literacy instructional materials aligned to the Science of Reading. You are welcome to adapt that tool if it serves your research purposes, however, please note that the tool is obsolete in our district.

Please feel free to reach out if you have any additional questions.

Thank you,

Danielle

TULSA PUBLIC SCHOOLS

EQUITY CHARACTER EXCELLENCE TEAM JOY

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Vita

Name	*Eric Snell*
Baccalaureate Degree	*Bachelor of Arts*, *Hofstra University, Hempstead, Major: Psychology*
Date Graduated	*May 1992*
Other Degrees and Certificates	*Master of Science, Queens College, Major: Education*
	Master of Science, College of New Rochelle in Education (2001)
Date Graduated	*June 1998*