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THE EFFECTS OF DATA-DRIVEN INSTRUCTION
AND LITERACY COACHING
ON KINDERGARTNERS' LITERACY DEVELOPMENT

A Dissertation

Submitted to the School of Graduate Studies and Research

In Partial Fulfillment of the

Requirements for the Degree

Doctor of Education

Karen K. Tyler

Indiana University of Pennsylvania

December 2009

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Since the passage of the No Child Left Behind Act (2001), districts, schools, and educators are pressured to collect, analyze and report data annually regarding student performance. If high-stakes assessments are to be useful tools for educators in their classrooms, the data need to be applicable in conveying meaningful instructional information that supports not only school-wide but also individual student improvement. The identification of student difficulty depends on valid assessment measures and effective educators who are competent of recognizing the value of using data to drive instructional decisions. In-class professional development opportunities made available through literacy coaches can provide teachers with assistance in understanding the significance of using assessments to support literacy instruction.

This study emphasizes the role of schools in utilizing data and ongoing classroom-based professional development to drive instruction that enables kindergartners to make progress in literacy. The objective of this study is to determine the measurable effects in literacy as a result of systematic and explicit data-driven instruction derived from classroom-based assessments and collaborative teaching among kindergarten learners. To assess the levels of student achievement, the study utilizes a mixed-method design to clarify and illustrate both quantitative and qualitative information. Quantitative evidence of student achievement is demonstrated through

phonemic awareness assessment data presented through ANOVA and SPSS comparisons. Additionally, qualitative research investigates classroom teachers' perceptions regarding coaching and collaboration. Interview results are presented to identify specific outcomes of the year-long study. The development of the teachers' professional experience and collaboration, as well as their understanding of assessment and data-based instructional decisions are described.

Findings for this study indicate that student achievement scores were improved as a result of data-driven instructional decisions derived from a combination of formative and summative assessments. Additional effects in early literacy progress were demonstrated through classroom teachers working collaboratively with a literacy coach to assist in the process of professional learning, according to the results of this study. Recommendations focus on the importance of promoting professional development opportunities for classroom teachers. Assessments to support instructional decisions and effective early literacy instruction necessitate continuous learning experiences on behalf of both educators and students alike.

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CHAPTER ONE

THE PROBLEM

Since the passage of the No Child Left Behind Act (2001), states, districts, schools and educators are pressured to collect, analyze and report data annually regarding student performance. A result of this federal legislation has been a surge in student testing (Chappius & Chappius, 2008). Although assessment data can be valuable in demonstrating student achievement, “there is a basic flaw in our current sanctions-based accountability system: its reliance on an end-of-the-year test” (Barton, 2008, p. 70). If high-stakes, summative assessments are to be useful tools for educators in their classrooms, the measurements should go beyond evaluating standards-based requirements and rendering statistical comparisons. The data need to be applicable in conveying meaningful instructional information that supports not only school-wide but also individual student improvement.

High stakes, standardized assessments have been utilized to demonstrate students’ levels of proficiency towards achievement of a variety of state standards, serving the purpose of summative evaluation or accountability (Guskey, 2005). The assessments of learning can motivate school reform initiatives toward improving student performance. Results can also be used for important information such as grading, evaluating program effectiveness, or determining if a school or district has made Adequate Yearly Progress (Chappius & Chappius, 2008).

Despite the value that summative assessments may offer in determining student achievement for school accountability purposes, they are not designed to provide data to improve educators’ instructional approaches and data-based decisions (Guskey, 2003).

Summative assessments of learning are utilized to measure the results of instruction after a unit or concept has been delivered. Leahy, Lyon, Thompson, and Wiliam (2005) relate that such information attained from assessments of learning is difficult to use, especially in efforts to improve student achievement. Teachers with the desire to utilize the information for instructional purposes often receive the assessment data or recommendations too late to alter their instruction modes (Leahy et al., 2005).

Assessments for learning can improve instruction by demonstrating to teachers each student's developing abilities relative to standards and essential skills, as well as fundamental concepts (Earl, 2003). According to McNamee & Chen (2005), formative assessments are ongoing and have the "ability to track a child's continuing development" (p. 73). Effective and efficient informal assessment techniques are also necessary to inform instruction and assist teachers in monitoring the growth of each student (Dole, 2004). Overall, assessments for learning, if chosen or created with applicable connections to the design of individualized classroom instruction, can enable educators to "address standards accurately, identify instructional weaknesses, and diagnose individual student learning problems" (Guskey, 2005, p. 32). Consequently, formative assessments are able to bring value to educators' data-based instructional decisions.

With the understanding that teachers and schools alike are confronted with federal mandates toward gathering evidence of student achievement, effectively implementing both summative and formative assessments and designing instruction to match individual student data are a challenge for elementary school educators today. "The standards and accountability movement has placed extraordinary demands on schools ... to improve educational outcomes" (Johnson & Donaldson, 2007, p. 8). Teachers of reading, in

particular, are challenged to address the marginal gains and poor rates of reading performance that have been noted on high-stakes assessments of literacy (National Center for Education Statistics [NCES], 2003).

Assessments of literacy have revealed the educational challenge for our nation in the fact that over 62% of fourth graders are reading below proficient levels and 38% of the challenged students are reading below basic levels of performance (National Assessment of Educational Progress, 2005). According to the NCES (2003), more than two-thirds of U.S. adolescents are struggling to read proficiently. These statistics are necessary for examination before making instructional and assessment decisions to improve student achievement in literacy.

Empirical evidence suggests that third grade, and possibly second, is too late for classroom instruction to have a significant impact on reading acquisition (Chard & Kame'enui, 2000). Both early detection and effective instruction with those children struggling to read are critical factors in reading acquisition. A study by Felton and Wood (1992) indicated that children who failed to demonstrate strong reading skills in first grade had a 90% chance of remaining poor readers. These findings imply that children's reading trajectories are established early and remain stable across grade levels and time.

When educators discuss the effective strategies needed to teach children to read successfully, phonemic awareness receives much attention. In 2000, the National Research Council (NRC) recognized that numbers of correlation studies have identified a strong association between a child's ability to read and phonemic awareness. The NRC supported the performance of kindergartners on tests of phonemic awareness as a strong predictor of their future reading achievement stating that if the teaching of phonemic

awareness is effectively accomplished in the primary grades, reading performance scores have the possibility to reflect progress.

In addition to early development of phonemic awareness, educators seeking to improve student outcomes in reading need to consider the relevant information that can be retrieved from both summative and formative assessments. Used effectively, measurements of and for learning can assist teachers with the instructional decisions that may lead to an improvement in reading. “Informative assessment is not an end in itself, but the beginning of better instruction” (Tomlinson, 2008, p. 13).

Literacy coaches can play a pivotal role in assisting classroom teachers in becoming literate with assessments. The International Reading Association defines a literacy coach as a “reading specialist who focuses on providing professional development for teachers by providing them with the additional support needed to implement various instructional programs and practices”(IRA, 2007, Category III, bullet 2). Coaches working with teachers to select and integrate effective, meaningful assessments can provide assistance with data management and instructional techniques. Equipped with an understanding of phonemic awareness and assessments of and for learning, literacy coaches and teachers working together toward instructional goal setting are able to demonstrate the potential in a collaborative professional learning environment (Joyce & Showers, 1980; Joyce & Showers, 1982). “When teachers design assessments, give each other feedback through peer reviews, evaluate student work, and plan together for improvement, they are engaged in highly effective professional development” (McTighe & Emberger, 2006, p. 38). Educators committed to collaborative initiatives,

best reading practices, as well as data-based instructional decisions are better prepared to meet the individual needs of their students.

Significance of the Study

In an era of educational accountability with national efforts focused toward improving reading proficiency levels, this study emphasizes the role of schools in utilizing data and ongoing classroom-based professional development to drive instruction that enables kindergartners to make progress in literacy. Determining how teachers can best gather, examine, and utilize data in guiding their instruction is a problem worthy of exploration and support in an effort to individualize and differentiate learning. It is a relevant undertaking to examine the effects of data-based decisions in curriculum, assessment and instruction in the area of early literacy. Additionally, it is important to evaluate the direct impact of in-class professional development on students' reading achievement.

Given that “the gap between theory and practice remains wide in terms of how reading methodologies are taught and applied in the field,” further studies in determining the benefits of ongoing, in-class professional development could positively impact student learning (Doubek & Cooper, 2007, p. 413). Dole (2004) points out, “It is apparent that theory or demonstrations do not provide teachers with sufficient support and guidance to apply new instructional strategies and programs in their own classrooms” (p. 465). Research by Smylie (1995) supports Dole’s statement, relaying the need for consistent practice in teachers’ work settings in order to transfer professional learning into practice. In-class literacy coaching offers opportunities for learning directly within the teachers’ classrooms. Learning experiences that support assessment and phonemic

awareness instruction in the kindergarten classroom could benefit both teachers and students.

Statement of the Problem

The problem of this study is to examine the effects of data-driven instruction and literacy coaching among kindergartners' literacy development. A study to explore the correlation between coaching and student achievement could assist in establishing the validity and benefits of the collaborative learning experience. According to Dole (2004), "Little research exists on the use of reading coaches in schools. This will change more as educators and researchers begin to understand their potentially critical role in the professional development of teachers" (p. 468). Furthermore, examining the use of data to drive instruction with the development of phonemic awareness among early readers could demonstrate achievement data supportive of student progress.

While summative assessments of learning demonstrate the value in the potential to impact school reform initiatives, formative assessments for learning, as described by Stiggins (2002), can illustrate the improvements that can be made toward the advancement of individual student achievement. Teachers and coaches working together with effective, meaningful classroom assessments that can be directly related to instructional goals could benefit student learning. Educators and coaches, working together to understand that ongoing classroom measurements and results inform instructional practices, are empowered to recognize the relevance of data-driven decisions for reading instruction.

McTighe and Emberger (2006) stated, "teacher collaboration is a powerful form of professional learning" (p. 38). Classroom teachers receiving assistance from literacy

coaches are provided with learning experiences, support, and guidance in using student data to drive reading instruction. Many teachers crave the professional conversations and collaborations made available by literacy coaches (Allen, 2006). Based on this premise, the study intends to determine the extent to which collaborative teaching efforts and formative assessment measures affect the literacy development of kindergartners.

Research Questions

The objective of this study is to examine how data-driven instruction and literacy coaching influence the literacy development of kindergartners. The research questions are as follows:

- (1) To what extent do kindergartners achieve success as a result of data-driven instructional decisions in literacy?
- (2) To what extent are the measurable effects on student learning a result of the daily collaboration of literacy coach and classroom teacher?
- (3) How do literacy coaches and kindergarten teachers use assessment data to inform instructional decisions?

Assumptions

This study will assume that two groups of kindergarten students can improve their academic achievement over the course of a school year. Based on the understanding that a literacy gain is expected among both groups of kindergartners, the study will attempt to demonstrate higher achievement levels as a result of the benefits of data-driven instruction within the experimental group. If the experimental group receives instruction catered to their individual needs within a collaborative teaching environment as identified through the ongoing assessments, then higher academic progress in the area of early

literacy may result when compared with the control group. This assumption is derived from the premise that designing differentiated instruction as a result of information retrieved through frequent and varied data collection may demonstrate greater academic gains throughout a school year.

Coupled with the daily support from a literacy coach to assist with differentiated instruction, the data-driven effects and comparisons may be noteworthy. This study will attempt to recognize the impact of a literacy coach in accelerating not only student achievement, but also the professional growth that may ensue among the group of teachers participating in the study.

Additionally, it is assumed that during the second year of study, with the removal of the two variables which contributed to the experimental groups' previous progress, a decline in student achievement differences may occur. Removing the specialized treatment consisting of data-driven, differentiated, and collaborative instruction, the scores of the experimental group may no longer demonstrate the effects identified the previous year. A possible decline in student achievement during the second year of the study could validate the effects of data-driven instruction and literacy coaching as reliable factors in acceleration of student achievement.

Limitations to the Study

Both the experimental and control group of kindergarten learners will incur a nine-month period of growth and development during each year of the study. In light of individual developmental variations, limitations to the study's statistical significance may be somewhat attributable to the developmental, social, emotional, and intellectual growth of the learners throughout each academic year. As a direct result, a number of the

students may reflect progress related in their assessment scores, not attributable to the curriculum, instruction, and assessment interventions over the two years of study.

The study is limited to one school district in a suburban area of Pennsylvania. The student population will consist of similar demographic, socio-economic, and cultural comparisons. The group of teachers participating in the experimental group will number a small set of five.

Summary

Research suggests that reading failure can be prevented if identified and treated early (National Institute of Child Health and Human Development, 2000; National Research Council, 2001). Identification of student difficulty depends on valid and reliable assessment measures and effective educators who are competent of recognizing the value of using data to drive instructional decisions. Summative assessments may provide worthwhile information for schools and districts with regard to program, teacher, and course effectiveness. However, the additional information provided by formative assessments may offer ongoing data and inform instructional decisions that lead to the improvement of individual student achievement. Teachers, working in tandem with coaches, are provided with assistance in understanding the value of using assessments to support literacy instruction.

Chapter Two will examine the role of assessments in the classroom, collaborative learning environments, and the development of literacy among kindergarten students. The Literature Review will highlight the use of assessments, data, differentiated instruction and literacy coaching. With contemporary national reform initiatives focused on reading

instruction, Chapter Two will serve to support educators intending to improve literacy development among kindergarten students.

CHAPTER TWO

REVIEW OF THE RELATED LITERATURE

The Review of the Literature focuses on five areas related to the development of this research study to examine the effects of data-driven instruction and literacy coaching among kindergartners' literacy development. The first section investigates the role of assessments in the classroom. The second section examines the development of emergent literacy among kindergarten students with a subsection relating the relevance of phonemic awareness instruction. The third section identifies the purpose for utilizing assessment data in determining instructional decisions in phonemic awareness, including a subsection illustrating the benefits of differentiated instruction. The fourth section explores the benefits of professional development with a subsection that defines the literacy coaching model. The fifth section explains the practice of collaborative teaching. The Review of the Literature concludes with a summary referencing the contributing factors that can be exercised to elevate literacy achievement among kindergartners.

Introduction

Since the arrival of No Child Left Behind (NCLB, 2001) legislation, educators and administrators have increasingly agreed that data-driven decision-making has become a focal point of educational practice and policy. Statewide standardized tests supply data derived from systems, districts, schools, or groups to be examined and reported for trends or patterns. The student achievement outcomes acquired from high-stakes summative assessment results determine a school or district's Adequate Yearly Progress (AYP). According to NCLB (2001), AYP is the amount of progress a school system gains toward the goal of 100% of students reaching state academic standards in

reading. Under the provisions of NCLB, favorable statewide summative assessment results may support federal funding and recognition. The measures do little to promote the classroom-level instructional decisions of educators. While summative assessments may offer school-wide or system information relevant toward funding or sanctions, they reveal limited information to benefit individual students. If used in conjunction with formative assessments, however, the summative measurements can support the learning process (Stiggins, Arter, Chappius, & Chappius, 2006).

Forms of Assessment

Summative Assessments

Large-scale or summative assessments of learning can be effective tools in school-wide decisions. Summative assessments are conducted periodically to determine what a student understands or does not yet comprehend. Summative assessments are typically utilized in the classroom for grading purposes but can also assist in determining student learning relative to the content standards. Measuring the results of instruction after a unit or concept has been delivered can demonstrate the level of student proficiency toward varying state standards, serving the purpose of summative evaluation or accountability (Guskey, 2005). Schools and districts have utilized large-scale or high-stakes summative assessments in their efforts toward reform.

Educators generally agree that state tests can be powerful motivators resulting in communicating objectives and aligning curriculum and instruction (Herman & Baker, 2005). In 2001, The Commission on Instructionally Supportive Assessment agreed that effective statewide achievement tests could be beneficial. The Commission recommended that educators be afforded with information useful in improving the quality of instruction.

Multiple assessments and reports that demonstrate learning can “provide states with information to hold educators, schools, and school districts accountable for student performance” (p. 2). The Commission, consisting of renowned members Eva Baker, David Berliner, W. James Popham, Rachel F. Quenemoen, Flora V. Rodriguez-Brown, Paul D. Sandifer, Stephen G. Sireci, and Martha L. Thurlow compiled a list of recommendations entitled, “Building Tests To Support Instruction and Accountability: A Guide for Policymakers” (2001). The Commission’s report suggested nine requirements for responsible statewide achievement tests able to link academic achievements with data-driven instruction. The requirements included the following:

1. A state’s content standards must be prioritized to support effective instruction and assessment.
2. A state’s high-priority content standards must be clearly and thoroughly described so that the knowledge and skills students need to demonstrate competence are evident.
3. The results of a state’s assessment of high-priority content standards should be reported standard-by-standard for each student, school, and district.
4. The state must provide educators with optional classroom assessment procedures that can measure students’ progress in attaining content standards not assessed by state tests.
5. A state must monitor the breadth of the curriculum to ensure that instructional attention is given to all content standards and subject areas, including those that are not assessed by state tests.

6. A state must ensure that all students have the opportunity to demonstrate their achievement of state standards; consequently, it must provide well-designed assessments appropriate for a broad range of students, with accommodations and alternate methods of assessment available for students who need them.

7. A state must generally allow test developers a minimum of three years to produce statewide tests that satisfy Standards for Educational and Psychological Testing and similar test-quality guidelines.

8. A state must ensure that educators receive professional development focused on how to optimize children's learning based on the results of instructionally supportive assessments.

9. A state should secure evidence that supports the ongoing improvement of its state assessments to ensure those assessments are (a) [*sic*] appropriate for the accountability purposes for which they are used, (b) appropriate for determining whether students have attained state standards, (c) appropriate for enhancing instruction, and (d) not the cause of negative consequences. (p. 2-3)

The Commission believed the provisions would assure all students the opportunities and accommodations to demonstrate achievement. Overall, the set of nine requirements can be acknowledged as relevant in recognizing the purposes needed to satisfy the public demands for accountability while servicing the needs of learners through data-based instruction.

Herman and Baker (2005) relate the value of summative assessments in suggesting that, “state tests can be powerful motivators, communicating expectations and focusing curriculum and instruction” (p. 48). Supporting learning with summative

assessments can be relevant in defining the conclusion to the course of study or grade.

Assessments of learning can also contribute to the rank of a student based on the outcome of their success in the desired goal.

Lashway (2003) believes that to constructively use data from statewide assessments is, “to challenge institutions to not only satisfy legal requirements but also to focus action to improve student learning” (p. 3). The Education Commission of the States (2002) study of schools utilizing effective data-based practices made effective connections between statewide assessments and student learning. According to the study, the use of multiple assessments benefitted different groups of learners and became central to the success of each school. The Education Commission of the States study emphasized that flourishing schools used data not only for instructional decisions in everyday practices but also for tracking school and individual progress and guiding professional development offerings.

Using summative data to measure learning that has already occurred is a challenge for educators today. Schools and educators are confronted with public demands for accountability in quantitative evidence of a school’s effectiveness (Holcomb, 1999). Holcomb defines public education as a “service industry that must be user friendly or lose its market share to vouchers, private schools, and for-profit enterprises” (p. 11). These factors necessitate that schools and districts become accountable for the acquisition of learning with measurements capable of demonstrating the ongoing performance and progress of all students.

The process and implications of testing and data collection can be time consuming and complicated, but educators are aware of the significance of quality assessments and

data to strengthen public education's efforts in meeting the individual needs of students (Gandal & McGiffert, 2003). Peterson and Monty (1999) acknowledge the following:

The challenge is to match assessment that is integrated into classroom instruction and is focused primarily on helping individual children with assessment that provides school-and district-wide information being demanded by local and state officials or various community forces. (p. 2)

If high-stakes assessments are to be useful tools for educators within their classrooms, they need to go beyond measuring standards-based requirements and statistical comparisons. The data need to be applicable in conveying meaningful instructional information that supports not only school-wide but individual improvements.

Stiggins (2004) suggests reevaluating the reliance on high-pressure assessment "as our primary tactic for attaining excellence in education" (p. 199). Concentrating school improvement efforts and instructional practices for individual students on standards-based and high-stakes assessments simply cannot provide enough evidence of individual progress and development. Collecting and analyzing multiple sources of data during the instructional process, once the goals have been developed, allow educators to make decisions based on valuable information. Stiggins proposes instructional adjustments and appropriate accommodations for students through data derived from multiple assessment methods over time.

Formative Assessments

Educators aware of the relevance in summative assessments should also recognize the motivation and focus that can be encouraged through formative assessment measures

and feedback (Tomlinson & McTighe, 2006). Formative assessment is an instructional practice which provides information needed to make adjustments in teaching and learning. Hill (2001) relates, “The heart of assessment should be the information you collect on an ongoing basis in your classroom” (p. 2). Teachers utilizing formative assessment can determine any additional practice necessary with a skill or concept and can also provide the feedback needed to encourage student achievement.

Formative assessments can be utilized to provide the data classroom teachers need to guide their instructional decisions. Assessments for learning improve instruction by demonstrating to teachers the development of each student’s skills and strategies. The assessments are ongoing and can provide information regarding a child’s progress and educational needs. Formative assessments, if chosen or created with applicable connections to the design of individualized classroom instruction, can be valuable tools that enable educators to, “address standards accurately and identify instructional weaknesses and diagnose individual student learning problems” (Guskey, 2005, p. 32).

Stiggins (2003) believes educators utilizing ongoing assessments for learning encourage students to become involved in their own learning possibly contributing to a boost in their confidence. With student-involved assessment, learners become motivated to learn in a culture of successful experiences rather than disappointment. Stiggins states, “through the use of student-involved classroom assessment, student-involved record keeping, and student-involved communication, we can let students feel in control of their own academic destiny” (p. 205). Assessments for learning that occur at the time of teaching, during, and immediately following instruction, provide rapid feedback for both the teacher and student.

Chappius and Stiggins (2002) suggest educators use assessment formatively when they pretest, analyze, revise, reflect, and conference. These instructional strategies encourage teachers and students to manage and be responsible for their own understandings. When students become empowered with meaningful data and feedback, they often begin to set goals for themselves and discover how they learn best (Chappius & Stiggins, 2002). Receiving explicit targets for learning through assessment results enables students to take personal responsibility in educational accomplishments.

Stagor (2000) defines Action Research as a partnership between students and teachers in working together toward the growth of student progress through assessment data. In a successful Action Research process, educators and students are participants in examining educational practices and data in an effort to inform instructional decisions. It is designed to be a reflective process in search of solutions to improve instruction and student achievement. Stagor recommends extending Action Research to include and engage students in the decision-making process. Students aware of their own educational plan and progress can assist in selecting an instructional focus, clarifying theories, identifying research questions, collecting and analyzing data, reporting results, and taking informed actions. Action Research has the possibility to build both reflective students and educators, capable of making decisions for necessary instruction and assessment.

Effective classroom assessment strategies, including Action Research, pretests, ongoing performance tasks, and portfolios, offer students the opportunity to recognize their progress through teacher feedback. Teaching students to focus on quality and revisions, to set goals and self-assess, and to reflect with clear targets for proficiency, authorizes students to make a contribution in their personal educational decision-making

(Chappius, 2005). When educators and students begin to reason with and take an active responsibility in learning choices and strategies, as a result of their assessment results, education can begin to improve and reform. McTighe and O'Connor (2005) identified seven specific assessment and grading practices to enhance teaching and learning. They include the following:

Practice 1: Use summative assessments to frame meaningful performance goals.

Practice 2: Show criteria and models in advance.

Practice 3: Assess before teaching.

Practice 4: Offer appropriate choices.

Practice 5: Provide feedback early and often.

Practice 6: Encourage self-assessment and goal setting.

Practice 7: Allow new evidence of achievement to replace old evidence. (p. 12–17)

Developing a meaningful assessment process that reflects the cumulative objectives of individual, classroom, school, and district-wide improvements in learning and responsibility can be accomplished through the effective use of assessments.

McTighe and Ronald (2003) characterize schools and districts today with two distinguishing kinds of improvement initiatives. “One centers on the classroom - emphasizing effective instructional practices in teaching to the state standards. The other focus is systemic - creating results-oriented schools that use analysis of achievement data to develop improvement plans” (p. 52). Schools able to demonstrate success with the

integration of the two initiatives first identify the desired results and then develop meaningful assessments and learning plans accordingly (McTighe & Ronald, 2003).

Popham (2003) explains, instructionally advantageous data can only come from instructionally useful assessments. Popham describes the “five attributes of instructionally useful tests applicable to formative as well as large-scale assessments: significance, teachability, describability, reportability, and nonintrusiveness” (pp. 49-50). If assessments meet all of the points provided, teachers are provided useful and quality data that will guide proper instructional decisions for the students within their classrooms.

Classroom Assessments of and for Learning

Test-based accountability has become a national issue for states, districts, schools, educators, and students in recent years. The goals established under NCLB may not be realistic for all schools but with significant changes made in our classrooms, based on both formative and summative assessments, effective reform initiatives will yield results (Linn, 2005). Reform research compiled by Bernhardt (2004) advocates that the use of data can help schools gather, analyze and use information to make better decisions for their schools, community and student body. Educators able to understand the primary needs of students are more successful in planning and implementing positive change. A study by Black and Wiliam (1998) confirmed teachers who conducted assessments for learning, achieved in six or seven months, what would have taken a year in a traditional classroom setting.

While many teachers recognize the power in utilizing assessments for learning, they are challenged in finding the time and developing their understandings in order to

effectively implement them in their daily practice. Districts are recognizing the need to assist educators in building content knowledge in the area of assessment and instruction. Many stakeholders and administrators have become committed to providing embedded professional learning opportunities for their educators (Moran, 2006). Assessment literate teachers of reading, interested in learning about individual students, are gathering data through a combination of assessments and matching their instruction accordingly.

According to the International Reading Association (2004), teacher competence standards expect teachers of reading to be knowledgeable in assessment. To be successful in the area of literacy, educators need specialized training, ongoing support and an awareness of reading development. They also need an understanding of the link between assessment and reading instruction (Lyons & Pinnell, 2001). Being assessment-literate requires teachers to be capable of examining student performance information and developing change in an effort to increase student performance (Hargreaves & Fullan, 1998). In the subject area of reading, teachers need to create opportunities to measure the progress of students toward meeting standards and learning targets to support their instructional reading levels. Teachers literate in assessment can examine what students are able to demonstrate as readers and scaffold the learning to provide assistance as they move forward in the reading process. If assessment is the key to building knowledge about students as readers, collecting a variety of evidence can develop insights about each child's reading development and understandings.

Examining multiple sources of data and synthesizing a combination of results derived from both formative and summative assessments can be an effective practice in reporting achievement as well as making improvements in schools, classrooms, and

among individual students. Teachers using classroom-based performance tasks and projects in conjunction with summative measurements, increase their confidence in making instructional decisions in literacy, according to Hill (2001). “Used with skill, assessments can motivate the unmotivated, restore the desire to learn, and encourage students to keep learning and it can actually create - not simply measure - increased achievement” (Stiggins, Arter, Chappius, & Chappius, 2006, p. 3).

Kindergartners afforded with learning experiences that have been established through data derived from both formative and summative assessments are given an opportunity to make improvements in literacy. “The best practices in literacy assessment ... are those that use a variety of appropriate indices to address the needs of different audiences” (Morrow, Gambrell, & Pressley, 2003, p. 208). Educators skilled in implementing appropriate ongoing assessments can offer kindergarten students informed, individualized, and differentiated instructional decisions.

The literacy development of kindergartners can be advanced with a combination of both summative and formative assessments. Data derived from a number of assessments provide educators and students with information regarding individual, school, or district achievement. Assessment data can also be beneficial in determining gaps in student achievement.

Summative assessments in reading offer school and district-wide accountability through ongoing data comparable with national and state norms. Analyzing national or statewide student achievement measurements in phonics, phonemic awareness, vocabulary, fluency, or comprehension can provide schools and teachers with valuable information regarding student learning in relationship to content standards. Learning

what students know at a particular point in time can be useful for grading, culminating units of study, or evaluating a program or school. Summative assessments may guide student placement or measure school or statewide goals.

Formative assessments provide ongoing information for instructional, programming, and curricular decisions. Adjustments can occur throughout the learning process as assessment data is gathered through a variety of methods. Incorporated into daily classroom practices, kindergarten teachers can utilize formative assessments to measure early reading development, differentiate learning experiences, and assist in the progression of literacy skills.

Literacy in Kindergarten

Kindergarten students respond to the sounds of language in a very natural way (Pinnell & Fountas, 2007). In the classroom, kindergartners are encouraged to participate in language opportunities that include peer and teacher interactions, songs, rhymes, chants, familiar poems, and literature. These shared and interactive occurrences guide emergent literacy development (Fountas & Pinnell, 2006). Kindergarten children immersed in rich language experiences can benefit from a diverse vocabulary and an awareness of sounds which will assist them in reading and writing.

Akhavan (2008) notes, “Effective instruction for kindergartners involves thoughtful interactions between teachers and children” (p. 107). Every student needs the support of peers, “but the teacher plays a central role in assuring that instruction leads each child forward” (Fountas & Pinnell, 2006, p. xxxii). Lev Vygostky (1978) explained the role of the expert in the life of a student. Instead of waiting for the learner to develop and grow, the expert “supports the learner in successful performance tasks that are just a

little bit harder than he could accomplish independently” (p. xxxii). Understanding how language works and how individual sounds and letters represent words requires a scaffolding of support.

Educators need to be able to recognize and scaffold the support each kindergartner needs in developing reading skills. Many children come to school with background knowledge and understandings which assist them in their reading development. Family time spent with literature, lyrics, poems, or in conversations, expose numbers of school-age children to a strong vocabulary and a readiness to listen and learn new information. Conversely, there are also students entering kindergarten without the vocabulary exposure and reading readiness experiences that others may have been afforded. Optimal development transpires through interactions that are physically, emotionally, socially, and cognitively appropriate with regard to the changing needs of the child (Snow, Burns, & Griffin, 1998). Children entering kindergarten without well-developed language abilities and a variety of experiences are often challenged in acquiring emergent literacy skills. Recognizing the diversity in emergent literacy among kindergartners requires educators to immediately assess students in order to develop appropriate and differentiated instructional plans.

Phonemic Awareness

Snow et al. (1998) suggest, “The achievement of real reading requires knowledge of the phonological structures of language and how the written units connect with the spoken units” (p. 79). The ability to hear sounds in words is an essential skill in becoming literate. Children able to form phonological connections to letters are equipped to decode and recognize words. Adams, Foorman, Lundberg, & Beeler (1998) have defined

phonemic awareness as the consciousness that language is comprised of phonemes, or small units of speech that correspond with letters of an alphabetic writing system.

Phonemic awareness is one kind of phonological awareness, “which is a broad term that refers to both explicit and implicit knowledge of the sounds in language” (Pinnell & Fountas, 2007, p. 360). It is the ability to segment oral speech into its component speech sounds, or phonemes (Walpole & McKenna, 2004). Phonemic awareness is auditory, does not involve words in print, and is the prerequisite for effective phonetic applications in reading. Emergent readers, ages four through six, are encouraged to develop phonemic awareness to become confident in hearing individual sounds. This awareness of phonemes will assist kindergartners in identifying the letters that match the sounds in words, which can then be applied to the visible information provided by the written word.

In helping children understand how letters represent speech, it is necessary to help them understand that spoken words can be segmented into phonemic units (Blachman, Ball, Black, & Tangel, 2000). Phoneme isolation encourages children to recognize individual sounds in a word. Phoneme blending is a process of listening to a given word, identifying the individual phonemes and combining them together to form a word. Phoneme segmentation is the act of breaking a word apart by its individual sounds. Phoneme deletion is the practice of omitting a sound from a given word. For example, asking children to repeat the word slip without the /s/ requires the practice of phoneme deletion. Phoneme substitution is the addition to or replacement of a sound within words. Changing the /s/ in slip to /f/ would result in flip after the practice of phoneme substitution.

Students who possess phonemic awareness have the ability to distinguish different sounds that enable them to connect sounds with letters; thus leading to reading acquisition. According to the Center for the Improvement of Early Reading Achievement (CIERA, 2001), “children who have phonemic awareness skills are likely to have an easier time learning to read and spell than children who have few or none of these skills” (p. 2). In the 2001 publication, *Put Reading First*, CIERA emphasizes the important role of phoneme manipulation. Children able to work with phonemes in words through blending, segmenting, deleting, adding or substituting sounds become skillful in using the letters of the alphabet to form words.

Adams et al. (1998) suggest, “Poorly developed phonemic awareness is the core difficulty for a large proportion of children who have difficulty learning to read” (p. 5). The research by Adams et al. supports the correlation between schoolchildren’s ability to attend to and manipulate phonemes with their reading success through twelfth grade. Based on this premise, cognitive preparation in phonemic awareness is necessary for most kindergarten learners denied of enriching early language experiences in the home. Reflective awareness of language and its individual parts makes sense of our written language. Developing children’s phonemic awareness prepares them for learning to read and write. Fountas and Pinnell (2006) relate, “All literacy learning, including the development of fluent reading, is grounded in oral language” (p. 75).

Many children may come to school having already developed their phonemic awareness skills. Teachers need to use a variety of assessments in determining the scaffold of support each learner needs in their individual continuum of reading. Phonemic awareness is a vital component among a variety of others in developing a reader (Morrow

et al., 2003). Supporting readers in their acquisition of reading readiness skills requires a number of differentiated instructional strategies and assessments. The National Reading Panel (NRP, 2000) also supports the development of skills in literacy to include phonemic awareness among young children. Yopp and Yopp (2000) reveal that phonemic awareness instruction can support reading development when included in a broader program consisting of vocabulary, syntax, comprehension, strategic reading abilities, decoding strategies, and writing across the curriculum. Based on a variety of research, it is evident that emergent readers need a comprehensive instructional approach that caters to individual and group needs.

Effective literacy educators are capable of equipping emergent readers with the assistance, differentiated instruction, and the environment needed to nurture their reading skills. Fostering phonemic awareness among children can provide them with an advantage in learning to read and write fluently and effectively. Utilizing assessment methods designed to define both success and challenge among kindergarten students can assist in making appropriate decisions for instruction in phonemic awareness.

In the year 2000, the NRP examined whether phonemic awareness instruction assisted children in reading and spelling. The NRP utilized a number of research articles to define effective procedures for instruction in phonemic awareness. One group of children received the specific phonemic awareness instruction most often recommended through the literature. Another group received various other types of generic classroom instruction in reading readiness. The NRP compared the effect size to determine whether phonemic awareness instruction improved children's phonemic awareness, reading, and spelling and found the results to be positive. Although the initial overall effect size on

reading and spelling outcomes were moderate (0.86 with phonemic awareness, 0.53 with reading, and 0.59 with spelling), the follow-up assessments, given several months after the training ended, were significant. Effects on standardized tests as well as experimenter-devised tests were significant, demonstrating that teaching children to manipulate phonemes in words is a highly effective instructional practice.

Phonemic Awareness in the Classroom

“Correlational studies have identified phonemic awareness and letter knowledge as the two best school-entry predictors of how well children will learn to read during their first 2 years in school” (NRP, 2000, p. 2). Based on this evidence along with additional research in support of early literacy instruction by the International Reading Association (1998) and the National Association for the Education of Young Children (1998), the Elementary and Secondary Education Act (including the NCLB bill) was passed. The legislation suggests specific areas of early literacy in which to focus instruction. Phonemic awareness, phonics, comprehension, vocabulary, and fluency are the five core elements recommended in a comprehensive approach to early literacy by the NRP.

In order to read and write effectively, children need to develop multiple skills. Distinguishing individual sounds to blend and segment words is a skill that is important in the development of a reader. According to the National Research Council (2001), children who become successful readers apply phonemic connections to letters and context, which facilitates productive reading. A study compiled by Griffith et al. (1992) found that children with high phonemic awareness outperformed those with low phonemic awareness on all literacy measures.

Educators offering a variety of experiences in emergent literacy instruction as a result of the information derived from ongoing assessments can orchestrate a successful kindergarten experience, meeting the demands of the NCLB legislation. Ongoing classroom assessments have the, “potential to not only measure and report learning, but also to promote it” (McTighe & O’Connor, 2005, p. 11). Additionally, kindergarten teachers maximizing the use of data can guide instructional decisions to prevent reading difficulties (Reilly, 2007). According to Routman (2003), most children increase their phonemic awareness and demonstrate their understandings through activities that involve observable behaviors. Educators utilizing observable performance tasks, pretests, checklists, progress monitoring devices, and portfolios, can determine the course for instruction in order to address the varying needs of even our youngest students.

Prior to entering school, kindergartners have gained basic understandings of how our language and print operate and bring with them a wide variety of background experiences (Pinnell & Scharer, 2003). In an effort to measure kindergarten students’ prior knowledge, pretests can be utilized for instructional planning purposes. The assessments can range from interest inventories, skill checks, knowledge lists, to the initial stages of K-W-L charts (What we **K**now, what we **W**ant to know, what we **L**earned) administered at the beginning of a field of study. Stiggins et al. (2006) explain that if teachers, “want to use assessment as a tool for learning, students need to know where they are going, know where they are now and know how to close the gap” (p. 34).

Taking the time to assess students’ prior knowledge can be valuable in determining an instructional focus or starting point. With the use of pretests such as K-W-L charts, kindergarten students can collaborate in sharing what they already know and

examine their interests with regard to the topic or subject to be developed. Pretests are typically not graded and set a purpose or target for learners. They present data for teachers that relay previous knowledge and skills. The data supplied through pre-assessments enable educators to design and plan for differentiated instruction (McTighe & O'Connor, 2005). Kindergarten educators teaching phonemic awareness skills can pretest many concepts. For example, phoneme deletion can be measured with a performance task in a small group or individually. Children can be asked, "Say bat without the /b/. Say sit without the /s/." Students having difficulty are identified to be in need of development in this skill and following the pretest, can be grouped for accommodating instruction. Without effective intervention provisions, a reading performance gap has the potential to develop early and widen as children progress across school years (Reilly, 2007).

The promotion of phonemic awareness can occur through several performance tasks based on the observable individual skills or decisions students demonstrate during an activity. Using paper and pencil applications, verbal information exchanges, teacher observations, conferences, interviews, running records, or learning logs, educators can document not only the support needed for each child, but also ongoing individual progress toward proficiency. In the area of phonemic awareness, identifying skills attained can become a regular practice of linking assessment with instruction (Hill, 2001). Assessment checklists can note valuable performance indicators that a student may be able to demonstrate with regard to phonemic awareness. Skills that can be documented include phoneme identification, blending, segmentation, substitution, and deletion. Additionally, the ability to follow one, two, and three-step verbal directions, recognize

and produce rhymes, identify onset rime, segment sentences and perform syllabication, can all be documented on a checklist.

Teacher observations can document the accuracy or proficiency level of each literacy task accomplished (Lyons & Pinnell, 2001). Teachers circulating within a classroom, listening to peer conversations or observing constructive learning situations, can utilize opportunities to assess the learning taking place among individuals or groups. Maintaining documentation of observed efforts or errors through the use of management systems can provide educators with an arsenal of information on students' literacy development (Annandale et al., 2004). For example, the ability to produce a rhyme for a given word can be noted in a literacy log. A literacy log might even demonstrate the progression of skills such as listening or the production of rhymes with echo speaking experiences (Tyner, 2006).

Portfolios can also be connected with phonemic awareness assessments for learning. Portfolios are collections of observations, checklists, work, projects, ideas, writing, artwork, and assessments that are meaningful in demonstrating student growth over a period of time (Stiggins, 2004). Included in the portfolio may be evidence of an understanding such as onset rime. Children may listen to a prompt such as, "I'm thinking of a word. It rhymes with 'dig'. It starts with the sound /p/. Draw a picture of my word." Illustrations may verify a continuum of literacy learning and proficiency (Blevins, 1997).

Every task students take action in performing can be assessed for learning through a variety of observable tasks. Ongoing and multiple means of assessment measures take any high-stake levels or feelings from the evaluations (Stiggins, 2004). For instance, in the area of phonemic awareness, an assessment in measuring the ability to segment a

sentence can be represented suitably with a cumulative performance assessment.

Following the instruction, students can demonstrate their understanding of segmentation by listening to a sentence read aloud and sliding a set of buttons forward to represent each word heard within the sentence as they repeat it aloud.

The ongoing assessment of literacy knowledge offers opportunities to determine appropriate instructional decisions to advance each child's literacy learning. With students entering a typical kindergarten class with very different levels of language and knowledge, instruction must be adapted for these differences (Tyner, 2006). The formation of differentiated instructional decisions, derived from assessment data, can provide students with data-and standards-based curriculum decisions, critical strategies for reading success and the time needed to develop early literacy foundations.

Differentiated Instruction

As kindergarten teachers strive toward meeting the needs of an ever-increasing range of learners within the classroom, it becomes more important to develop instruction responsive to the diversity of the students. A one-size-fits-all approach has failed to reach many students. Differentiating literacy instruction for kindergarten learners addresses the concern in providing for academic diversity in the classroom. According to Tyner (2006), "without differentiated reading instruction, some children will fall further behind whereas others will be left unchallenged" (p. 6).

In many kindergarten classrooms, some students may perform at grade-level expectancy, others may fare well above anticipated levels, while the remainder of learners may struggle with early reading skills. In order to effectively guide the reading process in a classroom, the needs of all learners must be considered and accommodated

to ensure successful learning experiences. Through informed decisions derived from meaningful, ongoing authentic assessment data, differentiated instructional plans and techniques can attend to the varying levels of learners.

According to The American Heritage College Dictionary (2002), the definition of the word differentiate is “to make different by alteration or modification” (p. 395).

Differentiating literacy instruction for kindergarten learners is critical to the reading process. The understanding of the wide range of abilities and interests in literacy among kindergarten students can motivate teachers to assist students with continued growth. Additionally, teachers informed with assessment data and knowledge in the best practices of reading instruction can determine appropriate plans, groupings and strategies to differentiate learning.

The practice of making adjustments in teaching and learning plans, based on the specific ability levels of students, can address the curricular goals in the area of reading for kindergartners. Tomlinson and McTighe (2006) explain that opportunities, “always exist for students with varied backgrounds, strengths, deficits, and developmental stages to work with the essential ideas” (p. 42). All kindergarten students, including those challenged in the area of phonemic awareness as well as those already reading fluently, need instruction that is proactive in creating successful understandings.

The primary purpose of differentiated instruction is to maximize student capacity (Forsten, Goodman, Grant, Hollas, & Whyte, 2006). Assessments can provide important information critical for instructional decisions catered to individuals and small groups. Differentiating literacy instruction designed to meet the diverse needs of kindergarten learners can lead to academic growth toward the curricular outcomes. Kindergarten

teachers cognizant of and practicing ongoing assessment and differentiated teaching methods can maximize the success for each child. Developing teachers' understanding towards the relevance in assessments and differentiated instruction requires a commitment. Mindful administrators, dedicated to the development of student achievement through ongoing assessments and differentiated instructional techniques, are increasingly aware of the importance in providing teachers with ongoing professional development supportive of desired results.

Professional Development for Educators

In order to become effective in utilizing both formative and summative assessments, educators need adequate professional development. Teachers literate in assessment recognize the accountability that can be demonstrated by using achievement data wisely in a time of high-stakes testing (Fullan, 2001). Rock (2002) recognizes that teachers of reading need to use both formative and summative assessment data in determining an instructional focus in phonemic awareness to benefit student learning. Kindergartners measured with a variety of assessments and phonemic awareness experiences based on information derived from assessment data could make substantial progress. However, a number of teachers need professional development to assist them in attaining the skills needed in aligning assessments with their instructional decisions.

The Improving America's Schools Act of 1994 highlights the significance of professional development in Part C, Section 2301. The Act recognizes professional development as a desirable component in improving our nations' schools and supports purposeful ongoing learning opportunities. The document, a reauthorization of the Elementary and Secondary Education Act of 1965, cites the following:

A need for professional development with a primary focus on teachers, to provide both prospective teachers and current teachers' opportunities to learn both the content and the pedagogy needed to teach to high standards ... that demonstrate new organizational arrangements and deep investments in teachers necessary to better prepare teachers for new standards and assessments (The Improving America's Schools Act, Pub. L. 103-382, 1994, Professional Development section 1119).

A response to this call to produce highly trained and qualified teachers, capable of improving student performance, has led to an increase in the number of on-site, embedded professional learning programs. With job-embedded professional development, differentiated instructional techniques can cater to the needs of the individual teacher. Individualizing learning experiences for teachers can lead to deeper understandings and an increase in learning and application.

With unparalleled federal, state, district, school and community expectations, teachers are searching to attain professional support in the twenty-first century. In an effort to increase student learning, classroom teachers are held accountable for not only implementing a combination of assessments and forming data-driven instructional decisions, but also to develop their own professional learning experiences. "One of the primary goals of professional development is change - change in teacher knowledge, change in instruction, change in student learning, and eventual change in school or district progress" (Fullerton & Quinn, 2002, p. 134). According to the National Commission on Teaching and America's Future (Darling-Hammond, 1996), the profession of teaching must be restructured toward increasing teachers' knowledge to

meet the demands necessary for redesigning schools to be supportive of quality teaching and learning.

Literacy Coaching

Hirsh and Sparks (1997) specified the need for change in professional development from an off-site model to on-site, embedded instructional encounters. The traditional model of professional development, with a one-day, make-it and take-it outcome, fails to meet the contemporary demands on educators. Without the opportunity to practice new strategies over a sustained period of time under guidance, the likelihood of continuity and quality is jeopardized (Dozier, 2006).

In an effort to satisfy the provision of NCLB to develop highly qualified teachers, literacy coaches can be utilized to assist the process. Today, at national, state, and local levels, literacy coaching is being touted as a valuable tool for developing teachers professionally. According to Dozier (2006), the utilization of literacy coaches can help to increase student achievement and improve reading instruction. Literacy coaching can improve teachers' knowledge base, analytical skills, and expertise through an ongoing, local professional development embedded in classroom experiences.

This model of collaborative and interactive professional learning can increase the possibility of authentic learning experiences for educators. According to a study conducted by Joyce and Showers in 2002, 95% of teachers were able to reach an executive implementation level with a literacy coach, while none of these teachers accomplished this by studying the theory in isolation. By engaging in professional development opportunities made available through literacy coaches, educators are assisted in learning about reading processes, assessment, and instruction.

Knight (2004) defines a literacy coach as an assistant to teachers in understanding how research-validated practices offer useful solutions to the challenges teachers are presented with in the classroom. Burkins (2007) offers a more explicit definition: A literacy coach is an educator with specific expertise and extensive experience in literacy instruction who through individual coaching, team meetings, formal professional learning, demonstration lessons, classroom visitations, study groups, and various other contexts, works with and for teachers to lead, assist and honor them as they solidify and expand their skills in and understandings of literacy instruction. (pp. 28-29)

According to Hughes et al. (2002), the purpose of professional development should be to provide teachers with knowledge and instructional strategies that improve their teaching and reflective practices. A collaborative literacy coaching model can offer hands-on learning experiences persistent over time. A study by Rodgers, Fullerton, and DeFord (2002) found, “embedded professional development sessions have an impact on teaching experiences” (p. 59). With school reform initiatives that reflect the need for professional learning experiences, literacy coaches are in the position to provide ongoing, hands-on staff development catered to the specific needs of educators, students, schools, and districts.

Kemp (2005) described the role of a literacy coach as a provider of information, a facilitator or presenter able to develop, “innovative methods to actively engage teachers in strengthening their literacy strategies” (p. 24). Professional development need not be an isolated event. The ongoing assistance of literacy coaches can encourage classroom teachers to practice reflective, responsive, and strategic teaching to bring about lasting change. Staff development standards exist to provide direction in designing adequate

professional development experiences. In 2001, the National Council on Student Development (NCSD) recommended staff development experiences that are results-driven, standards-based, and job-embedded. In an effort to promote effective, lasting change, teachers require quality from staff developers.

With regard to phonemic awareness and reading instruction, effective teaching relies on the ability to understand several factors that relate to the reading process. Professional development is essential in fully developing the following understandings: recognizing the intricacies of the reading process, knowing how reading is learned, understanding how children ascertain and demonstrate knowledge in literacy, observing strengths and challenges in reading behaviors and identifying what children need to know in their continuum of learning (Pinnell, 2001).

The primary objective of the literacy coach is to engage the classroom teacher in a reflective learning experience. For instance, a literacy coach could target a group of kindergarten students needing additional practice with segmenting sounds. The literacy coach could then model a strategy in the classroom with the use of a rubber band to illustrate the stretching of the sounds heard within a given word. Sound stretching is an instructional strategy worthy of advising a kindergarten teacher to use in developing the phonemic awareness skill of segmentation or blending. Additionally, if a teacher is encouraged to understand the purpose in using the rubber band and the hierarchy of phonemic awareness skills that children need to attain, a teacher receives far more than a strategy to implement. The educator is empowered with learning and the ability to individualize choices to better meet the needs of students. “For coaching to make a

difference, teachers must transfer their understandings and pedagogical practices from the coaching environment to their classroom practices” (Dozier, 2006, p. 9).

Poglinco and Bach (2004) outlined two types of literacy coaching. The researchers found both small group and in-classroom literacy coaching to be a viable staff development option. Literacy coaches are in the position to foster growth among teachers and address specific needs and concerns directly in the classroom. Knight (2004) highlights several factors that make literacy coaching more effective:

1. Sufficient time to work with teachers
2. Proven research-based interventions
3. Professional development for literacy coaches
4. Protection of the coaching relationship
5. Ensuring principals and literacy coaches work together
6. Hiring the right literacy coaches

Professional learning experiences between colleagues can offer an opportunity to further educators’ understandings and progress in the field of education. Honawar (2008) relates the correlation between professional development and teaching with the statement suggesting that, “high quality teacher professional development can lead to gains in student achievement” (p. 9). Small groups or individual educators equipped with the support of ongoing professional development and additional classroom collaboration with a literacy coach are enriched with the tools or approaches most effective in meeting the varying needs of learners.

Recognizing the need for professional development opportunities within the classroom and making the decision to incorporate literacy coaching into a school

district's reform initiatives requires a thoughtful commitment. According to Burkins (2007) a literacy coach may coordinate professional learning opportunities, work with educators regarding instructional decisions, and become the literacy specialist for the entire school. Additionally, literacy coaches can organize and manage literacy resources, manage data, be actively involved in the school community, and also proceed as a learner in literacy. In an effective coaching experience, literacy coaches are working to bolster student learning through the improvement of classroom instruction. However, too often, literacy coaches fall short of meeting the primary goal of improving student learning as a result of the other responsibilities they acquire within a school.

Literacy coaches are in position to support teachers directly with assistance in curriculum, assessment, and instruction within the classroom setting. The collaboration process can ignite possibilities, strategies, and pedagogy that reflect conceptual understandings and research-based approaches in teaching literacy. The opportunity to work side-by-side with a colleague is a professional benefit for teachers that can positively impact student learning. Professional classroom work, or sessions designed to present or examine theories that accompany actual implementation or guided classroom practice, affects the learning experiences of teachers and students alike (Walpole & McKenna, 2004).

Feldman and Tung (2002) analyzed teacher and administrator perceptions of the role of the coach in schools. The Center for Collaborative Education (CCE) funded the study and worked with urban districts to implement whole school reform and improve student achievement. CCE worked with the schools in the following four areas:

1. Building leadership capacity and a professional collaborative culture
2. Improving learning, teaching and assessment
3. Creating structures to support high achievement
4. Data-based inquiring and decision-making (pp. 2-3)

Five schools were selected for the study, including 75 teachers and nine administrators. The teachers and administrators were interviewed to determine their perceptions about the role of the coach in their schools. Analyzing the teachers and administrators' work with the coaches, perceptions regarding the coach as a change agent, the coaching activities related to the reform model overall, and any barriers that may have hindered the implementation of the reform model became the focus of the study. Throughout the study, most of the work of the coach occurred during meetings. Coaches recorded their daily activities in logs which were analyzed for the activities the coaches participated in, who they worked with, how long the work lasted, what content was covered, and what resources were used. Coaches worked to establish a collaborative culture within the school during these meetings. Teachers and coaches examined student work, used data to plan for instruction, and developed a school improvement plan.

The findings of Feldman and Tung's study in 2002 were positive. Teachers and administrators found the coach had an impact on school change. Teachers reported many changes in their classroom practices that could be sustained as a result of the coach. Administrators viewed the coaches as professionals able to "push their thinking about school-wide change" (p. 23).

In the classroom, teachers and literacy coaches working together can scaffold learning not only professionally, but also in support of growth among students. Numbers

of informed educators recognize that effective reading instruction, “meets the needs of readers where they are and takes them where they need to go in the development of a reading process” (Pinnell, 2001, p. 64). Literacy coaches working to influence teachers in the practice of differentiating literacy instruction can assist in promoting classroom and school-wide improvements.

Collaborative Teaching

Too often, school improvement teams concentrate their collaborative efforts on raising scores, primarily on high-stakes assessments (McTighe & Thomas, 2003). This type of focus can result in the narrowing of the curriculum and reductions in student opportunities for learning. Collaboration requires open sharing among teachers receptive to differing opinions and strategies in order to address the challenges of educating students (Creighton, 2005). Through peer-related, one-on-one collaborative efforts, literacy coaches and teachers can take joint responsibility for assessment experiences and understandings that are beneficial to students’ ongoing progress and overall achievement.

Traditionally, teachers have not been provided with the benefits of collaboration (Foley, 2007). Teachers have come to understand professional development as an experience in which they attend an off-site location, listen to ideas or a particular philosophy of a speaker within a whole group setting, receive a handout, and return to the classroom the following day. Collaboration with literacy coaches appeals to classroom teachers as an opportunity for meaningful, applicable professional development sessions (Rodgers et al., 2002). In an effort to make school-wide improvements through a collaborative approach, the initial focus could attend to individual student progress within the classroom.

In the practice of attending to individualized student and data-based decisions from multiple sources, the collaborative effort can identify the most valuable data within the overlap of both qualitative and quantitative information (Burkins, 2007). With the information derived, the teacher and literacy coach can examine the evidence to inform the design and delivery of instructional strategies that address specific learning needs. As a result of the collaboration process, educators can inform their teaching with the results of several data sets if given guidance, time, and assistance.

Stakeholders involved in education would concur that improved instructional practice may well result in improved student achievement (Popham, 2003). Creating an environment of collaboration and support improves pedagogy. Analyzing data, in addition to demonstrating and discussing the best practices in reading instruction, can influence instructional decisions. Lyons and Pinnell (2001) advocate the following:

The most effective way to improve instruction is to develop teachers' conceptual understandings about the reading and writing process ... the most efficient and effective way to improve teachers' knowledge base, analytical skills, and expertise is through one-to-one coaching that is informed and based on students' behaviors. (p. 93)

Literacy coaches can assist classroom teachers to recognize the differences among students' reading behaviors. The design of informed, differentiated instructional plans can develop meaningful literacy experiences. Children with diverse reading behaviors deserve to be supported with affirmation, affiliation, accomplishment and autonomy with responsive teaching (Tomlinson, 2003). Quality curriculum, assessment and instruction all play a pivotal part in developing successful emergent readers.

“Literacy coaches are the people who are directing continual school improvement work at the state, district and school levels” (Walpole & McKenna, 2004, p. 20). It is relevant to utilize literacy coaches for curriculum guidance, data-driven instructional efforts, and professional development sessions that present research-based theory and strategies. However, the true advantage for educators and students can be found in the classroom collaboration with the literacy coach (Moran, 2006). Instrumental literacy coaches learn how to work with various educators in different settings to facilitate student achievement as the primary focus. Working together in a professional relationship, teachers and literacy coaches can build literacy learning experiences that enable every child to become a more competent reader and writer (Lyons & Pinnell, 2001). “It is important that adequate modeling and guided practice occur if a lasting change in classroom instruction is going to take place” (Allen, 2006, p. 99).

Summary

Assessment has the potential to be a powerful tool for teachers and school professionals. Within the classroom, the ongoing use of assessment data can provide information to inform instructional decisions. Schools and districts can utilize assessment information to present the statistical evidence needed to demonstrate the growth of students and the effectiveness of programs. Both formative and summative assessment data can assist educators and administrators in determining key relationships between student achievement and district goals or statewide standards.

The use of assessment data by teams and school professionals can be enhanced by the support of a literacy coach. Literacy coaches not only assist in the collection, analysis, and presentation of assessment data in support of student learning, but they can also offer

professional development sessions designed to promote data-based differentiated instruction. Literacy coaches are positioned to support educators in making instructional changes based on student differences and individual needs.

Differentiated instructional decisions appear to meet the literacy acquisition needs of kindergarten students. A variety of multisensory learning experiences can assist kindergarten students in developing phonemic awareness skills. Students developing phonemic awareness skills seem to progress if provided with opportunities to learn in small groups through a variety of instructional strategies based on their different levels of understanding.

The Review of the Literature regarding the subjects related to improving student achievement has included assessments, kindergarten literacy development, phonemic awareness, differentiated instruction, professional development, literacy coaching and collaborative teaching. Chapter Three is a description of the methodology utilized to determine the effects on kindergartners' development in literacy as a result of data-driven instruction.

CHAPTER THREE

PROCEDURES

The problem framing this study was to examine how data-driven instruction and literacy coaching influence the literacy development of kindergartners. In Chapter Three, the research methods of the study are described to include the setting, participants, process for data collection, research instruments, procedures, and methods of data analysis that were utilized. The study employed a mixed-method design to clarify and illustrate both qualitative and quantitative information in order to address the following research questions:

- (1) To what extent do kindergartners achieve success as a result of data-driven instructional decisions in literacy?
- (2) To what extent are the measurable effects on student learning a result of the daily collaboration between literacy coach and classroom teacher?
- (3) How do literacy coaches and kindergarten teachers use assessment data to inform instructional decisions?

Setting of the Study

The study's participants were all enrolled in the Harbor Creek School District located in Harborcreek, Pennsylvania, a suburban community. Kindergartners in the experimental group were based at Rolling Ridge Elementary School, while the control group was comprised of students in both Clark and Klein Elementary Schools. The teachers involved in the study were employed at Rolling Ridge Elementary School. The three schools are located in a township consisting of 43 square miles and comprised of

approximately 16,000 citizens. The study was conducted throughout an entire school year.

Study Sample

Participants in this study consisted of two sets of kindergarten learners, four classroom teachers and a control/experimental group of students only. The student sample drawn from the three elementary schools is depicted in Table 1. The number of participants varied in each group throughout the school year.

Table 1

Student Population Data

Groups	Beginning of the year population	Middle of the year population	End of the year population
Control group 1	37	39	39
Control group 2	58	58	58
Experimental group	75	76	73

Table 2 represents a summary of the demographics for the teachers that participated in the study. The four kindergarten teachers, all female, held bachelor's degrees and averaged thirteen and a half years total teaching experience. Of those years, the combined average was equivalent to eight years in the kindergarten classroom. Three of the teachers represented were veterans, representing thirteen or more years in the classroom. Two of the teachers involved in the study were in their second year teaching kindergarten. The literacy coach involved in the study was also female, with thirteen years of teaching experience, nine of which were spent teaching kindergarten. Holding a

master’s degree in reading, the literacy coach had also been involved four years as a district reading specialist.

Table 2

Teacher Demographic Data

Class Assignment	Male	Female	Total years teaching	Years teaching kindergarten	Bachelor Degree	Master’s Degree
K	0	1	25	20	1	0
K	0	1	13	10	1	0
K	0	1	13	2	1	0
K	0	1	3	2	1	0
Literacy Coach	0	1	13	9	1	1

Data Collection

The study utilized a mixed-method design to clarify and illustrate both quantitative and qualitative information. Quantitative evidence of student achievement is demonstrated through phonemic awareness assessment data. Additionally, qualitative research investigated classroom teachers’ perceptions regarding coaching and collaboration through an interview. Specific trends, comparisons and outcomes, as a result of the year-long experience, are defined.

Quantitative data were collected, analyzed, and reported from 170 kindergarten students within this study. The students’ pre-reading skills were assessed using subtests from the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) benchmark assessments. Over a period of one year among the control groups and one and a half

school years for the experimental group, the DIBELS assessments were administered to measure student progress. Data were collected throughout each assessment period by a district-wide team consisting of a literacy coach, two reading specialists, two speech and language pathologists, one learning support teacher, and three instructional support teachers. The data were then entered into the DIBELS national database.

The qualitative aspect of the research study is represented through the responses derived from an open-ended interview conducted with the four participating classroom teachers. The interview reveals the perspectives of the teachers working with the literacy coach towards improving student achievement in literacy. The interview has the potential to illustrate and define the effects of collaboration and instructional decisions determined by data. Themes, trends and insights that emerged from the interview session provide a basis for subsequent interpretive analysis. Through the interview, the researcher attempted to identify factors that may have affected student achievement and manually code and the effects, if any, of literacy coaching.

Instruments Used

DIBELS is an assessment device designed to identify students who may qualify as at-risk in literacy development. DIBELS analyses were created by and are maintained through the University of Oregon (Appendix A). For the purposes of this study, the assessment tool was used to examine the fluency levels of kindergarten students in the application of phonemic awareness skills. Letter naming fluency (LNF), initial sound fluency (ISF), phonemic segmentation fluency (PSF), and nonsense word fluency (NWF) were the specific skills measured.

The DIBELS assessments are utilized in over 13,000 school districts nationwide (Kaminski, 2007). The measurements provide kindergarten educators with both formative and summative assessment results which may be applied to drive instructional decisions and strategies regarding the area of phonemic awareness. The tests have the capacity to measure student achievement in phonemic awareness through benchmark assessments administered three times a year, as well as progress monitoring assessments that may be conducted as frequently as once a week. There has been extensive research completed on the DIBELS assessments, specifically on how accurately these assessments can predict performance on important outcomes that depend on the ability to read and comprehend text (Kaminski, 2007)). The reliability and validity for these tests have been found to be acceptable as presented in Table 3 (Good & Kaminski, 2001).

Table 3

Reliability and Validity of DIBELS Assessment

Test	Alternative-form reliability	Validity
Letter Naming Fluency	.88	.70 (a)
Initial Sound Fluency	.72	.48 (b)
Phoneme Segmentation Fluency	.88	.54 (d)
Nonsense Word Fluency	.83	.36 (e)

(a) The median criterion-related validity of LNF with the Woodcock-Johnson Psycho-Educational Battery-Revised readiness cluster standard score is .70 in kindergarten. (b) Concurrent criterion-related validity of ORF with DIBELS PSF is .48 in January of kindergarten and .36 with the Woodcock-Johnson Psycho-Educational Battery Readiness Cluster score. (d) Concurrent criterion validity of PSF is .54 with the Woodcock-Johnson Psycho-Educational Battery Readiness Cluster score in the spring of kindergarten. (e) Concurrent criterion-validity of DIBELS NWF with the

Woodcock-Johnson Psycho-Educational Battery-Revised Readiness Cluster score is .36 in January and .59 in February of first grade (Good & Kaminski, 2002).

Methods

Early literacy skills in phonemic awareness can be measured using the DIBELS standardized assessment. The DIBELS Initial Sound Fluency Assessment or ISF (Appendix B) is a standardized measure of phonemic awareness that tests a child's ability to identify and produce the initial sounds of a word presented aloud (Kaminski & Good, 1996). In conducting this assessment, the tester provided a set of four illustrations and named each object depicted on a given page. After listening to the objects named, the student responded to the oral directive, "Point to the picture that begins with the sound, /f/." After reviewing all four of the illustrations provided, the student had the opportunity to point to and possibly name a response.

In addition to the skill of demonstrating the ability to identify the initial sound of a given word, the rate of the correct identification was also measured. The scores were converted into the number of correct initial sounds identified during one minute. The accuracy of the response and the fluency score were combined to determine the student's level of proficiency for the ISF score.

The ISF measurement, utilized for the purposes of this study, was collected a total of three times, beginning in the fall of the kindergarten year, midyear, and concluding in the spring of the kindergarten year. The assessment which evaluates learners' ISF was collected for both the experimental and control groups.

The DIBELS Phonemic Segmentation Fluency Assessment, or PSF (Appendix C), is a standardized measurement of phonemic awareness that evaluates the production of the individual sounds heard contained in a given word by individual students. A

student's ability to segment the three or four phonemes heard in each provided word, within a one minute time frame, was added to form a total number of sounds. For example, in the assessment of phonemic segmentation, the tester may have read, "Tell me the sounds you hear in 'step'." A student may have correctly responded with "/s/, /t/, /e/, /p/". Again, the rate and accuracy of the response determined the proficiency level achieved. This instrument was administered to each set of kindergarten students, a frequency of three times, in the winter and spring of the kindergarten year along with the fall of the first grade year.

The DIBELS Nonsense Word Fluency Assessment, or NWF test (Appendix D), is a standardized measurement of the alphabetic principle as well as the skill of phoneme blending. Inside the time frame of one minute, learners were asked to recognize sets of three letters arranged in a consonant-vowel-consonant pattern, apply the sound each letter represents, and read the letter sets as if they were real words. The nonsense word scores were based on the accuracy of the sounds students provide during the minute of assessment.

Words included in the NWF assessment may have resembled, "biz", "taf" or "juk" and the final score was once again gauged on accuracy and rate. This assessment was administered during the winter and spring of kindergarten and again in the fall of the first grade year.

The DIBELS Letter Naming Fluency Assessment, LNF (Appendix E), is a standardized test that rates the number of randomly arranged letters, both upper and lower case, read accurately inside one minute. This assessment was conducted at the three seasonal intervals during one year of kindergarten with the two groups of learners.

Teams comprised of three instructional support teachers, one speech pathologist, one learning support teacher, one administrator, two reading specialists, and one literacy coach were instrumental in conducting the assessments. The teams assessed learners individually with standardized, individualized measurements of their ability to identify letters (LNF), segment words (PSF), name individual phonemes (NWF), and identify initial sounds (ISF) through the DIBELS benchmark assessment, within a specific time frame. Performances were analyzed according to accuracy and rate. The assessors utilized stopwatches, DIBELS benchmark assessment booklets, and manuals. Testing to gather data occurred over one week intervals, three times during the kindergarten school year and once during the first grade year with the experimental group. The frequency of each individual assessment altered according to the DIBELS measurement. The study utilized data based on letter naming and initial sound fluency that were assessed three times throughout the school year. Phoneme segmentation and nonsense word fluency were measured at three intervals for the purposes of this study.

The data collected for the study were analyzed and interpreted against the established DIBELS benchmark measurements for instructional decisions. Student achievement was related to the norm for each skill; classroom teachers, working collaboratively with the literacy coach, then determined appropriate classroom groupings and instructional decisions based on individual phonemic awareness performances.

The qualitative data took the form of open-ended interview responses and notes. The actual interview was tape recorded and transcribed for accuracy and control of investigator bias. Manual open coding (Creswell, 1998) was used to segment specific information and to identify themes regarding the collaborative teaching experiences and

professional development sessions with the literacy coach. The investigator-constructed interview questions allowed the four kindergarten teachers participating to share their thoughts concerning what they valued and the changes they made as a result of the study. The information gathered by the researcher created a full portrayal of the teachers' experiences. An interpretive analysis identified trends common throughout the interview responses. The mixed-model research approach assisted in presenting a link between both quantitative and qualitative results.

Summary

Chapter Three described the methodological framework of this mixed-method study. The problem of this study was to examine the effects of data-driven instruction and literacy coaching on kindergartners' literacy development. Chapter Four will present the results of the study and will use data analysis to convey the results of data-based instructional decisions and literacy coaching for individual kindergarten learners' literacy success. Additionally, Chapter Four will also present findings, compare statistical evidence, and summarize both quantitative and qualitative information. Chapter Five presents a discussion of the results as related to previous research, limitations to the present study, as well as implications and suggestions for future research.

CHAPTER FOUR

DATA ANALYSIS

The problem of this study is to examine the effects of data-driven instruction and literacy coaching among kindergartners' literacy development. Chapter One outlined the productive use of assessment, data, and differentiated instruction in phonemic awareness. The educational practices of literacy coaching and collaborative teaching were also discussed within the first chapter. The reviewed literature in Chapter Two illustrated the use of data in determining instructional decisions and stressed the impact of teachers and literacy coaches working together toward improving student achievement. Chapter Three described the methodological framework of this study which included information on the research procedures, instrumentation, and data collection.

Results

The purpose of Chapter Four is to present the findings based on three research questions:

- (1) To what extent do kindergartners achieve success as a result of data-driven instructional decisions in literacy?
- (2) To what extent are the measurable effects on student learning a result of the daily collaboration of literacy coach and classroom teacher?
- (3) How do literacy coaches and kindergarten teachers use assessment data to inform instructional decisions?

To investigate these research questions, this chapter represents a mixed-method study which not only examines the student achievement data obtained from ongoing student

assessments in phonemic awareness, but also offers insights derived from classroom teachers involved in the literacy coaching experience.

Initially, the chapter will focus on the data findings for this study. The results of the quantitative analysis will identify comparisons in student achievement as a result of data-driven instruction between and within the groups studied. Quantitative data were collected, analyzed, and reported from 170 kindergarten students within this study. The students' pre-reading skills were assessed using subtests from the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) benchmark assessments. Over a period of one and a half years, DIBELS assessments were administered to measure student progress. Following the first year of study, the quantitative data derived from the two control groups and one experimental group were measured with a one-way analysis of variance (ANOVA) which compared the means of the mixed-effects models. The Statistical Package for the Social Science (SPSS), version 16.0.1, was used to conduct all statistical analyses. Repeated measures were analyzed and interpreted through SPSS to distinguish any statistical correlations between the control and experimental groups.

Additional quantitative data reported in this chapter will analyze the measurable effects on student learning as a result of collaborative teaching. The DIBELS assessments served as the basis for the data reports. An analysis of the scores provided the descriptive statistics needed to demonstrate findings.

Finally, the chapter will present an interpretive analysis of qualitative measures, including the results of interviews which provide data regarding collaborative practices between the literacy coach and classroom teachers. Collected during a one hour meeting with the four classroom teachers, the interview data were then manually transcribed and

coded. An interpretive analysis was conducted to categorize specific trends which are presented within Chapter Four.

The foundation for this research asserts there is a correlation between student achievement in literacy and data-driven instructional decisions. Further, the research is based on the premise that there may be a correlation between student achievement in literacy and the collaborative efforts between classroom teachers and literacy coaches.

The research questions will be examined through both quantitative and qualitative methods. The study presents an analysis of quantitative data derived from three DIBELS benchmark assessments (Table 4). The data retrieved from initial sound fluency (ISF), letter naming fluency (LNF), phoneme segmentation fluency (PSF) and nonsense word fluency (NWF) assessments answer the first and third research questions regarding the impact of data-driven instructional decisions on student achievement and the impact of collaborative teaching on student learning. Statistical comparisons are presented through frequencies, means (average scores), and percentages. The data were analyzed statistically through one-way ANOVA to identify raw scores; and SPSS to compare data within and among groups.

Table 4

Quantitative Assessment Timeline

October	January	April	November
LNF ISF	LNF ISF PSF NWF	LNF PSF NWF	PSF NWF

Qualitative efforts evaluate the correlation between the collaborative process and student achievement. The qualitative research investigates the second research question regarding the measurable effects on student learning as a result of daily collaboration between a literacy coach and classroom teachers. In-depth, structured interviews with the classroom teachers captured insights regarding how and why teachers made data-based instructional decisions. The interview also outlined the factors that influenced implementation. Distinct patterns and trends emerged from the interview.

Data Analysis

For the purpose of this study, student data were accessed through the DIBELS database to provide a statistical presentation of student achievement. Reports were generated within the DIBELS database for the control and experimental groups. The quantitative data derived were measured with a one-way ANOVA, the analysis of variance which compared the means of the mixed-effects models.

Repeated measures were analyzed and interpreted through SPSS to distinguish any statistical correlations between the control and experimental groups. The criterion for significance tests for all null hypotheses was set at $p = .05$. Analyzing the quantitative data using the ANOVA and the SPSS compared the means among the two groups, thus allowing for extensive data query.

Quantitative research as described by Lyon and Chhabra (2004), “attempts to answer questions about ‘what causes what’. To draw reliable inferences about cause and effect - for example, to determine whether a particular instructional approach produces significant gains in reading achievement...” (p. 13). For the purpose of this study, the quantitative research is presented through a causal comparative method. The quantitative

research was intended to demonstrate the implications of differentiated, data-driven instruction and collaborative teaching methods on student achievement. Specific assessment measurements offer data to form correlations among phonemic awareness skills between two groups of kindergarten students.

Interview data were also collected and analyzed following a one hour meeting with the four classroom teachers involved in the experimental group (Appendix F). Responses to open-ended questions were recorded on a cassette recorder and documented by hand for qualitative purposes in researching both data-driven instruction and the collaborative model experienced between literacy coach and classroom teachers. The teachers' statements were collected and examined for trends or emergent themes through interpretive analysis. Attempts were made to synthesize information gathered, highlighting any specific, common trends in their responses. Manually coding was used to represent the major trends, significant to the research. According to Patton (2002), the quality of insights generated through research is what matters, not the quantity of such insights. The anecdotal comments, taken verbatim, were cross-case analyzed and used to generate conclusions.

Quantitative Analysis of the Findings

Nine kindergarten classrooms, residing in three elementary schools, were chosen and the associated faculty agreed to participate in this study. Among the schools participating, two schools constituted the control groups and one school participated in the role of the experimental group. The five classrooms that formed the two control groups participated in the yearly assessment measurements, but did not receive daily interaction with instructional assistance from a literacy coach. The experimental group,

consisting of four kindergarten classrooms, participated in the yearly assessment procedures and accepted the assistance of a literacy coach who encouraged data-driven instructional practices throughout a school year. All nine kindergarten classroom teachers practiced early literacy instruction in the area of phonemic awareness and participated in the three assessment procedures.

The Kindergarten DIBELS Benchmark Assessments were chosen to measure the phonemic awareness skills within all three groups of students. For the purpose of this study, the assessment data were utilized in response to the following two research questions: To what extent do kindergartners achieve success as a result of data-driven instructional decisions in literacy? To what extent are the measurable effects on student learning a result of the daily collaboration between literacy coach and classroom teacher? Statistical data were organized and compared for the purpose of answering the questions during three different intervals.

Three schools, representative of 170 kindergartners, participated in the measurements of phonemic awareness. The two control groups (Schools 1 and 2), represented roughly 95 kindergarten students and participated in three DIBELS benchmark assessments throughout one school year to measure ISF, LNF, PSF and NWF. The experimental group (School 3) consisted of approximately 75 kindergarten learners and also participated in the measurements of the three DIBELS benchmark assessments. The sets of scores, derived from the three elementary schools, representing both the control and experimental groups, were compared utilizing the causal comparative method.

Achievement as a Result of Data-Driven Instructional Decisions in Literacy

The first research question addresses the query: To what extent do kindergartners achieve success as a result of data-driven instructional decisions in literacy? To answer this question, a one-way ANOVA was conducted to determine if differences existed between the schools studied. In order to compare the year-long achievement results of the learners, the initial data collection was compiled in the fall of the kindergarten year, prior to any influence from data-driven instructional decisions or collaboration with the literacy coach.

The first assessment conducted in phonemic awareness measured ISF to determine a child’s ability to isolate individual phonemes, specifically the consonant sounds found at the beginning of words. Table 5 presents a comparison between and within the three schools examined for their awareness of ISF, the first of two skills assessed in the fall.

Table 5

Descriptive Statistics for the Independent Comparison Groups (Fall)

School	Phonemic Awareness Measurement	N	Mean	SD
1	ISF	37	14.90	10.29
2	ISF	58	15.70	8.69
3	ISF	75	17.50	10.09

The data illustrate the descriptive statistics for student achievement in the assessment of ISF prior to the influence of data-driven instruction or the collaboration of

a literacy coach. Both Schools 1 (N = 37 students) and 2 (N = 58 students) represent control groups; School 3 (N = 75 students) constitutes the experimental group. In School 1, a set of kindergartners within one of the two control groups, demonstrated the lowest average score, or mean (14.90) in ISF. Results for the experimental group, School 3, indicated the school with the highest mean (17.50). Thus, at the onset of the assessment measurements, the experimental group exhibited the highest overall skill level for ISF in the fall of the kindergarten year.

Additional results reveal the statistical significance between and within the groups measured. A one-way ANOVA was conducted in the fall to test the equivalency of ISF scores among the three groups - the two control groups and the one experimental group. Data are presented in Table 6.

Table 6

Summary of ANOVA Results on Initial Sound Fluency (Fall)

Score	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	201.32	2	100.66	1.07	.35
Within Groups	15682.13	167	93.91		
Total	15883.45	169			

The *F*-ratio from the ANOVA was not significant ($p > .05$). The calculated *p* value of .35 is more than the alpha of 0.05. This is consistent with the means presented in Table 5.

The phonemic awareness skill of LNF was also measured in the fall of the kindergarten year. All three groups of students were measured, using the DIBELS

benchmark assessments, to determine their rate and accuracy level in naming upper and lowercase alphabet letters. Table 7 depicts the data gathered.

Table 7

Descriptive Statistics for the Independent Comparison Groups (Fall)

School	Phonemic Awareness Measurement	N	Mean	SD
1	LNF	37	28.80	14.80
2	LNF	58	29.69	15.90
3	LNF	75	28.09	15.30

The data indicate the lowest mean (28.09) was represented by School 3, while the highest mean (29.69) was achieved by School 2. The table reflects an initial measurement of LNF in which the experimental group projects the lowest mean. The fall assessments were conducted, collected, and analyzed prior to the implementation of data-driven instruction and the collaboration of a literacy coach.

Table 8 demonstrates a summary of the ANOVA results regarding LNF between and within the groups assessed.

Table 8

Summary of ANOVA Results on Letter Naming Fluency (Fall)

Score	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	83.74	2	41.86	.18	.84
Within Groups	39618.37	167	237.24		
Total	39702.11	169			

The table demonstrates the *F*-ratio was not significant ($p > .05$) with a *p* value of .84. These data support the mean results displayed in Table 7.

Following the first DIBELS benchmark assessment, professional development coaching/mentoring began between the literacy coach and the classroom teachers within the experimental group. Ongoing professional development sessions included information and assistance with the application of informal assessments and data to drive instructional decisions, develop phonemic awareness skills in kindergartners, and practice differentiated instructional strategies in the kindergarten classroom.

The classroom teachers received before, during, and after school professional development sessions, as well as daily classroom-based collaboration and modeling opportunities with the literacy coach. Through shared discussions, classroom-based lessons, and a variety of informal assessments, this collaboration reinforced the professional development topics.

The core literacy curriculum of the experimental group incorporated instruction supportive of phonemic awareness and alphabetic principle skills. Collaborative time integrated individual, small, and whole group instruction with students. The data-driven instructional decisions catered primarily to identified sets of learners scoring at or with some level of risk, determined as a result of the DIBELS benchmark assessments measuring ISF and LNF which had been administered in the fall.

ISF skills were reinforced with songs, chants, and sound activities supportive of the first sound heard in words. The lessons reinforced concepts such as initial sound discrimination and matching. Children distinguished between objects with varying initial sounds, recognized sound patterns, and matched the beginning sounds portrayed in

pictures with the associated objects. ISF skills were developed through individual and small group learning experiences. Ongoing assessments measured progress, and data from the assessments assisted in constructing instructional decisions and groupings.

LNF skills were developed via shared reading experiences, letter charts or card readings with a partner, and alphabet books, along with upper and lowercase letter matching games. The coach and teachers implemented instructional approaches compatible with the data collected to address individual or group needs. Needs-based groups were determined by evidence derived from ongoing assessments. LNF was developed in varying, flexible groups of students identified to benefit from differentiated instruction.

Prior to the second DIBELS assessment, students in the experimental group received whole and small group as well as individualized instruction in the area of phonemic awareness which incorporated ISF and LNF development. Students in the control group also received ISF and LNF instruction through literacy activities in a whole group, but not in a small group or individualized setting and without the assistance of a literacy coach.

Table 9 illustrates the descriptive statistics for student achievement in ISF skills collected during the winter assessments of the kindergarten year. With the influence of data-driven and collaborative instruction, students in the experimental group were assessed to determine their progress in literacy. Students in the control groups also received phonemic awareness instruction in tandem with the DIBELS assessments. The second assessment results regarding ISF can be found within Table 9.

Table 9

Descriptive Statistics for the Independent Comparison Groups (Winter)

School	Phonemic Awareness Measurement	N	Mean	SD
1	ISF	39	27.70	10.69
2	ISF	58	29.59	13.40
3	ISF	76	33.60	14.49

The lowest average (27.70) indicates School 1, a control group exhibiting the lowest skill level in ISF. School 3, the experimental group, reflects the highest average (33.60) with ISF. All groups demonstrated progress in the area of ISF, while the lowest and highest mean remained consistent with the initial fall assessment. Table 10 demonstrates the *F*-ratio among the three groups.

Table 10

Summary of ANOVA Results on Initial Sound Fluency (Winter)

Score	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Between Groups	1051.37	2	525.68	2.94	.06
Within Groups	30354.34	170	178.56		
Total	31405.71	172			

The calculated *p* value of .06 is slightly more than the alpha of 0.05. The results of the ANOVA represent a slight difference between the three sets of kindergarten

students during the second of three assessments in ISF. The experimental group once again demonstrates a slight advantage over the control groups in the assessment process regarding the area of ISF.

The second assessment conducted in all three schools regarding LNF is illustrated in Table 11. The first assessment revealed the lowest mean among the experimental group in the skill set of LNF. Table 11 demonstrates an alternative finding.

Table 11

Descriptive Statistics for the Independent Comparison Groups (Winter)

School	Phonemic Awareness Measurement	N	Mean	SD
1	LNF	39	47.29	12.10
2	LNF	58	43.09	15.70
3	LNF	76	45.69	13.50

In the skill set of LNF, once again, both the lowest and highest means are represented by the control groups. It is important to note, however, that the mean scores are much higher at the mid-year point for all groups involved. The experimental group reflected a mean of 28.09 within the fall assessment and the winter measurement demonstrated a mean of 45.69, indicating achievement.

Table 12

Summary of ANOVA Results on Letter Naming Fluency (Winter)

Score	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Between Groups	446.76	2	223.38	1.14	.32
Within Groups	33282.59	170	195.78		
Total	33729.35	172			

Table 12 indicates that the *F*-ratio from the ANOVA was not significant. The calculated *p* value of .32 is more than the alpha of 0.05 ($p > .05$).

The winter assessment procedures included two additional measurements regarding kindergartners' literacy achievement; PSF and NWF were added to the previous evaluations of kindergartners' early literacy skills. Phoneme segmentation is a student's ability to segment three and four phoneme words into individual phonemes. The PSF measure has been found to be a good predictor for later reading achievement (Kaminski & Good, 1996). The PSF results of the three groups are denoted in Table 13.

Table 13

Descriptive Statistics for the Independent Comparison Groups (Winter)

School	Phonemic Awareness Measurement	N	Mean	SD
1	PSF	39	35.30	9.29
2	PSF	58	26.29	14.39
3	PSF	76	54.20	10.90

In the skill set of PSF, the lowest recorded mean of 26.29 is represented by School 2, a control group. The highest mean of 54.20 is displayed by School 3, the experimental group. This assessment measurement demonstrates the first display of significant differences between the groups as indicated in Table 14.

Table 14

Summary of ANOVA Results on Phoneme Segmentation Fluency (Winter)

Score	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	27013.75	2	13506.87	95.61	.00
Within Groups	24016.81	170	141.28		
Total	51030.56	172			

Among the winter assessment data, the p value is less than the F -ratio ($p < .05$). A statistical significance between the experimental and the control groups developed in the skill set of PSF.

The winter assessments provided a fourth and final measurement in phonemic awareness during the kindergarten year. As stated in Chapter Three, NWF is measured

with the students' application of letter sounds blended together to read a nonsense word aloud that doesn't make sense, but has three phonemes. For example, a word that resembles, "nix" or "peb" is read aloud and measured for accuracy and rate. All three groups were assessed in NWF. The results are noted in Table 15.

Table 15

Descriptive Statistics for the Independent Comparison Groups (Winter)

School	Phonemic Awareness Measurement	N	Mean	SD
1	NWF	39	35.19	12.40
2	NWF	58	27.80	17.89
3	NWF	76	33.70	21.49

The lowest mean in NWF during the winter assessment was determined by School 2 (27.80). The highest mean (35.19) was also held within the control group by School 1. Once again, the experimental group did not score the highest or lowest mean for the assessment. Table 16 represents a supportive analysis.

Table 16

Summary of ANOVA Results on Nonsense Word Fluency (Winter)

Score	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1641.26	2	820.63	2.37	.10
Within Groups	58774.67	170	345.73		
Total	60415.93	172			

A one-way ANOVA was conducted in the winter to test the equivalency of NWF among the three groups. The F -ratio from the ANOVA was not significant ($p > .05$). The calculated p value of .10 is more than the alpha of 0.05.

The variables of data-driven instruction and literacy coaching did not demonstrate overall statistical differences between the two groups. The effects on the experimental group were not significant. At the conclusion of the second of three assessments, it is important to highlight the progress achieved by each group.

School 1, among the control groups, demonstrated an improvement in student achievement in ISF. In the fall assessment, the mean determined was 14.90. The winter assessment results revealed a mean of 27.70 for School 1. School 2 also exhibited progress in the skill set of ISF between the fall and winter assessment. Means ranged from 15.70 to 29.59 respectively. The experimental group, School 3, achieved improvement in the assessment of ISF as well. In the fall, the mean revealed was 17.50. The ISF mean in the winter assessment for the experimental group almost doubled with a result of 33.60.

In the LNF skill set, the control group represented by School 1 progressed from a mean of 28.80 to 47.29 between the two assessment periods. Likewise, the second control group, School 2, advanced from a mean reflecting 29.69 in the fall, to 43.09 by the winter assessment. School 3, the experimental group, also exhibited student achievement in the awareness of LNF between the two assessment periods. In the fall, School 3 earned a mean of 28.09 and by spring had produced a mean of 45.69.

Following the second benchmark assessments in phonemic awareness, the coach reviewed and shared the results with the classroom teachers in the experimental group.

Subsequent to the first benchmark assessment, treatment through instruction was based on decisions made as a result of the data. Following the second assessment, instructional choices were determined with a higher intensity focused on recognizing individual needs. At-risk students received greater individualized attention in the classroom setting.

The teachers of the control group did not alter instruction in working with phonemic awareness and early literacy skills. At-risk learners continued to be removed from the classroom for remedial services from Title I reading specialists within a small group setting. The four classroom teachers within Schools 1 and 2 examined the data derived from the mid-year assessment, yet did not explicitly apply it for instructional purposes.

Conversely, the teachers of the experimental group identified learners at-risk and provided not only small group and individualized attention, but also differentiated instructional techniques which included multisensory learning experiences. In the skill set of LNF, children were afforded additional opportunities in working with letters through kinesthetic experiences. The visual and auditory experiences that had been afforded prior to the second assessments continued, however, the inclusion of tactile learning supports including use of shaving cream, sand trays, paint, and markers to form letters became a priority. It was assumed that the population of students making little gain needed differentiated instruction beyond the linguistic, musical, and visual experiences. Applying tactile learning strategies with the struggling learners assisted in further developing early literacy skills. The coach modeled multisensory approaches and provided professional development accordingly.

Assistance in PSF also occurred on a more individualized basis with differential opportunities. Kinesthetic learning included hopping and clapping movement in tandem with sounds. Students were educated through a variety of sensory techniques to identify the individual phonemes heard within words.

NWF instruction occurred through shared reading experiences with books supportive of whimsical and rhyming words. Children were encouraged to apply letter-sound relationships throughout the day, enabling integrated learning experiences in all subject areas. Multisensory approaches encouraged kinesthetic learning through jumping games with letter and sound focus along with linguistic opportunities involving the segmentation and blending of words.

The development and delivery of ongoing performance tasks provided evidence of student learning. Data obtained as a result of the formative assessments were utilized to develop instructional plans and groupings. Professional support and learning opportunities, including intensive instruction in phonemic awareness, were offered by the literacy coach. The focus of professional learning expanded from data-driven instruction, student-based instructional decisions and differentiated instruction to specific literacy learning in the area of early reading skills.

The final assessment period for all three groups occurred in the spring of the kindergarten year when LNF, PSF, and NWF were all measured. ISF was not assessed as a result of the DIBELS availability and developmental progress among kindergartners.

An examination of Table 17 reveals the final student achievement analysis in the assessment of LNF.

Table 17

Descriptive Statistics for the Independent Comparison Groups (Spring)

School	Phonemic Awareness Measurement	N	Mean	SD
1	LNF	39	52.79	14.00
2	LNF	58	46.89	15.29
3	LNF	73	52.99	11.60

Table 17 demonstrates the lowest mean (46.89) in LNF among School 2. The highest mean (52.99) was recorded within the experimental group. The results depict an improvement in LNF for each of the groups involved in the study, however, the experimental group demonstrated the highest gains. Table 18 further denotes the achievement within the experimental group.

Table 18

Summary of ANOVA Results on Letter Naming Fluency (Spring)

Score	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1390.48	2	695.24	3.81	.02
Within Groups	30479.49	167	182.51		
Total	31869.96	169			

A one-way ANOVA was conducted in the spring to test the equivalency of LNF among the three groups. The F-ratio from the ANOVA displayed significance ($p < .05$). The calculated p value of .02 is less than the alpha of 0.05.

The skill set of PSF also denotes significant gains for the experimental group during the final assessment period. The experimental group results demonstrated a significant difference among all three groups of kindergartners as illustrated in Table 19.

Table 19

Descriptive Statistics for the Independent Comparison Groups (Spring)

School	Phonemic Awareness Measurement	N	Mean	SD
1	PSF	39	49.39	7.10
2	PSF	58	38.89	12.70
3	PSF	73	62.80	10.99

School 3 achieved the highest mean among the three schools measured in PSF with 62.80. The two control groups fell below, with the closest mean depicted by School 1 at 49.39 and the lowest mean documented for School 2 with a measurement of 38.89.

Table 20 further supports the data.

Table 20

Summary of ANOVA Results on Phoneme Segmentation Fluency (Spring)

Score	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18701.90	2	9350.95	78.78	.00
Within Groups	19821.28	167	118.69		
Total	38523.18	169			

The experimental group demonstrated favorable results following the ANOVA. The *F*-ratio ($p < .05$) was significant with a *p* value of .000 among the skill set of PSF.

Descriptive statistics illustrate the final assessment in NWF among the three schools. The experimental group once again demonstrated significant achievement gains.

Table 21 identifies the results depicted for NWF.

Table 21

Descriptive Statistics for the Independent Comparison Groups (Spring)

School	Phonemic Awareness Measurement	N	Mean	SD
1	NWF	39	40.99	12.80
2	NWF	58	29.60	17.09
3	NWF	73	49.50	19.09

In the assessment of NWF, the highest mean (49.50) was depicted by School 3. The lowest mean (29.60) was represented by School 2. Therefore, School 3 outperformed the two control groups in the phonemic awareness skills measured in the spring of the kindergarten year. Table 22 provides additional data to support the results regarding the skill set of NWF.

Table 22

Summary of ANOVA Results on Nonsense Word Fluency (Spring)

Score	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12802.37	2	6401.18	21.75	.00
Within Groups	49159.28	167	294.37		
Total	61961.65	169			

The third and final skill set measured among the three groups revealed the F -ratio from the ANOVA was significant ($p > .05$). The assessment of NWF displayed the calculated p value of .00 is less than the alpha of 0.05.

The statistical comparison established significant findings in the April benchmark assessment with regard to phonemic awareness improvement among the experimental group. The effect of collaborative, data-driven teaching experiences enabled the learners within the experimental group to perform higher than the control groups in LNF, PSF, and NWF. At mid-year, the statistics were not significant among the groups.

Student Learning as a Result of Daily Collaboration Connecting a Literacy Coach and Classroom Teachers

The second research question addresses: To what extent are the measurable effects on student learning a result of the daily collaboration of literacy coach and classroom teacher? To answer this question, an analysis of the experimental group was completed through additional DIBELS assessments. Further research data were compiled to determine residual effects and instructional sustainability by removing the collaborative, data-driven teaching environment that occurred throughout the year of study.

Within a period of six months following the kindergarten school year, the experimental group had experienced a summer with an absence of classroom-based learning and the benefits of data-driven instruction. Also, during that time the students not only incurred a natural period of growth and development, but may have also acquired many new literacy skills and strategies. In an effort to identify the levels of achievement maintained, nonsense words and phonemic segmentation fluency levels

were to be measured among only the first grade students who had participated in the experimental group during the kindergarten year. The control groups were not assessed utilizing DIBELS assessments during the first grade year due to alterations in both staff and district initiatives.

The DIBELS performance indicators are based upon a longitudinal predictive probability of achieving the next goal. The benchmarks are set with an indication of students achieving the next benchmark goal or a probability of need for instructional support in achieving the next goal. For example, students achieving at benchmark status at the end of the kindergarten year, based on the DIBELS predictors, have a greater than .80 probability of achieving the benchmark goal in first grade (Kaminski, 2007).

However, consideration was given to the absence of the involvement of the literacy coach within the first grade classroom. The collaboration and professional development that occurred regarding decisions with data, instructional grouping, ongoing formative assessments and differentiated instruction were not maintained within the first grade year. As a result, it was anticipated that although the students had a strong foundation in early literacy skills, a decline might incur in overall student achievement. With the removal of data-driven instructional decisions and literacy coaching variables, the benchmark assessment progress in NWF and PSF may be significantly altered. The fall of first grade assessment results are reflected in Table 23.

Table 23

First Grade DIBELS Benchmark Assessments

Measurements	Kindergarten Assessments (April results)	First Grade Assessments (October results)
NWF	95% (at or above benchmark goal of 25 sounds each minute)	80% (at or above benchmark goal of 24 sounds each minute)
PSF	91% (at or above benchmark goal of 35 sounds each minute)	62% (at or above benchmark goal of 35 sounds each minute)

Based on the understanding that any student achieving at or above the benchmark indicates an 80% probability of achieving the next goal (Kaminski, 2007), the statistical comparisons between the spring of the kindergarten year and the six month period of growth were significant. Students at or above benchmark levels declined from 95% to 80% with NWF skills, demonstrating a difference of 15% among the experimental group's population. It is significant to note the benchmark performance indicator rested at 25 sounds correct per minute in the end of the year kindergarten assessment and is set similarly, in the initial first grade benchmark goal with 24 sounds correct per minute. Despite the fact that the assessment data system does not reflect an increase in the benchmark goal following the six months of growth, students did not even maintain their level of achievement.

In the skill set of PSF the difference represented an even higher statistic, with a 29% decline in student achievement. With a consistent benchmark of 35 sounds correct

per minute in both the spring of kindergarten and fall of first grade assessments, the effects were significant.

Overall Quantitative Conclusions

Evaluating the measurable effects on student achievement as a result of both data-driven instruction and collaborative work between a literacy coach and classroom teachers produced some interesting data. The initial one-way ANOVA identified that no significant differences existed between groups in the fall among the skill areas, including ISF and LNF. By the winter assessment, performances among the kindergartners had improved. However, the mid-year scores did not support the hypotheses for the experimental group. Data-driven instructional decisions and collaboration with a literacy coach did not necessarily demonstrate an impact on student achievement scores in literacy.

The statistics presented in Tables 5–22 reveal a comparison that can be attributable to the variables that exist between the two groups of learners. A mean comparison, however, demonstrates the conclusive achievement results. In the skill area of ISF, the control group consisting of kindergartners from School 1 progressed from a mean of 14.90 in the fall to 27.70 by the mid-year assessment. School 1 also achieved progress in LNF, revealing means developing from 28.80 (fall) to 47.29 (winter) to 52.79 (spring). Additionally, School 1 improved performances in PSF, reflecting a mean of 35.30 in the winter and 49.39 by the spring. Finally, School 1 exhibited gains in NWF with a mean of 35.19 measured in the winter assessment and 40.99 in the spring.

School 2, a control group school, made progress in all areas measured as well. ISF measurements displayed advancements in the means from 15.70 (fall assessment) to

29.59 (winter assessment). Assessments in LNF also demonstrated improvement for School 2. The mean progressed from a fall measurement of 29.69 to a winter mean displaying 43.09. By spring, the mean reported was 46.89. In the skill set of PSF, School 2 made additional increases in the mean average from 26.29 (winter) to 38.89 (spring). The final assessment for School 2 demonstrated slight steps forward in NWF from the winter to spring assessment periods when the mean altered from 27.80 to 29.60, respectively.

The educational experience within the control groups reflected whole group instruction. Pedagogy involving differentiated, small groups, or data-driven instruction was not accommodated throughout the school year. Moreover, a literacy coach was not made available to the faculty or student populations in both buildings due to a district decision. As a result, the overall student achievement in literacy did not attain the progress depicted by the experimental group.

The experimental group from School 3 conversely revealed improvements in phonemic awareness skills throughout the year. The distinction between groups, however, can be attributed to significant gains made as a result of data-driven instructional decisions and collaborative instruction. School 3 demonstrated a mean of 17.50 in the fall assessment regarding ISF. The group progressed to 33.60 by the winter assessment. In the assessment of LNF, the experimental group improved from a mean of 28.09 (fall assessment) to 45.69 (winter assessment). The final mean rested at 52.99 (spring). Assessments in PSF also demonstrated gains from 54.20 to 62.80 from the winter to spring data. Finally, School 3 exhibited a mean of 33.70 in the winter assessment that progressed to a mean of 49.50 by the spring in NWF.

The secondary results, revealed during the fall of the first grade year, also provide information regarding the achievement of kindergartners with regard to collaborative efforts. Once the variables of data-driven instruction and literacy coaching were removed, the students' success in the area of phonemic awareness did not demonstrate progress. Literacy progress declined in PSF and NWF among the experimental group.

Qualitative Analysis of the Interview

A structured interview was conducted with each of the four kindergarten teachers who participated in the experimental group (Appendix F). The interview provided qualitative data based on the teachers' responses with regard to the second research question: How do literacy coaches and kindergarten teachers use assessment data to inform instructional decisions?

Literacy Coaches and Kindergarten Teachers Working with Assessment Data to Inform Instructional Decisions

The interview began with introductions and mention of basic interview guidelines. Participants were informed that they would be asked a series of questions relating to data-driven instruction in the area of phonemic awareness, literacy coaching, collaborative teaching and professional development. The interviewer remained silent while the participants responded to each question. If the participants hesitated or requested clarification, the question was repeated or a prompt was offered by the interviewer.

All four teachers interviewed were professional with their responses, demonstrated interest in participating in the interview process and had a clear understanding of each question. Each of the teachers agreed to be audio recorded and

provided contact information in the event that further clarification might be needed. Pre-determined themes for the content of the interview questions are illustrated through the headings found below.

Professional Experience and Education

The participants responded to the first two interview questions, “How many years have you taught kindergarten?” and “Can you describe the post-secondary education and training requirements you have experienced?” Among the teachers, their years of experience in the elementary classroom averaged thirteen and one half years. The range of teaching time for all four teachers fell between three and twenty-five total years of experience. Their combined experience teaching kindergarten averaged eight years.

(Table 3-2)

All four of the kindergarten teachers had attained bachelor degrees. Two of the participants had also earned a number of professional learning credits through a local university. Each participant shared past attendance at a number of local and state-wide conferences highlighting developmentally appropriate practices, early literacy instruction, children’s literature, and classroom learning centers. Additionally, the teachers reported having attended several yearly professional development sessions offered within their school district by local educators. The teachers’ overall participation in conferences and professional development sessions averaged 15 experiences, to the best of their recollection.

Professional Growth

Question three related to professional learning and change; “Do you think the demands in your career will increase or decrease over the next five years? Why?”

Responses were consistent throughout the group with all four of the teachers agreeing that more professional learning experiences will be required. One participant expressed her belief that master degrees would become a requirement of new teachers. She stated:

I believe that over the next five years teachers will have to earn master's degrees and become experts of either primary or intermediate grades. I am aware of certifications shifting among universities to K-2 and 3-6 models. I feel that teachers will have to choose a focus and become master teachers of specific ages and developmental levels. (Teacher 1)

The participants all realized the importance of college preparation for new teachers and related it to their own experiences in the classroom. Two of the four felt sufficiently prepared in teaching young children to read from their college preparation. The other two teachers felt that their college preparation programs in undergraduate school did not prepare them entirely for the demands of teaching kindergartners. One of the two who felt ill-prepared in early literacy instruction related her feelings toward the question by stating:

I think that to meet the demands of the children I am teaching I need to further educate myself. I need to understand the emotional, social and developmental stages of my children. After experiencing the year of collaboration in kindergarten, I realize that I have a lot of learning to do. In order to meet the early literacy needs of my students, I need to fully appreciate emergent and early literacy behaviors and expectations. (Teacher 3)

Overall, the participants agreed that they believe demands in their career will increase during the next five years. Each expressed excitement about the professional

development opportunities becoming increasingly available in their own school district. Before, during, and after-school professional development sessions were offered at the time of the interview. Three of the teachers cited the availability of and access to the district literacy coach and curriculum director for professional development purposes. They commented favorably on the fact that increasing demands were matched with an increase in opportunities for professional growth.

Question four directly related to the discussion, “What changes have you seen over the past five years in this occupation?” The teachers collectively cited the No Child Left Behind Act (NCLB, 2001) legislation. According to the group, in an era of high stakes assessments, Responses to Intervention (RTI), and inclusionary practices, teachers are growing increasingly responsible for progress and differentiated instruction. One teacher responded:

With NCLB I feel such a pressure to educate myself. I need to know the different assessment tools available and the procedures needed to conduct them. I need to understand the RTI process and become better in collecting the adequate paperwork for referrals. I need to learn about how to develop accommodations and modifications needed for many of my students. I need to enhance my gifted kids and support my struggling students while demonstrating AYP among all of the students in my room. With NCLB, the demands are increasing every day. I can't imagine what they will be in five years! (Teacher 3)

Another reaction noted similar feelings saying:

I am fairly new to kindergarten and while I have manuals and a general awareness of child development, I feel as though I have almost too much to learn. It seems to

me that with all of the federal and state changes, every teacher is going to struggle with feeling competent no matter how many years they have taught at a certain grade level. (Teacher 2)

Participants expressed their concerns over the changes that have been made on behalf of school, district, and statewide progress over the last five years. The teachers believed that many of the curriculum demands assessed in third grade have trickled down into the kindergarten year. One teacher remarked:

Our students just don't have a chance to play and grow in the classroom like they used to. We are constantly teaching curriculum. We don't have time to play or work on social skills like we did in the past. In the last five years, I feel as though we have brought the first grade curriculum to the kindergarten classroom and our children just aren't ready to learn what the state is requiring of them. I have kids ready for a nap at noon, not book handling skills. Developmentally appropriate practices in the classroom seemed to have been tossed out when NCLB came in.

(Teacher 4)

Collaboration with a Literacy Coach

Question five related to the impact of the literacy coach, "What was your initial impression about having the literacy coach involved in your instructional decisions? Were you a willing participant in the experience?" All four teachers discussed their willingness to become involved in the collaborative teaching year. They agreed that their initial responses were positive toward a literacy coach working in partnership with them on behalf of student achievement. One of the teachers articulated:

In kindergarten it is always great to get another set of eyes and ears on my students. Particularly in the fall, it is an asset to have another professional evaluating and coming to know my students. The children can be a handful when they begin kindergarten. I really looked forward to having another teacher in the room to assist me. (Teacher 1)

Another added:

I was confident that the literacy coach would have good ideas and could help me in creating a climate for learning early in the school year. I was looking forward to the co-teaching element. What I underestimated was her ability to assist me with instructional decisions for every child. The literacy coach was able to identify struggling students immediately and offered good advice. My initial impression involved the realization that I, as well as my students, would learn as a result of having her time in the classroom. (Teacher 3)

One teacher cited a specific example:

After learning that I had two students entering my kindergarten classroom able to read, one student with autism, and three students diagnosed with ADHD, I was very concerned about my ability to meet all of their needs. It was very reassuring to know that the literacy coach would help me not only assess, but also develop instructional decisions for my diverse group.

(Teacher 2)

Data-Driven Instructional Decisions

Question six asked, “To what extent did you practice data-driven instruction prior to the coach’s role in your classroom?” Two of the teachers stated the district adopted

reading program led their instructional decisions. The other two teachers responded that the standards-based district curriculum drove their instruction. While each teacher confirmed the use of a number of summative and formative assessments throughout the school year prior to the year of study, not one of the four utilized flexible groupings or differentiated instruction driven by data. One of the teachers explained:

In the past, if I assessed my students in shoe tying and one of them could not tie a shoe, I remediated with that individual child when I had time or had a sixth grader visit and practice the skill with my student. After a year of forming data-driven instructional decisions, I realize the need to identify individual or small groups of students and recognize their specific instructional needs. With data, I can acknowledge the need for one or more students, form a small group, and teach to the skill using multisensory learning.

(Teacher 3)

Another participant shared:

I really didn't pay that much attention to the district-wide assessment results in other school years. I knew what skills would be measured and made sure I reviewed the concepts prior to their testing. The students that scored poorly were admitted into Title I for remedial reading services. The results of the assessments weren't necessarily my concern in the classroom. I would say I practiced little, if any, data-driven instruction, especially in the area of phonemic awareness.

(Teacher 1)

After the results of this question were compiled, the common understanding was that although practiced to some degree, data-driven instructional decisions were rarely

determined for individuals or small groups within the kindergarten classroom. State expectations to cover specific curriculum objectives challenged the time which the educators could spend on specific skills in the classroom. The teachers expressed their reliance on the remedial reading services, afforded through Title I, to address the ongoing challenges among the varying at-risk population.

Professional Growth with a Literacy Coach

“What, if anything, did the literacy coach bring to your understanding?” was the seventh question posed to the classroom teachers. The conversation among the four teachers generated a list of skills brought to their understanding as a result of the literacy coach. They discussed the development of their general understandings toward the relevance of data-driven instruction, the need for student-driven instruction, the role of DIBELS assessments and procedures, the strategies in teaching phonemic awareness skills, the continuum of a reader, early literacy skills, the need for small group and differentiated instruction, and the components of balanced literacy. One teacher shared:

Before the literacy coach began working with me I believed that our reading program had all of the answers to my literacy questions. Now I realize that each child requires a different set of answers and I need to use a lot of resources and techniques to help me find ways to reach each student. (Teacher 1)

Another expressed:

Balancing literacy in the classroom requires me to get to know the needs of my students individually and collectively. I need to teach responsively in order to facilitate progress among my students. If I use data, different teaching techniques

and resources, and ask for help, I am able to reach out to my students with educated answers. (Teacher 4)

All of the teachers felt stronger in teaching early literacy skills as a result of the year spent collaborating with the literacy coach. While each teacher recognized her knowledge and experience in teaching kindergartners, they also acknowledged the additional understandings that a reading specialist with a focus in literacy had to offer. A participant explained:

I had no idea that phonemic awareness skills played such an important role in early literacy. I had always taught the letters and their sounds at the same time and wondered why some children struggled with letter sounds. After the year together I felt supported in phonemic awareness and the continuum that needs my attention. Now that I understand the importance in developing phonemic awareness, I can give my kids a stronger foundation in reading. (Teacher 2)

Teacher Involvement in Data-Driven Instructional Decisions

Participants responded to the eighth interview question, “To what extent were you involved in the data-driven instructional decisions for your students?” Mixed responses were elicited from the teachers. One teacher stated that the literacy coach determined all of her instructional groupings. She replied that finding time to review ongoing assessment data analytically was a challenge. Thus, she relied on the literacy coach for the decisions regarding instructional strategies and groupings, especially early in the year.

Another teacher explained that she altered her small group instructional decisions on a daily basis. With ongoing formative assessments, she felt confident rotating students among groups and individualizing educational decisions throughout the day and week.

The other two teachers agreed that they relied on the literacy coach to utilize the data in making instructional decisions in phonemic awareness. They were, however, actively involved in weekly conversations regarding the assessment and instructional decisions with the literacy coach. Teachers 3 and 4 felt as though they were able to offer ongoing observations and insights the assessment data didn't always document.

Collaborative Efforts

Question nine related to the collaborative efforts between the classroom teacher and literacy coach. Specifically, "How would you describe the collaboration with the literacy coach?" Teachers made the correlation with professional development immediately. One teacher responded:

The literacy coach constantly connected theory and practice. She not only talked about what works in literacy, she demonstrated it. (Teacher 1)

Another replied:

The collaboration was so valuable. We discussed individual students which supported me in meeting with parents. She encouraged me and taught me research-based strategies that were effective. I felt empowered to try new things. (Teacher 2)

Another articulated:

I am a stronger teacher because of the experience. I learned a lot and value the collaborative community we established. The weekly meetings in which we all met as a team and the individual meetings created professional conversations that would never have occurred if we had not have had the year of collaboration. (Teacher 3)

The fourth teacher explained:

The sharing of specific strategies in phonemic awareness was beneficial. The multisensory learning approaches really improved their achievement scores. I really felt as though I learned a lot. (Teacher 4)

The discussion regarding the year-long collaboration centered on the value of the professional learning community that was established. Participating teachers found the professional conversations to be helpful. The teachers and coach met weekly to discuss data, students, skills, and strategies as a collective group. Their collaboration provided an opportunity for reflective study and critical thinking regarding individual students, assessments, and instructional decisions. Additionally, the teachers met individually with the coach for planning purposes. They were easily accessible to one another through email or visits and their constant interactions led to instruction based on student need.

Professional Development as a Result of a Literacy Coach

“In what capacity did the coach contribute to your professional development?” was the tenth question posed to the interviewees. Responses were parallel among the group as the teachers addressed the impact of the professional development that occurred. Particularly concerning phonemic awareness, the literacy coach had facilitated learning experiences with skills that had been lacking in their previous professional development sessions and resources. One teacher reflected:

I changed what I knew about phonemic awareness. I had always related it to letters and phonics. My additional research and experiences have changed the way I teach reading. I have made the connection from language to letters and can encourage my students in ways I never have before. The collaboration with the

literacy coach helped me to understand early literacy skills far better than the reading program. (Teacher 2)

Another teacher had a similar response:

I didn't realize how much I needed to learn. I have been teaching kindergarten for years but never looked as analytically at my children as I did this year. I learned their levels of phonemic awareness and worked them through the continuum. I have more students reading this year than ever. (Teacher 4)

Ongoing professional development offered by the literacy coach throughout the year included "team meetings" and "literacy links". At the weekly team meetings, ongoing data were presented and examined. Furthermore, individual students were discussed and a variety of instructional decisions determined. Literacy was linked to classroom as the literacy coach modeled strategies that addressed the targeted skills measured through ongoing assessments. Professional development sessions outside of the classroom occurred before, during, and after school to provide additional support in topics such as data-driven instruction, student-based instructional decisions, differentiated instruction, co-teaching, and phonemic awareness.

Data-Driven Instruction as a Result of a Literacy Coach

Question eleven examined, "How did the literacy coach impact your knowledge of data-driven instruction?" All four of the respondents viewed the experience with the literacy coach as a means for professional growth in the area of data-driven instruction.

One teacher described the experiences as follows:

Anytime you attend a workshop and get new information it is a great experience. Yet, you can sit there and think that this is good stuff and like it, but then you

leave and it gets left behind. You may think it was important but you don't have time to implement it. Workshops in data-driven instruction taught me a great deal but it was my time spent implementing it through the help of my coach that made it a true learning experience. (Teacher 4)

Participants agreed that the initial thought of data-driven instruction with kindergarten students did not sound appealing to them both professionally and personally. However, as a result of their work with the literacy coach and the observed student success, the teachers changed their initial reaction to the process. Data-driven instructional decisions became a valuable practice that demonstrated improvement among student achievements. A teacher describes the experience:

After each DIBELS assessment, I was able to look at the scores of each student and make instructional plans. Small or individual groups were easily identified in the data. The skill in need of improvement was there in black and white and the plan was written. For some kids, rate was an issue throughout the year. We worked on automaticity. For others, it was the ability to name letters or hear vowel sounds. The challenges were seen in their classroom performances but also visible in their ongoing data.

(Teacher 2)

Data-driven instructional decisions also became a systematic process. Each week, assessment data including DIBELS progress monitoring tools, teacher-made checklists, portfolio pieces, anecdotal records or informal observations were collected and analyzed by the literacy coach. At the weekly collaborative session, the data were reported and discussed. The weekly team meetings provided the teachers and literacy coach with

opportunities to discuss data and assessment information, form instructional groupings and decisions, as well as plan lessons accordingly.

Professional Growth with the Removal of Collaboration

“What are your impressions of your own professional performance as a result of the loss of the ongoing professional development?” was the fifteenth question asked of the participants. Based on the responses of the teachers, the loss of the collaborative community and professional learning experiences were considered detrimental. Each of the teachers stated their concerns with their lack of professional discourse each week. Without the organized and planned team meetings with the literacy coach, the kindergarten teachers felt somewhat disconnected professionally. They no longer knew the strengths and challenges of one another’s students and found themselves isolated in determining instructional decisions. Recognizing the power of data to assist in their instructional decisions, the educators realized the need for professional conversations regarding decisions. Teacher 1 describes the lack of support by stating:

My time spent discussing my students validated my concerns. If I was seeing a student having difficulty in my room, I was able to talk with another professional and receive immediate feedback. I was able to look at issues of students and get ideas on what to try or do in my classroom to take them from point A to point B. The coach and other teachers knew my students and what they needed. Sometimes I just needed another point of view or perspective to get a handle on a concern. (Teacher 1)

Additionally, much of the research-based dialogue was constrained. The kindergarten teachers were no longer taking time to research, read, or learn new literacy strategies. One of the classroom teachers depicted the loss as follows:

During our team meetings together we shared beliefs, ideas, possibilities and our enthusiasm for teaching early literacy. Without our literacy coach facilitating the time and dialogue, we are disconnected. There is a disconnect from each other and our students. (Teacher 3)

Another participant added:

I don't feel like I am growing professionally this year. I need the ongoing reflective conversations to grow. I am going to enroll in a college class next semester to experience the learning I am missing. (Teacher 4)

Overall Qualitative Conclusions

Qualitative data were collected through an interview with the four classroom teachers participating in the experimental group (Appendices I-L). The interview data obtained from the transcripts were analyzed to identify major trends pertaining to how literacy coaches and kindergarten teachers use assessment data to inform instructional decisions. An interpretive analysis, manually coded, categorized the following reoccurring trends shared by the teachers:

- 1) Professional learning experiences
- 2) Collaboration
- 3) Assessment and data-based instructional decisions

With increasing NCLB mandates, the kindergarten teachers valued the professional learning opportunities made available throughout the school year that

directly impacted their teaching. The professional development experiences focused on topics directly related to early literacy and data-driven instruction which benefitted each teacher by strengthening their professional expertise. The teachers involved in the experimental group felt that they had improved their teaching as a result of the professional learning experiences afforded them during the year of study and support.

From the onset of the study, the collaborative efforts were welcomed and remained positive throughout the school year. While the teachers grew in their understandings of phonemic awareness and individual differences among their students, they also grew into a professional learning community. The kindergarten teachers recognized the relevance of the year-long conversations. The four teachers and literacy coach became reflective practitioners. Following the study, the teachers felt the loss of the collaborative community that had been established and the professional dialogue that had occurred. The lack of collaboration toward assessment, instruction, and curriculum decisions was felt to be detrimental.

Finally, assessments and data-driven instructional decisions were determined to be a trend for discussion among the classroom teachers. The teachers admittedly did not use data to drive instructional decisions prior to the year of study on a regular basis. At the conclusion of the kindergarten year the educators were confident in their knowledge of and practice with use of assessments to determine student-based instructional decisions.

Summary

In this chapter, quantitative and qualitative data were analyzed and presented in an effort to answer the research questions: (1) To what extent do kindergartners achieve

as a result of data-driven instructional decisions in literacy? (2) To what extent are the measurable effects on student learning a result of the daily collaboration of literacy coach and classroom teacher? (3) How do literacy coaches and kindergarten teachers use assessment data to inform instructional decisions?

The instruments used to collect the quantitative data for questions one and three included the three Kindergarten DIBELS Benchmark Assessments. The statistical techniques employed to analyze the data involved a one-way ANOVA and SPSS to determine comparisons. The quantitative research established that differences do exist among classrooms of children and teachers involved in a collaborative teaching experience. Student achievement data achieved statistically significant levels as a result of data-driven instructional decisions and a collaborative teaching environment.

Additional data were gathered through qualitative research derived from teacher interviews. The qualitative data presented answers to the second question of study. Interview data were transcribed and manually coded in order to identify any patterns and similarities throughout the responses. An interpretive analysis helped to discover deeper meanings within the interviews and three trends emerged from discussion surrounding the pre-determined themes. The thematic analysis assisted in organizing the presentation of the qualitative data and in demonstrating how achievement occurred as a result of the year of collaboration. Chapter Four presented the results of the data analyses. Chapter Five will present a summary, conclusions, and implications of the findings. The study will conclude with recommendations for future research.

CHAPTER FIVE
CONCLUSIONS, IMPLICATIONS, RECOMMENDATIONS
AND SUMMARY

This chapter will provide a summary of quantitative data and qualitative information related to early literacy achievement among kindergarten students. An overview of the study, conclusions, internal and external threats, implications of the findings, and recommendations for further research will be stated. The results of data-based instructional decisions and literacy coaching for individual kindergarten learners' literacy success will be reviewed in Chapter Five.

Overview of the Study

Reading instruction may well be the most politically charged topic in education (Tyner, 2004). The No Child Left Behind (NCLB, 2001) legislation presents concerns in relation to reaching young children with research-based assessment and instruction in the area of literacy. Although effective early intervention instruction has been recognized to prevent reading difficulties from occurring, there is still research to be accomplished regarding factors that influence student achievement in literacy. This study emphasizes the role of schools in utilizing data and ongoing classroom-based professional development to drive instruction that enables kindergartners to make progress in literacy.

This mixed-method study examined the effects of data-driven instruction and literacy coaching on kindergartners' literacy development. The researcher selected three elementary schools in which to conduct the research. Quantitative evidence of student achievement was demonstrated through phonemic awareness assessment data collected from 170 students. Comparisons and statistical progress of student achievement were

compiled utilizing Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessments and presented using a one-way analysis of variance (ANOVA) using Statistical Package for the Social Sciences (SPSS) to provide an analysis of the results. Additionally, qualitative research exemplified classroom teachers' perceptions regarding coaching and collaboration through an interview process. Specific outcomes and trends, as a result of the year-long experience, were defined.

Conclusions Based on Key Findings

This section summarizes the key findings and the conclusions drawn based on the research. The three areas of research include the following: 1) kindergartners' progress in literacy achievement as a result of data-driven instructional decisions in literacy; 2) measurable effects on student learning as a result of collaboration between literacy coach and classroom teacher; and 3) assessment methods used to inform instruction.

Literacy Achievement as a Result of Data-Driven Instructional Decisions in Literacy

To what extent do kindergartners achieve success as a result of data-driven instructional decisions in literacy? The quantitative data revealed that the kindergartners involved in this study were able to achieve significant progress in phonemic awareness as a result of data-driven instructional decisions. Chapter Four presented a number of tables demonstrating significant results supportive of the experimental group's achievement in phonemic awareness.

At the onset of the school year the kindergarten students did not demonstrate significant differences among groups in the phonemic awareness skills measured through the DIBELS assessments. Statistically, the control groups and experimental group shared comparable aggregate means (average scores) in letter naming fluency (LNF) and initial

sound fluency (ISF). The aggregate mean between the two control groups demonstrated 29.25 in LNF. The experimental group demonstrated an aggregate mean of 28.09 in the skill set. The range between the groups was equal to 1.16 in LNF. The control groups' aggregate mean with ISF was 15.30 and the experimental group averaged 17.50. A difference of 2.20 was noted between the means for ISF. Consequently, the range between the control groups and the experimental group was not statistically significant during the initial assessment period. It was assumed, however, that after the initial assessment, data-driven instruction would result in higher student achievement among the experimental group.

Following the initial assessments, among the experimental group, the literacy coach began a number of professional development sessions with the kindergarten classroom teachers catered to data-based instructional decisions in early literacy development. The literacy coach presented various assessment techniques, demonstrated methods regarding how to determine instructional decisions from assessment data, and modeled differentiated instruction with phonemic awareness skills in the kindergarten classrooms.

The teachers of the control groups did not have access to collaboration and professional learning supportive of data-driven processes, nor did professional conversations with the literacy coach occur among the control groups. A literacy coach, encouraging differentiated instruction based on data, was not made available to the kindergarten classroom teachers or students in the control groups as a result of a district decision linked to budgetary concerns. Considering the initial assessment results and the variable of data-driven instructional decisions in the experimental group, it was predicted

that the achievement scores of the experimental group would result in a higher mean in the skill sets of LNF, ISF, phoneme segmentation fluency (PSF) and nonsense word fluency (NWF) following the second assessment interval.

The second set of phonemic awareness assessment scores, including skill sets in LNF, ISF, PSF, and NWF, was collected in the winter of the kindergarten year among both the control and experimental groups. The aggregate means were calculated after data-driven instructional decisions were implemented in each of the classrooms in the experimental group. The range of LNF scores was .50 with the aggregate mean of the control groups equal to 45.19 and 45.69 for the experimental group. In the skill set of ISF, the aggregate mean demonstrated by the control group equaled 28.65 and the experimental group earned 33.60. A difference of 4.95 was noted. The skill sets of LNF and ISF did not demonstrate early literacy achievement gains among the experimental group. In contrast, the findings for the skill set of PSF demonstrated significant achievement gains between groups. The aggregate mean of the control groups was 30.80 and 54.20 among the experimental group, reflecting a difference of 23.40. Finally, in the skill set of NWF, the control groups averaged 31.50 and the experimental group's aggregate mean was 33.70. At this point in the study, student achievement in literacy as a result of data-driven instructional decisions was only achieved in phonemic segmentation. PSF increased among the experimental group, revealing a significant difference between groups in one of the four skill sets measured.

Subsequent to the data results from the second assessment interval, the classroom teachers and the literacy coach involved in the experimental group became reflective in their decisions regarding the improvement of student achievement in early literacy.

Alterations included a commitment to weekly team meetings and daily discussions, the implementation of additional assessments for learning, the use of data in determining small group and individualized instructional decisions, and the practice of differentiated instruction with multisensory learning strategies.

The range of the final spring scores for the three participating schools reflected significant statistical differences. Although this difference could be attributable to developmental progress and academic hours, the influence of data-driven practices and classroom-based professional development certainly contributed to the statistical gains. In the skill set of LNF, the range between groups reflected a 3.15 difference with the experimental group earning an aggregate mean of 52.99 and the control groups averaging 49.84. The skill set of PSF demonstrated a range of 18.66 with the aggregate mean among the experimental group at 62.80 and control groups with 44.14. The skill set of NWF reflected a range of 14.20 between groups; the experimental group was 49.50 and the control groups earned 35.30.

At the conclusion of the year-long DIBELS assessments in phonemic awareness, the highest mean scores in each measured skill set were derived from the experimental group. The variables implemented with the experimental group resulted in measurable success. The collaboration between the classroom teachers and literacy coach along with the application of data-driven instructional decisions reflected favorable end of the year results.

These findings support Marzano, Pickering, and Pollock's (2001) claim that teachers' use of data to determine instructional decisions can create a noteworthy influence on student learning. The teachers involved in the study responded to assessment

data and continually developed differentiated instructional plans designed to improve learning. Research by the Florida Center for Reading Research (FCRR, 2007) maintains the link between the use of data to inform instructional decisions and differentiated instruction. Practicing a number of assessments, reflecting on the individual needs of students, and determining the lesson structure that will be most effective in meeting needs for differentiated instruction are recommendations offered by the research of the FCRR. Tomlinson and McTighe (2006) explain that practicing differentiated instruction requires teachers to recognize students' needs and make modifications in how students are taught. The data findings in this research were intended to and succeeded in justifying data-driven instructional decisions in support of kindergartners' literacy achievement.

Measurable Effects on Student Learning as a Result of Collaboration with a Literacy Coach

To what extent are the measurable effects on student learning a result of the daily collaboration between literacy coach and classroom teacher? According to the quantitative data results, teachers became increasingly prepared to support students in specific skills as a result of the collaboration with the literacy coach throughout the kindergarten year. The progression of achievement data from the beginning to the end of the year chronicled the results of the collaborative effort. The statistics previously described in this chapter demonstrate quantitative evidence regarding the improvement of student performance.

To provide further supportive research, a comparison of statistical percentages among the experimental group during the following school year was demonstrated within Chapter Four. The experimental group's progress, as measured in the spring of the

kindergarten year, was compared with their achievement in phonemic awareness skills during first grade, the following fall. According to the statistical comparisons, literacy coaches, working in collaboration with teachers, are placed in a situation designed to promote student achievement in early literacy skills. The measurable effects resulting from the year of collaboration were also demonstrated through a comparison of percentages presented in Table 23.

It was assumed that the experimental group could no longer maintain the high performance levels in the area of phonemic awareness without the support of the collaborative model. The students did not receive a formal education during the summer and experienced three months in first grade without the classroom-based collaboration. With the removal of the collaborative efforts between the classroom teachers and the literacy coach it was assumed that some growth would be documented in literacy achievement. It was theorized, however, that achievement would not reach the significant levels of progress noted at the conclusion of the kindergarten year.

In an effort to develop comparisons of progress in the experimental group, the participants were evaluated in the skill sets of PSF and NWF during the following year in first grade. During May of their kindergarten year, the students had scored at or above the predetermined benchmark level of 25 correct sounds each minute, with an average of 95% in NWF. This statistical evidence supported that only 5% of learners were below the benchmark expectation of 25 sounds correct each minute at the conclusion of the kindergarten school year. In November of the experimental group's first grade year, 80% of the population scored at or above benchmark for the skill set of NWF while 20% fell below the benchmark average (24 sounds correct each minute). Consequently, the

statistical decline of 15% between the kindergarten and first grade assessment intervals in the skill set of nonsense words was noteworthy.

Additionally, the PSF skills test resulted in increasingly dramatic effects, with 91% of the experimental group achieving at or above the benchmark of 35 sounds correct each minute in May of the kindergarten year. However, by November of the first grade year, the percentage of students at or above benchmark levels equaled only 62% with the identical benchmark goal. The statistical decline of 29% in students achieving at or above benchmark in phonemic segmentation was also significant.

Overall, the experimental group demonstrated a statistical decline in the literacy performance by the month of November in first grade. These findings may be attributable to an academic loss experienced over the summer months that researchers refer to as the “faucet theory” (Entwisle, 1992, p. 2). When the school faucet is turned on as schools are in session, children benefit in terms of academic achievement. However, when the school faucet is turned off during the summer reading proficiency can decline, particularly among economically disadvantaged children. As a result, the existence of the faucet theory could be a contributing factor among the experimental group’s decline in literacy achievement.

The decline in the students’ performance may also be attributed to the variables presented in this study. The loss of the collaborative efforts among four classroom teachers and a literacy coach by November of the first grade year, along with the lack of data-driven instructional decisions could have generated the measurable effect on students’ literacy achievement. Consequently, it can be concluded that the removal of the variables including the involvement of the literacy coach and data-driven instructions

initiated a decline among student achievement scores in phonemic awareness.

Quite possibly, the lack of a formal summer educational program could have contributed to the decline among the scores. Additional consideration can be paid to the lack of professional development opportunities with the first grade teachers during the second year of study. Overall, the percentages demonstrated a decline in student achievement scores following a withdrawal of a formal education and the assistance in the collaborative, data-driven classroom experiences.

Children deserve the opportunity to receive quality reading instruction. Educators participating in professional development and accepting instructional assistance from literacy coaches are able to make progress toward advancing student achievement. Allington (2009) suggests that, “improving teachers’ expertise about reading development improves the instruction they provide” (p. 102). Classroom teachers and literacy coaches, working together to use data in determining instructional decisions, are able to encourage students’ ongoing classroom performances.

The achievement score decline associated with the experimental group between the month of May during the kindergarten year and November of the first grade year was noteworthy. The findings provided further evidence to support the hypotheses that collaboration with a literacy coach does have a positive measurable effect on student achievement.

Methods Used to Inform Instructional Decisions

How do literacy coaches and kindergarten teachers use assessment data to inform instructional decisions? To gain additional insight into teachers’ perceptions regarding the year of collaboration, and to understand the details relative to the methods in which

the literacy coach and kindergarten teachers used the assessment data, the qualitative measure of individual teacher interviews was employed. The sixteen interview responses, categorized into three themes, were monitored for common trends. The three themes supported the professional learning experiences, collaboration, and assessment coupled with data-based instructional decisions. The first theme included responses to questions one, two, three, seven, ten, thirteen, and fifteen, which addressed professional learning experiences. The second theme related to the collaborative learning opportunities and teaching environment, which corresponded with questions five, nine, fourteen, and sixteen. The third theme, regarding assessment and data-based instructional decisions, was supported by questions four, six, eight, eleven, and twelve.

Overall, teachers reiterated the importance and impact that a literacy coach had on their professional learning throughout the school year. Some suggested a district-wide adoption of literacy coaches working with classroom teachers. Others discussed the increasing value of the data-driven collaborative efforts in light of their perception of the needs of those students entering kindergarten. Professional learning supported the practice of classroom-based formative assessments to assist teachers in collecting tangible evidence of the levels of student performance.

Professional Learning Experiences

Common trends among interview responses supported professional learning experiences acquired through the year of working collaboratively with a literacy coach. This trend surfaced with the questions regarding the teachers' past experiences with ongoing professional development and recent encounters with the literacy coach involved in the study. One of the teachers compared her previous learning experiences to the

embedded professional development sessions with the literacy coach by stating:

I have attended many different classes and workshops in the past that gave me ideas and taught me things I didn't know. My experience working with a literacy coach for a year enabled me to actually understand the ideas and practice the things I didn't know. (Teacher 1)

According to Hughes et al. (2002), "high-quality professional development programs should be structured to include three components: support, reflection, and collaboration" (p. 25); all three components were included in this research model. The classroom teachers entered the year of collaboration with positive expectations, participated enthusiastically, and ended the year having learned a number of skills and strategies to strengthen their practice. During the interviews a teacher reflected upon the professional development she received in specific phonemic awareness skills. She noted learning in the skill areas of phoneme isolation, segmentation, substitution, blending and deletion. Another identified learning pertaining to the skills of listening and following directions, rhyming, and syllable segmentation and blending. A third teacher recalled the reinforcement of sentence segmentation and onset rime (the onset of a word is the consonant or consonants that precede the vowel, and the rime is everything after the vowel).

The interview results also detailed strategies that were offered throughout the year to address phonemic awareness skills in the kindergarten classroom. Teachers included information concerning a variety of differentiated learning techniques that utilized multisensory experiences. Instructional practices such as matching initial sounds with pictures or objects, segmenting syllables with pennies to represent the number of

syllables heard, and reciting rhymes with nursery rhymes and songs were among the strategies described. According to the teachers interviewed, they were assisted in offering students a number of experiences that were not previously implemented.

Professional development sessions included information regarding differentiated, data-driven, and student-driven instructional decision making. Training also focused on the balanced literacy framework and the instruction of phonemic awareness and early literacy skills. Research articles were reviewed periodically, professional discourse occurred daily, and modeling opportunities were provided regularly. Teachers grew reliant on the professional development sessions, advice, and a collaborative community developed throughout the year of study. Classroom-based learning experiences supported theory and offered opportunities for practice and feedback. The applications of learning praxis assisted teachers to extend their learning. The teachers involved in the study recognized their professional growth and valued the embedded learning experience. One kindergarten teacher noted:

This experience has honed my training as a kindergarten teacher. Prior to the time together I felt isolated. I made decisions based on what I had learned in the past and what I thought worked. I recognize the value in research-based teaching strategies now. I have seen the effects in my classroom. I understand the key role that collaborative feedback plays in making decisions, too. My decisions are supported by research and colleagues that have experience and knowledge.

(Teacher 3)

Collaboration

Another common trend identified through the interview questions supported the theme of collaboration. Lyons and Pinnell (2001) stated that coaches and teachers working together can reflect, analyze, and interpret students' work, build collective understandings of literacy learning, and encourage student growth. Students involved in the study demonstrated growth in phonemic awareness performances as a result of the collaborative efforts. The teachers and coach worked together, providing scaffolds of support to increase early literacy development. Utilizing differentiated instructional decisions in the context of small groups between the first and second assessment periods led to progress for the experimental group. Multisensory, individualized learning occurred more frequently between the second and third assessments. Teachers made research-based decisions on behalf of kindergartners that led to improvements in achievement data and classroom performances. One teacher explained the effects of the collaborative effort in stating:

My kids have made achievements in reading that have surpassed my expectations. Their literacy learning has been remarkable this year. I am amazed at the amount of independent reading my students are able to do as a result of the foundation we laid in measuring and analyzing their levels of phonemic awareness. (Teacher 4)

Communication became a valued practice in weekly team meetings and daily scheduled visits in the classroom. The literacy coach and classroom teachers shared in making contributions to one another's learning and professional growth through their active and responsive discussions. Fullerton and Quinn (2002) explain that professional development has been criticized for its lack of continuity and connection to the daily

work of teachers. The teachers involved in the study described the collaborative efforts with the literacy coach as an extension beyond what an isolated workshop would offer to mentored daily professional development praxis in the classroom. Recurring professional conversations and embedded demonstrations of instructional strategies catered to the specific needs of small groups and individual students. As the year of collaboration progressed, student achievement in phonemic awareness increased as well.

Assessments and Data-Driven Instructional Decisions

Trends regarding ongoing assessments for learning and data-driven instructional decisions were identified throughout the interviews. The interviews revealed that at the onset of the study the teachers were skeptical of data-based instructional decisions in a kindergarten classroom. Although somewhat confident in conducting ongoing classroom-based assessments, the teachers were not as prepared for the language and practices supportive of data-driven instruction. The DIBELS assessment data initially presented somewhat of a learning challenge as well. One teacher described her feelings in saying:

For years I have been measuring student progress with informal checklists and have developed my own system to document students' strengths and weaknesses. The district-wide DIBELS assessments came across so clinical and statistical at first. (Teacher 4)

After the initial assessments were conducted, collected, analyzed, and interpreted, the discussions and detailed DIBELS reports assisted the teachers' learning and growth in the area of data analysis. The teachers were provided with support in learning the data management devices and recognizing the information needed in planning and forming instructional decisions. They were assisted in developing flexible groups of students for

instructional purposes. The teachers received sustained professional development that encouraged the use of data to determine differentiated instructional decisions and multisensory learning opportunities. The daily support offered by the literacy coach set a foundation for the teachers to then independently utilize data for instructional decisions.

One teacher recalls:

I remember the day it all came together for me - the importance of the assessments. When I was able to look at a graph and use the information to form small groups and plan my lessons for the very next week, I got it. I realized what a valuable tool I have in data. (Teacher 1)

Marzano (2006) describes formative assessments as, “any activity that provides sound feedback on student learning” (p. 11). A clear pattern that emerged from the interview questions indicated that the teachers were utilizing and documenting assessment data every day. The kindergarten teachers documented observations on post-it notes and graphic organizers. They developed portfolios to showcase growth and created a number of checklists to document the skills taught and measured. Teachers recognized and responded to the information provided through the collection of meaningful, ongoing assessment data. Team meetings revealed the assessment findings and discussions supported the learning that had occurred throughout the week, as well as any learning yet to be accomplished. Anecdotal records and ongoing assessments served the instructional planning process well. Differentiated instructional plans were easily developed with data and research to support the decisions.

Internal and External Threats

Sample selection was the primary threat to the internal validity of the study. The student population and resulting sample was one of convenience. The researcher's professional association with the district provided accessibility to the students, teachers, and literacy coach. Results from a completely random sample might differ.

Additionally, the literacy coach and teachers involved in the study had a vested professional interest in the development of their learners' early literacy skills. Therefore, the classroom teachers were committed to the success of the literacy coaching experience, thus threatening the internal validity of the study. Negating the threat, however, was the professional commitment of the teachers in the control group. They also shared a vested interest in student achievement gains.

A final threat to internal validity rested in the experience and professional commitment the educators involved in the study shared. Previous years of teaching and educational experiences benefitted both the students and teachers involved in the study.

Sample size was the main threat to the external validity of the study. The small sample required the need for caution in generalizing the results. The findings from the study were limited to the involvement of 170 kindergartners in nine classrooms, among four teachers and one literacy coach, in one school district in northwestern Pennsylvania. A study with a larger sample base would allow the findings to be applied more generally.

Implications and Recommendations

This section discusses the results of the study and what the results mean for practicing literacy coaches and educators. Implications and recommendations are noted.

Implications of the Study

Based on the Review of the Literature and the results of this study, there are a few implications for further consideration. Proficient reading skills are not only critical for a successful school experience, but also to a literate life. Students with poorly developed basic reading skills during the primary grades are then placed at a significant disadvantage in subsequent grades. If educators are to accomplish the goal of cultivating lifelong readers, both teachers and administrators need to understand the benefits of using assessment and instruction to assist in developing literacy skills among young children.

Research has identified five critical components for effective reading instruction among young children; the National Reading Panel (NRP, 2000) identifies phonemic awareness, phonics, vocabulary, comprehension and fluency as essential areas in which children need to receive early literacy instruction. Among the identified areas, phonemic awareness or the awareness of segments in speech is one of the best predictors of success in learning to read. Central to the skill of phonemic awareness is the understanding that speech can be segmented into phonemes or individual sounds, syllables, and words. Through repeated exposure to language, songs, rhymes, literature, and alliteration that all promote word play, most children are able to acquire phonemic awareness (Morrow, Gambrell, & Pressley, 2003).

Some students, however, need additional assistance in understanding and identifying units of sound. Without phonemic awareness, the systematic relationships between print and speech are difficult to grasp. This challenge can lead to poor decoding skills, a necessary component in learning to read effectively. Teachers skilled in teaching reading and utilizing assessments for the purposes of data-driven instructional decisions

can serve the important purpose of diminishing reading failure. Studies have been conducted linking teachers' use of data to instructional effectiveness in the classroom (Strickland, 2005). The creators of the DIBELS assessments assert that its subtests are useful in predicting future reading difficulty and in facilitating early and accurate identification of students in need of intervention (Good, Simmons, & Kame'enui, 2001). Teachers educated to effectively use data from meaningful assessments are in the position to promote student learning.

Educators practicing purposeful assessments, such as DIBELS, can use data to establish differentiated instructional decisions based on the outcomes of the assessment for individuals or small groups of learners. Grouping of students with similar reading abilities helps teachers cater instruction to meet the diverse needs in the classroom (Morrow & Pressley, 2003). Collaboration between teachers and literacy coaches can be beneficial to adequately form and instruct groups of learners for the purpose of small group differentiated instruction.

Literacy coaches are in a position to present job-embedded approaches to professional learning. They are able to support teachers by providing ongoing training and support, facilitating data collection, and determining instruction and grouping decisions (Askew et al., 2002). The ongoing efforts of literacy coaches address the initiatives of NCLB in developing highly qualified classroom teachers able to improve students' literacy performance.

The responsibilities of a literacy coach vary among schools, districts, and states. This study provides evidence of a literacy coach working with teachers to facilitate change. Providing professional development opportunities, appropriate materials and

resources, and instructional strategies are among the many assets that a literacy coach can offer to teachers and students. An examination of this study can assist administrators in determining how to utilize literacy coaches effectively in the pursuit of facilitating professional learning and student achievement.

Recommendations for Future Study

Based on the results of this study, classroom teachers utilizing assessment data are able to determine instructional decisions to better serve the needs of students. In order to promote the research presented through this study, administrators need to recognize the relevance in the professional development and planning time necessary for personal and professional reflection which includes conversations among educators (Rooney, 2009). Professional development is vital in serving the needs of striving readers. Pinnell and Fountas (2009) stated, “The most vulnerable children need the best teaching and the key to providing it is ongoing professional development. Teachers need support to become more expert with every year of teaching” (p.14). Additional research regarding professional development designed to support ongoing assessments and data-driven instruction is recommended in an effort to advance literacy achievement among students.

Furthermore, there is much research to be accomplished regarding the effects of coaching upon student achievement. Despite the existence of research there is a need for empirical evidence regarding literacy coaching. Classroom-based professional development may appear productive, however additional research based on observation and experimentation could assist in determining specific factors that elevate effectiveness. The evidence that is present today acknowledges that coaches with proper training, including reading specialist certifications and years of experience teaching

reading in the classroom, have the potential to be highly influential professionals. Studies measuring the effects of coaching on student achievement in literacy could assist the growing numbers of striving readers. Qualitative research examining teacher growth, as a result of literacy coaching, may be beneficial.

Quantitative evidence may also be needed in support of literacy coaching. It has become increasingly important to continue to investigate effects on student achievement based on the collaboration of classroom teachers and literacy coaches. With the dissipation of the Reading First initiative propelled by NCLB, many teachers may find that support services, such as literacy coaching, are no longer available. Federal funding restraints affect teachers on district, school, and classroom levels. Many literacy coaches have been supported with Reading First or Title II budgets. There are a growing number of districts affected by the financial constraints of NCLB. Research in promotion or defense of professional development can only benefit teachers and students alike based on the findings of this study. Educators' ability to foster effective early reading skills is essential in providing educational and personal professional success.

Finally, this study was limited to one school district. It would be beneficial to replicate this study employing a longitudinal research model to investigate if data-driven instructional decisions and literacy coaching would be consistent with these findings. Replicating the study in a large school district or across several districts among different demographics could provide evidence regarding the consistency of the impact of data-driven instruction and literacy coaching on student achievement. An expanded population of students and teachers, along with additional grade level participation, might reveal alternative outcomes to this study.

Summary

The goal in conducting this research was to determine the measurable effects in literacy as a result of systematic and explicit data-driven instruction derived from ongoing assessments and collaborative teaching among kindergarten learners. Illustrating the effects among these variables will aid researchers with the purpose in data-driven instruction, the use of assessments, the relevance in literacy coaching and professional development and ultimately factors that affect reading achievement.

The foundation for the first research question explored the correlation between student achievement in literacy and data-driven instructional decisions. Over the course of a school year, literacy gains were expected among both the control and experimental groups of kindergartners. The research, however, succeeded in demonstrating higher achievement levels as a result of the benefits of data-driven instruction within the experimental group. Differentiated instruction catered to individual needs, as identified through the ongoing assessments, and resulted in higher academic progress in the area of early literacy when compared with the control group. Designing differentiated instruction as a result of information retrieved through frequent and varied data collection demonstrated greater academic gains throughout a school year.

The second research question was based on the premise that there may be a correlation between student achievement in literacy and the collaborative efforts between classroom teachers and literacy coaches. Coupled with the daily support from a literacy coach to assist with differentiated instruction, the data-driven effects and comparisons were noteworthy. The collaborative efforts also provided ongoing classroom-based professional development that impacted the teachers' performance and pedagogy. This

study demonstrated the impact of a literacy coach in accelerating not only student achievement, but also the professional growth that ensued among the group of teachers participating in the study.

The third research question examined the measurable effects on student learning as a result of daily collaboration between classroom teachers and a literacy coach. It was assumed during the second year of study, with the removal of the variables which contributed to the experimental groups' previous progress, a decline in student achievement differences may occur, validating the effects of data-driven instruction and literacy coaching as reliable factors in the acceleration of student achievement. Indeed, the research demonstrated that the removal of the specialized treatment consisting of data-driven, differentiated, and collaborative instruction decreased the phonemic awareness scores of the experimental group. The secondary results, revealed during the fall of the first grade year, succeeded in providing information regarding the achievement of kindergartners with regard to collaborative efforts. Once the variables of data-driven instruction and literacy coaching were removed, the students' success in the area of phonemic awareness did not demonstrate literacy progress once achieved.

As Earl and Katz (2002) noted, the use of data for school improvement is no longer a choice; it is a must. Turning data into productive information is a multifaceted process, and the supporting research is still young. The research presented in this study addressed two vital components in this process including the use of data to drive classroom-based instructional decisions, and the use of professional development to help teachers efficiently become more informed, reflective practitioners.

As school systems move forward in making Adequate Yearly Progress, it is important to note the findings of this study. Data-driven instructional decisions, derived from a combination of summative and formative assessments, have the potential to bolster student achievement scores. A literacy coach working collaboratively with classroom teachers can assist in fostering data-driven instructional decisions as well as promoting residual professional learning. Literacy coaches and teachers are encouraged to recognize the improvements that can be made in student achievement scores as a result of professional learning experiences and collaborative efforts.

Additionally, administrators are persuaded to recognize the benefits of ongoing, embedded professional development in their school-wide improvement efforts. The study indicates that professional development provides teachers with enduring understandings that can assist in student achievement, particularly among kindergarten students. Knowledgeable teachers, supportive coaches, and informed administrators have the potential to develop not only individual but also school-wide improvements.

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Appendix A

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) are a set of standardized, individually administered measures of early literacy development. They are designed to be short (one minute) fluency measures used to regularly monitor a development of early reading skills.

Which skills do the DIBELS measures assess?

Measures of Phonological Awareness:

- Initial Sounds Fluency (ISF): Assesses a child's skill to identify and produce the initial sound of a given word.
- Phonemic Segmentation Fluency (PSF): Assesses a child's skill to produce the individual sounds within a given word.

Measure of Alphabetic Principle:

- Letter Naming Fluency (LNF): Assesses a child's ability to identify and name a given letter.
- Nonsense Word Fluency (NWF): Assesses a child's knowledge of letter-sound correspondences as well their ability to blend letters together to form unfamiliar "nonsense" (e.g., fik, lig, etc.) words.

Measure of Fluency with Connected Text:

- Oral Reading Fluency (ORF): Assesses a child's skill of reading connected text in grade-level material word.

(Good & Kaminski, 2002)

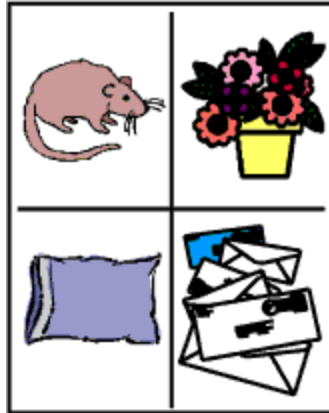
Appendix B

Description of the Initial Sound Fluency Measure

The DIBELS Initial Sound Fluency (ISF) Measure is a standardized, individually administered measure of phonological awareness that assesses a child's ability to recognize and produce the initial sound in an orally presented word (Kaminski & Good, 1996, 1998; Laimon, 1994). The ISF measure is a revision of the measure formerly called Onset Recognition Fluency (OnRF). The examiner presents four pictures to the child, names each picture, and then asks the child to identify (i.e., point to or say) the picture that begins with the sound produced orally by the examiner. For example, the examiner says, "This is sink, cat, gloves, and hat. Which picture begins with /s/?" and the student points to the correct picture. The child is also asked to orally produce the beginning sound for an orally presented word that matches one of the given pictures. The examiner calculates the amount of time taken to identify/produce the correct sound and converts the score into the number of initial sounds correct in a minute. The ISF measure takes about 3 minutes to administer and score and has over 20 alternate forms to monitor progress.

Scoring Procedures for the ISF Measure

Sample Stimulus Pictures:



Materials Needed for Administration:

- Examiner probe
- Stimulus pictures
- Clipboard
- Stopwatch
- Red pencil or pen

Sample Examiner Probe:

Initial Sound Fluency Short Form Directions	Benchmark 1 Initial Sound Fluency								
<p>Make sure the long form of directions is readily available to clarify unexpected problems.</p> <p><u>Initial Sound Fluency</u></p> <p><i>This is mouse, flowers, pillow, letters</i> (point to each picture while saying its name). <i>Mouse</i> (point to mouse) <i>begins with the sound /m/</i>. <i>Listen, /m/, mouse. Which one begins with the sounds /f/?</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;"> CORRECT RESPONSE: Student points to flowers, you say: </td> <td style="width: 50%; padding: 2px;"> INCORRECT RESPONSE: If student gives any other response, you say: </td> </tr> <tr> <td style="padding: 2px;"> <i>Good. Flowers begins with the sounds /f/.</i> </td> <td style="padding: 2px;"> <i>Flowers</i> (point to flowers) <i>begins with the sounds /f/</i>. <i>Listen, /f/, flowers. Let's try it again. Which one begins with the sounds /f/?</i> </td> </tr> </table> <p><i>Pillow</i> (point to pillow) <i>begins with the sound /p/</i>. <i>Listen, /p/, pillow. What sound does letters</i> (point to letters) <i>begin with?</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;"> CORRECT RESPONSE: Student says /l/, you say: </td> <td style="width: 50%; padding: 2px;"> INCORRECT RESPONSE: If student gives any other response, you say: </td> </tr> <tr> <td style="padding: 2px;"> <i>Good. Letters begins with the sound /l/.</i> </td> <td style="padding: 2px;"> <i>Letters</i> (point to letters) <i>begins with the sound /l/</i>. <i>Listen, /l/, letters. Let's try it again. What sound does letters</i> (point to letters) <i>begin with?</i> </td> </tr> </table> <p style="text-align: center;"><i>Here are some more pictures. Listen carefully to the questions.</i></p>	CORRECT RESPONSE: Student points to flowers, you say:	INCORRECT RESPONSE: If student gives any other response, you say:	<i>Good. Flowers begins with the sounds /f/.</i>	<i>Flowers</i> (point to flowers) <i>begins with the sounds /f/</i> . <i>Listen, /f/, flowers. Let's try it again. Which one begins with the sounds /f/?</i>	CORRECT RESPONSE: Student says /l/, you say:	INCORRECT RESPONSE: If student gives any other response, you say:	<i>Good. Letters begins with the sound /l/.</i>	<i>Letters</i> (point to letters) <i>begins with the sound /l/</i> . <i>Listen, /l/, letters. Let's try it again. What sound does letters</i> (point to letters) <i>begin with?</i>	<p>This is eggs, daughter, spider, leopard (point to pictures).</p> <ol style="list-style-type: none"> 1. Which picture begins with /l/? 0 1 2. Which picture begins with /d/? 0 1 3. Which picture begins with /e/? 0 1 4. What sound does "spider" begin with? 0 1 <p>This is hawk, bathtub, monster, sausage (point to pictures).</p> <ol style="list-style-type: none"> 1. Which picture begins with /h/? 0 1 2. Which picture begins with /b/? 0 1 3. Which picture begins with /s/? 0 1 4. What sound does "monster" begin with? 0 1 <p>This is scissors, bell, cupboard, muscle (point to pictures).</p> <ol style="list-style-type: none"> 1. Which picture begins with /k/? 0 1 2. Which picture begins with /m/? 0 1 3. Which picture begins with /s/? 0 1 4. What sound does "bell" begin with? 0 1 <p>This is horn, tulip, robot, cap (point to pictures).</p> <ol style="list-style-type: none"> 1. Which picture begins with /k/? 0 1 2. Which picture begins with /h/? 0 1 3. Which picture begins with /r/? 0 1 4. What sound does "tulip" begin with? 0 1 <p>Time: _____ Seconds Total Correct: _____</p> <p style="text-align: center;"><i>60 * Total Correct</i> = _____ Correct Initial Sounds per Minute <i>Seconds</i></p>
CORRECT RESPONSE: Student points to flowers, you say:	INCORRECT RESPONSE: If student gives any other response, you say:								
<i>Good. Flowers begins with the sounds /f/.</i>	<i>Flowers</i> (point to flowers) <i>begins with the sounds /f/</i> . <i>Listen, /f/, flowers. Let's try it again. Which one begins with the sounds /f/?</i>								
CORRECT RESPONSE: Student says /l/, you say:	INCORRECT RESPONSE: If student gives any other response, you say:								
<i>Good. Letters begins with the sound /l/.</i>	<i>Letters</i> (point to letters) <i>begins with the sound /l/</i> . <i>Listen, /l/, letters. Let's try it again. What sound does letters</i> (point to letters) <i>begin with?</i>								

Appendix C

Description of the Segmentation Fluency Measure

The DIBELS Phoneme Segmentation Fluency (PSF) measure is a standardized, individually administered test of phonological awareness (Kaminski & Good, 1996). The PSF measure assesses a student's ability to segment three- and four-phoneme words into their individual phonemes fluently. The PSF measure has been found to be a good predictor of later reading achievement (Kaminski & Good, 1996). The PSF task is administered by the examiner orally presenting words of three to four phonemes. It requires the student to produce verbally the individual phonemes for each word. For example, the examiner says "sat," and the student says "/s/ /a/ /t/" to receive three possible points for the word. After the student responds, the examiner presents the next word, and the number of correct phonemes produced in one minute determines the final score. The PSF measure takes about 2 minutes to administer and has over 20 alternate forms for monitoring progress.

Sample PSF Probe:

Benchmark 2 Phoneme Segmentation Fluency					
trick	/t/ /r/ /ɪ/ /k/	cat	/k/ /æ/ /t/	_____	/7
that	/θ/ /æ/ /t/	pick	/p/ /ɪ/ /k/	_____	/6
mine	/m/ /ɪ/ /n/	noise	/n/ /oɪ/ /z/	_____	/6
coat	/k/ /oʊ/ /t/	spin	/s/ /p/ /ɪ/ /n/	_____	/7
meet	/m/ /i/ /t/	ran	/r/ /æ/ /n/	_____	/6
wild	/w/ /ɪ/ /l/ /d/	dawn	/d/ /ɔ/ /n/	_____	/7
woke	/w/ /o/ /k/	sign	/s/ /ɪ/ /n/	_____	/6
fat	/f/ /æ/ /t/	wait	/w/ /aɪ/ /t/	_____	/6
side	/s/ /aɪ/ /d/	yell	/j/ /e/ /l/	_____	/6
jet	/j/ /e/ /t/	of	/o/ /v/	_____	/5
land	/l/ /æ/ /n/ /d/	wheel	/w/ /i/ /l/	_____	/7
beach	/b/ /i/ /tʃ/	globe	/g/ /l/ /oʊ/ /b/	_____	/7
TOTAL:				_____	

Materials Needed for Administration:

- Examiner copy of word list with phoneme scoring columns
- Clipboard
- Stopwatch
- Red pencil or pen
- Tape recorder (optional)

NOTE: As the PSF measure is an auditory measure, the student has no stimulus materials.

STANDARDIZED DIRECTIONS

Setting the Scene:

1. Place the segmentation word list in front of you so that the student cannot see what you record.

Directions to Student:

2. Say these specific directions to the student:

"I am going to say a word. After I say it, you tell me all the sounds in the word. So, if I say 'Sam', you would say /s/ /a/ /m/. Lets try one." (one second pause) "Tell me the sounds in 'mop'."

Correct Response: If student says, /m/ /o/ /p/, you say:	Incorrect Response: If student gives any other response, you say:
<i>"Very good. The sounds in "mop" are /m/ /o/ /p/."</i>	<i>"The sounds in "mop" are /m/ /o/ /p/. Your turn. Tell me the sounds in "mop"."</i>

"OK. Here is your first word."

Beginning Administration:

3. Give the student the first word and start your stopwatch. If the student does not say a sound segment after **3 seconds**, give the student the second word and score the first word as zero segments produced.

Score as You Go:

4. As the student says the sounds, mark the student response in the scoring booklet. Underline each **different, correct**, sound segment produced. Put a slash (/) through sounds produced incorrectly.

Presenting the Next Word:

5. **As soon as the student is finished saying the sounds**, present the next word promptly and clearly.

Time per Sound:

6. The maximum time for each sound segment is **3 seconds**. If the student does not provide the next sound segment within **3 seconds**, give the student the next word. If the student provides the initial sound only, **wait 3 seconds for elaboration** before presenting the next word.

Prompting Rule:

7. If a student has done the examples correctly and does not respond correctly to the words, say, "Remember to tell me the sounds in the word." This prompt can be given once.

Ending Administration:

8. At the end of **1 minute**, place a bracket (]) after the sound produced, stop presenting words and do not score further responses. Add the number of sound segments produced correctly. Record the total number of sound segments produced correctly according to scoring rules on the bottom of the scoring sheet.

SCORING PROCEDURES

- 1. Discontinue Rule:** If a student has not given any sound segments correctly in the first 5 words, discontinue the task and put a score of zero (0).
- Underline the sound segments in the word the student produces that are correctly pronounced. Students receive 1 point for each different, correct, part of the word.
- Put a slash (/) through segments pronounced incorrectly.

Correct Segmentation:

A correct sound segment is any **different, correct, part** of the word. For example, the sound /t/ is a correct segment of "trick", as are /tr/ and /tri/ (see rule 10).

Examiner says "trick", student says "t...r...i...k"

Examiner says "cat", student says "k...a...t"

Word:	Student says:	Scoring Procedure:	Correct Segments:
trick	"t...r...i...k"	<u>/t/</u> <u>/r/</u> <u>/i/</u> <u>/k/</u>	4/4
cat	"k...a...t"	<u>/k/</u> <u>/a/</u> <u>/t/</u>	3/3

Schwa Sounds:

Schwa sounds (/u/) added to consonants are not counted as errors. Some phonemes cannot be pronounced correctly in isolation without a vowel, and some early learning of sounds includes the schwa.

Word:	Students says:	Scoring Procedure:	Correct segments:
trick	"tu...ru...i...ku"	<u>/t/</u> <u>/r/</u> <u>/i/</u> <u>/k/</u>	4/4
cat	"ku...a...tu"	<u>/k/</u> <u>/a/</u> <u>/t/</u>	3/3

Additions

Additions are not counted as errors if they are separated from the other sounds in the word.

Word:	Student says:	Scoring Procedure:	Correct Segments:
trick	"t...r...i...k...s"	<u>/t/</u> <u>/r/</u> <u>/i/</u> <u>/k/</u>	4/4
cat	"s...k...a...t"	<u>/k/</u> <u>/a/</u> <u>/t/</u>	3/3

Articulation and Dialect

The student is not penalized for imperfect pronunciation due to dialect, articulation, or second language interference. For example, if the student consistently says /th/ for /s/, i.e. /r/ /e/ /th/ /t/ for "rest", he or she should be given credit for correct segmentation. This is a professional judgment and should be based on the student's responses and any prior knowledge of his/her speech patterns.

Sound Elongation

The student may elongate the individual sounds and run them together and still receive credit as long as it is clear he or she is aware of each sound individually. For example, if

the student says "rrrrreeeeesssstttt", they would receive credit for 4 phonemes produced correctly, /r/ /e/ /s/ /t/. This is a professional judgment and should be based on the student's answer and prior knowledge of the student's learning. When in doubt, no credit is given.

WORD:	STUDENT SAYS:	SCORING PROCEDURE:	CORRECT SEGMENTS
rest	"rrrrreeeeesssstttt"	<u>/r/</u> <u>/e/</u> <u>/s/</u> <u>/t/</u>	4/4

No Segmentation:

If the student repeats the entire word, no credit is given for any correct parts. Circle the word to indicate no segmented response was given.

WORD:	STUDENT SAYS:	SCORING PROCEDURE:	CORRECT SEGMENTS
trick	"trick"	<u>trick</u>	0/4
cat	"cat"	<u>cat</u>	0/3

Incomplete Segmentation:

The student is given credit for each correct sound segment produced, even if they have not segmented to the phoneme level. The underline indicates the size of the sound segment.

WORD:	STUDENT SAYS:	SCORING PROCEDURE:	CORRECT SEGMENTS
trick	"tr...ick"	<u>tr</u> <u>tr</u> <u>tr</u> <u>tr</u>	2/4
cat	"c...at"	<u>ca</u> <u>ca</u> <u>ca</u>	2/3

Overlapping Segmentation:

The student receives credit for each **different, correct, sound segment** of the word. Thus, /tri/ and /ick/ are both different, correct sound segments of "trick" and would receive 2 of 4 points possible.

WORD:	STUDENT SAYS:	SCORING PROCEDURE:	CORRECT SEGMENTS
trick	"tri...ick"	<u>tri</u> <u>tri</u> <u>tri</u> <u>tri</u>	2/4
cat	"c...cat"	<u>ca</u> <u>ca</u> <u>ca</u>	1/3

Omissions:

The student does not receive credit for sound segments that are not produced. If student provides the initial sound only, be sure to wait 3 seconds for elaboration.

WORD:	STUDENT SAYS:	SCORING PROCEDURE:	CORRECT SEGMENTS
trick	"tr...(3 seconds)"	<u>/t/</u> /r/ /i/ /k/	1/4
cat	"c...t"	<u>/k/</u> /w/ <u>/t/</u>	2/3

Segment Mispronunciation:

The student does not receive credit for sound segments that are mispronounced. Put a slash (/) through the incorrect sounds.

WORD:	STUDENT SAYS:	SCORING PROCEDURE:	CORRECT SEGMENTS
trick	"t...r...i...ks"	<u>/t/</u> /r/ <u>/i/</u> /k/	3/4
cat	"b...a...t"	/b/ /w/ <u>/t/</u>	2/3

(Good & Kaminski, 2002)

Appendix D

Description of the NWF Measure

The DIBELS Nonsense Word Fluency (NWF) measure is a standardized, individually administered test of the alphabetic principle - including letter-sound correspondence in which letters represent their most common sounds and of the ability to blend letters into words in which letters represent their most common sounds (Kaminski & Good, 1996). The student is presented an 8.5" x 11" sheet of paper with randomly ordered VC and CVC nonsense words (e.g., sig, rav, ov) and asked to produce verbally the individual letter sound of each letter or verbally produce, or read, the whole nonsense word. For example, if the stimulus word is "vaj" the student could say /v/ /a/ /j/ or say the word /vaj/ to obtain a total of three letter-sounds correct. The student is allowed 1 minute to produce as many letter-sounds as he/she can, and the final score is the number of letter-sounds produced correctly in one minute. Because the measure is fluency based, students should receive a higher score if they are phonologically recoding the word, as they will be more efficiently producing the letter sounds, and receive a lower score if they are providing letter sounds in isolation. The intent of this measure is that students are able to read unfamiliar words as whole words, not just name letter sounds as fast as they can. The NWF measure takes about 2 minutes to administer and has over 20 alternate forms for monitoring progress.

Administration and Scoring Procedures for the NWF Measure

Sample NWF Probes:

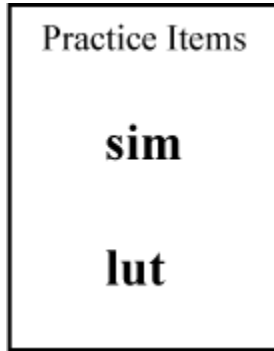
Probe 1 - Examiner Copy					
boj	sim	uk	bod	naf	____/
mik	lut	bil	fer	zel	____/
dap	nek	kog	pim	ret	____/
jom	fom	neb	vum	gim	____/
et	zik	dij	fek	pol	____/
kej	rit	jul	bec	waz	____/
Total correct letter sounds (CLS): ____					
Total words recoded completely and correctly (WRC):					
Error Pattern:					

Probe 1 - Student Copy					
boj	sim	uk	bod	naf	
mik	lut	bil	fer	zel	
dap	nek	kog	pim	ret	
jom	fom	neb	vum	gim	
et	zik	dij	fek	pol	
kej	rit	jul	bec	waz	

Materials Needed for Administration: Examiner copy of probe; Student copy of probe; Practice Items; Clipboard; Stopwatch; Red pencil or pen

STANDARDIZED DIRECTIONS

Setting the Scene:



1. Place practice items in front of student (e.g., the "sim" and "lut" page).
2. Place examiner probe on clipboard so that student cannot see what you record.

Directions to Student:

Say these specific directions to the student:

"Look at this word." (point to the first word on the practice probe) "It's a make-believe word. Watch me read the word: /s/ /i/ /m/ "sim". (point to each letter and say sound and then run your finger fast beneath the whole word as you read the word). "I can say the sounds of the letters, /s/ /i/ /m/ (point to each letter), or I can read the whole word "sim." (run your finger fast beneath the whole word).

"Your turn to read a make-believe word. Read this word the best you can (point to the word "lut"). Make sure you say any sounds you know."

Correct Response: If the child responds with "lut" or with all of the sounds, say:	Incorrect Response: If the child does not respond within 3 seconds, or responds incorrectly, say:
<i>"That's right. The sounds are /l/ /u/ /t/ or "lut."."</i>	<i>"Remember, you can say the sounds or you can say the whole word. Watch me: the sounds are /l/ /u/ /t/ (point to each letter) or "lut" (run your finger fast through the whole word. "Let's try again. Read this word the best you can (point to the word "lut.")"</i>

****NOTE:** The directions can be shortened by beginning with Number 4 for repeated measurement when the student clearly understands the directions and procedure.

Beginning Administration: Place the student copy of the probe in front of the child.

"Here are some more make-believe words (point to the student probe). Start here (point to the first word) and go across the page (point across the page). When I say "begin", read the words the best you can. Point to each letter and tell me the sound or read the

whole word. Read the words the best you can. Put your finger on the first word. Ready, begin."

Beginning Timing: Start your stopwatch when student says the first sound or word.

Probe 1 - Examiner Copy					
boj	<u>sim</u>	<u>uk</u>	wod	<u>naf</u>	<u>10</u> / 14
<u>mik</u>	<u>lut</u>	bil	<u>fer</u>	xel	<u>13</u> / 15
hap	<u>nek</u>	<u>kog</u>	<u>rim</u>	ret	<u>10</u> / 15
jom	fom	neb	vum	gim	___ / 15
et	zik	dij	fek	pol	___ / 14
kej	rit	jul	bec	waz	___ / 15
Total correct letter sounds (CLS):					<u>33</u>
Total words recoded completely and correctly (WRC):					<u>5</u>
Error Pattern:					
<i>frequently confuses b, d, and p.</i>					
<i>need more instruction on those letter sounds</i>					

Score as You Go:

Follow along on the examiner copy of the probe and underline each letter sound the student produces correctly, either in isolation or read as a whole word. Put a slash (/) through incorrectly read letter sounds (see Scoring Rules).

Ending Administration:

At the end of **1 minute**, place a bracket (]) after the last letter sound provided by the student and say, "Stop."

Count the number of letter-sounds provided correctly for the total score.

SCORING PROCEDURES

Discontinue Rule: If a student does not get any sounds correct in the first 5 words, discontinue the task and record a score of zero (0).

Correct letter sounds: Underline the individual letters for letter sounds produced correctly in isolation and score 1 point for each letter sound produced correctly. For example, if the stimulus word is "tob" and the students says /t/ /o/ /b/, the individual letters would be underlined with a score of 3.

Word	Student Says	Scoring Procedure	Correct Letter Sounds
tob	"t...o...b"	<u>t o b</u>	3 / 3
dos	"d...o...s"	<u>d o s</u>	3 / 3

Correct words: Use a single line under multiple letters for correct letter sounds blended together, and give credit for each letter sound correspondence produced correctly.

For example, if the stimulus word is "tob" and the student says "tob", one underline would be used with a score of 3.

Word	Student Says	Scoring Procedure	Correct Letter Sounds
tob	"tob"	<u>t o b</u>	3 / 3
dos	"d...os"	<u>d o s</u>	3 / 3

Partially Correct Responses: If a word is partially correct, underline the corresponding letters for letter sounds produced correctly. Put a slash (/) through the letter if the corresponding letter sound is incorrect. For example, if the word is "tob" and the student says "toab" (with a long o), the letters "t" and "b" would be underlined, and the letter "o" would be slashed with a score of 2.

Word	Student says	Scoring Procedure	Correct Letter Sounds
tob	"toab" (long o)	<u>t</u> / <u>b</u>	2 / 3
dos	"dot" (3 seconds)	<u>d</u> o /	2 / 3

Sound letter pronunciation: Sounds pronounced twice while sounding out the word are given credit only once. For example, if the stimulus word is "tob" and the student says /t/ /o/ /ob/, the letter "o" and the letters "ob" are underlined. The student receives 1 point for the letter sound /o/ even though the correct sound was pronounced twice (a total of 3 for the entire word).

Word	Student Says	Prompt	Scoring Procedure	Correct Letter Sounds
tob	"t" (3 seconds)	"/o/ (point to b) <i>What sound?</i> "	<u>t</u> / <u>b</u>	1 / 3
dos et	"d...o" (3 seconds)	"/s/ (point to e) <i>What sound?</i> "	<u>d</u> o / et	2 / 5

3 second rule - word by word: If the student is reading words and hesitates for 3 seconds on a word, score the word incorrect, provide the correct word, point to the next word, and say, "*What word?*" This prompt may be repeated. For example, if the stimulus words are "tob dos et" and the student says, "tob" (3 seconds), prompt by saying, "**dos** (point to et) *What word?*"

Sound order - sound by sound: Letter sounds produced in isolation but out of order are scored as correct. For example, if stimulus word is "tob" and the student points to and says, /b/ /o/ /t/, all letters would be underlined, with a score of 3. The purpose of this rule is to give students credit as they are beginning to learn individual letter sound correspondences.

Word	Student says	Scoring Procedure	Correct Letter Sounds
tob	"b...o...t" (point correctly)	<u>t</u> <u>o</u> <u>b</u>	3 / 3
dos	"o...d...s" (point correctly)	<u>d</u> <u>o</u> <u>s</u>	3 / 3

Sound order - word by word: Blended letter sounds must be correct and in the correct place (beginning, middle, end) to receive credit. For example, if stimulus word is "tob" and the student says, "bot", only the "o" would be correct and in the correct place, for a score of 1.

Word	Student Says	Scoring Procedure	Correct Letter Sounds
tob	"t...o...ob"	<u>t</u> <u>o</u> <u>b</u>	3 / 3
dos	"d...o...s...dos"	<u>d</u> <u>o</u> <u>s</u>	3 / 3 · 3 second rule - sound by sound: If the student is providing individual letter sounds and hesitates for 3 seconds on a letter sound, score the letter sound incorrect, provide the correct letter sound, point to the next letter, and say, " What sound? " This prompt may be repeated. For example, if the stimulus word is "tob" and the student says, /t/ (3 seconds), prompt by saying, "/o/ (point to b) What sound? "

Word	Student says	Scoring Procedure	Correct Letter Sounds
tob	"bot"	t <u>o</u> b	1 / 3
ik	"ki"	k i	0 / 2

Insertions: Insertions are not scored as incorrect. For example, if the stimulus word is "sim" and the student says "stim", the letters "s" "i", and "m" would be underlined and full credit given for the word with no penalty for the insertion of /t/.

Word	Student says	Scoring Procedure	Correct Letter Sounds
tob	"stob"	<u>t o b</u>	3 / 3
dos	"dots"	<u>d o s</u>	3 / 3

Articulation and Dialect: The student is not penalized for imperfect pronunciation due to dialect, articulation, or second language interference. This is a professional judgement and should be based on the student's responses and any prior knowledge of speech patterns. For example, a student may regularly substitute /th/ for /s/. If the word is "sim" and the student says "thim", the letter "s" would be underlined and credit for a correct letter-sound correspondence would be given.

Word	Student says	Scoring Procedure	Correct Letter Sounds
sim	"thim" (articulation error)	<u>s i m</u>	3 / 3
rit	"wit" (articulation error)	<u>r i t</u>	3 / 3

Self-corrections: If a student makes an error and corrects him/herself within 3 seconds, write "SC" above the letter and count it as correct.

Skipping Rows: If a student skips an entire row, draw a line through the row and do not count the row in scoring.

(Good & Kaminski, 2002)

Appendix E

Description of the LNF Measure

DIBELS Letter Naming Fluency (LNF) is a standardized, individually administered test that provides a measure of risk. LNF is based on research by Marston & Magnusson (1988). Students are presented with a page of upper- and lower-case letters arranged in a random order and are asked to name as many letters as they can. Students are told if they do not know a letter they will be told the letter. The student is allowed 1 minute to produce as many letter names as he/she can, and the score is the number of letters named correctly in 1 minute. Students are considered at risk for difficulty achieving early literacy benchmark goals if they perform in the lowest 20% of students in their district. The 20th percentile is calculated using local district norms. Students are considered at some risk if they perform between the 20th and 40th percentile using local norms. Students are considered at low risk if they perform above the 40th percentile using local norms.

Administration and Scoring Procedures for the LNF Measure

Sample LNF Probe:

Probe 1
c c N u Q M u h S i
n b e N F f o a K K
g p k p a H C e G D
b w F i h O x j I K
x t Y q L d f T g v
T V Q o w P J t B X
Z v U P R I V C I W
R J m O z D G y U Y
Z y A m X z H S M E
q n j s W r d s B I
r A E L c c N u Q M
TOTAL: _____ /110

Materials Needed for Administration:

- Student copy of LNF probe
- Examiner copy of LNF probe
- Clipboard
- Stopwatch
- Red pencil or pen

LNF Probes

- Each probe is a random sort of 2 lower case and 2 uppercase alphabets.
- Lines help students keep their place.
- Serial naming and fluency aspects of the task are important.

STANDARDIZED DIRECTIONS

Setting the Scene:

1. Place the student copy of randomized alphabets in front of the student.
2. Place the examiner copy of randomized alphabets in front of you, but shielded so that the student cannot see what you record.

Directions to Student:

3. Say these specific directions to the student:

"Here are some letters" (point). "Tell me the names of as many letters as you can. When I say 'begin', start here" (point to first letter in upper left hand corner), "and go across the page" (point). "Point to each letter and tell me the name of that letter. Try to name each letter. If you come to a letter you don't know, I'll tell it to you. Put your finger on the first letter. Ready?"

Beginning Administration:

4. Say "Begin" and start your stopwatch.

Score as You Go:

5. Follow along on the examiner probe. Put a slash (/) through letters named incorrectly

Keep the Administration Going:

6. If a student stops or struggles with a letter for **3 seconds**, tell the student the letter and mark it as incorrect.

Prompting for Correct Response:

7. If the student provides the letter sound rather than the letter name, say, *"Remember to tell me the letter name, not the sound it makes."* This prompt may be provided once during the administration. If the student continues providing letter sounds, mark each letter as incorrect and indicate what the student did at the bottom of the page.

Ending Administration:

8. At the end of **1 minute**, place a bracket (]) after the last letter named and say "Stop."

SCORING PROCEDURES

3 Second Rule: If the student hesitates for 3 seconds on a letter, score the letter as incorrect, provide the correct letter, point to the next letter, and say, "What letter?" This prompt may be repeated. For example, if the letters are "t L s" and the student says "t" (3 seconds pass), prompt by saying, "L", (point to s) "What letter?"

Self Corrections: If a student makes an error and corrects him or herself within 3 seconds, write "SC" above the letter and **do not** count it as an error.

Probe 1										
c	c	N	u	Q	M	u	h	S	i	
n	b	e	N	F	f	o	a	K	K	
g	p	k	p	a	H	C	e	G	D	
b	w	F	i	h	O	x	j	I	K	
x	t	Y	q	L	d	f	T	g	v	
T	V	Q	o	w	P	J	t	B	X	
Z	v	U	P	R	I	V	C	I	W	
R	J	m	O	z	D	G	y	U	Y	
Z	y	A	m	X	z	H	S	M	E	
q	n	j	s	W	r	d	s	B	I	
r	A	E	L	c	c	N	u	Q	M	
TOTAL: 36 /110										

Incorrect Letter: A letter is incorrect if the student substitutes a different letter for the stimulus letter (e.g., "b" for "d").

Omissions: A letter is incorrect if the student omits the letter.

Similar Shaped Font: For some fonts, including Times, the upper case letter "i", and the lower case letter "L" are difficult or impossible to distinguish. A response of **either** "i" or "L" is scored as correct in that instance.

Articulation and Dialect: The student is not penalized for imperfect pronunciation due to dialect, articulation, or second language interference. For example, if the student consistently says /th/ for /s/ and pronounces "thee" for "see" when naming the letter "C", he/she should be given credit for correct letter naming. This is a professional judgment and should be based on the student's responses and any prior knowledge of his/her speech patterns.

Skipping Rows: If a student **skips an entire row**, draw a line through the row and do not count the row when scoring.

(Good & Kaminski, 2002)

Appendix F

Interview Questions

1. How many years have you taught kindergarten?
2. Can you describe the post-secondary education and training requirements you have experienced?
3. Do you think the demands in your career will increase or decrease over the next five years? Why?
4. What changes have you seen over the past 5 years in this occupation?
5. What was your initial impression in having the literacy coach involved in your instructional decisions? Were you a willing participant in the experience?
6. To what extent did you practice data-driven instruction prior to the coach's role in your classroom?
7. What, if anything, did the literacy coach bring to your understanding?
8. To what extent were you involved in the data-driven instructional decisions for your students?
9. How would you describe the collaboration with the literacy coach?
10. In what capacity did the coach contribute to your professional development?
11. How did the literacy coach impact your knowledge of data-driven instruction?
12. Following the year of collaboration with the literacy coach, did you continue to practice data-driven instruction?
13. Following the year with coaching, did you continue to use the instructional strategies modeled the previous years? What were they, if any?
14. What are your impressions of the children's performance as a result of the loss of the ongoing professional development?
15. What are your impressions of your own professional performance as a result of the loss of the ongoing professional development?
16. Do you wish to have the opportunity to collaborate with a literacy coach again? If so, why?

Appendix G

The Effects of Data-Driven Instruction and Literacy Coaching on Kindergartners' Literacy Development

Dear Kindergarten Teacher,

You are invited to participate in a study that examines student achievement as a result of collaborative teaching efforts and data-driven instruction. This research will examine the benefits in using assessments to identify individual needs and cater instruction accordingly. The following information is provided so that you may make an informed decision about whether or not to participate. You are eligible to participate in this study because you are a teacher who receives daily support from the district literacy coach. There are no known risks for you or your students associated with participating in this research. Your participation is strictly voluntary. You are free to withdraw from the study at any time by simply contacting me via e-mail, telephone, or postal mail. Participation or non-participation in this study will not adversely affect you in anyway.

Initial participation in this study will require your agreement to work collaboratively with the literacy coach. You may be asked to participate in a 30-60 minute interview, which would be held at your convenience. No one, except myself, and Dr. Lansberry, will have access to the data. All assessment scores will be secured in a locked file cabinet for at least three years in compliance with federal regulations. When analyzing and presenting the assessment data derived from your students, I will identify them with a pseudonym in order to protect their anonymity. In addition, any publication or presentation of the findings from this research will exclude information that would identify you.

If you are willing to participate in this study, please sign the statement on the next page and return it to me. Please take the extra, unsigned copy with you. Your return of this letter implies consent. An executive summary of the findings from this study will be made available to you upon request.

Thank you for your time and consideration.

Principal Investigator:

Karen Tyler, D.Ed. candidate, Indiana University of Pennsylvania
Professional Studies in Education
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Erie, PA 16504
814-825-1379
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Dr. Frank Corbett
Indiana University of Pennsylvania
Professional Studies in Education
122 Davis Hall
724-357-2417
fcorbett@iup.edu

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (phone: 724-357-7730)

Appendix H

Permission Letter



HARBOR CREEK SCHOOL DISTRICT

6375 Buffalo Road, Harborcreek, Pennsylvania 16421-1632
www.hcsd.ius.org

Administrative Office
814 897-2100
fax: 814 897-2142

Indiana University of Pennsylvania
Professional Studies in Education Department
Indiana, Pennsylvania

To Whom It May Concern,

Please accept this letter on behalf of Karen Tyler for her dissertation study in support of academic advancement with Indiana University of Pennsylvania. Ms. Tyler has been granted permission to utilize collective student data gathered through the DIBELS assessments within the Harbor Creek School District. It is my understanding that the research reflects two consecutive school years, 2005-2007 and will be subject to a quantitative study measuring the effects of data-driven instruction on the literacy development of our kindergarten and first grade students.

If you have any questions regarding this matter, please email or call me with the numbers listed below.

Sincerely,

Richard Lansberry, Ph.D.
Curriculum Director

	Phone:	Fax:
High School	814 897-2100	814 897-2136
Jr. High School	814 897-2100	814 897-2121

	Phone:	Fax:
Clark	814 899-0873	814 897-8723
Klein	814 899-4424	814 898-0225
Rolling Ridge	814 899-0816	814 898-1916

Appendix I

Interview with Teacher 1

1. How many years have you taught kindergarten?

I just finished my second year.

2. Can you describe the post-secondary education and training requirements you have experienced?

I have a Bachelor degree in Elementary Education. I have attended once conference since being in kindergarten. It was a good one. It was BER's "What's New in Children's Literature?" and we looked at many different genres of new children books geared toward primary students.

3. Do you think the demands in your career will increase or decrease over the next five years? Why?

I believe that over the next five years teachers will have to earn master degrees and become experts of either primary or intermediate grades. I am aware of certifications shifting among universities to K-2 and 3-6 models. I feel that teachers will have to choose a focus and become master teachers of specific ages and developmental levels. They are already requiring Praxis exams in the upper grades. You really need to be an expert in a field to do well on the Praxis tests. So, to me that's a lot to expect – a big increase in demands for our career as teachers. It is just a matter of time before the primary grades are affected by change. I think the certifications will help teachers feel better prepared for classrooms. I think I was ready for the classroom after college but still have a lot of learning to do.

The professional development sessions being offered and required of our district have increased. Our literacy coach and curriculum director are constantly offering sessions to help us to get our required hours. I do think that the new requirements for professional development will continue to change and increase. Luckily, in the classroom I don't feel actual career changes so much. And we don't have the learning curve of the PSSA tests in reading, math, science and soon, social studies in kindergarten.

4. What changes have you seen over the past five years in this occupation?

I think the biggest changes for teachers have been the testing, ESL students, inclusion, and NCLB. I know the kindergarten teachers across the district can't believe the curriculum they are teaching today, as compared to ten years ago. We are preparing kids for test taking skills and writing prompts in order for our district to earn more money. The increase in testing is quite a change. The accountability for federal funding is a change. Teachers feel a lot of pressure to have good scores. Principals and districts feel it too.

5. What was your initial impression in having the literacy coach involved in your instructional decisions? Were you a willing participant in the experience?

In kindergarten it is always great to get another set of eyes and ears on my students. Particularly in the fall, it is an asset to have another professional evaluating and coming

to know my students. The children can be a handful when they begin kindergarten. I really looked forward to having another teacher in the room to assist me. I was very excited to have the help. With so many different needs, you really need another teacher in the classroom. It would be very nice to have the help every year. I think coaching should be put into place for every kindergarten classroom across the district, especially now.

6. To what extent did you practice data-driven instruction prior to the coach's role in your classroom?

I really didn't pay that much attention to the district-wide assessment results in other school years. I knew what skills would be measured and made sure I reviewed the concepts prior to their testing. The students that scored poorly were admitted into Title I for remedial reading services. The results of the assessments weren't necessarily my concern in the classroom. My day-to-day teaching didn't change as a result of test scores.

I would say I practiced little, if any, data-driven instruction, especially in the area of phonemic awareness. The core reading program has different assessments in phonics and alphabetic principle and the report card checklists gave me some assessment ideas, like beginning sounds. The report card checklist lists specific skills and I would assess them for mastery. I generally taught whole group instruction and the Title I teacher would serve individual needs of identified students.

7. What, if anything, did the literacy coach bring to your understanding?

Before the literacy coach began working with me, I believed that our reading program had all of the answers to my literacy questions. Now I realize that each child requires a different set of answers and I need to use a lot of resources and techniques to help me find ways to reach each student. The various assessment tools such as DIBELS also helped me to understand kindergarten expectations. The literacy coach helped me to learn how to use assessments and data. I work with assessments and data every day now. She taught me early literacy skills and the sequence in which they should be introduced. I learned how important modeled, shared, interactive and guided reading experiences were in the classroom.

I think that there should be literacy and math coaches available to all teachers across the district. I have attended many different classes and workshops in the past that gave me ideas and taught me things I didn't know. My experience working with a literacy coach for a year enabled me to actually understand the ideas and practice the things I didn't know. I learned about sentence segmentation, phoneme segmentation and isolation skills in addition to so many other ideas in phonemic awareness. I wouldn't have gained this much information without the year working together.

8. To what extent were you involved in the data-driven instructional decisions for your students?

In the beginning of the year, I really relied on the coach to make all of my learning groups. She could look at the data, my notes and just go from there. I didn't have the time or the ability to maintain the flexible groups. Finding time to analyze was a challenge for me. Now that I realize how important it is, I find the time.

I remember the day it all came together for me - the importance of the assessments. When I was able to look at a graph and use the information to form small groups and plan my lessons for the very next week, I got it. I realized what a valuable tool I have in data.

9. How would you describe the collaboration with the literacy coach?

The literacy coach constantly connected theory and practice. I would describe the collaboration with the word “connected”. She not only talked about what works in literacy, she demonstrated it. The collaboration included helpful conversations and developed a professional community among all five of us. We had easy access to daily interactions with the literacy coach and with one another. Through our weekly meetings and daily classroom connections we were able to plan, talk, and share ideas and helpful thoughts. It really benefitted me to have the teachers with experience in kindergarten thinking about my students and listening to me vent.

10. In what capacity did the coach contribute to your professional development?

The coach gave me more training in early literacy that I hadn’t had before. Especially in phonemic awareness, my coach prepared me for teaching the skills and strategies my kids needed. I had more professional training than ever this year. Professional development occurred every day. The coach working through classroom lessons, professional readings, conversations and formal trainings - all became a part of my learning.

The team meetings were important, too. The coach facilitated meetings each week for data and examining student growth. We had a student-based focus. It wasn’t just about the curriculum or early literacy skills. We spent time thinking and talking about kids.

11. How did the literacy coach impact your knowledge of data-driven instruction?

The literacy coach was a means for professional growth in the area of data-driven instruction. Without my time with her, I wouldn’t have looked at DIBELS or Metropolitan Achievement scores looking for much meaning.

At the beginning of the year, I looked at the big standardized tests defensively. I was comfortable with my ongoing classroom assessments but as my knowledge grew, I changed my feelings toward the application of the results of the tests. DIBELS data told me some things about the skills and performance results of my students. My coach taught me to look at data and results in ways that are meaningful.

12. Following the year of collaboration with the literacy coach, did you continue to practice data-driven instruction?

I use ongoing assessments for learning and teaching decisions every day now. I use a lot of different assessments that give me information for groupings, lesson planning – short and long term. I use the DIBELS data too. It gives me information about my students’ levels of phonemic awareness and really guides my planning.

13. Following the year with coaching, did you continue to use the instructional strategies modeled the previous years? What were they, if any?

The skills I have listed on a bookmark that the literacy coach gave us and I use them in my planning each week. I check to make sure I have an objective that matches a skill that is repeated throughout the week. Some weeks I am planning for two or three phonemic

awareness skills within my groups. The strategies for teaching the skills I pull from the internet, the binder the coach made for us, or the Florida Center for Reading Research binders we put together last year. I have been buying some published books for ideas too.

14. What are your impressions of the children's performance as a result of the loss of the ongoing professional development?

I think that without the professional development and collaboration I am trying to keep my head above water. I really came to become aware of the need for professional growth and discussion. I miss the conversations and learning that we shared. I believe that every grade level would benefit from a literacy coach and wish that we could have the experience every year. Teachers need mentors acting as coaches to feed us. I think that without the ongoing support we are too independent in making choices for our kids. We need to get feedback to have a well-rounded answer to questions or concerns. I think that my kids fared better with the year of collaboration. I know their test scores went up. I know their confidence was higher. There were more pats on the back, the more eyes and ears watching and listening. I think I felt more confident to make decisions too.

15. What are your impressions of your own professional performance as a result of the loss of the ongoing professional development?

My time spent discussing my students validated my concerns. If I was seeing a student having difficulty in my room I was able to talk with another professional and receive immediate feedback. I was able to look at issues of students and get ideas on what to try or do in my classroom to take them from point A to point B. The coach and the other teachers knew my students and what they needed. Sometimes I just needed another point of view or perspective to get a handle on a concern. I feel isolated and too independent in my decision-making. I need the experience or expertise to guide me as a teacher. I think all professionals need that reassurance, especially teachers. I need feedback both professionally and personally in this job. I am hungry this year. I miss the learning.

16. Do you wish to have the opportunity to collaborate with a literacy coach again? If so, why?

Yes, I would like to see that happen. I want to reach all of the levels of my students and still have more to learn. Classroom management and balanced literacy still challenge me. The professional learning community is needed on behalf of myself, colleagues and students.

Appendix J

Interview with Teacher 2

1. How many years have you taught kindergarten?

I have taught two years in kindergarten.

2. Can you describe the post-secondary education and training requirements you have experienced?

I have a bachelor degree. As far as education beyond that, I have only been to one workshop since I have been a kindergarten teacher. It was about learning centers and the presenter was reputable. Throughout my teaching career I have been to roughly four conferences. I have learned a lot about child development through the professional development sessions I have participated in. I've been to different district in-service hours but I wouldn't say those were training experiences. They always seemed more informational or program oriented.

3. Do you think the demands in your career will increase or decrease over the next five years? Why?

I think the field of education will require more from teacher candidates. I think the idea of highly qualified teachers will interest many to receive extra certifications or concentrations. Teacher candidates will need specialized training in ESL and technology. Assessments should be, if it isn't, a huge part of their learning in higher ed. I didn't feel at all prepared in assessment and instruction. I didn't have an area of expertise either. I think that having an early childhood focus would have benefitted me in my kindergarten teaching.

The need for professional development hours will increase over the next five years. It already has been written in to our contracts. Our school district is really offering a lot throughout the year and summer to acknowledge the hours needed. In the last two years, they have really worked to get us to come in for professional development over the summer. The literacy coach and curriculum director have opened up a number of sessions. We have had access to the literacy coach for our own personal professional development but her sessions can work for others too.

4. What changes have you seen over the past 5 years in this occupation?

I am fairly new to kindergarten and while I have manuals and a general awareness of child development, I feel as though I have almost too much to learn. It seems to me that with all of the federal and state changes, every teacher is going to struggle with feeling competent no matter how many years they have taught at a certain grade level. NCLB has affected every grade. Even though our kids in kindergarten aren't required to take the state assessments, we feel the curriculum pressures. We are teaching our students to write to a math prompt, look at angles and measurements. I think that many of these types of expectations were put on students and teachers in the last year.

5. What was your initial impression in having the literacy coach involved in your instructional decisions? Were you a willing participant in the experience?

After learning that I had two students entering my kindergarten classroom able to read, one student with autism, and three students diagnosed with ADHD, I was very concerned about my ability to meet all of their needs. It was very reassuring to know that the literacy coach would help me not only assess but also develop instructional decisions for my diverse group. I was willing to participate. September and October are such challenging months in kindergarten. I was especially happy to have the help from the get-go. Kindergarten is unique in that you often don't have paperwork on a child. There isn't data or reports and children may have a number of issues that need attention. You don't know their needs until they are in your classroom. The collaboration with the literacy coach and other teachers really helped me deal with the special needs of my students.

6. To what extent did you practice data-driven instruction prior to the coach's role in your classroom?

I have used the report card, core reading program and DIBELS for my assessments. I make notes on checklists and keep track of points earned on certain papers. I even keep running records in the winter and spring. I have always kept portfolios and used ongoing assessments in the classroom. The summative and formative assessments have been guided by district expectations. Data always seemed like a reporting procedure.

The data from the assessments, well, I never really dwelled on them. If a child earned points or performed a certain skill, I documented it and moved on from there. We have a lot of curriculum to cover. If a child had trouble making achievements Title I was a service that addressed curriculum lags. The reading specialist and her aide spent time with the kids challenged. I didn't use data for grouping or individualized instruction much, if at all.

7. What, if anything, did the literacy coach bring to your understanding?

I had no idea that phonemic awareness skills played such an important role in early literacy. I had always taught the letters and their sounds at the same time and wondered why some children struggled with letter sounds. After the year together collaborating I felt supported in phonemic awareness and the continuum that needs my attention. Now that I understand the importance in developing phonemic awareness, I can give my kids a stronger foundation in reading. Our professional development sessions helped me understand and be able to teach skills like phoneme isolation, segmentation, substitution, blending and deletion.

The importance of small group differentiated instruction is another thing that the coach led me to understand. Early literacy skills are the foundation for reading and comprehending. Looking at assessment data and grouping students based on need can improve test scores. The improvements can lead to better reading skills.

Another thing that the literacy coach brought to my understanding was the benefits of ongoing professional development. Throughout the year, I read articles and watched videotapes. I learned some best practices in reading instruction based on research. I was able to watch experienced teachers model lessons. My commitment to professional development has strengthened. I learned a lot.

8. To what extent were you involved in the data-driven instructional decisions for your students?

I would say I was very active in the weekly conversations about my students and groupings. I ultimately wanted to make the final decisions. I did rely on the coach for grouping choices because of the assessment data and instructional planning necessary for the literacy block. The coach handled the data efficiently and had the time to do it. She was able to set up assessments, collect data, and determine groups, especially in the fall and winter. In the spring, I really took off on the decisions made. I was able to attend our meetings with pre-determined lists and assessment data to share. I worked with assessments every day to capture performances and observations. I used data every day to help me with planning.

9. How would you describe the collaboration with the literacy coach?

The collaboration was so valuable. We discussed individual students which supported me in meeting with parents. She encouraged me and taught me research-based strategies that were effective. I felt empowered to try new things. Valuable conversations about kids and instruction were a constant. We had frequent interactions throughout the day and week and exchanged ideas. Our collaborative efforts paid off in the students' end of the year performance assessments.

10. In what capacity did the coach contribute to your professional development?

I think I answered this in another question so you can cross-reference the other question pertaining to professional development if I skip any ideas. I became a stronger teacher in early literacy skills. I learned how powerful direct instruction can be when a child needs it. I also changed what I knew about phonemic awareness. I had always related it to letters and phonics. My additional research and experiences have changed the way I teach reading. I have made the connection from language to letters and can encourage my students in ways I never had before. The collaboration with the literacy coach helped me to understand early literacy skills far better than the reading program. I know about multisensory learning and how it can make a difference to a child. I used shaving cream and clay with my tactile learners. I used lily pads for hopping to segment sounds and hula hoops for jumping into sounds to blend phonemes. These strategies addressed my kinesthetic learners. My visual learners were given pictures and objects to match beginning sounds. My auditory learners played Earobics on the computer to work on their phonemic awareness skills. With our collaboration I really saw the benefits of multisensory learning with practical and fun learning strategies.

The professional development sessions offered really improved my practice. I am using data, teaching early literacy skills, using assessments, and reading a lot about this age level.

11. How did the literacy coach impact your knowledge of data-driven instruction?

After each DIBELS assessment, I was able to look at the scores of each student and make instructional plans. Small or individual groups were easy to pick out of the data. The skill in need of improvement was there in black and white and the plan was written. For some kids, fluency was an issue throughout the year. We worked on automaticity. Games with stopwatches naming letters, centers with timed challenges in matching beginning sounds and nonsense word readings were included in the plans. For other students, it was the

ability to accurately name letters or hear vowel sounds that was hard. They had isolated or direct instruction in letter naming, a few at a time. They practiced auditory discrimination with games on the computer or the stretching of sounds. The challenges were seen in their classroom performances but also visible in their ongoing DIBELS data.

Our time collaborating worked on addressing needs like the ones I described. We brainstormed strategies to acknowledge the skills they lacked. I used data to make these decisions. I had research and experiences along with the time collaborating to support my decisions. Data-driven instruction became my common practice. We took time in every team meeting to talk about and think about data. Our collaboration helped me practice data-driven instruction after collecting and analyzing results. The classroom lit links – the co-teaching helped me make sense of the team meeting discussions and learning. In our professional development sessions and team meetings we reviewed theory and really learned about data-driven instruction. The lit links put the theory to practice. I really changed my initial intimidation of the process. Differentiated instruction based on students' individual or small group needs was easy to plan for when using data.

12. Following the year of collaboration with the literacy coach, did you continue to practice data-driven instruction?

I am still using a number of assessments every week. I don't look at the data and organize the testing information as often as I did in the past, but that's not to say that I don't use the data. When a child is following behind I know it. When someone isn't making the progress they should, I see it. I am using data and assessments for my instruction. I revisit concepts a lot for small groups. I am planning interventions for some students and their work with older students. It's tougher to run small groups as often as I would like without the help of a coach but data is definitely being used all the time in my decision-making.

13. Following the year of coaching, did you continue to use the instructional strategies modeled the previous year? What were they, if any?

Yes! We have actually been using the binder that we put together with our coach last year. I have also bought quite a few other idea books and log into fcrr.org a few times a month to give me lesson plans. I plan for specific skills using something I remember works or use one of the resources.

I can work on specific skills with multisensory learning experiences. Off the top of my head, I like to have the kids practice syllabication or sentence segmentation by pushing pennies. To practice rhyming we use songs or chants. The kids are using picture wheels for onset rime activities. We are using play dough and clay to identify beginning sounds. There are so many strategies to choose from. The phoneme segmentation, blending, and substitution exercises include a lot of language.

14. What are your impressions of the children's performance as a result of the loss of the ongoing professional development?

I am confident about this year. I think that I have been and will be able to continue to use what I learned to help my students. I am using assessments and data. I am working with my students in small groups and teaching early literacy skills in creative ways. I think that my students test results with DIBELS and Metropolitan tests will prove to be high

again this year but wish that I had the guidance in getting there that I did last year. I really miss the time together.

I am definitely disappointed that I don't have the hands-on help I need for my students and wish that we could wind the clock back up again. I have my hands full and small groups are hard to manage with just one teacher working on skills.

15. What are your impressions of your own professional performance as a result of the loss of the ongoing professional development?

The collaboration we shared was so important. I can be reflective about my assessments and instructional decisions but without the conversation with the other teachers and literacy coach, I don't feel that my choices and ideas are as well-rounded. I miss the collaboration.

This school year we are being offered a lot of professional development opportunities. I am anxious to begin the work with the other kindergarten teachers in learning new ideas.

I am using research-based teaching strategies. I am reading literacy-related professional books and am thinking about taking some classes. I would like to have another year of professional development that teaches me just what I would like and need to know.

16. Do you wish to have the opportunity to collaborate with a literacy coach again? If so, why?

Yes. Collaborative teaching is the best resource we can offer teachers and kids.

Appendix K

Interview with Teacher 3

1. How many years have you taught kindergarten?

Ten years.

2. Can you describe the post-secondary education and training requirements you have experienced?

I have a bachelor degree in elementary education and a minor in science. Over the last few years I have earned PLS credits from Gannon University with college courses geared toward early childhood, reading, and developmentally appropriate practices. Throughout my career, my professional developments have ranged from guided reading to science curriculum writing. I'll bet I have attended over twelve. I believe in professional development. I have also participated in Earth Force training and sign language classes.

3. Do you think the demands in your career will increase or decrease over the next five years? Why?

I think that to meet the demands of children I am teaching I need to further educate myself. I need to understand the emotional, social, and developmental stages of my children. After experiencing the year of collaboration in kindergarten, I realize that I have a lot of learning to do. In order to meet the early literacy needs of my students, I need to fully appreciate emergent and early literacy behaviors and expectations.

I think that undergraduate college programs play a large role in preparing teachers. The demands in my career have increased since I left college. In the next five years teachers better be graduating with a great deal of knowledge regarding assessment, instruction, reading and math. I did not feel prepared when I graduated and went into the classroom over ten years ago. With all of the pressures of NCLB, I can't imagine graduates will feel prepared, no matter what college they attended.

Professional development demands will keep increasing in the next five years. Highly qualified teachers and nationally certified teachers will need their credits, hours, and time spent learning. The expectations are there. We need training and time for learning. Our district is requiring more professional development hours since the passing of this contract. I think our next contract in four years will require even more time spent learning. Luckily, the district is also providing more time for professional development hours before and after school, during the summer, and in class. We have access to a curriculum director and to our literacy coach to help with ongoing professional development.

4. What changes have you seen over the past 5 years in this occupation?

With NCLB I feel such a pressure to educate myself. I need to know the different assessment tools available and the procedures needed to conduct them. I need to understand the RTI process and become better in collecting the adequate paperwork for referrals. I need to learn about how to develop accommodations and modifications needed for many of my students. I need to enhance my gifted kids and support my struggling students while demonstrating AYP among all of the students in my room.

With NCLB, the demands are increasing every day. I can't imagine what they will be in five years! There has been such a trickle-down effect into kindergarten. We are teaching first grade curriculum. Five years ago, our kids were in school half of a day and took naps. Now, we don't even have time to rest. We are too busy teaching content and not social skills. That is the biggest change; the shift to content and curriculum teaching – from social and developmental play.

5. What was your initial impression in having the literacy coach involved in your instructional decisions? Were you a willing participant in the experience?

I was willing to have the time together. I was confident that the literacy coach would have good ideas and could help me in creating a climate for learning early in the school year. I was looking forward to the co-teaching element. What I underestimated was her ability to assist me with instructional decisions for every child. The literacy coach was able to identify struggling students immediately and offered good advice. My initial impression involved the realization that I, as well as my students, would learn as a result of having her time in the classroom.

6. To what extent did you practice data-driven instruction prior to the coach's role in your classroom?

In the past, if I assessed my students in shoe tying and one of them could not tie a shoe, I remediated with that individual child when I had time or had a sixth grader visit and practice the skill with my student. After a year of forming data-driven instructional decisions, I realize the need to identify individual or small groups of students and recognize their specific instructional needs. With data, I can acknowledge the need for one or more students, form a small group, and teach to the skill using multisensory learning.

With reading, I practiced a standards-based curriculum using the Early Childhood Learning Standards. I used resources like our reading series and resources to help guide me. My assessments though, came from my own checklists or worksheets that addressed specific skills. I used both summative and formative assessments and I would take the data and transfer it to conversations with parents or report cards. I would plan differentiated instruction giving kids an extra chance at learning with peers or during practice centers but never had the focus that I gained with the coach.

Title I has always used my DIBELS, Metropolitan Achievement Tests, Kindergarten Readiness Test and classroom assessment data to form small groups of at-risk students. Now I can also use my data and develop plans accordingly.

7. What, if anything, did the literacy coach bring to your understanding?

The literacy coach really deepened my understandings about early literacy and assessment. She gave me additional research, resources and experiences with specific literacy skills. I focused on the continuum of phonemic awareness this year, for the first time. I will mess this up but we worked on listening and following directions, rhyming, onset rime, syllable segmentation and blending, phoneme isolation and deletion, phoneme substitution too. We worked with compound words and stretching sounds in ways we had never done before. There was a lot of learning done with assessments too.

We were challenged in coming up with weekly assessment measurements that captured the true abilities of our students. We really thought about the challenge in the summative assessments for our students. If we gave them ample opportunities, through a number of ways, to perform, sooner or later they did.

The multisensory practices were key. If a child couldn't spell a word, they could certainly demonstrate that they knew the sounds in the word by clapping the syllables or phonemes. The more they practiced through kinesthetic or verbal approaches, the more they could apply it to their written work. We had visual cues and auditory games that really reinforced all of their learning through so many venues.

8. To what extent were you involved in the data-driven instructional decisions for your students?

At the onset of the year, I had the coach collect and analyze all of my data. She put together groupings that were pretty flexible, week to week, surprisingly. I also relied on the coach for instructional decisions with phonemic awareness. I had a lot to learn and recognize and wanted to see how she developed specific skills and the strategies she used.

As the year went on, I was more comfortable making my own decisions with grouping and instruction, assessment too. Our weekly team meetings really helped support my growth and seeing the learning modeled with the literacy coach. Assessments became easier to develop and so the data became easier to collect and analyze. By the end of the year, I shared observations in addition to all of my paperwork and felt much more confident about using data.

9. How would you describe the collaboration with the literacy coach?

I am a stronger teacher because of the experience. I learned a lot and value the collaborative community we established. The weekly meetings in which we all met as a team and the individual meetings created professional conversations that would never have occurred if we had not have had the year of collaboration. We gave important feedback from one another and to each other. The year of collaboration was very worthwhile.

10. In what capacity did the coach contribute to your professional development?

This experience has honed my training as a kindergarten teacher. Prior to the time together I felt isolated. I made decisions based on what I had learned in the past and what I thought worked. I recognize the value in research-based teaching strategies now. I have seen the effects in my classroom. I understand the key role that collaborative feedback plays in making decisions, too. My decisions are supported by research and colleagues that have experience and knowledge. The team meetings each week and lit links in the classroom each day were priceless learning experiences. The professional development sessions really picked up where my college career left off in making me a stronger teacher. I learned about phonemic awareness skills which is not a subject that you can find professional development on in this state very easily. Sure there are some venues but they are usually trying to sell you something. The professional development we received was ours. It met our specific needs.

11. How did the literacy coach impact your knowledge of data-driven instruction?

Data-driven instruction has been such a buzz word for the last few years. Before our time working collaboratively I had the impression that DDI was for grades 4,5,6. It sounded more intermediate.

The literacy coach really held my hand in helping me to understand and gain professional growth in the area of data-driven instruction. I changed my thinking after our first professional development session and the team meetings. We discussed data every day and made it seem like something very student-driven. In fact, that was the title of one of the professional development sessions, “Student-Driven Instructional Decisions”.

12. Following the year of collaboration with the literacy coach, did you continue to practice data-driven instruction?

After the year of collaboration I joined my school’s data team. I practice data-driven decision making every day and have shared a lot of what I have learned with others. I have joked and said that I am offering “DDI for Dummies”.

I have created and am still creating a list of skills for every kindergarten teacher with some recommended assessments to measure students’ performances. I am very interested in this topic. It has become a district-wide initiative for these data teams to spread the ideas within each school and I am really working hard to share all that I have learned.

13. Following the year of coaching, did you continue to use the instructional strategies modeled the previous year? What were they, if any?

This fall I am practicing phonemic awareness and phonics strategies every day. I have a little recipe box with index cards that I pull from to help me plan for my groups. I put together the note cards throughout last year and over the summer with ideas that I saw the coach model or ones that I found worked for me. I also have the phonemic awareness binder that our coach left behind to remind me of strategies that worked and can go online to hunt for other ideas. Some of my favorite strategies acknowledge the multisensory learning techniques. Penny pushes to show syllables, shaving cream printing to show initial sounds heard, clapping sounds, stomping words, and shaking pompons to the number of sounds heard in a word. Using wiki sticks to form letters, creating Dr. Seuss books to represent nonsense words, and mixing up compound words are some of my favorites. We hop, draw, step, and slide sounds and words all the time.

14. What are your impressions of the children’s performance as a result of the loss of the ongoing professional development?

We knew it was too good to be true. How can a district afford to give instruction to a specific group of teachers and students year after year? It’s disappointing that we lost our coach. Shouldn’t districts be trying to build capacity? Isn’t that what our year of learning was about? Our job is to keep up the test scores by doing what we did last year ... best practices. The only factor they don’t consider is that we need an extra set of hands and eyes to do what we did. To really make learning happen for all kids we need smaller groups. That means we need more teachers.

I would like to think that I will be able to keep up my kids test scores and performance levels this year with all of the professional development I have had but I’m nervous. I am

confident in myself and what I know but it is going to be tough to compete with last year. I am missing the collaborative effort and the constant learning that we shared. We became our own little classroom of teachers.

15. What are your impressions of your own professional performance as a result of the loss of the ongoing professional development?

At our team meetings together we shared beliefs, ideas, possibilities and our enthusiasm for teaching early literacy. Without our literacy coach facilitating the time and dialogue, we are disconnected. There is a disconnect from each other and our students. I am worried about missing out on new ideas and current research. It is tough to take time to sort through research readings and journal articles to find something applicable to my classroom. The coach did that regularly because she had the time to find us what we needed. I am falling behind in my collaborative efforts to continue working with my kindergarten colleagues and probably missing some research and ideas that would help me in my classroom.

16. Do you wish to have the opportunity to collaborate with a literacy coach again? If so, why?

Yes, I think that the time spent with the literacy coach provided an assurance to student achievement. I think the professional development, collaboration and data-driven instruction really benefitted us as professionals and gave the kids what they needed.

Appendix L

Interview with Teacher 4

1. How many years have you taught kindergarten?

Twenty years.

2. Can you describe the post-secondary education and training requirements you have experienced?

I have a bachelor degree and almost the equivalence of a master degree. My post-secondary education has been through both Gannon University and Edinboro University courses. I have many courses related to early childhood and developmentally appropriate practices. I have enjoyed courses that emphasize play and social development. I have averaged two professional developmental experiences each year in my career. That makes over twenty post-secondary learning moments - at least.

3. Do you think the demands in your career will increase or decrease over the next five years? Why?

Oh, there are always increased expectations for teachers. I think we will be teaching year-round one day with 1/3 of our time in professional development. From committees to curriculum writing the demands have grown especially since NCLB. The more districts feel the heat from the government, the more heat we feel in the classroom; teachers and students alike. Colleges are even having to increase their demands on students.

4. What changes have you seen over the past 5 years in this occupation?

Our students just don't have a chance to play and grow in the classroom like they used to. We are constantly teaching curriculum. They don't have time to play or work on social skills like in the past. In the last five years, I feel as though we have brought the first grade curriculum to the kindergarten classroom and our children just aren't ready to learn what the state is requiring of them. I have kids ready for a nap at noon, not book handling skills. Developmentally appropriate practices in the classroom seemed to have been tossed out when NCLB came in. The trickle-down effect from the PSSAs in third grade is staggering. Our kids are learning content skills, not life skills.

5. What was your initial impression in having the literacy coach involved in your instructional decisions? Were you a willing participant in the experience?

I had a positive outlook on the whole experience. Any opportunity to have another perspective on my classroom, students, teaching I welcome. I have had math specialists in and the speech teacher. Title I teachers and aides are also welcome. I was anxious to begin the year with the coach.

6. To what extent did you practice data-driven instruction prior to the coach's role in your classroom?

My kids have made achievements in reading that have surpassed my expectations. Their literacy learning has been remarkable this year. I am amazed at the amount of independent reading my students are able to do as a result of the foundation we laid in measuring and analyzing their levels of phonemic awareness.

The Early Learning Standards acknowledge phonemic awareness and pretty much just list the skills or ideas. This year of training in looking at phonemic awareness assessments and data really did much more than the list of standards did for me. I didn't use data in my instructional decisions. I just acknowledged the curriculum requirements or the standards noted. I was able to move from whole group instruction to small group and individual lessons. I had not done that in the past – worked with data that way.

7. What, if anything, did the literacy coach bring to your understanding?

Balancing literacy in the classroom requires me to get to know the needs of my students individually and collectively. I need to teach responsively in order to facilitate progress among my students. If I use data, different teaching techniques and resources, and ask for help, I am able to reach out to my students with educated answers. I can practice student-driven choices and adjust groupings as a result of the data I have collected. These are things that I had not done before the coach intervened.

For years I have been measuring student progress with informal checklists and have developed my own system to document students' strengths and weaknesses. The district-wide DIBELS assessments came across so clinical and statistical at first. The coach really helped me to see the relevance in data and wise or well-designed assessments.

My early reading skills have really been refined. I have a more contemporary look at literacy. Let's face it, I like the Letter People. I believe in the good they can do for kids and have seen them work their magic for years. It's hard to let go of something that you know works. But, the coach has opened my eyes to balanced literacy and the importance of guided, shared, interactive and modeled reading time. I have always practiced those ideas but didn't call them or put the value on them that I do now. Independent reading really grew on me by the end of the year. I used to take an entire year to introduce the Letter People. After the year with the coach I was working on all the components of balanced literacy and had the Letter People all displayed and introduced by Christmas. We did so much work in phonemic awareness and phonics that it was natural. The letters needed to be out. The balanced literacy needed the letters to be introduced to support the kids writing and reading. I guess I the coach really supported my literacy learning, instruction and assessment practices through year-long professional development.

8. To what extent were you involved in the data-driven instructional decisions for your students?

I embraced the data-driven decision making from the beginning. I changed my small groups each week, giving authenticity not just lip service to the idea of flexible groups. I wanted to give kids the chance to work with a variety of students and make friends. I really used the opportunity to work with small groups as a social group too. I found myself sometimes pairing up students in the same group with differing ability levels too. I wanted to have kids act as mentors and step up their role as leaders in the classroom. I used a lot of sources of information in doing so. (I made) notes on social and emotional tendencies as well as abilities. (My students became) not just leaders but friends that help others. I mixed up the groups as often as I could. I used data and I was helped by the coach in doing so.

9. How would you describe the collaboration with the literacy coach?

The collaboration was so valuable. I have mentored over ten teachers throughout the year. I think that this experience made me feel mentored for once, by the coach and by my colleagues. We were really able to help one another out this past year. I learned from them, they learned from me. It was such a give and take. The coach really challenged us to think about students analytically, about our classroom routines and decisions.

The sharing of specific strategies in phonemic awareness was beneficial; the balanced literacy support and assessment tools. The multisensory learning approaches really improved their achievement scores. I really felt as though I learned a lot.

We shared important conversations and learning with each weekly meeting and every day visits. Email was used at home when we planned or needed to vent. The communication we shared really kept it all together.

10. In what capacity did the coach contribute to your professional development?

The coach helped me learn about balanced literacy, phonemic awareness and data-driven instruction. I didn't realize how much I needed to learn. I have been teaching kindergarten for years but never looked as analytically at my children as I did this year. I learned their levels of phonemic awareness and worked them through the continuum. I have more students reading this year than ever.

I am a firm believer in professional development but this year was different. I really deepened my practice. The professional learning before, during and after school was so powerful. The hands-on learning with content that was appropriate to our needs. To our kids need. That was deep. I read articles I would have never found or picked up. I used assessment tools that I never would have thought to be practical. I am inspired to continue to learn after this time together. I am inspired to be a stronger mentor to my colleagues. I need the time to do it though.

11. How did the literacy coach impact your knowledge of data-driven instruction?

Anytime you attend a workshop and get new information it is a great experience. Yet, you can sit there and think that this is good stuff and like it, but then you leave and it gets left behind. You may think it was important but you don't have time to implement it. Workshops in data-driven instruction taught me a great deal but it was my time spent implementing it through the help of my coach that made it a true learning experience. The time together this past year was means for professional growth in the area of data-driven instruction. It was professional growth in early literacy and classroom planning.

12. Following the year of collaboration with the literacy coach, did you continue to practice data-driven instruction?

Yes. I expect it of myself and others now. We laugh at one another in the teachers' room and say, "data is my friend". Sure it takes time to plan and make assessment tools, collect data, analyze it and use it. Everything in education seems to have the time factor. Once you realize the value in something, though, you make a commitment to find the time. I use data every day for grouping, lesson planning, and schedule changes.

13. Following the year of coaching, did you continue to use the instructional strategies modeled the previous year? What were they, if any?

Do you want me to list them? Okay, well, I'll start with the fun ones. We hop sounds in words along lily pads with our frog puppet, we pass around a rhyming rat, we sing little chants like "What's cooking in the kitchen? It starts with /b/." We draw pictures to show onset rime, we slide pennies and bingo chips to show syllabication and play rhyming bingo. All of these games represent the phonemic awareness skills we practiced last year with the coach. She would model ideas, we would jot them down and I still use them today. We also have the binder she left behind to remind us of strategies that worked. Pretty much any multisensory learning approach we can use, works for kids. The groups need to be sorted to make it worthwhile, so it isn't repetitive work on a skill already acquired.

14. What are your impressions of the children's performance as a result of the loss of the ongoing professional development?

What the district should be doing is recognizing that our kindergartners need the added attention every year. The kids test scores are going to be lower this year. They will be. The small groups are tough to manage without a coach. The professional conversations about students and what they need are gone. Our kids aren't getting the individualized attention they had with two teachers working hard to boost their performance. I know that I am key in keeping their scores high but it would be nice to have the extra help.

I am discouraged by the loss of the collaborative experience. Our coach shared our commitment to the work that needs done in kindergarten. It takes a village, so to speak.

15. What are your impressions of your own professional performance as a result of the loss of the ongoing professional development?

I don't feel like I am growing professionally this year. I need the ongoing reflective conversations to grow. I am going to enroll in a college class next semester to experience the learning I am missing.

I am missing the times we spent talking and acknowledging our own strengths and weaknesses within the conversation. If I lacked expert ideas or background, the coach would compensate. If I needed an idea, another teacher could lend a hand. The learning was reciprocal. I miss it.

16. Do you wish to have the opportunity to collaborate with a literacy coach again? If so, why?

Yes. We need the time to meet with the kindergarten teaching team. We need a reading specialist in working with our kids needs. We need time and professional development to grow and become stronger. I really treasured the collaboration and learning. Yes, I wish it all back!