2007

The impact of daily writing on kindergarten students' phonemic awareness.

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2007

ABSTRACT

The Impact of Daily Writing on Kindergarten Students' Phonemic Awareness

by

C. A. Snell

M.A., King's College, 2000
B.A., Lycoming College, 1997

Doctoral Study Submitted in Partial Fulfillment
Of the Requirements for the Degree of
Doctor of Education
Teacher Leadership

Walden University
June 2007

Abstract

The purpose of this quantitative study was to determine whether or not a significant relationship exists among daily writing and student growth in phonemic awareness. The study also considered the impact of writing on the phonemic awareness development of students at different literacy levels. Although studies exist on the importance of phonemic awareness development in reading acquisition, a deficit exists examining the correlation among daily writing and the phonemic awareness development of students representing different literacy levels. Forty students in an experimental group engaged in daily writing opportunities, while 37 students in the control group engaged in less frequent writing opportunities. Data included pre- and posttest results from The Phonological Awareness Test. Descriptive statistics were chosen to describe the demographic variable of group, gender, and ability level and inferential statistics included the two-sample *t* test. Results were statistically analyzed using SPSS 13.0 and concluded that a significant relationship does exist among daily writing opportunities and the phonemic awareness development of kindergarten students. Daily exposure to writing had a significant impact on students in the low-risk experimental group. Although a significant difference was not found in the some/at-risk groups, the experimental group had a larger average increase on the phonemic awareness measure. Results will fill the existing gap between research and practice concerning the correlation among daily writing and phonemic awareness, and the reciprocal impact this correlation has on students' literacy development. In addition, results may influence early childhood educators to implement daily writing opportunities as a method for increasing students' phonemic awareness development.

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DEDICATION

This doctoral study is dedicated to early childhood teachers who truly understand the importance of authentic and meaningful daily writing, and to kindergarten writers who have inspired me to share the value of emerging writing and developmental spelling with others.

ACKNOLWEDGEMENTS

I would like to acknowledge my mentor, Dr. Ashraf Esmail, and my committee members, Dr. Charles Duffy and Dr. Glendolyn Duhon-JeanLouis, for sharing their knowledge and expertise through this process. Dr. Esmail, you were a wonderful sounding board and support system to have along the way. I would like to acknowledge my family and friends for their support through this journey. Your understanding provided the encouragement I needed, even during those moments when researching, writing, and editing were overwhelming. I would also like to acknowledge the administrators and staff of the Lake-Lehman School District for their continued support and their understanding in the importance of professional development. Lastly, I would like to acknowledge my best friend and fiancé, who stood alongside me during the entire journey. Your positive thoughts and spiritual guidance reminded me daily of my desire in completing this degree.

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CHAPTER 1:

INTRODUCTION TO THE PROBLEM

Introduction

Educational research which spans nearly four decades, has examined the spellings and emerging writings of young children to define their effects on literacy instruction and the correlation to reading. Research in these areas was pioneered during the mid 1970s by Read (1975) and Clay (1975). Their research on the spelling and writing development of young children laid the foundation for numerous studies to follow, and the terms *developmental spelling* and *emerging writing* evolved. Beginning or emerging writing "is a child's gradual development of perceptual awareness of those arbitrary customs used in written English" (Clay, 1975, p. 2). Invented or developmental spelling is "the early spellings that children produce independently" (Strickland & Morrow, 1989a, p. 427).

The current literature on emerging writing and developmental spelling concludes that students' literacy development is enhanced when daily opportunities to explore writing and spelling are provided (Ehri & Wilce, 1987; International Reading Association and National Association for the Education of Young Children, 1998; Lombardino, Bedford, Fortier, Carter, & Brandi, 1997; Mann, Tobin, & Wilson, 1987; Partridge, 1991; Richgels, 1995). Furthermore, research has begun to explore the connection between writing, spelling, and *phonological and phonemic awareness* (Henterly, 2000; Kamii & Manning, 2002; Mann, et al., 1987; National Reading Panel Report, 2000; Snow, Burns, & Griffin, 1998; Strattman & Hodson, 2005). Phonological and phonemic awareness refer to pre-reading skills that are used interchangeably in literature. According to the

International Reading Association and the National Association for the Education of Young Children (1998), the majority of "theoretical and empirical literature focuses specifically on phonemes" (p. 6), so the term phonemic awareness is used more frequently in research. Children who display phonological awareness recognize "that words can rhyme, can begin or end with the same sounds, and are composed of phonemes (sounds) that can be manipulated to create new words" (Ericson & Juliebo, 1998, p. 3). Whereas phonemic awareness, a subset of phonological awareness, "is the understanding that the sounds of spoken language work together to make words" (Center for the Improvement of Early Reading Achievement and The National Institute for Early Literacy, 2001, p.3). It is phonemic awareness, in particular phoneme detection, blending, and segmenting, that has been highly examined in reading research because these skills "are more important for reading acquisition" (Smith et al., 2001, p. 27). For the purpose of this study, *phonemic awareness* will be the term used throughout the remainder of the paper.

The literature base also includes studies that have focused on the spelling and writing development of kindergarten students (Lombardino et al, 1997; Lamme, Fu, Johnson, & Savage, 2002; Partridge, 1991; Read, 1975), the contribution of invented or developmental spelling to beginning reading (International Reading Association and the National Association for the Education of Young Children, 1998), the spelling-reading connection (Ehri & Wilce, 1987; International Reading Association and National Association for the Education of Young Children, 1998; Richgels, 1995), and the role that journal writing and writer's workshop has in kindergarten classrooms (Hannon, 1999;

Hertz & Hydenberk, 1997; Jarvis, 2002; Piccirillo, 1998). A more detailed discussion in regards to these studies can be found in chapter 2.

The above research has confirmed the importance of daily writing in early childhood classrooms, but a study has yet to be conducted that examines the influence of daily writing on the phonemic awareness development of kindergarten students representing various literacy levels. Minimal studies have been noted in the existing literature base that explores the following: a) the impact writing has on students' phonemic awareness development (Henterly, 2000; Kamii & Manning, 2002; Mann et al., 1987), and b) the need for additional knowledge related to the importance of daily writing and spelling opportunities in kindergarten classrooms (Piccirillo, 1998; Strattman & Hodson, 2005).

Statement of the Problem

The present study was motivated by the fact that since the late 1990s, additional attention has been placed on early childhood literacy programs and the importance of phonemic awareness in emerging reading development (Adams, Foorman, Lundberg, & Beeler, 1998; Carr, Davis, Durr, & Hagen, 1998; Ericson & Juliebo, 1998; Fielding-Barnsley, 1997; Oudeans, 2003; Snider, 1997). Attention has increased due to the National Reading Panel Report (2000) and the No Child Left Behind Act of 2001 (U.S. Department of Education, 2005), which have defined the importance of early literacy and the role that phonemic awareness has in the prevention of reading problems. Although research has determined that a correlation exists among phonemic awareness and reading achievement (Adams, 1990; Ball & Blachman, 1988, 1991; National Reading Panel

Report, 2000; Torgesen & Davis, 1996), the National Assessment of Educational Progress (2003) found that 37% of fourth graders have "below basic" reading skills. In addition, Torgesen (2004) noted that "children who are destined to be poor readers in fourth grade almost invariably have difficulties in kindergarten and first grade with critical phonological skills" (p. 1). Finally, Juel (1988) found that children who do not learn to read by second grade have little chance of success in reading.

Statistics such as these reiterate the critical importance of acquiring phonemic awareness in learning to read (Adams et al., 1998; International Reading Association and the National Association for the Education of Young Children, 1998; Snider, 1997; Steinhaus, 2000; Torgesen, 1998; Yopp & Yopp, 2000). Numerous research studies exist on the importance of phonemic awareness in reading acquisition, yet a deficit exists in the literature base concerning the correlation between daily writing and the phonemic awareness development of kindergarten students representing different literacy levels. Although phonemic awareness is taught through auditory techniques, other strategies or research-based methods may be influential to the acquisition of phonemic awareness development. Such strategies or research-based methods can be used to aid in the phonemic awareness development of all students, regardless of ability level. In addition, Pokorni, Worthington, and Jamison (2004) noted a need for further studies which examine "intensive phonemic awareness training with other salient activities by applying the alphabetic principle" (p 156). The present study focuses on the salient activity of writing, during which students use their phonological knowledge to associate sounds with letters and apply the alphabetic principle.

This study compared the phonemic awareness development of students representing different literacy levels in an experimental and control group design. The purpose of the design was to determine whether or not a significant relationship exists among daily writing opportunities and student growth in phonemic awareness. The study also considered the impact of daily writing on the phonemic awareness development of students at different literacy levels. Students in the experimental group engaged in daily writing opportunities that encouraged emerging writing and developmental spelling, whereas student participants in the control group participated in less frequent writing opportunities. Pre- and posttests on The Phonological Awareness Test (Robertson & Salter, 1997) were administered to students in the experimental and control groups in early fall and spring of the kindergarten year and results were statistically analyzed.

Nature of the Study

In this quasi-experimental study, the researcher analyzed pre- and posttest data to determine if a significant relationship exists among the independent variable of daily writing and the dependent variable of phonemic awareness. The null hypothesis was tested which states that there are no significant differences between the population means of the experimental and control group in terms of phonemic awareness development. The alternative hypothesis states that there is a significant difference between the population means of the experimental and control group; that is, the belief that daily writing has some kind of effect on phonemic awareness development.

In addition, the researcher analyzed pre- and posttest data to determine if a significant relationship exists between the experimental group and the control group in

terms of phonemic awareness development at different literacy levels. The null hypothesis was tested which states that there are no significant differences between the population means of the experimental and control groups in terms of phonemic awareness development and different literacy levels. The alternative hypothesis states that there is a significant difference between the population means of the experimental and control groups in terms of phonemic awareness development and different literacy levels; that is, the belief that daily writing has some kind of effect on the phonemic awareness development of students representing different literacy levels.

The independent variable of daily writing opportunities that encourages emerging writing and developmental spelling is defined as the writing and spelling that young children produce naturally using their knowledge of letters and sounds. This definition is derived from the definitions for emerging writing and developmental spelling. Emerging writing "is a child's gradual development of perceptual awareness of those arbitrary customs used in written English" (Clay, 1975, p. 2). Invented or developmental spelling is "the early spellings that children produce independently" (Strickland & Morrow, 1989a, p. 427). The dependent variable of phonemic awareness is defined as "the ability to notice, think about, and work with the individual sounds in spoken words" (Center for the Improvement of Early Reading Achievement & National Institute for Early Literacy, 2001, p. 2).

Data was collected from 77 kindergarten students during the 2006-2007 school year. The student sample was drawn from a rural school district located in northeastern Pennsylvania. Three classrooms represented the experimental group and 3 classrooms represented the control group. The students in the experimental group participated in

daily writing that encouraged emerging writing and developmental spelling, and students in the control group participated in less frequent writing opportunities. The participating teachers provided daily writing instruction following the writer's workshop format which included teacher modeling of writing, a minilesson based on student writing, independent writing time, conferencing with individual students, and student sharing with the class (Bouas, Thompson, & Farlow, 1997; Cooper, 1993; Hertz & Hydenberk, 1997; Maehr, 1991a). This daily opportunity to engage in writing allowed young children to explore emerging writing and developmental spelling. The present study addressed the following questions:

1. Do daily writing opportunities that encourage emerging writing and developmental spelling impact phonemic awareness development?

2. What impact does writing have on the phonemic awareness development of students' representing different literacy levels?

Purpose of the Study

The purpose of this study was to determine whether or not a significant relationship exists between daily writing and the phonemic awareness development of 77 kindergarten students of different literacy levels. Studies have indicated that young children's literacy development is enhanced when they engage in daily writing opportunities that are meaningful and authentic (Ehri & Wilce, 1987; International Reading Association and the National Association for the Education of Young Children, 1998; Lombardino et al., 1997; Mann et al., 1987; Richgels, 1995; Spear-Swerling,

2002), yet few studies have focused on the impact that writing has on phonemic awareness (Kamii & Manning, 2002; Mann et al., 1987). Results of this study will add to this minimal body of evidence and will provide early childhood educators with additional information on the importance of daily writing opportunities to enhance students' phonemic awareness development.

Theoretical Base

This area of inquiry is based on developmental spelling research by Read (1971, 1975), Chomsky (1970), and Gentry (1982) and on emerging writing research of Clay (1977, 1975), Richgels (1995), and Ehri and Wilce (1987). Interest in this area has increased because numerous studies have defined developmental spelling and emerging writing as good teaching practice and significant to the literacy development of emerging learners. In addition, the use of developmental spelling and emerging writing in classrooms has been found to be an effective way to assess and teach "not only spelling, but also important aspects of phonemic awareness, phonics, writing, and other essential elements of literacy" (Gentry, 2000, p.1).

According to Cahen, Craun, and Johnson (1969), educators have been concerned with spelling "since the late nineteenth century" (p. 281). Such concerns included the developmental and cognitive aspects of spelling acquisition and strategies for teaching students how to spell (Beers, 1980; Chomsky, 1970; Gentry & Gillet, 1993; Gentry & Henderson, 1980; Henderson, 1980; Wilde, 1992). In addressing these issues, the terms *invented, creative,* and *developmental spelling* were created to describe the writing and spellings of young children. These terms refer to "writers' own spellings, which are

recognized as being based on their underlying knowledge of language" (Wilde, 1992, p. 3).

The stages of developmental spelling have been defined and studied by researchers, in particular Bear and Templeton (1998), Chomsky (1970), Ehri (1991), Gentry (1982), Manning (2004), and Read (1971); and the principles and stages of emerging writing have been identified by Clay (1975, 1977), Ehri and Wilce (1987), and Richgels (1995). These researchers have agreed that developmental spelling and emerging writing offer a glimpse into children's knowledge and application of language. Templeton and Morris (2001) stated that "spelling offers perhaps the best window on what an individual knows about words" (p. 1). According to Gentry and Gillet (1993),

> Each time a child or adult invents a spelling, he or she produces a telling snapshot of how the mind conceives of spelling…since the journey unfolds developmentally in patterns that are predictable and systematic, we can chart the journey with precision and accuracy. (p. 4)

The cognitive development theories of Vygotsky (1978) and Piaget (1969) have provided a framework for developmental spelling and emerging writing research. According to Templeton (1980), "Piagetian theory suggests that, particularly for young children, a considerable amount of hands-on involvement is required of any experience before that experience can be consciously examined and discussed" (p. 30). When children are writing in authentic contexts, they are engaged in a hands-on and meaningful activity. They are using their knowledge of alphabetic principle, phonemic awareness, phonics, and concepts of print to convey thoughts through writing. Young children may not know how to spell words in the conventional form but their emerging literacy concepts guide their writing.

Definition of Terms

Alphabetic principle: The idea that letters and letter patterns represent the sounds of spoken language (Reading Rockets: First Year Teacher, n.d., p.1).

Emergent literacy: The early stages of learning to read and write (Maehr, 1991b, p. 1).

Graphemes: Letters that represent phonemes. The word "hat" has 3 phonemes and 3 graphemes. The word "day" has 2 phonemes and 3 graphemes (Cooper, 1993, p. 282).

Invented spelling (developmental spelling): The early spellings that children produce independently (Strickland & Morrow, 1989a, p. 427).

Literacy: Mastery of language in written forms (Maehr, 1991a, p. 3).

Phonemes: Speech sounds of language. The word "hat" is composed of 3 phonemes /h/ /a/ /t/. The word "day" is composed of 2 phonemes /d/ /ay/ (Cooper, 1993, p. 282).

Phonemic awareness: The ability to notice, think about, and work with the individual sounds in spoken words (Center for the Improvement of Early Reading Achievement, 2001, p. 2).

Phonological awareness: Knowledge that words are made up of individual sounds (Center for the Improvement of Early Reading Achievement, 2001, p. 2).

Writer's Workshop: Consists of four basic parts: minilesson, state-of-the-class conferences, writing and conferring, and group sharing. Each part flows into the next to make up the block of time allocated for writing (Cooper, 1993, p. 445).

Assumptions, Limitations, Scope, and Delimitations

Although all students showed gains from pre- to postintervention on the phonemic awareness measure, it was hypothesized that students in the experimental group would score significantly higher in comparison to the students representing the control group. The participating teachers in the experimental group provided their students with daily writing opportunities to explore writing by utilizing emerging writing and developmental

spelling. The teachers did not follow an adopted writing program, but followed the writer's workshop format which included teacher modeling of writing, mini-lesson, writing time, conferencing, and sharing (Bouas et al., 1997; Cooper, 1993; Hertz & Hydenberk, 1997; Maehr, 1991a). The teachers also addressed the Pennsylvania Academic Standards for Reading, Writing, Speaking, and Listening (P.A. Department of Education, 2005) and the Pennsylvania Kindergarten Standards (P.A. Department of Education and P.A. Department of Public Welfare, 2005) while presenting writing instruction in their classrooms.

The present study focused on the independent variable of daily writing and the dependent variable of phonemic awareness. An experimental and control group was used to determine whether or not a significant relationship exists among daily writing and student growth in phonemic awareness. The study also considered the impact of daily writing on the phonemic awareness development of students at different literacy levels. The study confined itself to three elementary schools within the same school district in northeastern Pennsylvania. Seventy-seven students and 6 teachers participated during the 2006-2007 school year. Teachers were chosen because of availability, willingness to participate, and the amount of writing that typically occurred in their classrooms. Students were selected based on their placement in the participating teachers' classrooms. Prior to the start of the 2006-2007 school year, classroom placements were heterogeneously determined by each school's guidance department based on assessment results from a pre-kindergarten screening. Irrespective of the present study, the guidance department attempted to create classes which were similar in terms of number of students, gender, and ability levels.

Weaknesses in the study include a sample population which may not be representative of other kindergarten students or school districts throughout the country. The study occurred in 6 elementary classrooms from one school district in northeastern Pennsylvania. Of the 77 students who participated, 36% of the student participants received free or reduced lunch, 74% attended a preschool or Head Start program before entering kindergarten, 1% were of minority background, 3% were repeating kindergarten, and there were no English Language Learners or students identified as receiving Special Education services. The students were identified as low-risk, some-risk, and at-risk in terms of literacy development and each classroom had a balance among these ability levels. The various literacy levels in each classroom allowed for the study to be generalized to other student populations. Additional weaknesses in the study include the researcher's inability to control the following: a) daily phonemic awareness instruction that occurred which was based on the new Language Arts program that was implemented during the school year, and b) extraneous factors that may have contributed to students' phonemic awareness growth over the course of the study.

Significance of the Study

This study determined whether or not a significant relationship exists among daily writing and developmental spelling, and the phonemic awareness of 77 kindergarten students representing different literacy levels. The results of this study will fill the gap between research and practice, and add to the minimal body of evidence that exists concerning the relationship between daily writing and phonemic awareness. Although studies have confirmed the importance of daily writing in early childhood classrooms

(Ehri & Wilce, 1987; Hannon, 1999; Hertz & Hydenberk, 1997; International Reading Association and the National Association for the Education of Young Children, 1998; Jarvis, 2002; Piccirillo, 1998; Richgels, 1995), the relationship among daily writing opportunities and phonemic awareness development of students of different literacy abilities has yet to be examined.

The current study does not replicate the work of previous researchers, but relates directly to earlier studies, in particular the research performed by Hecht and Close (2002), Mann et al., (1997), and Tangel and Blachman (1992). The similarity which exists among the current study and past research is that these studies focus on the relationship among the phonemic awareness and developmental spelling growth of kindergarten students. The differences includes: a) participation of kindergarten students of different literacy levels, representing low-risk, some-risk, and at-risk literacy development; b) kindergarten students representing all socioeconomic groups; c) kindergarten students from a rural school district; and d) the experimental treatment of daily writing that encourages developmental spelling and emerging writing, as opposed to a treatment of daily phonemic and or phonological awareness activities.

Statistical data and analysis of the results will provide early childhood educators with additional information on the importance of daily writing opportunities to enhance students' phonemic awareness development. The significance and findings of the study will also encourage educators to implement daily writing opportunities with students of various literacy levels, as well as add to social change because student participants represent different literacy levels. A general understanding that children of all literacy levels can benefit from emerging writing and developmental spelling opportunities can

encourage kindergarten teachers to incorporate authentic and meaningful writing into the daily curriculum. This daily opportunity to interact with writing will impact the literacy development of all children involved and improve educational practice within school communities. Collaboration with colleagues, community members, and educators from varied educational settings is important in clarifying the significance of the problem and can lead to social change and improve educational practice. In addition, conducting research inside and outside the school community provides a model for other educators who may want to become involved in investigating the link between research and practice.

Transition Statement

The present study focused on the phonemic awareness growth of kindergarten students of different literacy levels. During the 2006-2007 school year, 77 kindergarten students participated in an experimental and control group design to measure the relationship between daily writing and phonemic awareness. Forty kindergarten students in the experimental group engaged in daily writing activities that encouraged emerging writing and developmental spelling, while 37 students in the control group participated in less frequent writing opportunities. The remaining chapters of this paper will address the relevant scholarly professional literature, research design, findings, conclusions, and recommendations for further study.

CHAPTER 2:

RELEVANT SCHOLARLY PROFESSIONAL LITERATURE

Introduction

Before any prior research on the topics of emerging writing and developmental spelling, school curriculum stressed the teaching of reading followed by an introduction of writing in the upper primary grades. The former theory suggested children needed to learn how to read and spell before they could write (Temple, Nathan, Temple, & Burris, 1993). Due to this belief, a small amount of authentic and meaningful writing occurred in the early primary grades until researchers such as Read (1971, 1975), Chomsky (1970), and Clay (1975, 1977) began examining the writing and spelling development of young children.

Interest in this area has continued to grow and numerous studies have defined developmental spelling and emerging writing as good teaching practices and significant to the literacy development of young learners (Chomsky, 1970; Clay, 1975, 1977; Ehri & Wilce, 1987; International Reading Association and the National Association for the Education of Young Children, 1998). Current research continues to address the correlation between writing, spelling, and other literacy areas, yet questions still remain as to the link between these areas and phonemic awareness. According to Gentry (2000),

> Over the past 20 years, invented spelling has had a powerful impact on our teaching as well as on our thinking about how literacy develops…We must continue to explore developmental aspects of learning to spell, particularly how invented spelling relates to early reading and to essential literacy elements such as phonemic awareness and phonics…These explorations will move us into a new millennium of better literacy instruction. (p. 8)

Additional attention has been placed on the importance of research-based literacy practices as a result of the International Reading Association and the National Association for the Education of Young Children (1998), the National Reading Panel Report (2000), and the No Child Left Behind Act of 2001 (U.S. Department of Education, 2005). The importance of early literacy and phonemic awareness in the prevention of reading problems and reading acquisition continues to be explored, although a gap exists in the literature base concerning the impact daily writing has on kindergarten students' phonemic awareness development. The focus of this literature review will explore the benefits of daily writing, focusing on emerging writing and developmental spelling, and provide insights to the relationship between phonemic awareness, writing, and spelling development.

Theoretical Base

This area of inquiry is based on developmental spelling research by Read (1971, 1975), Chomsky (1970), and Gentry (1982) and on emerging writing research of Clay (1977, 1975), Richgels (1995), and Ehri and Wilce (1987). According to Wilde (1992), "Read (1971, 1975) single-handedly began the modern interest in invented spelling with his research into young children's attempts to represent the English sound system through spelling" (p.22). Since then, "psychologists--cognitive, developmental, educational--as well as language arts educators have all focused on spelling to a degree not seen since the eighteenth and nineteenth centuries, when spelling instruction was considered the first step toward learning to read" (Templeton & Morris, 2001, p. 1). Interest in this area has increased because numerous studies have defined developmental spelling and emerging

writing as good teaching practice and significant to the literacy development of emerging learners. In addition, the use of emerging writing and developmental spelling in classrooms has been found to be an effective way to assess and teach "not only spelling, but also important aspects of phonemic awareness, phonics, writing, and other essential elements of literacy" (Gentry, 2000, p.1).

According to Cahen, Craun, & Johnson (1969), educators have been concerned with spelling "since the late nineteenth century" (p. 281). This interest in children's developmental spelling has been studied, in particular "preschoolers and first and second graders, primarily looking for similarities across children's spelling patterns" (Bissex, 1980, p. 35). These patterns have been described as "systematic and evolving" (p. 35). According to Templeton and Morris (2001), three "distinct theoretical and research perspectives" have emerged from research over the past four decades describing how children may acquire knowledge about spelling (p. 3). These include:

1. Spelling is a process of rote memorization.
2. Spelling is a process of abstracting regular sound-spelling patterns.
3. Spelling is a developmental process. (p. 3-4)

Templeton and Morris (2001) have stated that "stage or phase models are the primary vehicle for categorizing developmental growth" (p. 3-4). According to stage theories "children begin by using their knowledge of letter names and their knowledge of phonology to spell words. During later stages, additional sources of information come into play, including knowledge of orthographic patterns and morphological relationships among words" (Treiman & Bourassa, 2000, p. 2). Henderson (1980) found "that children advance in their knowledge of words through discernable conceptual stages and that these

stages hold with great stability across different methods of instruction, mixtures of dialect, and even different languages" (p. 2). Henderson (1980) concluded that "the characteristics of children's spelling errors lend themselves to grouping by developmental stages" (p. 10) and that "they are, instead, very broad and human developmental events in the progress toward literacy" (p.12).

The stages of developmental spelling have been defined and studied by researchers, in particular Bear and Templeton (1998), Chomsky (1970), Ehri (1991), Gentry (1982), Manning (2004), and Read (1971); and the principles and stages of emerging writing have been identified by Clay (1975, 1977), Ehri and Wilce (1987), and Richgels (1995). These researchers have noted that children's developmental spelling and emerging writings offer a glimpse into their knowledge and application of language. Templeton and Morris (2001) stated that "spelling offers perhaps the best window on what an individual knows about words" (p. 1). According to Gentry and Gillet (1993):

> Each time a child or adult invents a spelling, he or she produces a telling snapshot of how the mind conceives of spelling…since the journey unfolds developmentally in patterns that are predictable and systematic, we can chart the journey with precision and accuracy. (p. 4)

More than 30 years ago, Chomsky (1970) argued there was a place in the classroom for authentic and meaningful writing and children "are capable of inventing spellings well before they are ready to read" (p. 499). She stated, if "teachers encourage the writing once it begins to appear, if they welcome and value the spellings and transmit to the children their feelings they are doing something exciting and worthwhile, some children are likely to go ahead" (p. 513). In doing this, children will "come to trust their own linguistic perceptions, understand that they have a viable means for expressing

themselves, and get plenty of practice in doing so" (p. 512). Chomsky was one of the first to state a case for the importance of real writing in the classroom, not just copying sentences or practicing handwriting. Although research was beginning to support the assumption that children had a voice and a means to express themselves through writing, many educators refrained from providing students with opportunities to write authentic and meaningful pieces.

The cognitive development theories of Vygotsky (1978) and Piaget (1969) have provided a framework for developmental spelling and emerging writing research. According to Templeton (1980), "Piagetian theory suggests that, particularly for young children, a considerable amount of hands-on involvement is required of any experience before that experience can be consciously examined and discussed" (p. 30). When children are writing in authentic contexts, the children are engaged in a hands-on and meaningful activity. The children are using their knowledge of alphabetic principle, phonemic awareness, phonics, and concepts of print to convey thoughts through writing. Young children may not know how to spell words in the conventional form; therefore their emerging literacy concepts guide their writing.

Piaget has defined four stages of cognitive development which have "created our overall view of how children think in their early years" (Mooney, 2000, p. 60). These include the sensorimotor, preoperational, concrete operational, and the formal operational stages (Piaget & Inhelder, 1969). The observation of spelling strategies appearing in kindergarten children's emerging writings concur with characteristics of preoperational thinking. Children at the preoperational stage are characterized by the following:

1. They are egocentric.

2. They can focus on only one characteristic of a thing or person at a time.
3. They gather information from what they experience rather than what they are told.
4. They over generalize from their experience. (Mooney, 2000, p. 69)

Kindergarten children's writing contains egocentric stories which pertain mainly to themselves and the events and experiences in their lives. The children's stories come from direct personal experiences, and in writing, children generalize these occurrences to those around them. Another common feature of children's development spelling is the choice of letters that are used to represent words. When observing the emerging writing and spelling development of young children, Beers (1980) observed "children were aware of letters but only by their respective letter names. The name of the letter became the single most dominantly used feature to spell vowel elements in all the vowel categories for the children" (p. 43). This observation aligns with young children's ability to focus on one characteristic at a time, specifically the most dominant letter sound in this instance.

Piaget stated "the child's interactions with his environment are what create learning" (Mooney, 2000 p. 75). He concluded "children learn best when they are actually doing the work themselves and creating their own understanding of what's going on" (p. 62). Engaging children in open-ended activities, such as authentic and meaningful writing, encourages and creates learning. While writing using developmental spelling, kindergarten children are "in a position of inquiry" (p. 75). The children use knowledge of language and apply that knowledge to a meaningful task, in particular writing. During this open-ended activity, the children use their knowledge of alphabetic principle,

phonological and phonemic awareness, phonics, and concepts of print to convey a story through writing and drawing.

As children mature they begin to move from preoperational thinking into concrete operational thinking. This stage is characterized by the following:

1. Children form ideas based on reasoning.
2. Children limit thinking to objects and familiar events. (p. 64)

During this stage, children's thinking is more organized and their writing development shows decentration. Decentration is referred to as "moving outward from an egocentric view of the world" (Bissex, 1980, p. 108). This "developmental view of writing implies that learning comes from growth as well as instruction" (p. 109). Stages of cognitive development may be evident through the stories young children write. These emerging writings and developmental spellings can provide a glimpse of what is cognitively occurring in a child's mind. Piaget's theories of cognitive development coupled with developmental spelling and emerging writing research can be used to help educators create environments that are continually engaging and nurturing for young minds.

Vygotsky's theories have "changed the way educators think about children's interactions with others" and have shown "that social and cognitive development work together and build on each other" (Mooney, 2000, p. 82). Vygotsky (1978) addressed the teaching of and the types of writing that were occurring in classrooms. He stated "children are taught to trace out letters and make words out of them, but they are not taught written language" (p.105). He contributed this to historical factors: "specifically, by the fact that practical pedagogy, despite the existence of many methods for teaching reading and writing, has yet to work out an effective, scientific procedure for teaching

children written language" (p. 105). To this day, a specific scientific procedure has yet to be developed for educators to follow.

Research has addressed the importance of using emerging writing and developmental spelling with young children, but there is not a concise or consistent way to teach writing. Educational standards have included writing guidelines and milestones for early childhood and primary classrooms and many school districts have adopted these standards as part of their curriculum. Although the "goal of curriculum and instruction is to produce competent and independent spellers and users of punctuation" (Wilde, 1990a, as cited in Wilde, 1992, p. 8), writing instruction varies from classroom to classroom and school to school. Most early childhood programs do not follow a specific writing program. Authentic and meaningful writing is guided by the child.

Vygotsky (1978) defined three practical requirements for classroom writing instruction:

1. Writing should be meaningful for children, that an intrinsic need should be aroused in them, and that writing should be incorporated into a task that is necessary and relevant for life. (p. 116)
2. Writing be taught naturally. (p. 118)
3. Vygotsky believed that "children should be taught written language, not just the writing of letters" (p. 119).

A new interest in spelling has emerged with renewed focus on emerging writing and developmental spelling, in particular the importance of providing young children with daily opportunities to write in authentic and meaningful ways, and the idea that spelling and reading are interrelated. According to Wilde (1992),

> In many classrooms today, the situation has completely changed. Children are writing right from the beginning of school, at whatever level they are capable of. The focus is on the whole: the expression of ideas is primary and central, and there is an expectation that the parts – the shaping of a piece, the construction of sentences, and yes, correct spelling and punctuation – will gradually become refined over time. (p. 9)

Researchers such as Bissex (1980), Clark (1976), Clay (1975), Durkin (1966), and Read (1971, 1975), observed that a relationship existed among spelling and reading. Read (1975) found that the preschool children he observed began to write before they could read and this was a "case of production proceeding comprehension" (p. 330). Read "observed that most of his children learned to spell before reading, some coincidentally with reading" (Bissex, 1980, p. 190). According to Bissex (1980), "reading and writing are meaningless as well as disembodied if they are regarded as ends in themselves, not as means of learning, imagining, communicating, thinking, remembering, and understanding" (p. IX). Bissex (1980) also noted "observational studies of young children by Durkin (1966), Clay (1975), Clark (1976), and Read (1970), all confirm that reading and spelling develop together though not necessarily simultaneously" (p. 190).

Invented and Developmental Spelling

Introduction

Research on young children's spelling development was pioneered during the mid 1970s by Read, a linguist, who observed the writings of preschool children. Read (1975) believed that it was "possible to compare the spellings invented by different children and to ask what the spellings reveal about the children's phonological judgments" (p. 330). In this influential study, "Read observed that children invent spellings by using their

knowledge of letter names, letter sounds, and print conventions to create plausible spellings of words whose correct spellings have yet to be learned" (Lombardino et al., 1997, p. 334). That study was important to educational research because the entire sample of children appeared "to have invented similar spellings, which reflect certain judgments of English sounds and their representations" (Read, 1975, p. 330). In addition, the preschool children began to write before they could read and this was a "case of production proceeding comprehension" (p. 330). After the results were published, researchers began observing the spelling judgments of young children for identifying the various stages and to define the relationship between developmental spelling and literacy development.

Over the past 30 years, research on the spelling development of young children has expanded based on Read's (1975) study and the terms *invented and development spelling* have emerged. Invented and developmental spellings "refer to young children's attempts to use their best judgments about spelling" (Lutz, 2004, p.1). The definitions of invented spelling, for most of their history, "has included the notion that it is untutored, that it results from children's own experimentation with meaning-form links and with links between spoken language and written language" (McGee & Richgels, 1990, as cited in Richgels, 1995, p. 99). These developmental spellings occur when children make connections with print and meaning, and when they begin understanding that letters can be put together to make words. The developmental spellings of young children continue to be analyzed in conjunction with emerging writing to look for insights into the reading and writing processes of emerging learners.

In 1998, the International Reading Association (IRA) and the National Association for the Education of Young Children (NAEYC) published a research-based document entitled Le*arning to Read and Write: Developmentally Appropriate Practices for Young Children.* In this document the IRA and the NEAYC voiced their concerns about the early literacy development of children and provided teachers and parents of young children from birth through eight years of age with a set of guidelines and recommendations they stated were "the most important for literacy development" (p. 196). According to the IRA and NAEYC (1998),

> Studies suggest that temporary invented spelling may contribute to beginning reading (Chomsky, 1979; Clarke, 1988). As children engage in writing, they are learning to segment the words they wish to spell into constituent sounds. Classrooms that provide children with regular opportunities to express themselves on paper, without feeling too constrained for correct spelling and proper handwriting, also help children understand that writing has real purpose (Dyson, 1988; Graves, 1983; Sulzby, 1985). (p. 202)

The belief that encouraging developmental spelling as a good teaching practice has evolved because of the numerous research studies on the topic and a greater understanding of its significance to literacy development. The use of developmental spelling in classrooms is an effective way for assessing and teaching "not only spelling, but also important aspects of phonemic awareness, phonics, writing, and other essential elements of literacy" (Gentry, 2000, p.1).

Developmental spelling has also been shown to make "a contribution to reading acquisition among children who are just learning to read" (Ehri & Wilce, 1987, p. 60). Other studies have shown that "invented spelling performance, usually sampled in classroom contexts, is found to predict reading achievement as much as a year later, as measured in various ways" (Richgels, 1995, p. 96). This information has had an

influential impact on the teaching of young children. Kindergarten children are now encouraged to write using developmental spelling and implementation of structured daily writing time has proven to have positive effects on literacy development (Feldgus & Cardonick, 1999; Hannon, 1999; Hertz & Hydenberk, 1997; Moutray & Snell, 2003). According to Gentry (2000), "researchers and practitioners are making good use of developmental spelling models to bring developmentally focused, engaging literacy instruction into the classroom" (p. 8).

Research Studies

Research over the past 30 years has confirmed that children who are encouraged to experiment with spelling show significant improvement in areas of emerging literacy, in particular phonemic awareness, alphabetic principle, emerging reading and writing skills, and print awareness (Ehri & Wilce, 1987; Lombardino et al., 1997; Mann et al., 1987; Richgels, 1995). Research has shown that children who write early using invented spelling and pretend writing learn to write more words correctly then children who are taught using conventional techniques (Temple et al., 1993). In addition, invented spellings "provide a valid measure of children's phonemic awareness in print--a skill that is highly correlated with reading success in the early stages of literacy acquisition" (Lombardino et al., 1997, p. 333). The invented spellings of children provide an effective way to assess students emerging literacy abilities and can aid educators in identifying particular students who may lack the literacy skills needed to be successful readers.

Mann et al. (1987) conducted a study focusing on the invented spellings of kindergartners. Their study explored the possibility that the preconventional spellings of

kindergarten children can be a measure of phonological awareness and may predict first grade reading success. The findings suggested that children, who give a higher proportion of phonologically accurate, preconventional spellings, may become better readers in the first grade. According to Mann et al. (1987), "invented spelling not only offers a window into the development of phonological awareness, it ultimately may develop into an efficient and effective predictor of future reading progress" (p. 386). These results align with a study conducted by Ferroli and Shanahan (1987), in which they "found significant correlations between kindergarteners' performance in March on a developmental spelling test and their performances in March and May of kindergarten and May of first grade on two reading achievement measures" (Richgels, 1995, p. 96).

Lombardino et al. (1997) examined the spelling samples of 100 kindergarten children to "identify the type and frequency of occurrence of invented spelling patterns observed in the orthographies of a large sample of kindergarten children at different levels of spelling acquisition" (p. 336). The findings revealed that spelling patterns did show developmental changes across the skill level groups of kindergarten children identified as low, middle, and high based on their spelling abilities. The students in the middle and high groups showed "more advanced spelling patterns than the low group" (p. 340). In addition, "the more advanced spellers are applying their phonemic awareness knowledge to the task of spelling, whereas the less advanced spellers are using more random responses" (p. 341). According to Lombardino et al. (1997),

> Spelling is one form of phonemic awareness that can be directly and easily assessed by speech-language pathologists. Spelling patterns and response types identified in the study, along with developmental stages of spelling, should aid in the early identification of children who may be at risk for future reading difficulties. (p. 341)

Researchers have analyzed the effect invented spelling has on printed word learning in addition to examining the relationship between invented spelling ability and phonemic awareness skills. Richgels (1995) examined the spelling-reading connection of 119 kindergarteners by having the children complete three screening tasks: alphabet letter identification, word identification, and invented spelling. Of these students, 16 were identified as good inventive spellers and 16 as poor inventive spellers. These students then participated in a printed word learning task in which they read words identified as "easy" or "difficult" during several trials and an average score was computed. The results support the conclusion that "good inventive spellers are better word learners" (p. 104). In addition, the results confirmed "inventive spellers are especially prepared for the use of phonetic knowledge that beginning word reading requires" (p. 108).

These results were similar to a study conducted by Clarke (1988) in which he observed the literacy learning in four first grade classrooms. Two of the teachers encouraged invented spelling, while the other two encouraged traditional spelling. Clarke found that the "inventive spellers performed significantly better than traditional spellers on several measures of word reading administered in the second semester of first grade" (Clarke, 1988, as cited in Richgels, 1995, p. 96). In addition, Clarke (1998) found that "children using invented spelling developed an area of strength. The superior spelling and phonic analysis skill of children using invented spelling suggested that they benefited from the practice of matching sound segments of words to letters as they wrote and form using their own sound sequence analysis" (p. 307).

In one of the few experimental studies "to ascertain whether learning to spell improves beginning reading skill", Ehri and Wilce (1987) examined the effect that

teaching beginners to produce phonetic spelling has on their ability to read words (p. 47-48). Twenty-four English-speaking kindergarten students were placed into either an experimental or control group. All the participants participated individually in 7 to 18 sessions, lasting 15 to 40 minutes long. During the sessions the experimental group learned to spell several sets of words which included nonsense words while the control group practiced identifying 10 letters and matched sounds. According to the post test performances,

> Spelling-trained subjects learned to read a set of words more effectively than controls. Their greater success was not because they had learned how to sound out and blend the words, but rather because they had become better at phonetic cue reading, which entails reading words by remembering associations between letters in spelling and sounds in pronunciation. (p. 47)

Experimental evidence of this study shows that learning to spell "makes a contribution to reading acquisition among children who are just learning to read", whereas studies in the past only showed correlation evidence (p. 60).

Henterly (2000) conducted a quasi-experimental study with 38 kindergarten students to determine if daily phonemic awareness activities impacts students' developmental spellings. The treatment and control group received similar instruction during September to February of their kindergarten year on alphabet recognition and symbol-sound correspondence. Students in the treatment group received additional training in phonemic awareness over a 5 month period. Posttest measures found that the students in the treatment group scored significantly higher than the control group on assessment measures. According to Henterly (2000), "direct instruction in phonemic awareness appears to enhance young children's invented spelling" (p.55). Henterly (2000) also noted that,

> Rather than immersing children in worksheets that isolate letters, invented spelling enables children to use letters to create their own understanding of how sounds work together to make words. As children write, they gain practice in segmenting phonemes as well s reinforcement in linking phonemes to graphemes. (p. 5)

Snow, Burns, and Griffin (1998) noted "beginning writing with invented spelling can be helpful for developing understanding of phoneme identity, phoneme segmentation, and sound-spelling relationships" (p. 7). Similar to Snow et al. (1998), Slegers (1996) noted that when children have the opportunity to write they are developing their phonemic awareness skills. Finally, Stahl and Murray (1994), "found strong correlations between phonological awareness and spelling ability" (p. 229). Research findings, similar to the ones stated above, have confirmed that daily opportunities for students to engage in developmental spelling activities may encourage phonemic awareness and other literacy areas. In addition, daily phonemic awareness instruction impacts developmental spelling growth. This reciprocal relationship among developmental spelling and phonemic awareness can have major implications for emerging learners. According to Gentry (2004),

> Kindergarteners and first graders should invent spelling and write frequently because writing helps them develop underlying knowledge sources for reading, such as knowledge of sounds, letters, phonological awareness, phonemic awareness, and eventually, recognition and use of chunks of phonics patterns. Teachers should highlight the reciprocal relationship of spelling, writing, and reading instruction. (p. 22)

Emerging Writing

Introduction

Emerging writing, an extensively researched form of emergent literacy, focuses on children's developmental spellings. Emergent literacy "describes children's language

development from the time they begin to experience the uses of print to the point where they can read and write independently" (Muzevich, 1999, p. 1). Reading and writing activities can be integrated throughout the school day for encouraging children's emerging abilities. This will also help in raising children's awareness levels for the importance of literacy, regardless of students' developmental literacy level. In encouraging the writing component of emergent literacy, children must participate in an enormous number of opportunities to explore writing (Muzevich, 1999). According to Gentry and Gillet (1993) children,

> Need to write often, every day, about things that are real and important to them, with the emphasis and attention placed on the message, not on the form it takes or the correctness of the language or spelling. They need to see themselves as writers, full of wonderful ideas and competent to put those ideas down in pictures, in scribbles, in pretend writing, and in writing they and others can read (with help, usually). (p.66)

The beginning writing of children, referred to as emerging writing, encapsulates different styles, such as drawing, scribbling, letter-like forms, and invented spelling (Clay, 1975; Cooper, 1993; Crowell, Kawakami, & Wong, 1986; Lutz, 2004; Maehr, 1991a, 1991b; Muzevich, 1999; Ratcliff, 1995; Strickland & Morrow, 1989a; Temple et al., 1993). Research has shown when children are not taught about writing explicitly, most make discoveries in the order of scribbling, letter-like forms, and invented spelling (Temple et al., 1993).

Children discover the act of writing in many ways. While growing up, most children are surrounded by parents and other adults who model the act of writing by composing letters, grocery lists, and messages (Clay, 1987; Strickland & Morrow, 1989b). "When children see adults writing for a variety of purposes, they discover ways

in which writing is useful and meaningful" (Dailey, 1991, p. 171). Children also have the capacity for learning how to write, and children begin displaying their discovery when they engage in informal writing. Early in life, children will attempt to produce writing, even though they do not understand the mechanics, symbols, or letters are involved (Maehr, 1991a). According to Maehr (1991a),

> "In her early work Marie Clay observed that children write messages often with intent to communicate, long before they form letters. Clay noted that young children frequently scribble, draw pictures, or make marks that look a lot like letters, although the marks are not actual letters" (p.23).

Finally, children learn from other children. When they enter a school setting, they become aware of other children writing stories by drawing and adding scribbles to a page. This process encourages similar behavior throughout the classroom and some children may want to do it better (Maehr, 1991a, 1991b; Strickland & Morrow, 1988a, 1988b; Temple et al., 1993).

A consistent theme found throughout the literature is that writing development is not sequential, but rather a concurrent progression (Clay, 1975; Maehr, 1991a). Children will not move from one stage to the next at an exact age or grade-level, but rather will display a combination of stages in their writing when they are developmentally ready (Clay, 1977, 1975; Cooper, 1993; Maehr, 1991a; Strickland & Morrow, 1989a, 1989c). Dailey (1991) stated that,

> These stages are referred to as "invented spelling" because children apply what they know about sounds and letters to their early writing. It is common, however, for children to be in several stages of spelling development at once and revert to earlier stages as they experiment with writing. (p. 173)

For example, one child's writing may contain some common sight words, words repeated by the initial consonant sound, and a string of letters. Gentry (2004) noted "with writing,

the teacher can see what the students know and does not know quite explicitly. The way the child spells is like a visible footprint of how he or she thinks the code works" (p. 25-26).

According to the International Reading Association and the National Association for the Education of Young Children (1998), writing with young children helps children make connections between letters, words, sentences, and meaning. When children work to produce developmental spellings, they hear the individual sounds in words and are learning concepts of print. Other benefits associated with young children's writing include the integration of alphabet learning and phonemic awareness. When children are provided with opportunities to write, "they learn the relationship of the sounds and symbols (the graphophonemic system); they learn to combine words into sentences and phrases in a way that makes sense to them (the syntactic system); and they bring meaning to the words and combinations of words (the semantic system)" (Waite-Stupiansky, 1997, p. 87).

Research Studies

Numerous studies exist addressing early writing with developmental spelling, but few studies address the "practical classroom aspects of how to actually get children (and teachers) started in the process" (Feldgus & Cardonick, 1999, p. 7). Studies on actual classroom implementation, the role of the teacher and student, and the "how to" of setting up daily writing time in a classroom of young children who are emerging as readers and writers are scarce in the literature base. Recently, studies have begun addressing these concerns and programs such as *Kid Writing* developed by Feldgus and Cardonick (1997)

have emerged to help guide teachers on personal quests for using writing with young children. Topics currently being addressed through research include, but are not limited to, setting up writing time in early childhood classrooms, using journals with young writers, encouraging writing with students at all developmental spelling levels, and understanding how writing with young children aids in developing other literacy areas, such as reading.

Providing writing opportunities for children has many benefits. Above all, if integrated into the curriculum correctly, the practice can encourage a student's love of writing. According to Randolph and Robertson (1995), too many students have an anti-writing opinion, although writing is just as important as reading. Writing helps children develop other literacy areas, such as their listening, speaking, and reading skills (Ratcliff, 1995; Strickland & Morrow, 1988a, 1988b). When children write, they are making connections to what is happening in their lives, what they are familiar with, what they have to learn more about, and what they would like to share with others.

Research has shown that writing can be used with young children to aid in the development of phonetic skills and concepts of print (Clay, 1991; Daniels, Zemelman, & Bizar, 1999; Maehr, 1991a; Tompkins, 1993). Children who are encouraged to investigate writing begin to attaching phonemic meaning to the grapheme meaning and are engaged in the concepts of writing (Maehr, 1991a, p. 89). The children learn about letters, letter order, sounds, the use of capital letters and punctuation, and they understand that print carries a message (Clay, 1991).

Hertz and Hydenberk (1997) conducted a study of the benefits of writer's workshop in a half day kindergarten class with 19 students. Writer's workshop is a block

of time allocated for writing (Cooper, 1993, p. 445).Over a five month period, students participated in the writer's workshop three times a week for 45 minutes. The researchers collected formal and informal assessments, observations of students' writing behavior, parent, teacher and student interviews, and children's score on a 14 word pre and post spelling test. The results of the study found that students benefited from writer's workshop because it provided an interactive environment for learning and motivated students to write. The researcher also found that regardless of the student's abilities, all students made measurable gains in their writing.

In a study similar to Hertz and Hydenberk (1997), Lamme et al. (2002) observed how kindergarten children grow as writers. During the fall of 2000, two teachers collaborated with faculty from the University of Florida to inquire further about the teaching of writing within their classrooms. The teachers "sought to determine just how much and what kind of support in writing workshop was needed for individual children to gradually move to their next developmental level" (p. 73). The teachers demonstrated that "it is possible for kindergarten children to become avid writers given a supportive environment, time for writing, modeling and demonstrations, and developmentally appropriate assistance" (p.78). Adult assistance is a critical component to children's growth across developmental spelling levels. According to Lamme et al. (2002), "teaching writing is not just teaching language skills but also teaching the concept of writing through drafting, revising, and taking risks" (p. 78).

In a study on the extent that journal writing has on phonics acquisition in 41 kindergarten children, Piccirillo (1998) found that kindergarteners who kept journals did not "demonstrate a stronger knowledge of phonics skills" (p. 14). Although the results do

not coincide with the majority of the research on journal writing using emerging writing, this finding "suggests that more research needs to be done to determine the effects, if any, of journal writing on other areas of achievement" (p. 15). By using journals in the classrooms, Piccirillo does believe that "teachers may gain valuable insights into how the students learn and think" (p. 14).

Jarvis (2002), as a result of a new school initiative, began using journal writing in her kindergarten classroom. Her students wrote in journals every day starting at the beginning of the school year. In the two years she taught kindergarten, she stated it was the "most rewarding experience" of her career (p. 2). She discovered that the "students were not only able to read their text, but also obtained skills to be better readers and writers. They became emergent readers with an ability to distinguish between the oral and written language" (p.2). Another teacher, Hannon (1999) used journal writing with her kindergarten students but added dialogue to the process because she concluded her students were "ready for a nudge forward in journal writing" (p. 1). Hannon (1999) would write responses to their journal entries if requested to by the children. According to Hannon (1999),

> Changing the format to include dialogue expanded each writer's audience and gave journal writing another purpose. Knowing they would receive a response after reading their writing to me was important enough for some of the kindergartners competing for a moment of one-on-one teacher time with two dozen other child, the intercom, and myriad of other distractions. (p. 4)

Journal writing, with or without dialogue, can be a powerful instructional piece in an early childhood classroom. Journal writing not only encourages children to use their literacy knowledge, but the writing is a powerful activity for children at any developmental level of writing. Feldgus and Cardonick (1999) noted that,

> Journal writing provides children with an opportunity to systematically explore written language in the supportive environment in which they are leaning by doing for an authentic purpose – to communicate their ideas. Children do this through cooperative learning situations in which reading, writing, speaking, and listening are integrated in natural ways. (p. 4)

Moutray and Snell (2003) conducted a study focusing on three kindergarten teachers' quest in implementing "developmentally appropriate writing experiences into the daily curriculum" (p. 24). During the first year of the study, the teachers explored writing by using journals and story starters and implemented 30-minutes of daily writing time following the format of "brainstorming and modeling, writing, and sharing" (p. 24). Not only did the teachers grow in understanding developmental spelling, they also witnessed the importance of providing children with opportunities to explore writing. The teachers noticed an increase in children's understanding and application of alphabetic knowledge and print awareness.

Partridge (1991) conducted a quasi-experimental study to measure the effects that daily writing opportunities has on kindergarteners' spelling. The focus on spelling was specifically on the students' representations of phonemes in their writing. Eighty-eight kindergarten students participated in an experimental and control group design. Students in the experimental group participated in daily writing and drawing opportunities, and students in the control group participated in weekly opportunities. Results found that students in the experimental group who wrote daily scored significantly higher in developmental spelling.

For many years, the teaching of reading was the focus of early childhood programs, but current research has concluded that a place exists in early childhood classrooms for authentic and meaningful writing opportunities. Emerging writing and

developmental spelling has received attention for nearly 4 decades, and according to Clay (1977), early writing is "a highly satisfying experience for young children, for complimenting the early reading program" (p. 339). Fifteen years later, Griffith and Klesius (1992) noted that, "experimentation with paper and pen may be as important to the literacy development of children as is reading to children" (p. 7). Research has concluded that providing young children with opportunities to explore writing in authentic and meaningful ways enhances students understanding of alphabetic principle, phonemic awareness development, and awareness of concepts of print.

Writer's Workshop

Providing daily writing opportunities for young children to explore emerging writing and developmental spelling extends beyond giving children paper and writing utensils. Daily writing opportunities need to be organized by the teacher and allow for systematic and explicit instruction. Writer's workshop is a set block of time during which the teacher and students work together to explore writing (Bouas et al., 1997; Cooper, 1993; Hertz & Hydenberk, 1997; Maehr, 1991a). During writer's workshop children "are learning *how* to write – a skill that goes beyond putting thoughts and ideas on paper" (Avery, 2002, p.76). Children are given the opportunity to write and explore the writing process. They are engaged in a multi-level activity that is authentic and they "learn how to put ideas on paper, but then also how to revise, clarify, and craft those ideas to communicate effectively" (p. 76). Writer's workshop should occur daily and typically follows the format of mini-lesson, writing conference, and large group sharing (p. 66-70).

The first part of writer's workshop is the mini-lesson. During this time, the teacher

may focus on issues causing difficulty, help students generate ideas for writing, or introduce new ideas and concepts. Sometimes the mini-lesson can be a brainstorming opportunity for the class or a time for the class to discuss writing topics (Tompkins, 1993). Calkins (1986) was the first to introduce the concept of mini-lesson in the teaching of writing (Avery, 2002, p. 110). Avery (2002) noted that by "studying Graves, Giacobbe, and Calkins and through classroom experience, I've learned that effective mini-lessons are: (1) short: usually one to five minutes, (2) focused, (3) gentle in tone, and (4) responsive" (p. 111). Mini-lessons are typically generated by what the teacher is observing in the children's writing.

After the mini-lesson, the students begin their writing (Cooper, 1993). An important step in the process involves the teacher walking around the room encouraging and praising all of the students. Teachers will also conference during this time with individuals or small groups of students about their writing. This is crucial "because emergent writers are at an egocentric stage of development, they want to be noticed and affirmed" (Bouas et al., 1997, p.7). This provides an opportunity for teachers to support the emerging and developing writing and spelling abilities of the students. Teachers will spend time each day conferencing with students about the student's writing samples.

After writing time, the students are given the opportunity to share what they have written by sitting in the author's chair (Cooper, 1993; Crowell, et al., 1986; Martinez & Teale, 1987). An author's chair is a designated chair in the classroom where the author will sit and share his or her writing with the class. The author will then call "on different children to comment on the piece" (Fisher, 1991, p. 71). Some teachers choose to let each child in the class share; others will have only a few children share each day. The author's

chair “is one way to encourage the children to share themselves as writers, to listen as readers, and to experience reading like a writer and writing like a reader” (p. 70). The benefit of this is to have the students begin to feel like real writers. The role of the teacher during this time is “to support the children in becoming more and more in charge of the author’s chair by helping them develop a procedure for sharing, and by modeling what writers (the authors) and readers (the audience) do in the process (p. 72).

When writer's workshop becomes part of the classroom, kindergarten students become aware of the importance of writing (Cooper, 1993; Hertz & Hydenberk, 1997; Strickland & Morrow, 1989b). Most young children are usually not afraid of trying something new and unfamiliar so they engage in writing openly and freely, with very few restrictions. Those who are reluctant to write quickly become aware of the fun experienced by the other participants and want to follow their classmates in the activity (Hertz & Hydenberk, 1997). Writing also creates an environment in which students want to interact with one another and help each other with their writing. A love of writing occurs in students when given the opportunity to explore writing without feeling inhibited or afraid (Randolph & Robertson, 1995; Strickland & Morrow, 1990, 1989a, 1988a, 1988b).

Relationship among Phonemic Awareness, Writing, and Spelling Development

Researchers have been concerned with beginning reading instruction and the prevention of reading problems for nearly half a decade. Numerous studies have identified that the early literacy skill of phonemic awareness is critically important in learning to read (Adams et al., 2004; International Reading Association and National

Association for the Education of Young Children, 1998; Snider, 1997; Steinhaus, 2000; Torgesen, 1998; Yopp & Yopp, 2000). *Phonemic awareness* is defined as "the ability to notice, think about, and work with the individual sounds in spoken words" (Center for the Improvement of Early Reading Achievement and The National Institute for Early Literacy, 2001, p. 2). The impact that emerging writing and developmental spelling has on phonemic awareness has recently been examined because for many children "writing is the gateway to understanding how reading works (Feldgus & Cardonick, 1997, p. 6). According to Spear-Swerling (2002), "learning to spell words draws upon many of the same abilities you need to read them, such as phonemic awareness, knowledge of letter-sound relationships, understanding of the alphabetic principle, and knowledge of morphemic relationships" (p. 19). In addition, Lombardino et al. (1997) concludes that invented spellings "provide a valid measure of children's phonemic awareness in print – a skill that is highly correlated with reading success in the early stages of literacy acquisition" (p. 333).

The developmental spellings of young children can be used to assess understanding and application of phonemic awareness. According to Lombardino et al. (1997), invented spellings "provide a valid measure of children's phonemic awareness in print – a skill that is highly correlated with reading success in the early stages of literacy acquisition" (p. 333). When children understand that "letters and letter patterns represent the sounds of spoken language" (Reading Rockets: First Year Teacher, n.d., p. 1), they have understanding of alphabetic principle. This understanding, in combination with phonemic awareness, is important for early reading success (Haskell, Foorman, & Swank, 1992).

The writing samples of emerging learners can be excellent assessment pieces because children's knowledge and application of phonemic awareness and alphabetic principle are displayed. In order to write and spell, "children must be able to break words into phonemic segments (segmentation) and then select the alphabetic symbol that corresponds to each sound segment" (Morris & Perney, 1984; Tangel & Blachman, 1992, as cited in Lombardino et al., 1997, p. 334). This knowledge is evident through young children's writing and spelling. Children who participate in daily writing activities enhance the skills needed for early reading. According to Lombardino et al. (1997), "practice in manipulating and sequencing sound-letter relationships in the process of creating invented spellings has been show to have a carry-over effect to learning to read" (p. 335).

The National Reading Panel Report (2000) and the *No Child Left Behind Act of 2001* (U.S. Department of Education, 2005), has defined the importance of early literacy and the role that phonological awareness, phonemic awareness, and alphabetic principle has in the prevention of reading problems. In 2001, the Center for the Improvement of Early Reading Achievement and The National Institute for Early Literacy collaborated with the National Reading Panel and the Partnership for Reading to publish *Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and its Implications for Reading Instruction*. Together these organizations reviewed more than 100,000 studies to identify the critical skills that children need to be successful readers and identified phonemic awareness, phonics, fluency, vocabulary, and text comprehension as "skills and methods central to reading achievement" (p. 11).

According to this report, phonemic awareness can be taught, and instruction in this area helps all children learn to read and spell (p. 8).

The *No Child Left Behind Act of 2001* was designed to "improve student achievement and change the culture of America's schools" (U.S. Department of Education, 2005, ¶ 1). With this law, a student's progress is measured in the area of reading and math starting in grade three. With the pressure of *NCLB* and having all children read on grade-level by the end of third grade, schools have begun reviewing their language arts curriculum as early as kindergarten to identify ways to prevent reading problems in young children. The NCLB Act of 2001 states that "research shows that most reading problems faced by adolescents and adults are the result of problems that could have been prevented through good instruction in their early childhood years" (Snow, Burns & Griffin, 1998, as cited in U.S. Department of Education, 2005, ¶ 3). Early childhood programs began implementing direct and systematic instruction on the pre-reading skills of phonemic awareness. "Direct instruction in both the phonological code and alphabetic principle at the early stages of reading development is necessary for some students to develop the efficiency and automaticity necessary to be competent and fluent readers" (Lennon & Slesinski, 1999, p. 2 of 12).

Numerous research studies on phonemic awareness have concluded that a child's level of awareness is "highly predictive of success in learning to read--in particular in predicting success in learning to decode. In fact, phonemic awareness abilities in kindergarten (or in that age range) appear to be the best single predictor of successful reading acquisition" (The Importance of Phonemic Awareness in Learning, n.d., p. 6). In addition, Adams et al. (1998) noted that "poorly developed phonemic awareness is the

core difficulty for a large proportion of children who are having difficulty learning to read" (p. 5).

With the amount of research available on the correlation among phonemic awareness and reading achievement, children in our country continue to struggle with learning to read, and at least 20% of children have not achieved phonemic awareness by the middle of first grade (International Reading Association and National Association for the Education of Young Children, 1998, p. 13). Bursuck, Munk, Nelson, and Curran (2002), examined contemporary reading research and surveyed 549 teachers "attitudes toward, and knowledge of, beginning reading practices that have been shown to prevent reading failure" (p. 1). The results of the survey revealed that kindergarten and first grade teachers are "listening to the research on reading problem prevention (or experiences has led them to practices consistent with the findings)" (p. 5). The questionnaire also revealed that kindergarten and first grade teachers favor "more explicit reading practices for their at-risk readers" (p. 4).

Knowledge of phonemic awareness is important in preventing reading failure in young children, additionally, is the need for knowledge expressed through the identification and assessment of children who are in need of direct and systematic instruction. According to Torgesen (1998), "one of the most compelling findings from recent reading research is that children who get off to a poor start in reading rarely catch up" (p. 1). To prevent reading failure, educators must continually assess children in the specific areas of phonemic awareness, in particular "sound comparison, phoneme segmentation, and phoneme blending" (p. 5), and then use results to guide instruction. Tests of phonemic awareness, and letter names and sounds are predictors of reading

achievement. Such tests do not need to be nationally standardized for informing early identification. “National based norms are not required to identify which children within a given classroom or school are weakest in phonemic awareness and letter knowledge” (p. 6). However, Torgesen (1998) does recommend that tests should “take no more than ten to fifteen minutes per child to administer” (p. 6).

To ensure that educators use reading research and results from students’ assessments wisely, the International Reading Association and National Association for the Education of Young Children (1998) developed a position statement on phonemic awareness and the relationship of phonemic awareness and learning to read. If educators are to make informed decisions “it is critical that teachers are familiar with the concept of phonemic awareness and they know that there is a body of evidence pointing to a significant relation between phonemic awareness and reading acquisition” (p. 12). In this statement, the International Reading Association and the National Association for the Education of Young Children (1998) suggest that a classroom which has a print-rich environment, engages children in language activities, provides explicit instruction in alphabetic principle, and opportunities for students to practice authentic reading and writing, will engage children in learning to read (p. 15).

Lombardino et al. (1997) conducted one of the few studies which addressed the relationship among young children’s invented spellings and those children’s knowledge of phonemic awareness. Although phonemic awareness is known as an auditory process, assessment and application of a child’s phonemic awareness development is evident through his or her emerging writings and development spellings. Lombardino et al. (1997) explored this relationship and found that children’s developmental spellings were

indicative of the children's phonological knowledge. Few studies have followed Lombardino et al. (1997) which have address the reciprocal relationship among phonemic awareness, writing, and spelling development of emerging learners. A gap exists in the literature base which fails to fully explore the link connecting all three of these. Therefore, in order to address and prevent the reading problems experienced by many young children, additional attention is required based on the reciprocal relationship among phonemic awareness, writing, and spelling development.

Summary

The cognitive development theories of Piaget (1969) and Vygotsky (1978) have provided a framework for the developmental spelling research of Read (1971, 1975), Chomsky (1970), and Gentry (1982) and emerging writing research of Clay (1977, 1975), Richgels (1995), and Ehri and Wilce (1978). These researchers have studied the developmental spellings of emerging learners in an attempt to explore the theoretical perspective of spelling acquisition as a developmental process (Templeton & Morris, 2001, p. 3-4). Interest in the developmental aspect of spelling has been a concern since "the late nineteenth century" (Cahen, Craun, & Johnson, 1969, p. 281), but it was in the late 1970's that a renewed interest in spelling, in particular invented and developmental spelling, increased (Templeton & Morris, 2001, p. 1). In addition, cognitive, developmental, and educational psychologists began to explore the influence that developmental spelling and emerging writing opportunities have on the literacy development of emerging learners.

The observation of children's developmental spellings and the social aspect of authentic and meaningful writing opportunities, concur with the cognitive development theories of Piaget (1969) and Vygotsky (1978). Characteristics of preoperational thinking as defined by Piaget's stages of cognitive development (Piaget & Inhelder, 1969) and Vygotsky's (1978) theoretical framework of social interaction have provided a theoretical lens for understanding young children's spelling and writing. In addition, the theories of Piaget (1969) and Vygotsky (1978) laid the foundation for the development of stage or phase models of spelling acquisition. Stages of developmental spelling have been defined and studied by Bear and Templeton (1998), Chomsky (1970), Ehri (1991), Gentry (1982), Manning (2004), and Read (1971). Stage or phase models of emerging writing have been identified by Clay (1975, 1977), Ehri & Wilce (1987), and Richgels (1995). These stages of developmental spelling and emerging writing allow for emerging learners to explore both writing and spelling as a developmental process, which in turn encourages the development of cognition.

Recent research on the topics of phonemic awareness, developmental spelling, and emerging writing has confirmed that a significant relationship exists. Research has also attempted to define the spelling, writing, and reading connection, and the reciprocity between reading and writing (Gentry, 2006, p. xiii). Although research has concluded that providing young children with opportunities to explore writing and spelling encourages literacy development, a minimal body of research exists on the impact daily writing has on phonemic awareness development of kindergarten students identified as low-risk, some-risk, and at-risk in terms of literacy development.

CHAPTER 3:

METHODOLOGY

Introduction

The purpose of this quantitative study was to address a gap which exists between research on writing, spelling, phonemic awareness, and classroom practice. Although the critical role of writing and phonemic awareness in early childhood curriculums has been defined, many children continue to experience difficulty in reading acquisition. Difficulties in acquiring critical phonological skills can be prevented if early childhood programs address phonemic awareness development through activities that extend beyond auditory experiences for young children.

This study addressed the question of whether or not a significant relationship exists among daily writing opportunities that encourage emerging writing and developmental spelling and student growth in phonemic awareness. The study also considered the impact of daily writing on the phonemic awareness development of students at different literacy levels. Seventy-seven kindergarten students from 3 elementary schools located in northeastern Pennsylvania participated during the 2006-2007 school year. Pre- and posttest measures included assessment results from The Phonological Awareness Test (PAT) (Robertson & Salter, 1997). Students' literacy levels were identified as low-risk, some-risk, and at-risk at the beginning of the study based on the ISF assessment measure (Good & Kaminski, 2002).

Research Design and Approach

This study employed a quasi-experimental design, during which pre- and posttest data was collected from 77 kindergarten students. The intent of this design was to determine whether or not a significant relationship exists among daily writing and the phonemic awareness development of kindergarten students representing different literacy levels. Six kindergarten classrooms and 77 students participated in an experimental and control group design. Forty students in the experimental group participated in daily writing opportunities that encouraged emerging writing and developmental spelling, following the writer's workshop format (Bouas et al., 1997; Cooper, 1993; Hertz & Hydenberk, 1997; Maehr, 1991a). Thirty-seven students in the control group participated in less frequent writing opportunities.

The present study was motivated by the fact that although a correlation exists between phonemic awareness and reading achievement (Adams, 1990; Ball & Blachman, 1988, 1991; National Reading Panel Report, 2000; Torgesen & Davis, 1996), research also supports the need for early childhood educational programs which address phonemic awareness development (Center for the Improvement of Early Reading Achievement & National Institute for Literacy, 2001; International Reading Association and the National Association for the Education of Young Children, 1998; Stanovich, 1993-1994; Torgesen, 2005). Numerous studies exist on the importance of phonemic awareness in reading acquisition, yet a deficit exists in the literature base concerning the correlation between daily writing and the phonemic awareness development of kindergarten students representing different literacy levels.

Setting and Sample

Population

Eight kindergarten teachers representing three elementary schools in northeastern Pennsylvania were invited to participate in the present study. The teachers were selected based on the researcher's ability to conduct a study within their elementary schools, the individual teacher's willingness to participate, and the frequency of writing that occurs in his or her classroom. An invitation to participate and a questionnaire was administered to the kindergarten teachers requesting the following information: a) the types and frequency of writing that occurs in his or her classroom, b) interest in participating in the study, and c) willingness to allow the researcher to conduct data collection within the classroom (see Appendix A). The classrooms of the 8 kindergarten teachers had a student population of 162 students.

Sampling

A convenience sample was drawn based on the teacher respondents who completed the invitation and questionnaire. Those who were chosen to participate in the study noted that they were willing and available to participate, in addition to providing the types and frequency of writing instruction that allowed for emerging writing and developmental spelling growth. The sample size of 6 teachers was chosen based on individual teacher's responses. The 3 teachers selected to participate in the experimental group had experience in providing students with daily writing that encouraged emerging writing and developmental spelling growth, following the writer's workshop format

(Bouas et al., 1997; Cooper, 1993; Hertz & Hydenberk, 1997; Maehr, 1991a). The 3 teachers selected to participate in the control group indicated that daily writing does not typically occur in their classrooms. In addition, both groups of teachers agreed to participate and allow for data collection at predetermined points during the study. Teacher participants signed a consent form which included background information of the study, procedures, participants' voluntary nature of the study, and information in regards to compensation and confidentiality (see Appendix B).

The student sample consisted of 77 kindergarten students, with 40 students in the experimental group and 37 students in the control group. Forty-four of the students were males and 33 were females. Parents or guardians of the student participants signed a consent form which included background information, procedures, participants' voluntary nature, risks and benefits, and information in regards to compensation and confidentiality (see Appendix C). Community participants, which included 3 elementary principals, signed a consent form to allow for the study to be conducted within the participating elementary schools (see Appendix D). A sample size which included 3 community partners, 77 student participants, and 6 teachers were used because of the researcher's difficulty in finding additional teachers and community partners who were willing to participate in the study.

An attempt was made to have an equal number of classrooms in both the experimental and control groups to ensure that each group would be statistically equal in terms of teacher and student participants. Students in the experimental and control groups represented the three literacy development levels of at-risk, some-risk, and low-risk as

identified by the ISF assessment measure (Good & Kaminski, 2002) (see Table 1 and Figure 1).

Table 1

Ability Level Study Participants

Ability Level					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	**Some risk**	17	22.1	22.1	22.1
	Low risk	53	68.8	68.8	90.9
	At risk	7	9.1	9.1	100.0
	Total	77	100.0	100.0	

Figure 1. Study ability level distribution.

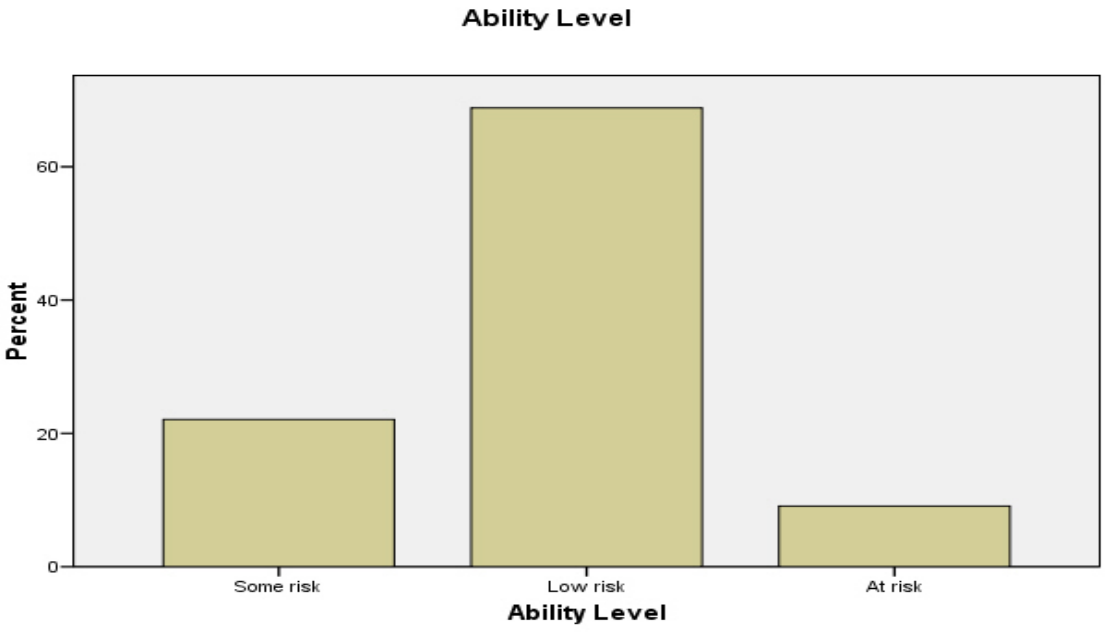

Table 1 shows there were 53 (69%) low risk study participants, 17 (22%) some risk study

participants, and 7 (9%) at-risk study participants. Figure 1 is a bar chart which graphically depicts the study ability level distribution.

In the present study, the function of the ISF assessment measure (Good & Kaminski, 2002) was used only to identify students' ability levels in terms of literacy development. Student results were entered into the DIBELS database (Good & Kaminski, 2002) and students pre-reading and early literacy skills were identified as low-risk, some-risk, and at-risk based on their scores. Instructional recommendations for each student were determined and included the following literacy recommendations: a) students with low-risk are identified as achieving the benchmark and are on grade-level, b) students with some-risk are identified as strategic and need some additional interventions, and c) students at-risk are identified as intensive and need substantial intervention.

Treatment and Data Collection

The participating teachers in the experimental classrooms met with the researcher prior to the study to discuss the types and frequency of writing that should occur in correlation with the present study. The 3 teachers reviewed the training that they participated in during the previous school year on the use of writer's workshop in a kindergarten classroom. The participating teachers understood that the daily writing opportunities were to follow the writer's workshop format which included teacher modeling of writing, mini-lesson, writing time, conferencing, and sharing (Bouas et al., 1997; Cooper, 1993; Hertz & Hydenberk, 1997; Maehr, 1991a). Writing activities were

also to address the Pennsylvania Academic Standards for Reading, Writing, Speaking, and Listening (P.A. Department of Education, 2005) and the Pennsylvania Kindergarten Standards (P.A. Department of Education and P.A. Department of Public Welfare, 2005).

The participating teachers in the control group also met with the researcher prior to the start of the study and discussed curricular issues and the implementation of writing. The 3 participating teachers in the control group were reminded to adhere to the curriculum and state standards even though writing would occur less frequently than in the experimental group. The teachers in the control group agreed to engage students in the writing activities that were part of the Language Arts program and no additional writing opportunities. The writing activities would occur only once a week. The researcher was available to participating teachers in both the experimental group and control group throughout the study when questions arose. In addition, the researcher met with the teachers in January to discuss any issues or concerns.

Forty kindergarten students representing the experimental group participated in daily writing opportunities. Writing opportunities were generally defined as daily writing that encourages children to engage in authentic and meaningful writing using emerging writing and developmental spelling. Writing opportunities began after the pre-assessments were conducted and continued daily throughout the school year. Thirty-seven students in the control group were not administered a treatment. Students in the control group did not participate in daily writing opportunities that encourage emerging writing and developmental spelling, and they did not participate in the writer's workshop format.

Before the treatment was administered to the experimental group, the Initial Sound Fluency (ISF) portion of the DIBELS assessment (Good & Kaminski, 2002) and The Phonological Awareness Test (PAT) (Robertson & Salter, 1997) were administered to students in both the experimental and control groups to determine a baseline of each students' early literacy development. The ISF assessment (Good & Kaminski, 2002) was used only as a pretest to identify students as either low-risk, some-risk, or at-risk in terms of literacy development. The posttest of the PAT (Robertson & Salter, 1997) was administered at the conclusion of the study. The assessments were administered individually to students and each assessment measured a student's level of phonemic awareness.

The participating elementary schools had a team of reading specialists who administered the ISF assessment (Good & Kaminski, 2002) prior to the treatment condition. The reading specialists and the researcher were trained through the local intermediate unit in administering and interpreting the ISF (Good & Kaminski, 2002) assessment. The researcher administered the PAT assessment measure (Robertson & Salter, 1997) to student participants before the treatment was initiated, and the posttest was administered at the conclusion of the study. The measures were administered individually to students and results were analyzed statistically using SPSS 13.0 (2004).

The timeline for data collection included:

1. September, 2006: The ISF portion of the DIBELS assessment (Good & Kaminski, 2002) was administered individually to kindergarten students by the remedial reading teachers. Students' raw scores were entered into the DIBELS database for analysis and

assessment reports were created. Assessment reports included the scores and literacy level for each student. Students were identified by the assessment as either low-risk, some-risk, or at-risk in terms of literacy development. These reports were shared with the researcher.

2. November, 2006: The researcher administered the pretest of the PAT (Robertson & Salter, 1997) to students who returned parent permission slips. An overall phonological awareness score was calculated for each student based on the isolation, deletion, substitution, blending, and grapheme subtests of the assessment.

3. April, 2007: The researcher administered the posttest of the PAT (Robertson & Salter, 1997) and an overall phonemic awareness score was calculated for each student based on the isolation, deletion, substitution, blending, and grapheme subtests of the assessment. The researcher statistically analyzed the experimental and control group's pre- and posttest scores on the PAT (Robertson & Salter, 1997) using SPSS 13.0 (2004) to determine if a significant relationship exists among daily writing and phonemic awareness development, and the impact writing has on the phonemic awareness development of students at different literacy levels.

Instrumentation and Materials

Data collected during the 2006-2007 school year included pre- and posttest results from The Phonological Awareness Test (PAT) (Robertson & Salter, 1997). The PAT (1997) assessment measure was administered individually to student participants at the beginning and conclusion of the study by the researcher. The Initial Sound Fluency

assessment measure (ISF) (Good & Kaminski, 2002) was used only as a pretest to identify students' ability levels in terms of literacy development. The ISF assessment (Good & Kaminski, 2002) was administered by the elementary schools remedial reading teachers prior to the implementation of the treatment condition.

The DIBELS assessments (Good & Kaminski, 2002) are "a set of standardized, individually administered measures of early literacy development" (DIBELS, 2002a, ¶1). Each one-minute measure assesses the development of early literacy skills and provides information on student development and progress in the areas of phonological and phonemic awareness, alphabetic principle, and fluency.

> The measures were developed under the essential early literacy domains discussed in both the National Reading Panel (2000) and National Research Council (1998) reports to assess student development of phonological awareness, alphabetic understanding, and automaticity and fluency with the code. Each measure has been thoroughly researched and demonstrated to be reliable and valid indicators of early literacy development and predictive of later reading proficiency to aid in the early identification of students who are not progressing as expected. (DIBELS, 2002a, ¶ 2)

The DIBELS assessment has been examined to confirm that scores are reliable, valid, and indicative of a student's ability (Elliott, Lee, and Tollefson, 2001; Good & Kaminski, 1996, 2002; Good, Wallin, Simmons, Kame'enui, & Kaminski, 2002, Good, Kaminski, Simmon, Kame'enui, 2001). Furthermore, tasks, directions, and analysis during scoring for each subtest measure are explicitly described to ensure reliability.

The pretest measure used to assess kindergarten literacy development contained two sections which included LNF and ISF. Results from the LNF portion of the assessment were not used in this study because it measures alphabetic principle. Results from the ISF assessment were used because this particular test measures phonemic

awareness and assesses “a child’s skill to identify and produce the initial sound of a given word” (DIBELS, 2002b, ¶ 1). The ability to recognize and produce the onset of a word with accuracy and fluency is a component of phonemic awareness.

The ISF is typically given to kindergarten students in the fall and winter, and takes approximately 3 minutes to administer to each student. A script is provided for the examiner to follow and student responses and elapsed time are recorded in a benchmark assessment booklet. The examiner uses a stopwatch to record student’s time in identifying answers. During the assessment,

> 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. (Good et al., 2002, p. 6)

The examiner uses a stopwatch to calculate the time it takes for the student to either identify or produce the correct sound. The number of initial sounds identified correctly in one minute is used to determine the student’s score. Scores are used to identify where a student is in their pre-reading and early literacy development. In addition, the ISF assessment measure (Good & Kaminski, 20002) is used to identify students who display weaknesses in the phonemic skill of isolation. Students who score less than 4 initial sounds are determined to be “at-risk”. Students with scores equal to or greater than 4 and less than 8 initial sounds per minute are deemed to be at “some-risk”, and students judged to be “low-risk” receive scores equal to ore greater than 8. Student scores were entered into the DIBELS Data System (Good & Kaminski, 2002) by each

school's DIBELS coordinator, and students' instructional literacy levels were determined by the system. The data system provides school districts with automated reports and analyses of individual students, classes, and schools based on the instructional recommendations, and these were shared with the researcher. Student pretest data on the ISF assessment measure are displayed in a table and found in the appendix (see Appendixes E and F).

The reliability and validity of the ISF measure (Good & Kaminski, 2002) was examined through repeated assessments and was compared to other published assessments. Results on the assessment were within the expected ranges for students at the kindergarten level. According to Good et al. (2002),

> By repeating the assessment four times, the resulting average has a reliability of .91 (Nunnally, 1978). The concurrent criterion-related validity of OnRF with DIBELS PSF is .48 in January of kindergarten and .36 with the Woodcock-Johnson Psycho-Educational Battery Readiness Cluster score (Good et al., in preparation). The predictive validity of OnRF with respect to spring-of-first-grade reading on CBM ORF is .45, and .36 with the Woodcock-Johnson Psycho-Educational Battery Total Reading Cluster score (Good et al., in preparation). (p.7)

Elliott, Lee, and Tollefson (2001) conducted a study to further extend the reliability and validity findings of Good & Kaminski (1996, 2002). Seventy-five kindergarten children were repeatedly administered the DIBELS assessment, along with five additional assessments, during an 11-week period. Results confirmed the findings of Good & Kaminski (1996, 2002) that use of the DIBELS assessment with kindergarten children is a valid and reliable measure.

The PAT assessment measure (Robertson & Salter, 1997) was designed to assess a student's phonological processing and phoneme-grapheme correspondence. This

individually administered test assesses the phonemic awareness skills of rhyming, segmentation, isolation, deletion, substitution, blending, graphemes, and decoding. Robertson and Salter (1997) identify the tasks as follows:

1. The rhyming subtest assesses the ability to produce rhymes and identify rhyming pairs. (p. 21)
2. The segmentation subtest assesses the ability to segment sentences, syllables, and words. (p. 22-23)
3. The isolation subtest assesses the ability to identify initial, final, and medial phonemes in words. (p. 24-25)
4. The deletion subtest assesses the ability to manipulate root words, syllables, and phonemes. (p. 27)
5. The substitution subtest assesses the ability to isolate a phoneme, change the phoneme, and make a new word. (p. 28-29)
6. The blending subtest assesses the ability to blend sounds together to form words. (p.31)
7. The graphemes subtest assesses knowledge of sound symbol correspondence. (p. 32-33)
8. The decoding subtest assesses the ability to blend sounds into unknown words. (p. 35)

For the present study, the rhyming, segmentation, and decoding subtests were not used. The rhyming and segmentation subtests do not measure phonemic awareness, but rather phonological awareness. The decoding subtest will not be used because Robertson and

Salter (1997) noted that this subtest may not be appropriate for five years olds (p. 11), which is the age of most kindergarten students participating in the present study.

During the administration of the PAT assessment measure (Robertson and Salter, 1997), the examiner follows a script and records student responses on a phonological awareness test form. Unlike the DIBELS assessment (Good & Kaminski, 2002), this assessment is not timed. The purpose of this test is to measure student's accuracy on phonemic awareness tasks, rather than fluency. At the conclusion of the assessment, an overall score is calculated for the subtests. Student pre- and posttest data on the PAT (Robertson & Salter, 1997) are displayed in tables and found in the appendix (see Appendixes G and H).

The validity and reliability of the PAT (Robertson and Salter, 1997) was examined by the test creators. A study was conducted which included 1,235 students, ranging in ages from 5 to 9 years old. Results found that the "test-retest coefficient for each subtest averages .80 and range from .37 to .98 across age levels" (LinguiSystems, 1997, ¶ 3). The validity of the measure concluded that "90% of the items show significant correlations with total test scores" (¶ 3). The strong reliability and validity of the PAT (Robertson and Salter, 1997) confirms that this measure provides accurate information which can be used as a reading screening for diagnostic purposes and an outcomes instrument.

Both the DIBELS assessment (Good & Kaminski, 2002) and The Phonological Awareness Test (Robertson & Salter, 1997) are proven to be reliable and valid measures of phonemic awareness. Scripts and scoring booklets are provided for both assessment measures so students will receive the same testing directions and prompts. The remedial

reading teachers have been trained in administering and scoring the DIBELS assessment (Good & Kaminski, 2002) and have conducted the assessment for four years in the school district. The researcher has administered the PAT (Robertson & Salter, 1997) to individual remedial reading students and has experience in administering and scoring the assessment.

Data Analysis

Descriptive and inferential statistical methods were used to analyze the data collected from the assessment measure. Descriptive statistics were chosen to describe the demographic variable of group, gender, and ability level. Inferential statistics included the two-sample *t* test which was used to compare the means between the normally distributed samples in the experimental and control group. The *t* test for two independent samples evaluates "the mean difference between two populations (or between two treatment conditions" (Gravetter, 2005, p. 248).

In this problem, the null hypothesis is being tested that there are no significant differences between the population means of the experimental and control group. The alternative hypothesis states that there is a significant difference between the population means of the experimental and control group; that is, the belief that daily writing has some kind of effect on phonemic awareness. Data was statistically analyzed using SPSS 13.0 (2004) and the null hypothesis was rejected when $p<.05$.

Protection of Participants' Rights

There were no risks associated with participating in the study. Participants did not face psychological stress, negative effects on their health, unwanted solicitation, unwanted intrusion of privacy, or social or economic loss. The identifiers used for the researcher's own purpose in regard to the teacher participants included participants' names, school address, email address, and telephone number. No social security numbers or personal information beyond school information was required. Student participants were identified by name, school, and classroom teacher. All participant information and assessment records were kept confidential. Records and assessments collected over the course of the study were kept private in a locked file. The researcher was the only person to have access to the key.

The teacher participants signed a consent form before the study began which explained their voluntary nature in the study. The consent form also included information on the procedures, risks and benefits in the study, and confidentiality. Parents of student participants signed a consent form which included information about the study and the student's role. The participants had Walden University's Research Participant Advocate and the researcher's faculty mentor available to answer questions about participation in the study. None of the participants elected to withdraw during the study.

CHAPTER 4:

RESULTS

Introduction

The purpose of this quantitative study was to determine whether or not a significant relationship exists among daily writing opportunities and student growth in phonemic awareness. The study also considered the impact of daily writing on the phonemic awareness development of students representing different literacy levels. Forty students in the experimental group participated in daily writing opportunities that encouraged emerging writing and developmental spelling; 37 students in the control group engaged in less frequent writing opportunities. Students literacy levels were identified as either low-risk, some-risk, or at-risk based on the ISF (Good & Kaminski, 2002) pre-assessment measure. Students in both the experimental and control groups represented each of the three literacy levels.

Data were collected in two phases over a seven-month period during the 2006-2007 school year. During the first phase of data collection, students in both the experimental and control groups were administered the ISF portion of the DIBELS assessment measure (Good & Kaminski, 2002) and the pretest of the PAT (Robertson & Salter, 1997) assessment measure. The last phase consisted of the administration of the posttest of the PAT (Robertson & Salter, 1997). Results were statistically analyzed using SPSS 13.0 (2004). Both descriptive and inferential statistical methods were employed. All testing was based on determining statistical significance at a two-sided alpha level of 0.05. Demographic variables were described using frequency and percentage. The two-

sample *t* test was used to test the hypotheses. Chapter four examines the results which are grouped by hypotheses and presented according to the research questions.

Research Question One Data Analysis

Hypothesis 1

It was hypothesized that there would be no significant difference in the average change in phonemic awareness from pre- to postintervention between the experimental and control groups. Based on the results of the two-sample *t* test, the results were statistically significant and the null hypothesis was rejected. A statistically significant difference was found in the average increase between the two groups. Tables 2 and 3 show that there was a statistically significant difference in the average phonemic awareness increase between the two groups. The mean scores for the two groups were 33.5 (12.3) versus 42.6 (13.7) for the control and experimental groups respectively, $t = -3.06$ (75); $p = 0.003$. Therefore, the null hypothesis was rejected and it was concluded that the experimental group showed a larger average increase in phonemic awareness from pre- to postintervention compared to the control group.

Table 2

Group Statistics for the Average Change in Phonemic Awareness from Pre- to Postintervention for the Experimental and Control Groups

Group Statistics					
	Group	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Change in Phonemic Awareness (Post - Pre)	**Control**	37	33.4865	12.32121	2.02560
	Experimental	40	42.6000	13.68660	2.16404

Table 3

Independent Samples Test for the Average Change in Phonemic Awareness Score from Pre- to Postintervention

Independent Samples Test				
				t-test for Equality of Means
		t	df	Sig. (2-tailed)
		Lower	Upper	Lower
Change in Phonemic Awareness (Post - Pre)		-3.062	75	.003

Research Question Two Data Analysis

Hypothesis 2

It was hypothesized that there would be no significant difference in the average change in phonemic awareness from pre- to postintervention between the low-risk experimental group and the low-risk control group. Based on the results of the two-sample *t* test, the results were statistically significant and the null hypothesis was rejected. Tables 4 and 5 show that there was a statistically significant difference in the average phonemic awareness increase between the two groups. The mean score for the two groups were 29.6 (11.8) versus 40.6 (13.9) for the low-risk control and low-risk experimental groups respectively, $t = -3.03$ (51); $p = 0.004$. Therefore, the null hypothesis was rejected and it was concluded that the low-risk experimental group had a larger average increase in phonemic awareness from pre- to postintervention than the low-risk control group.

Table 4

Group Statistics for Change in Phonemic Awareness from Pre- to Postintervention for the Low Risk Ability Groups

Group Statistics					
	Group	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Change in Phonemic Awareness (Post - Pre)	**Control**	23	29.6087	11.83500	2.46777
	Experimental	30	40.5667	13.89538	2.53694

Table 5

Independent Samples Test for Change in Phonemic Awareness from Pre- to Postintervention for the Low Risk Ability Groups

Independent Samples Test				
				t-test for Equality of Means
		t	**df**	**Sig. (2-tailed)**
		Lower	**Upper**	**Lower**
Change in Phonemic Awareness (Post - Pre)		-3.031	51	.004

Hypothesis 3

It was hypothesized that there would be no significant difference in the average change in phonemic awareness from pre- to postintervention between the some/at-risk experimental group and the some/at-risk control group. Based on the results of the two-sample *t* test, the results were not statistically significant and the null hypothesis was not rejected. Tables 6 and 7 show that there was not a statistically significant difference in the average phonemic awareness increase between the two groups. The mean scores for the two groups were 39.9 (10.6) versus 48.7 (11.6) for the some/at-risk control and some/at-

risk experimental groups respectively, t = -1.94 (22); p = 0.066. Therefore, the null hypothesis was not rejected and it was concluded that there is no difference in the average increase in phonemic awareness from pre- to postintervention between the some/at-risk control group and the some/at-risk experimental group.

Table 6

Group Statistics for Change in Phonemic Awareness Score from Pre- to Postintervention for the Some/At-risk Ability Groups

Group Statistics					
	Group	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Change in Phonemic Awareness (Post - Pre)	**Control**	14	39.8571	10.63273	2.84172
	Experimental	10	48.7000	11.59550	3.66682

Table 7

Independent Samples Test for Change in Phonemic Awareness Score from Pre- to Postintervention for the Some/At-risk Ability Groups

Independent Samples Test				
				t-test for Equality of Means
		t	**df**	**Sig. (2-tailed)**
		Lower	**Upper**	**Lower**
Change in Phonemic Awareness (Post - Pre)		-1.935	22	.066

Summary

In regard to research question one**,** analyses were conducted to determine whether or not there was a significant difference in the average increase from pre- to

postintervention between the experimental group and control group on The Phonological Awareness Test (PAT). Based on the two-sample *t* test, it was concluded that there was a statistically significant difference in the average phonemic awareness change from pre- to postintervention between the experimental and control groups. On this measure, the experimental group showed a larger phonemic awareness increase from pre- to postintervention as compared to the control group. Therefore, it was determined that daily writing opportunities that encourage emerging writing and developmental spelling, did impact students' phonemic awareness development.

In regard to research question two**,** it was determined that writing does impact certain areas of phonemic awareness development in students' representing various literacy levels. Students in the experimental group were identified as being low-risk, some-risk, or at-risk in terms of their literacy development. For statistical analysis, the some-risk and at-risk ability groups were combined because the sample size of 7 in the at-risk group was not a large enough sample for statistical analysis. The low-risk group had 53 participants and the some/at-risk group had 24 participants. Analyses were conducted to determine the following: a) if the amount of change in phonemic awareness from pre- to postintervention was different between the low-risk experimental group and the low-risk control group, and b) if the amount of change in phonemic awareness from pre- to postintervention was different between the some/at-risk experimental group and the some/at-risk control group.

A statistically significant difference was found in the average change in phonemic awareness from pre- to postintervention between the low-risk experimental group and the

low-risk control group on the PAT assessment measure. The amount of change from pre- to postintervention in the low-risk control group was significantly different from the amount of change from pre- to postintervention in the low-risk experimental group on the PAT assessment measure. Based on the two-sample *t* test, the low-risk experimental group had a larger increase on the PAT assessment measure from pre- to postintervention than the low-risk control group. Therefore, results found that students in the experimental group, which were identified as low-risk, scored significantly higher than those students in the control group. Exposure to daily writing using emerging writing and developmental spelling did impact the phonemic awareness development of students in the low-risk experimental group.

A statistically significant difference was not found in the average phonemic awareness change from pre- to postintervention between the some/at-risk experimental group and the some/at-risk control group on the PAT assessment measure. Although there was some indication of a larger average increase in the some/at-risk experimental group than the some/at-risk control group on the PAT assessment measures, a statistically significant difference was not found.

Chapter 5 will discuss the findings and significance of the research, and present recommendations for action and further study.

CHAPTER 5:

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine whether or not a significant relationship exists among daily writing and the phonemic awareness development of 77 kindergarten students at different literacy levels. Previous studies have indicated that young children's literacy development is enhanced when they engage in daily writing opportunities which are meaningful and authentic (Ehri & Wilce, 1987; International Reading Association and the National Association for the Education of Young Children, 1998; Lombardino et al., 1997; Mann et al., 1987; Richgels, 1995; Spear-Swerling, 2002), yet few studies have focused on the impact that writing has on phonemic awareness (Kamii & Manning, 2002; Mann et al., 1987). This study merges the topics of writing and phonemic awareness and the reciprocal impact that they have on students' literacy development.

This area of inquiry is based on developmental spelling research by Read (1971, 1975), Chomsky (1970), and Gentry (1982) and on emerging writing research of Clay (1977, 1975), Richgels (1995), and Ehri and Wilce (1987). Interest in this topic has increased because current literature on emerging writing and developmental spelling concludes that students' literacy development is enhanced when daily opportunities to explore writing and spelling are provided (Ehri & Wilce, 1987; International Reading Association and National Association for the Education of Young Children, 1998; Lombardino, Bedford, Fortier, Carter, & Brandi, 1997; Mann, Tobin, & Wilson, 1987;

Partridge, 1991; Richgels, 1995). In addition, the use of developmental spelling and emerging writing in classrooms has been found to be an effective way to assess and teach "not only spelling, but also important aspects of phonemic awareness, phonics, writing, and other essential elements of literacy" (Gentry, 2000, p.1). According to Cahen, Craun, & Johnson (1969), educators have been concerned with spelling "since the late nineteenth century" (p. 281).

The stages of developmental spelling have been defined and studied by researchers, in particular Bear and Templeton (1998), Chomsky (1970), Ehri (1991), Gentry (1982), Manning (2004), and Read (1971); and the principles and stages of emerging writing have been identified by Clay (1975, 1977), Ehri and Wilce (1987), and Richgels (1995). These researchers have agreed that developmental spelling and emerging writing offer a glimpse into children's knowledge and application of language. The cognitive development theories of Vygotsky (1978) and Piaget (1969) have also provided a framework for developmental spelling and emerging writing research.

Pre- and posttest data from The Phonological Awareness Test (PAT) (Robertson & Salter, 1997) was collected at pre-determined times during the 2006-2007 school year. The Initial Sound Fluency (ISF) (Good & Kaminski, 2002) was used only as pretest prior to the start of the study to identify students' literacy levels. Descriptive and inferential statistical methods were employed to analyze the data using SPSS 13.0 for Windows (2004). The two-sample *t* test was used to test the hypotheses. Through statistical analysis, it was determined that daily writing opportunities, which encourage emerging writing and developmental spelling, did impact students' phonemic awareness

development. In addition, it was revealed that writing does impact the phonemic awareness development of students' that are on grade-level in terms of pre-reading and early literacy skills.

Analyses were conducted to determine the following: a) if the amount of change in phonemic awareness from pre- to postintervention in the experimental group was significantly different from the amount of change in the control group, b) if the amount of change in phonemic awareness from pre- to postintervention in the two low-risk groups is significantly different, and c) if the amount of change in phonemic awareness from pre- to postintervention in the two some/at-risk groups is significantly different.

Interpretation of Findings

Research Question One

It was determined through group statistics and the independent samples test that there was a statistically significant difference in the average phonemic awareness increase between the experimental group and the control group. Students in the experimental group showed a larger increase in their scores from pre- to postintervention as compared to the control group on the PAT assessment measure. Therefore, it was concluded that daily writing, using emerging writing and developmental spelling, did impact students' phonemic awareness development as measured by the PAT assessment. Students in the experimental group showed a larger increase in their scores from pre- to postintervention on the following phonemic awareness tasks: isolation, deletion, substitution, blending, and grapheme identification. These findings correlate with other studies that have

determined that a relationship exists among children's developmental spellings and their phonemic awareness knowledge (Mann, et al., 1987; International Reading Association and National Association for the Education of Young Children, 1998; Lombardino et al., 1997; Spear-Swerling, 2002).

Research Question Two

The average change from pre- to postintervention between the low-risk experimental group and the low-risk control group were compared to determine whether or not there was a significant difference between the low-risk groups. It was determined that there was a statistically significant difference in the average change from pre- to postintervention between the low-risk ability groups on the PAT assessment measure. The group statistics and the independent samples test concluded that the low-risk experimental group had a larger increase in phonemic awareness from pre- to postintervention than the low-risk control group. Therefore, daily exposure to writing, using emerging writing and developmental spelling, did have a significant impact on students in the experimental group identified as low-risk in terms of literacy development. Students that were identified on grade-level, in regards to pre-reading and early literacy development and were exposed to the treatment condition of daily writing, scored significantly higher than those students in the control group who did not engage in daily writing. These results further support the hypothesis that daily writing can influence the phonemic awareness development of kindergarten students.

The average change from pre- to postintervention between the some/at-risk experimental group and the some/at-risk control group was compared to determine whether there was a significant difference in phonemic awareness development between the some/at-risk experimental and control groups. It was determined that there was not a statistically significant difference in the average phonemic awareness change from pre- to postintervention between the some/at-risk ability groups on the PAT assessment measure. Although a statistically significant difference was not found between the some/at-risk groups, students in the some/at-risk experimental group showed a larger average increase in phonemic awareness from pre- to postintervention as compared to the some/at-risk control group. The some/at-risk experimental group achieved a mean on the PAT posttest of 48.70, whereas, the some/at-risk control group achieved a mean of 39.86.

These results were surprising because it was hypothesized that the some/at-risk students in the experimental group would have scored significantly higher than the some/at-risk students in the control group. The low-risk students in the experimental group scored significantly higher on the PAT assessment measure than the low-risk control group and it was hypothesized that the experimental group, regardless of ability level, would have scored significantly higher than the control group across all ability levels. These results suggest that the exposure to daily writing did not have as strong an influence on the phonemic awareness development of the some/at-risk students in the experimental group as it had on the low-risk students in the same group.

Although studies exist concerning the impact writing has on students' phonemic awareness (Henterly, 2000; Kamii & Manning, 2002; Mann et al., 1987), a study has yet

to be conducted that examines the influence of daily writing on the phonemic awareness development of kindergarten students representing different literacy levels. The current findings show that students, regardless of ability level, can make gains when provided with daily writing instruction using emerging writing and developmental spelling. Students that are on grade-level in terms of pre-reading and early literacy development and are exposed to daily writing using emerging writing and developmental spelling scored significantly higher than those students in the control group. Results found that students' literacy development in the low-risk experimental group was enhanced when daily opportunities to explore writing and spelling were provided. Although daily writing exposure did not significantly impact the phonemic awareness development of students in the some/at-risk experimental group, they did have a higher mean posttest score than the some/at-risk control group on the PAT assessment measure. The findings of the present study correlate with those of Ehri & Wilce (1987); International Reading Association and National Association for the Education of Young Children (1998); Lombardino, et al. (1997); Mann, et al. (1987); Partridge (1991); and Richgels (1995).

Conclusions

Three main points can be drawn from the results of the study. First, daily writing opportunities that encourage emerging writing and developmental spelling did impact the phonemic awareness development of kindergarten students. Results found that there was a significant difference in the average increase from pre- to postintervention between the experimental and control groups on The Phonological Awareness Test (Robertson &

Salter, 1997) assessment measure. Second, daily exposure to writing, using emerging writing and developmental spelling, did have a significant impact on students in the experimental group identified as low-risk in terms of literacy development. Students that were identified on grade-level, in regards to pre-reading and early literacy development and were exposed to the treatment condition of daily writing, scored significantly higher than those students in the control group who did not engage in daily writing. These results further support the hypothesis that daily writing can influence the phonemic awareness development of kindergarten students. Third, although daily writing exposure did not significantly impact the phonemic awareness development of students in the some/at-risk experimental group, they did have a higher mean posttest score than the some/at-risk control group on the PAT. Therefore, exposure to daily writing did not have as strong an influence on the phonemic awareness development of the some/at-risk students in the experimental group as it had on the low-risk students in the same group.

Significance of the Study

Educational Research

The present study is motivated by the current focus in early childhood education on the importance of phonemic awareness and its impact on emerging reading development (Adams et al., 1998; Carr et al., 1998; Ericson & Juliebo, 1998; Fielding-Barnsley, 1997; Oudeans, 2003; Snider, 1997). Minimal studies have been noted in the existing literature base that examines classroom application strategies and techniques to encourage phonemic awareness development beyond auditory practices. The minimal

studies that do exist, explore the impact writing has on students' phonemic awareness development (Henterly, 2000; Kamii & Manning, 2002; Mann et al., 1987) and the need for additional knowledge related to the importance of daily writing and spelling opportunities in kindergarten classrooms (Piccirillo, 1998; Strattman & Hodson, 2005). Previous studies have indicated that young children's literacy development is enhanced when they engage in daily writing opportunities that are meaningful and authentic (Ehri & Wilce, 1987; International Reading Association and the National Association for the Education of Young Children, 1998; Lombardino et al., 1997; Mann et al., 1987; Richgels, 1995; Spear-Swerling, 2002), yet few studies have focused on the impact that writing has on the phonemic awareness development of emerging learners (Kamii & Manning, 2002; Mann et al., 1987).

The present study not only explores the impact that writing has on students' phonemic awareness development, but compares this development in students representing different literacy levels. Results of the study build upon past research (Henterly, 2000; Kamii & Manning, 2002; Mann, et al., 1987) and merge the topics of emerging writing, developmental spelling, and phonemic awareness development. In addition, the results correlate with those of Ehri and Wilce (1987); International Reading Association and National Association for the Education of Young Children (1998); Lombardino et al., (1997); Mann et al., (1987); Partridge (1991); and Richgels (1995). The existing knowledge base is extended because results of the present study add to the minimal studies that do exist, and results confirm that daily writing opportunities, which

encourage emerging writing and developmental spelling, do impact the phonemic awareness development of kindergarten students.

Educational Praxis

Results of the present study provide early childhood educators with additional knowledge related to the importance of daily writing and spelling opportunities in early childhood classrooms. Results also provide educators with additional information and clarification on the impact that daily writing opportunities that encourage emerging writing and development spelling has on students' phonemic awareness development. Finally, results fill the gap that exists in the literature base that examines the influence of daily writing on the phonemic awareness development of kindergarten students representing various literacy levels.

The current findings show that students can make significant gains on measures of phonemic awareness development when provided with daily writing instruction using emerging writing and developmental spelling. In addition, students that were identified on grade-level, in regards to pre-reading and early literacy development and were exposed to the treatment condition of daily writing, scored significantly higher than those students in the control group who did not engage in daily writing. These results further support the hypothesis that daily writing can influence the phonemic awareness development of kindergarten students. Therefore, results of the present study provide additional information for early childhood educators to implement daily writing opportunities with students of various literacy levels, as well as add to the general

understanding that children of all literacy levels can benefit from emerging writing and developmental spelling opportunities. The present study also provides the rational for the incorporation of authentic and meaningful writing into the curriculum, in addition to daily phonemic awareness instruction.

Social Change

The significance of the study in relation to educational research and praxis has implications for social change. Results of the present study can be used as a facilitation of change in school curriculums and early childhood classrooms. Research has confirmed that phonemic awareness is a skill highly predictive of later reading achievement and is "essential to learning to read in an alphabetic writing system" (Good & Kaminski, 2002). It is typically addressed through short auditory activities in early childhood classrooms on a frequent basis. Due to the fact that it is such a critical skill in beginning literacy development, instruction in phonemic awareness should be embedded and integrated in current classroom routines and into meaningful classroom experiences (Ericson & Juliebo, 1998; O'Connor, Notari-Syverson, & Vadasy, 1998).

The present study focused on the salient activity of writing, during which students used their phonological knowledge to associate sounds with letters and apply the alphabetic principle, and its impact on the phonemic awareness development of kindergarten students representing different literacy levels. The results of the study support the use of daily writing, using emerging writing and developmental spelling, as an activity to promote the phonemic awareness development of kindergarten students.

Due to the fact that phonemic awareness is such a critical skill in reading acquisition, instruction and activities which address this skill can be embedded into the daily curriculum through the use of writing.

The results of the present study also broaden the understanding of early childhood teachers. Classroom instruction can become static and predictable with the focus on educational standards and research-based programs. Frequently, classroom teachers find that there is not enough time in the day to address all the concepts and skills that are outlined in their school curriculum. The use of writing that focuses on emerging writing and developmental spelling, not only provides teachers with an activity that they can use in their classrooms that is multi-level, but also has benefits that outstretch just spelling and writing development. The results of the present study confirm that daily writing opportunities that encourage emerging writing and developmental spelling did impact the phonemic awareness development of kindergarten students. In addition, students that were identified on grade-level, in regards to pre-reading and early literacy development and were exposed to the treatment condition of daily writing, scored significantly higher than those students in the control group who did not engage in daily writing. These results further support the hypothesis that daily writing can influence the phonemic awareness development of kindergarten students.

This daily opportunity to interact with writing using emerging writing and developmental spelling can impact the literacy development of all children, regardless of ability level, and improve educational practice within school communities. The results of the study can improve classroom practice on not only a small scale within the

participating elementary school, but on a larger scale when the results of the study are available to early childhood educators, school administrators, and policy makers. The collaboration with colleagues, community members, and educators from varied educational settings was important in clarifying the significance of the problem and has lea to social change and improvement of educational practice within the researcher's community. In addition, conducting research with colleagues provided a model for other educators who are interested in investigating the link between research and practice.

Recommendations for Action and Further Study

The present study focused on the impact that daily writing, using emerging writing and developmental spelling, had on the phonemic awareness development of kindergarten students. Students in the experimental group were exposed to daily writing, whereas students in the control group were exposed to less frequent writing opportunities. The assessment measure used to collect data focused on the phonemic awareness development of the students in both the experimental and control groups. Further studies can be done using writing assessments to measure the impact that daily writing opportunities have on the emerging writing and developmental spelling growth of students. Further studies can also be conducted in which students in the experimental and control groups are exposed only to the treatment condition of writing using emerging writing and developmental spelling and not to any phonemic awareness instruction.

The present study focused on only one school district in northeastern Pennsylvania. Additional research on writing in kindergarten and first grade classrooms

with numerous schools participating and representative of the larger population is suggested. The present study occurred during the 2006-2007 school year in six kindergarten classrooms. Additional time may have been needed to fully explain the impact that daily writing has on the phonemic awareness development of students representing different literacy levels. Suggestions include conducting a longitudinal study which follows the students through kindergarten and first grade to measure the impact that daily writing had on their phonemic awareness development.

Concluding Statement

The purpose of this quantitative study was to determine whether or not a significant relationship exists among daily writing opportunities and student growth in phonemic awareness. Forty students in an experimental group engaged in daily writing that encouraged emerging writing and developmental spelling, while 37 students in the control group engaged in less frequent writing opportunities. Data included pre- and posttest results from The Phonological Awareness Test (Robertson & Salter, 1997) and pretest results from the Initial Sound Fluency of the Dynamic Indicators of Basic Early Literacy assessment (Good & Kaminski, 2002).

Results concluded that daily writing opportunities that encourage emerging writing and developmental spelling did impact the phonemic awareness development of kindergarten students. In addition, daily exposure to phonemic awareness tasks impacted students representing the low-risk literacy level. There was some indication that exposure to daily writing can close the gap between students between students identified as below

grade-level and students identified on grade-level. Results will fill the existing gap between research and practice, and address the need for further knowledge concerning the correlation between daily writing and phonemic awareness. In addition, results may influence early childhood educators to implement daily writing opportunities as a method for increasing students' phonemic awareness development.

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APPENDIX A:

INVITATION TO PARTICIPATE AND QUESTIONAIRRE

Dear Kindergarten Teacher,

You are invited to participate in a research study on daily writing and the phonemic awareness development of students of various literacy levels. You were selected as a possible participant due to your placement as a kindergarten teacher and permission from school administration to conduct the study within your school community. This study is being conducted by Carrie Snell, a doctoral candidate at Walden University. If you would like to participate, complete the attached questionnaire in the attached self-addressed stamped envelope by October 30, 2006.

If you agree to be in this study, you will be asked to participate in either a control or experimental group. If selected to be a participant in the experimental group, you will be asked to provide daily writing opportunities in your classroom following the writer's workshop format. If you are selected to be a participant in the control group, you will not administer any additional writing opportunities, other than the types and frequency of writings that have typically occurred in your classroom in the past. The researcher will conduct a phonemic awareness assessment with your students two times during the course of the study. Your participation in this study is strictly voluntary and there will be no compensation provided.

To return the questionnaire, use the attached self-addressed stamped envelope and return to the researcher. No questionnaires will be accepted after October 30, 2006. If you have any questions, please call Carrie Snell at 570-639-3616. The researcher may also be reached at snellc@lake-lehman.k12.pa.us. Thank you for taking the time to complete the questionnaire.

Sincerely,
Carrie A. Snell

Questionnaire

1. Does writing instruction occur daily in your classroom?	Yes	No
2. During writing time, are your students encouraged to use emerging writing and developmental spelling?	Yes	No
3. Are you interested in participating in this study?	Yes	No
4. Are you willing to allow the researcher to assess your students at two predetermined times during the course of the study?	Yes	No

____ Yes, I would like to be a participant in this study.

_____No, I would not like to be a participant in this study

Name_____

APPENDIX B:

TEACHER CONSENT FORM

Dear Kindergarten Teacher,

You are invited to participate in a research study on daily writing and the phonemic awareness development of students of various literacy levels. You were selected as a participant due to your placement as a kindergarten teacher and permission from school administration to conduct the study within your school community. This study is being conducted by Carrie Snell, a doctoral candidate at Walden University, and a kindergarten teacher in the Lake-Lehman School District. A conflict of interest will be avoided because the researcher, along with students in the researcher's class, will not be participating in this study. Please read this form and ask any questions you may have before acting on this invitation to be in the study.

Background Information: The purpose of this study is to determine if there is a significant relationship between daily writing and phonemic awareness. The expected duration of your participation is from November 1, 2006 to May 1, 2007.

Procedures: If you agree to be in this study, you will be asked to participate in either a control or experimental group. If selected to be a participant in the experimental group, you will be asked to provide daily writing opportunities in your classroom following the writer's workshop format. If you are selected to be a participant in the control group, you will not administer any additional writing opportunities, other than the types and frequency of writings that have typically occurred in your classroom in the past. The researcher will conduct a phonemic awareness assessment with your students two times during the course of the study.

Voluntary Nature of the Study: Your participation in this study is strictly voluntary. Your decision whether or not to participate will not affect your current or future relations with your school district or Walden University. If you initially decide to participate, you are still free to withdraw at any time later without affecting those relationships. In the event you experience stress or anxiety during your participation in the study you may terminate your participation at any time. You may refuse to answer any questions you consider invasive or stressful.

Risks and Benefits of being in the Study: There are no risks associated with participating in this study and there are no short or long-term benefits to participating in this study. In the event you experience stress or anxiety during your participation in the study you may terminate your participation at any time. You may refuse to answer any questions you consider invasive or stressful.

Compensation: There will be no compensation provided for your participation in this study.

Confidentiality: The records of this study will be kept private. In any report of this study that might be published, the researcher will not include any information that will make it possible to identify you or your students. Research records will be kept in a locked file, and only the researcher will have access to the records.

Contracts and Questions: The researcher conducting this study is Snell. The researcher's faculty advisor is Dr. Ashraf Esmail and can be contacted through email at aesmail@waldenu.edu**.** The Research Participant Advocate at Walden University is Leilanie Endicott; you may contact her at 1-800-925-3368, extension 1210, if you have questions about your participation in this study.

You will receive a copy of this form from the researcher.

Thank you,
Carrie Snell

Statement of Consent:

___ I have read the above information. I have asked questions and received answers. I consent to participate in this study.

Printed Name of Participant _____

Participant Signature _____

Signature of Investigator _____

APPENDIX C:

PARENT CONSENT FORM

Dear Kindergarten Parent,

You child's kindergarten classroom has been invited to participate in a research study on daily writing and phonemic awareness development. Their classroom was selected to participate based on the kindergarten curriculum, the teacher's interest in participating, and permission from school administration to conduct the study within your school community. Your child has been chosen to participate based on their placement in the selected classroom.

This study is being conducted by Carrie Snell, a doctoral candidate at Walden University and a kindergarten teacher at Lake-Noxen Elementary School. Please read this form and sign and return the attached permission slip by November 15th to your child's teacher.

Background Information: The purpose of this study is to determine if there is a significant relationship between daily writing and phonemic awareness.

Procedures: If you give your permission for your child to participate in the study, your child's assessment scores from two literacy assessments will be used. This will be explained verbally by the researcher to your child.

Voluntary Nature of the Study: Your child's participation in this study is strictly voluntary. If you initially allow your child to participate, you are still free to withdraw at any time. Your decision on whether or not to allow your child to participate will not affect your current or future relations with Lake-Lehman School District.

Risks and Benefits of being in the Study: There are no risks associated with participating in this study and there are no short or long-term benefits to participating in this study. In the event your child experiences stress or anxiety during their participation in the study you may terminate their participation at any time

Compensation: There will be no compensation provided for your child's participation in this study.

Confidentiality: The records of this study will be kept private. In any report of this study that might be published, the researcher will not include any information that will make it possible to identify your child. Research records will be kept in a locked file, and only the researcher will have access to the records.

Questions: The researcher conducting this study is Carrie Snell; you may contact her at 570-639-3616 or snellc@lake-lehman.k12.pa.us. The researcher's faculty advisor is Dr. Ashraf Esmail and can be contacted through email at aesmail@waldenu.edu**.** The Research Participant Advocate at Walden University is Leilanie Endicott; you may contact her at 1-800-925-3368, extension 1210, if you have questions about your participation in this study.

Thank you,
Carrie Snell

Please sign and return to your child's teacher by November 15, 2006.

You are making a decision about allowing your child to participate in this study. Your signature below indicates that you have read the information provided above and have decided to allow him or her to participate in the study. If you later decide that you wish to withdraw your permission for your child to participate in the study, simply tell me. You may discontinue his or her participation at any time.

_____
Printed Name of Child

_____ _____
Signature of Parent(s) or Legal Guardian Date

_____ _____
Signature of Investigator Date

APPENDIX D:

COMMUNITY PARTNER CONSENT FORM

Community Research Partner Name:

Contact Information:

Date: September 27, 2006

Dear Ms. Snell,

Based on my review of your research proposal, I give permission for you to conduct the study entitled “The Impact of Daily Writing on Kindergarten Students' Phonemic Awareness” within _____. As part of this study, I authorize you to collect data from kindergarten students in the selected classrooms. Teacher participation will be voluntary and at their own discretion. We reserve the right to withdraw from the study at any time if our circumstances change.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

Authorization Official
Elementary Principal

APPENDIX E:

EXPERIMENTAL GROUP SCORES ON INITIAL SOUND FLUENCY ASSESSMENT

Participant	Gender	Ability Level	Pre score
1	Male	At risk	1
2	Male	At risk	0
3	Male	At risk	3
4	Male	Some risk	4
5	Male	Some risk	7
6	Female	Some risk	7
7	Female	Some risk	4
8	Male	Some risk	6
9	Male	Some risk	5
10	Male	Some risk	6
11	Female	Low risk	12
12	Female	Low risk	12
13	Female	Low risk	12
14	Female	Low risk	19
15	Male	Low risk	8
16	Male	Low risk	10
17	Female	Low risk	8
18	Male	Low risk	14
19	Female	Low risk	33
20	Female	Low risk	20
21	Male	Low risk	18
22	Female	Low risk	20
23	Female	Low risk	14
24	Female	Low risk	33
25	Male	Low risk	8
26	Female	Low risk	15
27	Male	Low risk	11
28	Female	Low risk	12
29	Female	Low risk	12
30	Female	Low risk	14
31	Male	Low risk	8
32	Male	Low risk	25
33	Male	Low risk	11
34	Female	Low risk	45
35	Male	Low risk	15
36	Female	Low risk	8
37	Female	Low risk	18

38	Female	Low risk	17
39	Male	Low risk	9
40	Female	Low risk	10

APPENDIX F:

CONTROL GROUP SCORES ON INITIAL SOUND FLUENCY ASSESSMENT

Participant	Gender	Ability Level	Pre score
1	Male	At risk	1
2	Male	At risk	2
3	Male	At risk	0
4	Male	At risk	2
5	Male	Some risk	5
6	Female	Some risk	6
7	Male	Some risk	6
8	Male	Some risk	7
9	Female	Some risk	5
10	Male	Some risk	5
11	Female	Some risk	5
12	Male	Some risk	7
13	Male	Some risk	6
14	Female	Some risk	6
15	Female	Low risk	8
16	Male	Low risk	14
17	Female	Low risk	17
18	Male	Low risk	9
19	Male	Low risk	8
20	Male	Low risk	10
21	Female	Low risk	16
22	Male	Low risk	12
23	Male	Low risk	14
24	Female	Low risk	15
25	Male	Low risk	12
26	Female	Low risk	29
27	Female	Low risk	18
28	Male	Low risk	23
29	Male	Low risk	23
30	Male	Low risk	36
31	Female	Low risk	10
32	Male	Low risk	10
33	Male	Low risk	20
34	Male	Low risk	21
35	Male	Low risk	49
36	Female	Low risk	14
37	Male	Low risk	14

APPENDIX G:

EXPERIMENTAL GROUP SCORES ON THE PHONOLOGICAL AWARENESS TEST

Participant	Gender	Ability Level	Pre score	Post score
1	Male	At risk	35	84
2	Male	At risk	38	90
3	Male	At risk	14	59
4	Male	Some risk	14	87
5	Male	Some risk	49	92
6	Female	Some risk	39	85
7	Female	Some risk	32	87
8	Male	Some risk	0	49
9	Male	Some risk	28	54
10	Male	Some risk	12	61
11	Female	Low risk	15	74
12	Female	Low risk	68	98
13	Female	Low risk	51	95
14	Female	Low risk	73	100
15	Male	Low risk	36	86
16	Male	Low risk	41	98
17	Female	Low risk	51	100
18	Male	Low risk	53	88
19	Female	Low risk	42	86
20	Female	Low risk	88	104
21	Male	Low risk	62	100
22	Female	Low risk	47	77
23	Female	Low risk	66	93
24	Female	Low risk	85	104
25	Male	Low risk	32	78
26	Female	Low risk	70	92
27	Male	Low risk	62	95
28	Female	Low risk	32	63
29	Female	Low risk	40	90
30	Female	Low risk	73	97
31	Male	Low risk	32	86
32	Male	Low risk	56	95
33	Male	Low risk	12	61
34	Female	Low risk	38	90
35	Male	Low risk	49	95
36	Female	Low risk	25	87
37	Female	Low risk	39	89

38	Female	Low risk	44	97
39	Male	Low risk	32	49
40	Female	Low risk	20	84

APPENDIX H:

CONTROL GROUP SCORES ON THE PHONOLOGICAL AWARENESS TEST

Participant	Gender	Ability Level	Pre score	Post score
1	Male	At risk	33	74
2	Male	At risk	32	67
3	Male	At risk	7	48
4	Male	At risk	10	34
5	Male	Some risk	35	70
6	Female	Some risk	36	83
7	Male	Some risk	35	74
8	Male	Some risk	25	69
9	Female	Some risk	35	77
10	Male	Some risk	12	71
11	Female	Some risk	32	77
12	Male	Some risk	77	97
13	Male	Some risk	13	68
14	Female	Some risk	52	83
15	Female	Low risk	68	75
16	Male	Low risk	31	73
17	Female	Low risk	57	85
18	Male	Low risk	13	49
19	Male	Low risk	10	53
20	Male	Low risk	30	65
21	Female	Low risk	59	82
22	Male	Low risk	51	82
23	Male	Low risk	37	60
24	Female	Low risk	41	83
25	Male	Low risk	15	56
26	Female	Low risk	39	63
27	Female	Low risk	55	86
28	Male	Low risk	75	96
29	Male	Low risk	67	86
30	Male	Low risk	77	89
31	Female	Low risk	17	61
32	Male	Low risk	54	91
33	Male	Low risk	80	100
34	Male	Low risk	47	72
35	Male	Low risk	64	88
36	Female	Low risk	19	75
37	Male	Low risk	80	97

APPENDIX I:

IRB APPROVAL

Dear Ms. Snell:

This email is to notify you that the Institutional Review Board (IRB) has approved your application for the study entitled, "The Impact of Daily Writing on Kindergarten Students' Phonemic Awareness"

Your approval # is 11-09-06-0295745. You will need to reference this number in the appendix of your doctoral study and in any future funding or publication submissions.

.

Thank you,
Jeff Ford and Kathryn Green
Research Coordinators
Walden University

CURRICULUM VITAE

Carrie A. Snell

EXPERIENCE

1997-Present — *Elementary Teacher Kindergarten*
Lake-Noxen Elementary School, Harveys Lake, Pennsylvania

1999-Present — *Language Arts Department Chair, Kindergarten through 6th Grade*
Lake-Lehman School District, Lehman, Pennsylvania

2002-2003 — *Graduate Reading Instructor*
Marywood University, Scranton, Pennsylvania

EDUCATION

2004-Present — *Walden University, Minneapolis, Minnesota*
- Ed.D. in Teacher Leadership

1*998-2000* — *King's College, Wilkes-Barre, Pennsylvania*
- Master of Education, concentration on Reading Education
- Reading Specialist certification

1993-1997 — *Lycoming College, Williamsport, Pennsylvania*
- Bachelor of Arts, Elementary Education and Psychology

AWARDS AND HONORS

Nominated for the 2006 ASCD Outstanding Young Educator Award
Nominated for the 2006 Disney Teacher of the Year Award
Runner-up in 2004 K-1 Children's Writers Starfall Fellowship Program
Nominated for the 2004 SDE Kindergarten Teacher of the Year Award
Nominated for the 2001 Disney Teacher of the Year Award

PUBLICATIONS

Published in *Young Children* Journal, National Association for the Education of Young Children.
Moutray, C., & Snell, C. (2003, March). Three teachers' quest: Providing daily writing activities for kindergartners. Young Children, 24-28.

PRESENTATIONS

March 2001, National Council of Teachers of English Conference in Portland, Oregon.
May 2001, 37th Annual Bloomsburg Reading Conference in Bloomsburg, Pennsylvania
May 2002, 38th Annual Bloomsburg Reading Conference in Bloomsburg, Pennsylvania