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The Effects of Modeled Writing on Early Literacy Development in Preschool Children

Bethany M. Froehlich Collins
The University of Montana

THE EFFECTS OF MODELED WRITING ON EARLY LITERACY DEVELOPMENT

IN PRESCHOOL CHILDREN

By

BETHANY MARIE FROEHLICH COLLINS

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Approved by:

Sandy Ross, Associate Dean of The Graduate School
Graduate School

Lucy Hart Paulson, Chair
Communicative Sciences and Disorders

Ginger Collins
Communicative Sciences and Disorders

Patty Kero
Department of Educational Leadership

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Chairperson: Lucy Hart Paulson

  The purpose of this thesis was to investigate the impacts on early literacy development in preschool children by engaging them in writing activities that were intentionally modeled within their typical classroom setting.

  Twenty-five typically developing children 3 to 5 years of age participated in the study. The "Picture Story/Word Story," a preschool writing strategy described by Paulson, et al. (2001), was used to model the developmental levels of writing for the subjects two times a week for 10 weeks. The experimental group engaged in writing activities, which included intentional modeling of the stages of writing development that were just above the children's level of skill development. The same writing activities were provided for the control group with only conventional writing as a model.   Pre and post levels of early literacy development were established using the *Emergent Literacy Screening* (Paulson, 2001) at the beginning and end of the study.

  General trends in the data suggest greater early literacy skills in children who engaged in modeled writing instruction of the developmental stages of writing.

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Chapter 1: INTRODUCTION

Emergent literacy has been widely researched by those interested in early reading and writing since Marie Clay introduced the concept in 1966 (Vukelich & Christie, 2005). The National Early Literacy Panel (NELP) (National Institute for Literacy, 2007), substantiated that the development of early literacy incorporates the foundation skills of oral language, phonological awareness, and print knowledge, which is comprised of three components: print concepts (print awareness), alphabet knowledge, and the development of writing. Preschool programs typically enhance literacy development by making books readily available and creating opportunities throughout the day for teachers to read with the children (Vukelich & Christie, 2005).

Skills necessary for writing include the ability to discriminate pictures from print and the understanding that print is meaningful, as well as the development of motor skills, and the ability to generate ideas. Engaging preschool children in writing activities has become standard practice in early childhood settings. Activities that encourage children to engage in writing are also common in these settings (Neuman, Copple, & Bredekamp, 2000). Writing activities are often based in exploration opportunities for children without direct and intentional modeling of the steps in the writing process. However, the results of the National Early Literacy Panel (National Institute for Literacy, 2007) identified that early literacy skills, such as phonological awareness and print knowledge, can and should be systematically and explicitly taught to young children using developmentally appropriate practices. Competency in these areas facilitates an easier transition from early literacy in the preschool years to early reading and writing in kindergarten and first grade.

The purpose of this study is to investigate the impact on early literacy development in preschool children by engaging them in explicit writing activities that are intentionally modeled by adults within their typical classroom setting. The results from the study provide preliminary evidence that contributes to the growing collection of research in early literacy development by emphasizing the importance of print knowledge, specifically writing development.

Review of the Literature

Literacy acquisition is an important component of language development because language encompasses both spoken and written modalities of communication. Both speaking and listening provide the foundation for reading and writing; therefore, it is within the speech-language pathologist's scope of practice to both identify and treat reading disabilities (American Speech and Hearing Association, 2001). Oral and written languages parallel, as well as influence each other (Swank & Catts, 1994). Stanovich stated in 1986 that the reciprocal influence between oral language and the reading experience itself might contribute to the academic problems experienced by some children. Since then, there has been common agreement that a strong early literacy foundation facilitates children's literacy development when formal reading instruction begins (Duncan, Dowsett, Claessens, Magnuson, Huston, Klebanov…Duckworth, 2007; Justice & Ezell, 2001; Whitehurst & Lonigan, 1998). Therefore, children with underdeveloped early literacy skills are likely to fall behind in reading in the early grades, and continue to fall farther behind as they grow older. The skills with which children enter school will greatly affect later academic performance; further, children who experience early difficulties in learning to read are unlikely to catch up to their peers

(Baydar, Brooks-Gunn, & Furstenberg, 1993). In addition, children who enter school with poor pre-literacy skills are more likely to qualify for and require special education and related services (Neuman & Dickinson, 2002). According to Adams (1990), over 33% of children experience reading challenges. Therefore, it is important to identify all components of literacy development, and establish prevention programs so as to facilitate literacy development. A review the literature for this study includes a description of early literacy development, environmental influences, specific skills that comprise the components of print knowledge in print awareness, alphabet knowledge, and writing development

Skills that contribute to literacy development begin early in life, although learning to read is not an inherent or naturally developing ability (Justice, Chow, Capellini, Flanigan, & Colton, 2003; King & Rentel, 1979; Snow, Burns & Griffin, 1998; Whitehurst & Lonigan, 1998). During this time, children are developing an understanding of language, recognizing speech sounds, and beginning to use sounds and words to communicate, all of which are fundamental skills for learning to read. The development of literacy is supported when adults talk, read, and tell stories to children. Children are at an advantage when adults talk to them about print in their environment, and encourage them to scribble and write messages (Neuman, Copple, & Bredekamp, 2000). Exposure to books, magazines, newspapers, and other forms of print in the home may increase the child's interest in reading and writing, thereby supporting literacy (Whitehurst & Lonigan, 1998). Children who have more exposure to print are likely to express interest in literacy leading to more interest in shared reading interactions, noticing print in the environment, asking questions about the meaning of print, and

eventually enjoy reading on their own (Whitehurst & Lonigan, 1998). Justice, Kaderavek, Fan, Sofka, and Hunt (2009) discussed research indicating the importance of the quality of connections that children have with print in and around their environment. However, children's attentiveness and recognition of environmental print does not occur through exposure alone, but is heavily reliant on social interaction (Neuman & Roskos, 1993). Literacy develops as children attach meaning to printed words (Gillam & Johnston, 1985).

The ability to read requires both decoding skills and comprehension skills. Letter-name and letter-sound knowledge, as well as phonological awareness skills, are required for decoding, while understanding of vocabulary, syntax, semantics, and morphology is necessary for comprehension (Boudreau & Hedberg, 1999). Oral language, phonological awareness, and print knowledge have all been identified as precursors to the development of literacy. The National Reading Panel (2000) determined that letter-name knowledge is one of the greatest predictors of reading achievement. This study focuses on the importance of print knowledge in regards to early literacy development in preschool children.

Print knowledge refers to the developing realization that written letters represents the sounds in spoken words (McGinty & Justice, 2009). Print knowledge describes children's understanding of the forms and functions of print and includes three components: 1) print awareness, an understanding of how print works; 2) alphabet knowledge, letter name and sound associations; and 3) writing development, the rules of print (McGinty & Justice, 2009; Neuman et al., 2000; Bredekamp & Copple, 1998; Whitehurst & Lonigan, 1998).

Print Awareness

A child demonstrating print awareness is able to orient a book upright, turn pages, discriminate between pictures and words, follow print using left-to-right tracking, and eventually point to individual words with one-to-one correspondence. Children first learn to recognize words by their shape before recognizing the individual letters that make up words (Neuman et al., 2000). Children are likely to identify symbols and print in the environment, as well as recognize his/her own written name before they are able to read the actual words using sound/symbol correspondences.

The development of print awareness begins early in infancy, and requires environmental exposure (King & Rentel, 1979; Longian, 2006; Schickendanz, & Casbergu, 2009; Strickland & Riley-Ayers, 2006). Children who have limited exposure to print in their environment lack the necessary opportunities to figure out the connection between print and communication (Snow et al., 1998; Whitehurst & Lonigan, 1998; Neuman et al., 2000; Torgesen, 2004). Parents and caregivers can facilitate print awareness by providing a print-enriched environment. Families that have access to a variety of books and other reading materials encourage the interest and enjoyment of reading. Therefore, it is important for parents and/or caregivers to read to infants, and include books in their selection of toys. Furthermore, drawing attention to print around the environment, demonstrating the use of print, and modeling how print is made encourages interest, which also supports the development of both reading and writing (McGinty & Justice, 2009). According to McGinty and Justice, environmental influences are significant to understanding the variability among children in print knowledge development. Enhancing exposure to print in the preschool years is essential in order to

provide a strong foundation for beginning reading (Neuman, Coppel, & Bredekamp, 2000). Frequency and quality of interactions with print are equally important factors for children learning about reading and writing (Justice et al., 2009).

The use of print referencing has been found to increase attention and interest of children during storybook reading (Justice & Ezell, 2000). When referencing print, verbal and nonverbal techniques such as finger tracking or spoken commentary is often used to increase the child's attention and interest. Justice et al. (2009) conducted a study that examined the effectiveness of print referencing during storybook reading at an early childhood program. Results from this study revealed significant gains in children's print concept knowledge, alphabet knowledge, and name-writing ability. Neuman et al. (2000) suggest that, in addition to books, children learn to read through exposure to labels, signs, and other varieties of print that exist in and around their environment.

Alphabet Knowledge

As children develop an awareness of print in their environment, they concurrently learn about letters of the alphabet and acquire the realization that there is a relationship between letters and speech sounds. Children begin to learn this connection through singing the "Alphabet Song" because as they sing the song, they learn not only the individual names of the letters, but they consequently begin to identify the sounds that each letter makes (Foulin, 2005; Neuman et al., 2000; Shaywitz, 2003). Preschool children learn that letters have meaning and are important (Neuman et al., 2000). Through this process, they learn that letters represent sounds in words, thereby realizing that letters create words (Dickinson et al., 2004; Neuman et al. 2000). As letter knowledge develops, children progress from singing the alphabet to identifying

uppercase and lowercase letters. Eventually, they acquire the ability to identify and

produce the sounds of letters developing an understanding of the alphabetic principle.

Realizing the link between speech sounds and alphabet letters, the most advanced skill of

emerging literacy, is necessary for continued literacy development (Neuman et al., 2000).

Learning about the alphabet letters and experimenting with writing overlap each other.

Writing Development

Writing has been identified as being an integral part of literacy development.

Reading and writing have a parallel relationship in that they develop concurrently.

Concepts of print, name writing and invented spelling have been identified as important

measures to the development of both decoding and reading comprehension (Lonigan

2006). Several research studies have supported the idea that preschool children can

distinguish between writing and drawing (as cited in Gillam & Johnston, 1985).

Children learn about the alphabet through both reading and writing (American Speech-

Language-Hearing Association, 2001; Neuman et al., 2000). Children's experimentation

with writing helps them develop the understanding of sound-letter associations, as well as

how orthographic letters exemplify speech (Foulin, 2005). Skills necessary for writing

include the understanding of print, the development of motor skills, the ability to generate

ideas, and possessing the motivation to write (King & Rentel, 1979; Schickendanz &

Casbergue, 2009). Pencil grip, letter formation, letter-sound correspondence, and

conventions of print have all been identified as integral pieces that need to be taught to

children during the development of writing (Greer & Lockman, 1998; Schickendanz &

Casbergue, 2009). According to Dickinson et al. (2004), encouraging children to write is

an effective way to support phonological awareness.

Young preschoolers typically begin the writing process by exploring the physical forms of writing without assigning meaning to the end product (Schickedanz & Casbergue, 2009). Clay (1975) studied the development of writing in 5-year-old children and found that they quickly discover that a written symbol can represent a spoken message; consequently, they purposefully use those symbols to represent meaning in their writing.

Children progress from imitating patterns of print to creating their own print configurations in a systematic succession (Ehri, 1996 & Neuman et al., 2000). Sulzby (1985) identified seven categories of early writing that follow a sequential progression and include: drawing as writing, scribble writing, letter-like units, nonphonetic letter strings, copying from environmental print, invented spelling, and conventional writing (as cited in Vukelich & Christie, 2005). Ehri and Roberts (2006) described emergent writing as occurring during the prealphabetic stage of literacy development and includes drawing and pretending to write. Children at this stage of writing development remember words by their visual characteristics and context. Examples of emergent writing include scribbling, mock letters, and random letter strings. Preschool children as young as two to three years of age enjoy pretending to write by scribbling on a piece of paper, indicating that they know that print has meaning. At this stage, children do not yet use any letter-sound connections in their writing, and typically use drawings or scribble-like markings that only have meaning to the child. Children at the prealphabetic stage of writing may also imbed characteristics of the entity being written about into the symbols; for example, because a bear is bigger than a duck, the pictogram for bear would be represented bigger than the symbol for the duck (Whitehurst & Lonigan, 1998).

As children progress through the development of writing, they begin to understand that there is a direct relationship between letters and sounds. Many children begin the process of reading by first recognizing and then writing their own name (Treiman & Broderick, 1998). It is important to state that name writing and invented spelling are not the same ability; rather, name recognition and writing are precursors to invented spelling. Name writing is a skill that does not involve awareness of letter-sound association, but instead requires children to recognize the labels of their name (Treiman and Broderick, 1998). Invented spelling, on the other hand, necessitates the understanding that symbols can represent words and/or ideas. Treiman and Broderick (1998) suggest that children as young as three years of age begin to identify their printed names by first taking notice of the first letter, followed by the other letters in their name. As children continue through the developmental hierarchy, they progress from writing their name to representing ideas through the use of inventive writing.

Children three and four years of age begin exploring inventive spelling by using scribbles and individual marks that are made to resemble letters without possessing a strong understanding of how letters are formed. Children using mock letters in their writing typically reuse and reorder the letter-like symbols to represent different ideas.

The next stage of writing development occurs later in the preschool years, at around four to five years of age. At this stage of development, there is still no letter-sound connection, but the child uses random letter strings to represent words. Children at this phase represent their ideas by using the letters that they know how to write. The formations of uppercase letters are learned first in the writing process; therefore, children typically use uppercase letters in their random letter strings.

The early alphabetic stage of literacy development follows the prealphabetic stage, and occurs when the child begins to make connections between written letters and the associated speech sounds. Children at this stage of the development enjoy writing their name, and begin to learn the connection between the letters and sounds of their name (Ehri & Roberts, 2006). Ehri and Roberts noted that once this sound-letter association occurs, children demonstrate the understanding of the alphabetic principle and therefore start writing in a semiphonetic manner.

Home/Preschool Environment

The home environment is an important factor in emergent literacy. Studies have found that home environments encourage and support early literacy when they have access to print and books, and parents read storybooks to their children (Vukelich & Christie, 2005). It is also important for adults to model literacy behavior by using print for various purposes around the home. When children observe adults in their environment reading magazines, looking up phone numbers in the phone book, writing shopping lists and notes, they begin to learn about the practical uses of written language (Vukelich & Christie, 2005). Furthermore, Vukelich and Christie (2005) noted the importance in children having adult support in regards to their early attempts at reading and writing. Parents and caregivers can support children in literacy by answering questions about print, pointing out letters and words in the environment, providing easy access to print materials, and helping children write letters to others. Providing children with literacy-rich experiences, such as trips to the store, parks, museums, etc. is also an important piece in supporting early literacy development (Vulkelich & Christie (2005).

It has been well documented that children who come from low-income homes are at increased risk of struggling with literacy. Children who come from low-income families are often not offered the same opportunities to interact with environmental print and "literate events" that encourage reading and writing (Neuman and Roskos, 1993). Therefore, Neuman and Roskos (1993) suggested creating activities in the preschool that might enhance children's exposure to written language, thereby encouraging literacy behaviors in the home setting. In 1993, Neuman and Roskos examined this idea by designing literacy-rich play settings that replicated a real-life literacy context in a Head Start Program. Their goal was to increase children's opportunities to interact with environmental and functional print in order to develop print-meaning associations. During this study, all children were provided occasions during the preschool day to use and interact with environmental and functional print through the use of signs, labels and literacy objects. Some children played in the literacy-rich setting without adult support, while other children were actively engaged with parent volunteers who interacted with the children and modeled literacy behavior. Results of this study revealed improvements in literacy behaviors, especially in children who had close interactions with adults during the literacy-rich play schemes.

Justice and Ezell (2001) also examined written language awareness in preschool children from low-income families. Print recognition, print concepts, words in print, letter orientation/discrimination, alphabet knowledge, and metalinguistic awareness were assessed, and a descriptive analysis of the children's performance was conducted. Results from this study revealed that many children from low-income homes demonstrated difficulty with many of the written language awareness tasks, especially

print and word knowledge, identification of alphabet letters, and metalinguistic awareness of print. These findings suggest that structured early literacy interventions that address print knowledge should be incorporated into Head Start and preschool settings to assist children from low-income homes in building strong emergent literacy skills.

According to the National Association for the Education of Young Children (NAEYC), learning to read and write is one of the most significant achievements in life (Neuman et al., 2000). Several studies have discovered that early literacy skills, such as phonological awareness and print awareness, can be taught to young children (Culatta, 2003). Although the role of preschool programs is not to conduct formal reading and writing instruction, early childhood programs should provide experiences that facilitate emergent literacy development through the avenues of oral language, phonological awareness, and print knowledge (Neuman et al., 2000). Preschool children need opportunities that encourage the development of cognition, receptive and expressive language, as well as phonological awareness and print knowledge. It is also important for them to acquire motivation to read (Neuman et al, 2000).

Assessing Early Literacy

A screening process that identifies early literacy skill development can assist in the documentation of children who appear to be developing at a typical rate as well as those who may benefit from early intervention services. If emergent literacy deficits are identified in preschool, appropriate interventions may be established to prevent reading challenges later in life. Preschools can design effective educational programs that facilitate the skills necessary for the development of reading and writing by first identifying the skill levels that are important for emergent literacy development

(Dickinson & Tabors, 2001; Neuman et al., 2000). Screening tools are used to determine which children are at risk for developmental and/or learning difficulties and those who are learning at a typical rate. They are designed to be brief assessments that are conducted under standardized conditions (Paulson & Moats, 2010). Screening tools can be norm-referenced or criterion-referenced. Screenings that are used to assess early literacy in preschool children include the *Individual Growth and Development Indicators (myIGDI), Get Ready to Read!* Screening tool (National Center for Learning Disabilities)*, Phonological Awareness Literacy Screening -PreK (PALS-PreK),* and the *Emergent Literacy Screening* tool (Paulson et al., 2001).

The *Individual Growth and Development Indicators* is a preschool language and literacy assessment designed for preschool children ages three to five years that measures the development and growth of children through the screening of picture naming, rhyming, and alliteration (http://www.myigdis.com/wp-content/uploads/2012/03/myIGDIs-Handout.pdf). The *Get Ready to Read!* Screening tool is an online early literacy-screening assessment also designed for preschool children. The assessment measures print knowledge and linguistic awareness through a series of 20 questions that determine whether preschool children have the necessary skills needed for literacy development. *Phonological Awareness Literacy Screening -PreK* is another screening tool that measures children's early literacy development through their knowledge of rhyme, alliteration, alphabet-name knowledge, familiarity of books and name-writing. Paulson, Noble, Jepson, and van den Pol (2001) composed a simple checklist that can also be used by early childhood educators to identify and follow the developmental skill level of preschool children. In addition to the Emergent Literacy

Checklist, Paulson et al. (2001) have designed the Emergent Literacy Screening for children ages three through six years of age to assess developing literacy skills. Areas that are assessed include language use, phonological awareness, and print knowledge, all of which have been identified as skills necessary for the acquisition of literacy development (p. 353). This screening involves having the children participate in a number of tasks such as identifying symbols, drawing and writing, singing a song, telling a story, looking at pictures of words that rhyme, and playing with the syllables and sounds of words. Although the Emergent Literacy Screening is not a norm-referenced screening, results of this assessment provide a general representation of the child's overall emergent literacy development in the areas of language, phonological awareness, and print knowledge. Unlike the other preschool literacy screening tools mentioned above, the Emergent Literacy Screening assesses the children's writing skill level by including a section that requires children to draw a picture and write a story describing the picture. This is advantageous because of the known correlation between writing and literacy development. Early Childhood educators are encouraged to use the results from the Emergent Literacy Screening to plan programs that target the skills necessary for the development of emergent literacy, as well as monitor the developmental progress of each child.

Early Literacy Instruction

It has been well documented that preschool has positive effects on literacy development (Whitehurst & Lonigan, 1998). In fact, according to Whitehurst and Lonigan, shared opportunities in reading and writing within the preschool classroom have been correlated with advanced levels of vocabulary, print concepts, and story

comprehension. Many preschool programs have incorporated experiences and opportunities similar to those that are included in literacy-rich home environments, for children to engage in functional reading and writing activities (Vukelich & Christie, 2005). It is important for preschools to encourage awareness and exploration of print to build the skills necessary for emergent literacy (Neuman et al., 2000). The preschool environment should incorporate literacy, by making books readily available, and creating opportunities throughout the day for teachers to read with the children. Furthermore, providing items such as notepads, pencils, and magazines in the dramatic play area encourages children to practice writing skills (Neuman et al., 2000). According to Vukelich and Christie (2005), research has suggested that preschoolers often engage in meaningful literacy activities, including writing, during dramatic play when it is readily available to them. During dramatic play, children imitate adults, explore how to use print, and create their own written expressions (Neuman et al., 2000).

The development of print knowledge is dependent upon what young children know about being a writer (Vukelich & Christie, 2005; Neuman et al., 2000). One method of encouraging emergent literacy in the preschool setting is through a process called "shared writing" (Vukelich & Christie, 2005). This approach is a method of allowing children to dictate a story or personal experience while the teacher writes it down; the teacher then reads the story back to the children before giving them the opportunity to read it aloud (Vukelich & Christie, 2005). Through this method, children learn that words are meaningful and powerful. Furthermore, it is thought that children will likely recognize the connection between written and oral language through this shared writing experience because this approach provides teachers with the opportunity

to demonstrate the rules and structures of written language by modeling conventional spelling, spaces between the words, left-to-right and top-to-bottom sequences, capital and lowercase letters, and appropriate punctuation (Vukelich & Christie, 2005). Although the shared writing experience is an effective method of encouraging the connection between oral and written language, it is also important to allow preschool children the opportunity to produce their own written work at their level of development (Neuman et al., 2000).

Providing children with the opportunity to write at their own level encourages them to explore their own written language, and allows them a sense of accomplishment and pride in their own work. Preschool children who have had opportunities to independently express themselves on paper have shown better understanding of the purpose of writing (Sulzby, 1985). A study conducted by Clarke in 1988 also found that children in first-grade benefited from using invented spelling rather than the teacher providing correct spelling for the children when they were writing (as cited in Neuman et al. 2000). The process of invented spelling is thought to encourage children to think actively about letter-sound relationships, thereby strengthening their phonological awareness (as cited in Neuman et al., 2000).

Most early childcare settings understand the importance of writing in regards to literacy development; therefore, they incorporate print and writing opportunities into the preschool setting. In order to support literacy development, preschool programs should provide children with opportunities to write with teacher guidance (Dickinsen & Tabors, 2001; NAEYC, 1998; Neuman et al., 2000; Sulzby, 1985; Whitehurst & Lonigan, 2002). It has become standard practice for preschool programs to create writing centers and encourage writing through teacher modeling, and praising children's attempts to write

(Neuman et al., 2000). It is necessary to allow children to participate and explore the

writing process. Children are effectively guided through the writing process when adults

not only offer opportunities to write, but when they purposefully demonstrate how print

works at the child's level. Adult participation is essential in this process so children can

acquire appropriate pencil grip and letter formation, as well as discover the letters that

represent the sounds in the words they are writing (Schickendanz & Casbergue, 2009).

Paulson et al. (2001) have described a preschool writing program, the "Picture

Story/Word Story Strategy," that instructs preschool teachers how to model the

developmental levels of writing for young children. This strategy uses techniques that

facilitate children's development of writing by allowing them to feel comfortable writing

at their own level, and encouraging them to progress to the next level. The program

begins with the teacher drawing a horizontal line across the middle of the paper, and

explaining to the children concepts such as top, bottom, half, center and middle. The

teacher then draws a picture that is related to a recent activity on the top half of the paper,

and writes a simple sentence about the picture using conventional print, on the bottom

half of the paper. The goal of this strategy is to model the level of print that is just above

the level of the children. Thus, the teacher demonstrates different levels of print

development by writing the same sentence in conventional manner, phonetic manner,

semiphonetic manner, random letter string, mock letters, and/or scribble writing.

Between each level, the teacher reminds students that they get to write at their own level.

For example, if they do not know any letters they can scribble, but if they know a few

letters then they can write in a semiphonetic manner. It is important for teachers to

"think aloud" while writing at each level, and read the sentence while tracking left to

right after writing it. After the final step, the children are allowed to draw a picture and write about it at their own level, and then share their picture and story with the teacher. While the children are narrating their story, the teacher transcribes the story using conventional print and reads the story back to the child tracking the child's writing from left to right.

Although the "Picture Story/Word Story" strategy appears to be a useful method for scaffolding the development of writing in preschool, there is an absence of research to support its effectiveness or other strategies that are designed to intentionally guide children's writing development. Despite the lack of empirical data, it is believed that children achieve higher levels of literacy when teachers and caregivers support them at an early age by providing techniques that encourage development of reading and writing (Landry et al., 2006). The value of writing should not be underestimated because it is an essential component to literacy development. The acquisition of skills necessary for reading and writing occur early in life; therefore, careful planning and instruction is essential to facilitate literacy development (Neuman et al., 2000).   Children are given the opportunity to learn about print when parents provide them with literacy-rich experiences. Early childhood education programs can also facilitate literacy development by providing children with opportunities to engage in a variety of emergent literacy activities. Early literacy education should focus on oral language, phonological awareness, alphabet knowledge, and concepts of print. Because children need opportunities to engage in emergent forms of reading and writing, preschool programs should provide meaningful opportunities to engage in these activities (Vukelich &

Christie, 2005). Children further benefit when these skills are intentionally taught (NIFL, 2007).

Literacy acquisition is a complex, multidimensional concept that requires the systematic interplay from a variety of developmental and environmental sources. Although there are a variety of confirmed techniques for guidance of early literacy instruction through phonological awareness, there is a lack of validated strategies for instruction in print knowledge (Justice et al., 2009). Future studies need to focus on the implications of preschool writing programs in relation to literacy development as a means of strengthening the importance of emergent literacy. As previously stated, the aim of this research targets the importance of direct instruction in writing as it relates to emergent literacy development. The methodology and results provide a pilot model upon which continued research can be expanded.

Definition of terms

Alphabetic Principle: The alphabetic principle states that alphabet letters are used to represent individual phonemes in a spoken word.

Early Literacy: Early literacy is defined as reading and writing behaviors with no awareness or understanding of any letter-sound relationships. It incorporates oral language, phonological awareness, and print knowledge.

Mock letters: Mock letters are defined as individual marks made in an attempt to resemble letters. Mock letters typically have letter-like characteristics and include letters that are found in their first names.

Onset: Onset is defined as the beginning consonant or consonant cluster of a one-syllable word

Random Letter Strings: Random letter strings are defined as multiple letters written without any letter-sound connection.

Rime: Rime is defined as the last syllable of a word that includes the vowel and final consonants.

Scribble: A scribble is identified as irregular, horizontal and wavy lines.

Semiphonetic: The semiphonetic stage occurs when children begin to develop the association between the alphabet letters and the speech sounds that the letters represent.

Phonetic: The phonetic stage of early writing development occurs when children write words using a close letter-sound correspondence.

Phonological Awareness: Phonological awareness is the awareness of the sound structure of a language, and the ability to reflect on and consciously manipulate the syllables and sounds of speech.

Print Awareness: Print Awareness, recognition of print in the environment, is a component of print knowledge that is characterized by an understanding that that print is meaningful.

Chapter 2: METHODOLOGY

In order to support literacy development, preschool programs should provide writing opportunities for children (Dickinson & Tabors, 2001). As stated in Chapter 1, the purpose of this research is to investigate the impacts on early literacy development in preschool children by engaging them in writing activities that are intentionally modeled by adults within their typical classroom setting.

This chapter presents the methodology of this study and includes the hypothesis, procedure, population and sample, data collection procedures, limitations, definitions of terms, data collection procedures, and statistical methods.

Research Hypotheses

1a. Children who engage in modeled writing instruction of developmental stages will achieve greater oral language skills than those who participate in the adult-modeled only writing instruction.

1b. Children who engage in modeled writing instruction of developmental stages will achieve greater phonological awareness skills than those who participate in the adult-modeled only writing instruction.

1c. Children who engage in modeled writing instruction of developmental stages will achieve greater print knowledge skills than those who participate in the adult-modeled only writing instruction.

1d. Children who engage in modeled writing instruction of developmental stages will achieve greater written language skills than those who participate in the adult-modeled only writing instruction.

Population and Sample

The sample in this study consisted of 25 preschool children, 10 girls and 15 boys who attended the Learning and Belonging Preschool in the Phyllis J. Washington College of Education and Human Sciences. This preschool is a typical, open classroom that provides a morning and afternoon session for children three to five years of age. The Learning and Belonging Preschool follows a developmentally appropriate practice perspective that promotes the optimal learning and development of young children through consideration of three areas: knowledge of child development and learning, knowledge of the child as an individual, and knowledge about the social and cultural contexts in which children live (NAEYC, 2009).

The participants included 9 children who were 3 years of age, 15 children who were 4 years of age, and 1 child who was 5 years old. The participants were separated into a control group and experimental group based on their morning or afternoon preschool placement. The control group included 12 children, while the experimental group consisted of 13 children.

The University of Montana Institutional Review Board determined that the research was exempt from the requirement of review (See Appendix A). The parent permission form that was used to obtain consent from the parents or guardians of the children is included in Appendix B.

Measures

The measurements that were used in this study included the *Peabody Picture Vocabulary, Fourth Edition* (PPVT-4) and the *Emergent Literacy Screening* tool. The PPVT-4, a test of receptive vocabulary, was administered as a measure to determine

similarities between the control and experimental groups. The PPVT-4 is a well-established assessment that provides an estimate of children's verbal intelligence correlated to academic skill level. This assessment was administered by graduate students in the Department of Communicative Sciences and Disorders and supervised by a faculty member.

As a part of the regular classroom opportunities, a pre- and post-early literacy screening was also conducted with each child using the *Emerging Literacy Screening* tool (Paulson et al., 2001). This tool was chosen because the print knowledge section directly measures the developmental writing level of the child. The results obtained from this screening were used to provide a general representation of the children's overall emergent literacy development in the areas of oral language, phonological awareness, and print knowledge. The *Emerging Literacy Screening* was administered twice to obtain pre- and post-test emergent literacy development scores in September 2011 and again in December 2011 by graduate students in the Department of Communicative Sciences and Disorders, and supervised by a faculty member. The graduate students did not know the group membership of the subjects.

The *Print Awareness* metrics include book awareness, symbol identification, written name identification, print (writing) development, and singing the "Alphabet Song." The goal of this section is to obtain information about the child's awareness of book orientation and print function, as well as recognition of common environmental print. It also evaluates the child's ability to identify his/her written name, and stage of writing development. The second section of the screening, *Language Use*, assesses rhythmic patterns, basic concepts, narrative ability, speech sound intelligibility, and

grammar usage. The final portion, *Phonological Awareness*, evaluates rhyming

identification and production, as well as blending and segmenting syllables, onet/rime

units, and sounds.

Modeled Writing Intervention

The modeled writing intervention and data collection took place two times a week

over ten weeks during the 2011 fall semester, utilizing the "Picture Story/Word Story," a

preschool writing strategy described by Paulson, et al. (2001). This writing strategy

encourages children to write at their own developmental level following adult modeling

of the stages of writing. One session of the Learning and Belonging Preschool served as

the control group and the other session as the experimental group.

The control group consisted of 12 children and included five subjects who were 3

years old and seven who were 4 years old. The subjects in the control group who were 3

years old included two boys and three girls, while the group of 4-year-old children

consisted of four boys and three girls. The experimental group was comprised of 13

children, four of whom were 3 years of age, eight were 4 years old, and one child was 5

years of age. Of the subjects in the experimental group who were 3 years old, two were

boys and two were girls. The group of 4-year-old children included seven boys and one

girl. There was one girl in the experimental group who was 5 years of age. The

frequency distribution of the sample by age and gender is listed in Table 2.1.

During circle time, the researcher demonstrated the Picture Story/Word Story

strategy by drawing a picture that was related to a recent activity or topic on the top half

of the paper, followed by a simple sentence about the picture using conventional print on

the lower half of the paper. This procedure was used for both control and experimental

groups. For the experimental group, the researcher rewrote the sentence modeling the

phonetic, semiphonetic, random letter string, mock letter, and/or scribble writing. In a

small group center activity following the circle-time demonstration, children in both

groups drew a picture and wrote about it at their own level in a journal created for each

student participating in this project.

Table 2. 1

Frequency Distribution of Sample by Age and Gender

	Age	N	Males	Females
Control Group		12	6	6
	3-year-olds	5	2	3
	4-year-olds	7	4	3
	5-year-olds	0	0	0
Experimental Group		13	9	4
	3-year-olds	4	2	2
	4-year-olds	8	7	1
	5-year-olds	1	0	1

The researchers of this study demonstrated the Picture Story/Word Story strategy

during circle time and engaged with each child in a small group setting, encouraging

them to create their own picture story/word story in a journal provided to them as part of

this study. These sessions occurred two times a week over a 10-week period; there were

20 opportunities for the researchers to demonstrate the Picture Story/Word Story strategy

to the children. The writing process took place with a group of three to four students at

the designated writing center during regular preschool activities.

On average, each child in the control group participated in 18 out of 20 writing

activities, while children in the experimental group participation averaged 17 writing

sessions. If students were absent during scheduled visits, missing data was not

recollected. Instead, an "A" was recorded in the corresponding cell on the data collection

form to indicate absence.   While children were encouraged to participate, additional

effort was not made to enforce participation. In cases where children were apprehensive

or unwilling to participate, an "R" was coded in the corresponding cell on the data

collection form to indicate refusal for that day. Because name writing is not considered

to be the same skill as invented writing, "NS" was recorded when the child wrote his or

her name. The only exception for this rule occurred when the letters did not represent the

child's name. For instance, if a child wrote his or her name and dictated to the researcher

a sentence or story about his or her drawing, the trial was coded as "random letter string."

A unique identification code was assigned to each student in order to maintain

confidentiality of the children. All writing samples were scanned and saved as digital

documents for long-term archival, as well as for the potential of future review and

research. Table 2.2 represents an ordinal scale, which was adapted from Ehri (1996) and

outlined in Paulson et al. (2001). The ordinal scores were used to quantify the

developmental writing skill level of each child throughout the course of the study.

Limitations

In this pilot study, the sample only included children participating in a university

lab preschool. Socioeconomic status was not determined and, only children who were

identified by the preschool teachers as typically developing were included in the study.

There was no opportunity for make-up sessions if a child was absent from preschool on

the day of data collection, and the study only lasted for 10 weeks of the preschool year.

Table 2. 2

Ordinal Scale of Developmental Writing Skill Levels

Score	Value	Description
0	No differentiation	No distinction between drawing and writing
1	Scribble	Irregular wavy lines with horizontal orientation
2	Mock letters	Individual marks made in an attempt to resemble letters
3	Random letters	Multiple letters written without any letter-sound connection
4	Semiphonetic	Letters represent the beginning awareness of letter-sound association
5	Phonetic	Written words demonstrate a close letter-sound correspondence

Statistical Methods

The purpose of this study was to determine if children who engaged in modeled writing instruction of developmental stages achieved greater early literacy skills than those who participated in the adult-modeled only writing instruction. Descriptive statistical methods based on a comparative analysis of pre- and post-test results were utilized to summarize the collected data. Both qualitative and quantitative data were gathered and analyzed using a frequency distribution in order to determine the effectiveness of the modeled writing program on early literacy development in preschool children. Secondary research goals included qualitative evaluation of ad-hoc observations that could not be directly measured or quantified.

Chapter 3: RESULTS, ANALYSIS AND DISCUSSION

The purpose of this study was to investigate the impact on early literacy development in preschool children by engaging them in explicit writing activities that are intentionally modeled by adults within their typical classroom setting. This chapter describes the results and analysis of the pre- and post-testing of early literacy development, and homogeneity testing, and a discussion of what the results may mean in early literacy development by emphasizing the importance of print knowledge, specifically writing development.

Assessment Results

The *Peabody Picture Vocabulary Test, Fourth Edition* (PPVT-4) was administered to the subjects once during the study to identify the verbal intelligence and developmental skill level as well as to determine homogeneity between the control and experimental groups.

Results from this assessment using descriptive statistics are displayed in Table 3.1 for both groups. The control group received a mean standard score of 124.08 with a standard deviation of 10.958 on the PPVT-4, while the experimental group received a mean standard score of 120.46 with a standard deviation of 10.744. PPVT-4 test scores are based on a normal distribution in which a score of 100 is considered average with an accepted standard deviation of 15. Scores between 85 and 115 fall within average limits. Results from the PPVT-4 assessment administered for the study suggest that both groups had comparable and consistent scores, which were above average in verbal intelligence and skill level.

Table 3.1

Comparison of Peabody Picture Vocabulary-4 Results

	Control Group		Experimental Group				
	Mean	SD	Mean	SD	t	df	Sig.
Standard Score	124.08	10.958	120.46	10.744	.834	23	.413

Emergent Literacy Screening Pre-Test

The *Emergent Literacy Screening* was administered to each subject twice during

the study as pre-test before the modeled writing intervention and as post-test to determine

potential impacts on early literacy skill development.   As previously stated, this

screening tool encompasses three specific areas deemed necessary in order to measure

literacy development: phonological awareness, oral language, and print knowledge. The

Phonological Awareness subtest includes rhyming identification and production,

blending syllables, onset/rime units, and sounds, and segmenting syllables, onset/rime

units, and sounds. The Language Use section is comprised of singing a familiar song,

identifying basic concepts, recounting a narrative, as well as measurement of speech

sound intelligibility and sentence word order and use. In addition to assessing

responsiveness to print in books, recognition of common environmental symbols, written

name identification, and singing the "alphabet song," the Print Knowledge subtest of the

Emergent Literacy Screening directly measures writing development, which was a key

area of interest for this study.

The Phonological Awareness subtest was worth a maximum of 18 points, while

Language Use and Print Knowledge subtests were each worth a maximum of 15 points

each. A combined total score for all three subtests was obtained by summing the three

individual scores. The maximum score for all three subtests was 48 points.

Table 3.2 displays the results from the *Emergent Literacy Screening* pre-test for

the control and experimental groups. The Print Knowledge subtest produced the highest

total mean score in both groups of participants, followed by Language Use. The control

group achieved marginally higher scores than the experimental group in these two

subtests. Both the control and experimental groups demonstrated the lowest mean score

in the Phonological Awareness subtest, with the experimental group yielding slightly

higher scores. Results indicated that the control group achieved a greater total mean

score than the experimental group in the pre-test.

Table 3.2

Descriptive Statistics: Primary ELS Categories Pre-Test

	Group	N	Mean	Standard Deviation
Print Knowledge	Control	12	10.67	3.367
(15pts)	Experimental	13	10.46	3.620
Language Use	Control	12	9.67	3.525
(15pts)	Experimental	13	8.54	3.099
Phonological Awareness	Control	12	7.25	5.529
(18pts)	Experimental	13	7.38	4.174
Total Score	Control	12	27.58	11.603
(48pts)	Experimental	13	26.38	8.569

Figure 3.1 illustrates the homogeneity between the two groups of participants. In

all three subtests, comparison suggests that the control group performed similarly to the

experimental group on the *Emergent Literacy Screening* pre-test. Statistical analysis that

follows indicates that this difference is not of statistical significance and therefore both
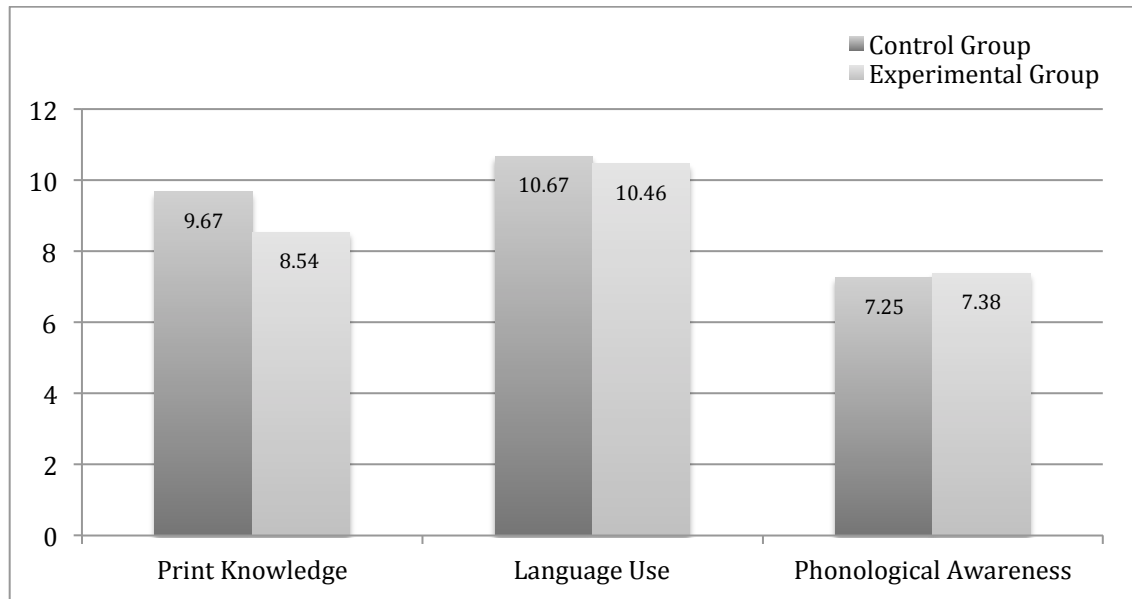
groups were considered to be homogenous.

Figure 3.1. Preliminary *Emergent Literacy Screening* pre-test comparisons between the control group and experimental group. Bars on the left represent the control group, while the bars of the right denote the experimental group. Each bar represents the average total score in Print Knowledge, Language Use and Phonological Awareness subtests.

An independent samples t-test was employed as a method of analyzing variability between the control and experimental groups. The analysis was performed on the mean test scores for each subtest, as well as the mean total score for each group. The independent samples t-test was chosen because the sampling distribution focused upon only two groups. The analysis was based upon the framework of standard statistical hypothesis testing (Howell, 2002). The quantitative results from the independent samples t-test identified no significant differences between the two groups. Because the analysis focuses on comparing the two groups, an independent samples t-test is the most ideal statistical evaluation.

The independent samples t-test is based upon calculating a ratio between the difference in mean scores to the difference in standard deviation of each mean. This ratio is then compared to a critical value of t to determine whether the groups are independent of one another or represent a similar population. If the calculated t values lie outside a critical t value and its corresponding level of significance, commonly 0.05 or less, then H_0 can be rejected.

In this study, the independent samples t-test was utilized to verify homogeneity between the control and experimental groups. Table 3.3 displays the results of the independent samples t-test of pre-test scores between the control and experimental groups. For each given measure in this study, the level of significance for corresponding t scores is significantly greater than the critical probability threshold of 0.05, suggesting that the control and experimental groups had comparable early literacy skill development in each of the three areas tested. The following section will focus on the results of the data taken while engaging the participants in the Picture Story/Word Story strategy.

Table 3.3

Independent Samples T-Test Results of Pre-test Scores

	t	df	Level of Significance (2-tailed)
Print Knowledge	.146	23	.885
Language Use	.852	23	.403
Phonological Awareness	-.069	23	.946
ELS Total Score	.295	23	.770

Modeled Writing Intervention

As a means to identify the correlation between the modeled writing instruction and increased emergent literacy skills, the Picture Story/Word Story strategy was implemented twice weekly for 10 weeks. As explained in previous chapters, this strategy was used to engage children in writing activities by demonstrating the different stages of writing and encouraging them to then write at their own level.

Hypothesis 1d stated that children who engage in modeled writing instruction of developmental stages will achieve greater written language skills than those who participate in the adult-modeled only writing instruction. In order to identify the progress of each participant, a data collection chart was developed. As mentioned in Chapter 2, an ordinal scale from zero to five, which correlated to the developmental writing skill level was used to score each child's attempt at writing (see Table 2.2). Although the scale used to identify the writing skill level is ordinal by nature, it also represents a linear progression in writing skill development. The minimum-maximum range for both control and experimental groups was zero to five with 0 = no distinction between drawing

and writing, 1 = scribble, 2 = mock letters, 3 = random letter strings, 4 = semiphonetic writing, and 5 = phonetic writing. No subject in either group obtained a score of five. On average, the participants in the control group progressed from 1 (scribbling) to 2 (using mock letters), while the subjects in the experimental group progressed from 1 (scribbling) to 3 (random letter strings). The control group averaged a 1.56 gain over the course of the study, while the experimental group earned a 2.54 average increase in writing development. The overall achievement of the experimental group indicates support for Hypothesis 1d.

Figure 3.2 demonstrates the progression in writing skill level of the control and experimental groups. Each point represents the average score for each writing opportunity. Scores were normalized by dividing the cumulative score for each opportunity by the total number of active participants for that opportunity. For example, the total number of participants in the experimental group was equal to 13; however, on the 12th opportunity one subject refused to participate and another was absent. Consequently, only 11 valid participants were used to calculate the cumulative score for the writing sample. While scores for both control and experimental groups show overall improvement during the course of the study, the trend for the experimental group yields a higher rate of change in writing development.

Point-by-point inter-rater reliability was established for the writing scores. Using this method, two participants from each group were randomly selected for score comparison. Two raters independently scored the writing samples of the selected participants and compared the results. The percentage reliability was calculated as the total number of scoring agreements divided by the total number of scoring agreements

plus disagreements multiplied by 100. Results from this calculation indicated a 98%
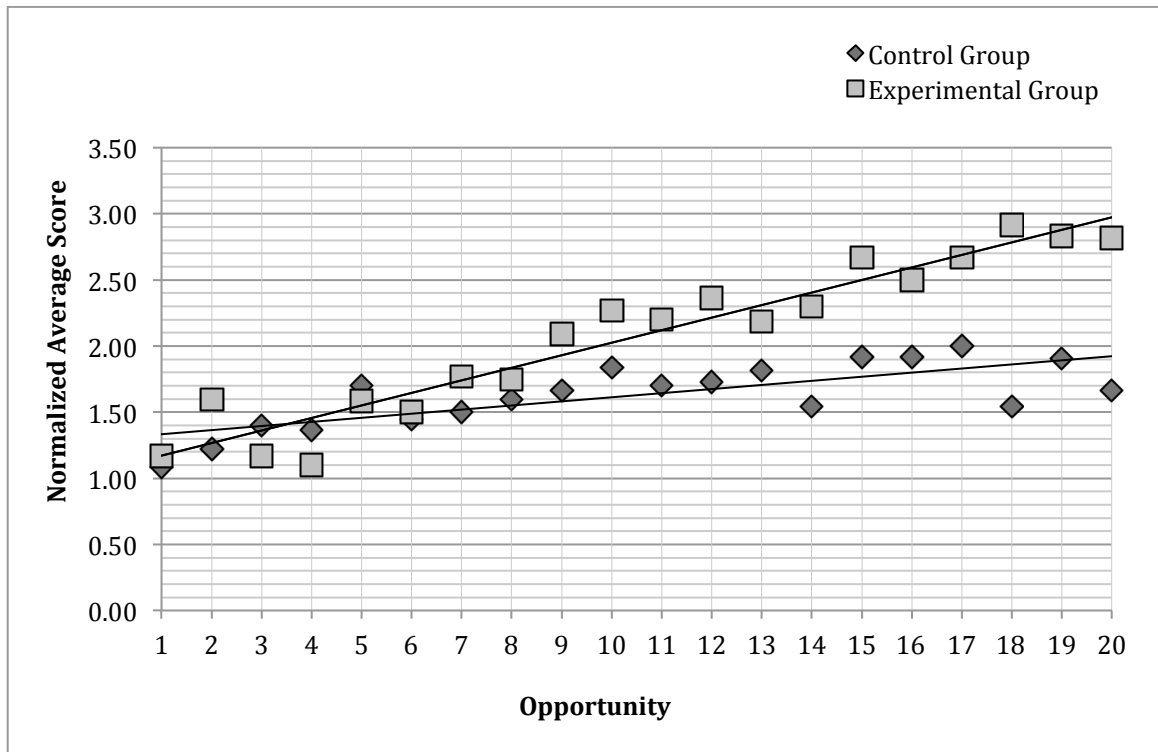
inter-rater reliability.

Figure 3. 2. Graph displaying the progression of the writing samples throughout the study. Each plot represents the normalized average scores of the students in each group. Lines were placed on this graph for visual reference. Regression analysis was not performed.

Emergent Literacy Screening Post-Test Results

        Before a comparison of the *Emergent Literacy Screening Results* pre-test and

post-test measures could be performed, it is important to first describe the post-test

results. Table 3.4 represents the results from the *Emergent Literacy Screening* post-test

for the control and experimental groups. Similar to the pre-test, the Print Knowledge

subtest produced the highest total mean score in both groups of participants. The second

highest mean score for both groups occurred in the Language Use section, and the lowest

mean score was obtained in the Phonological Awareness subtest. Post-test results

suggest that while the control group performed slightly better than the experimental

group in language use, the experimental group yielded higher scores in areas of print

knowledge and phonological awareness. Further, the experimental group achieved a

greater total mean score than the control group.

Table 3.4

Descriptive Statistics – Primary Categories Post-Test

	Group	N	Mean	Standard Deviation
Print Knowledge (15pts)	Control	12	11.50	1.883
	Experimental	13	11.92	2.362
Language Use (15pts)	Control	12	12.00	1.706
	Experimental	13	11.85	3.158
Phonological Awareness (18pts)	Control	12	8.83	4.428
	Experimental	13	10.23	3.539
Total Score (48pts)	Control	12	32.33	6.692
	Experimental	13	34.00	7.427

        Similar to the *Emergent Literacy Screening* pre-test, an independent samples

t-test was employed on the post-test scores to ascertain any observable

improvements in significance levels of each subtest. Table 3.5 displays the results of

the independent samples t-test of post-test scores between the groups. While there

was a noticeable improvement in the Phonological Awareness subtest in

comparison to the pre-test, none of the subtests indicated statistically significant

differences between the control and experimental groups.

Table 3.5

Independent Samples T-Test Results of Post-test Scores

	t	df	Level of Significance (2-tailed)
Print Knowledge	.150	23	.882
Language Use	-.492	23	.627
Phonological Awareness	-.875	23	.391
ELS Total Score	-.588	23	.563

Comparison of Emergent Literacy Screening Results

After the description and analysis of the *Emergent Literacy Screening* for pre-test

and post-test results as independent groups, the outcomes were then compared to one

another with the objective of determining the level of progress made within each group as

well as between groups. Due to the small sample size, non-statistical ad hoc comparisons

between the pre- and post-test scores for both groups were examined. Analysis focused

on distinguishing the difference in the post-test *Emergent Literacy Screening* scores

between the children who received the conventional writing demonstration and those who

engaged in writing activities that were intentionally modeled.

Figure 3.3 displays the post-test raw score comparisons. Overall, both groups

demonstrated improvement in all three subtests of the *Emergent Literacy Screening*

compared to their respective pre-test scores. Hypotheses 1a, 1b, and 1c stated that

children who engage in modeled writing instruction of developmental stages will achieve

greater oral language, phonological awareness, and print knowledge skills, respectively,

as compared to those who participate in the adult-modeled only writing instruction.

While the experimental group trended slightly above the control group in both

phonological awareness and print knowledge, language use scores were essentially the

same for both groups. These results validate Hypotheses 1b and 1c; however, the data

collected did not indicate support for Hypothesis 1a. Additional efforts were therefore

taken to further investigate the impacts of modeled writing instruction of developmental

stages on phonological awareness and print knowledge.

The most effective way to measure overall change within each group for the Print

Knowledge and Phonological Awareness subtests is to compare the calculated difference

between the pre-test and post-test mean scores. The calculated difference in mean scores

reflects the overall net gain or net loss in performance. It is important to note that while a

net gain implies an improvement in skill level, a net loss does not reflect a regression in

development; rather, a net loss value indicates a lower level of performance, which may

be the result of factors beyond test subject capabilities.

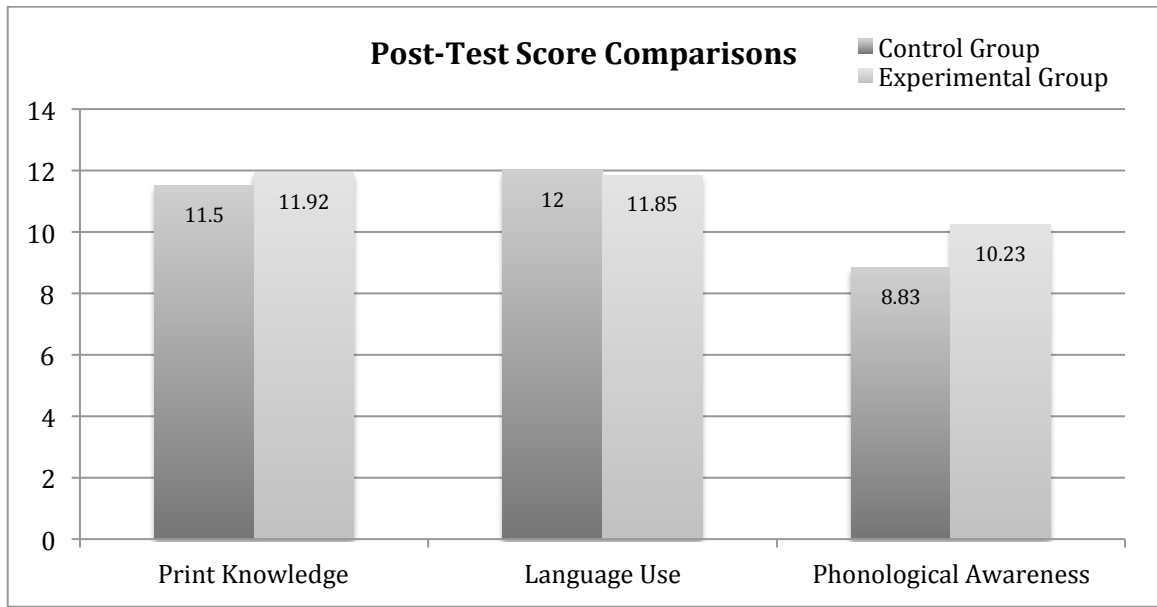*Figure 3.3.* Post-test *Emergent Literacy Screening* score comparisons between the control group and experimental group. This graph displays the post-test results of both groups. Bars on the left represent the control group, while the bars on the right denote the experimental group. Each bar represents the average total score for Print Knowledge, Language Use and Phonological Awareness subtests.

Table 3.6 represents the mean difference in scores between the *Emergent Literacy Screening* pre-test and post-test for both groups. Although statistical analysis was not performed on the *Emergent Literacy Screening* post-test results, there is an observable improvement in the mean difference score for both groups. The experimental group demonstrated a greater level of progression in print knowledge and phonological awareness, which is reflected by higher mean difference scores in these subtests. Due to a lack of improvement in the Language Use subtest, it was decided that no further analysis was warranted.

Table 3.6

Pre-Test vs. Post-Test Mean Score Differences

	Group	N	Mean Difference
Print Knowledge (15pts)	Control	12	1.83
	Experimental	13	3.38
Language Use (15pts)	Control	12	1.33
	Experimental	13	1.38
Phonological Awareness (18pts)	Control	12	1.58
	Experimental	13	2.85
Total Score (48pts)	Control	12	4.75
	Experimental	13	7.62

While the control and experimental groups yielded similar scores in the post-test, comparison of the pre- and post-test scores revealed greater gains in phonological awareness and print knowledge within the experimental group (see Figure 3.4). On average, the control group scored 1.33 points higher in the post-test than they did in the pre-test, while the experimental group scored 1.38 points higher in the post-test. As predicted, the experimental group gained higher post-test scores in print knowledge than the control group, representing an average improvement of 3.38 points. The

experimental group also demonstrated greater improvements in the Phonological

Awareness subtest, achieving a gain of 2.85 points on the post-test compared to the

control group gain of 1.58. Although the research results have not been statistically

tested, the ad hoc comparisons strongly support the research focus stating that print

knowledge and phonological awareness are influenced by modeled writing instruction.
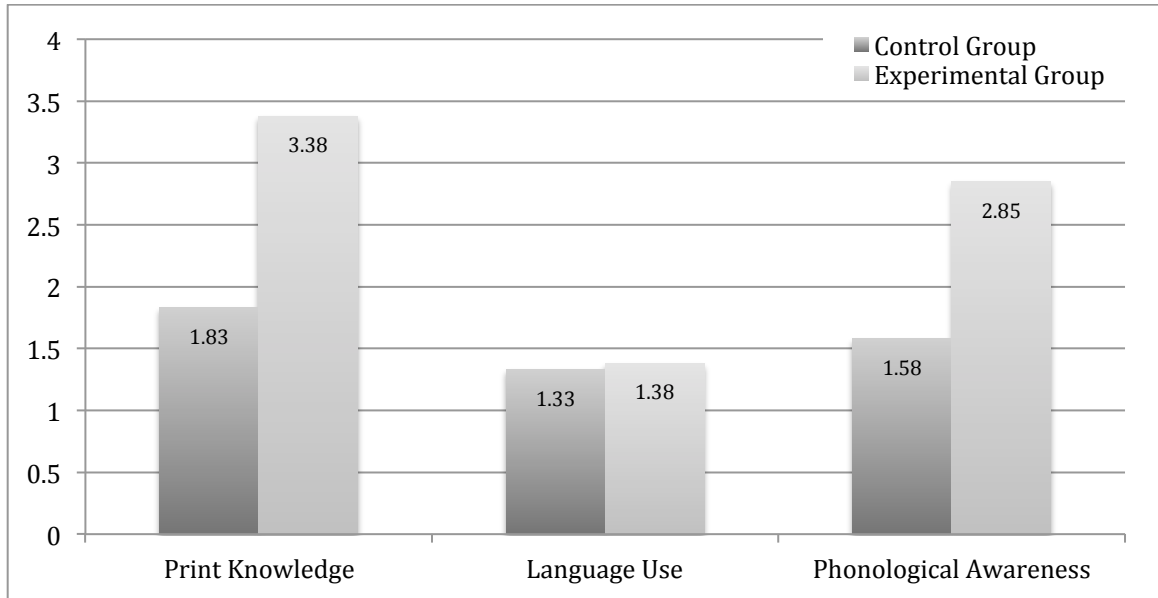
Figure 3.4. Pre/Post score comparisons of the *Emergent Literacy Screening* between the control and experimental groups. Bars on the left represent the control group, while the bars on the right denote the experimental group. Each bar displays the post-test minus the pre-test difference in average scores for Print Knowledge, Language Use and Phonological Awareness subtests. The experimental group demonstrated larger gains in Phonological Awareness and Print Knowledge than the control group.

Further evaluation of the Print Knowledge and Phonological Awareness subtests were conducted to identify what skills within each subtest showed the greatest improvement. Within the Print Knowledge section, both groups exhibited improved scores in book awareness, symbol identification, written name knowledge and singing the alphabet song, with the experimental group demonstrating larger mean differences in the areas of book awareness and written name identification (see Table 3.7). While the experimental group demonstrated the largest gain in the area of print development, the control group showed a mean loss in this area. However, this does not indicate a loss in skill; rather, it may be due to circumstances that are beyond the scope of this study. Figure 3.6 clearly indicates that differences were observed between the control group and experimental group in the areas of book awareness, written name identification, and print development, with the experimental group yielding the largest mean difference in the areas of book awareness and print development. The mean difference for book awareness was a 0.69 gain for the experimental group, compared to 0.17 gain for the control group; and the mean difference for print development in the experimental group was a 1.08 gain compared to a -0.08 loss in the control group. The comparative outcomes for book awareness and print development suggest a positive correlation with the implementation of a picture story/word story strategy.

Table 3.7

Print Knowledge Comparisons

	Group	N	Mean Difference
Book Awareness	Control Group	12	0.17
	Experimental Group	13	0.69
Symbol Identification	Control Group	12	0.58
	Experimental Group	13	0.46
Written Name Knowledge	Control Group	12	0.50
	Experimental Group	13	0.69
Print Development	Control Group	12	-0.08
	Experimental Group	13	1.08
Sings Alphabet Song	Control Group	12	0.67
	Experimental Group	13	0.46

In regards to the Phonological Awareness subtest, comparative outcomes in Table

3.8 indicate a mean gain for both groups in the areas of blending syllables, blending

sounds, segmenting syllables and segmenting sounds. The control group demonstrated a

net loss in the areas of rhyme production and segmenting sounds, while the experimental

group demonstrated a net loss in the area of rhyme identification. Again, this loss does

not reflect a regression in these areas of development. Although these results are not

favorable, rhyming was not a primary target in this study and further research is required

to evaluate the results. Figure 3.6 represents calculated differences between the control

group and experimental group for subtests of the Phonological Awareness category.

Results for the subtests of blending syllables and sounds, as well as segmenting syllables

and sounds suggest a noticeable difference between groups. Most notably, the

experimental group generated the largest mean difference value for segmenting syllables,

scoring twice as high as the control group.
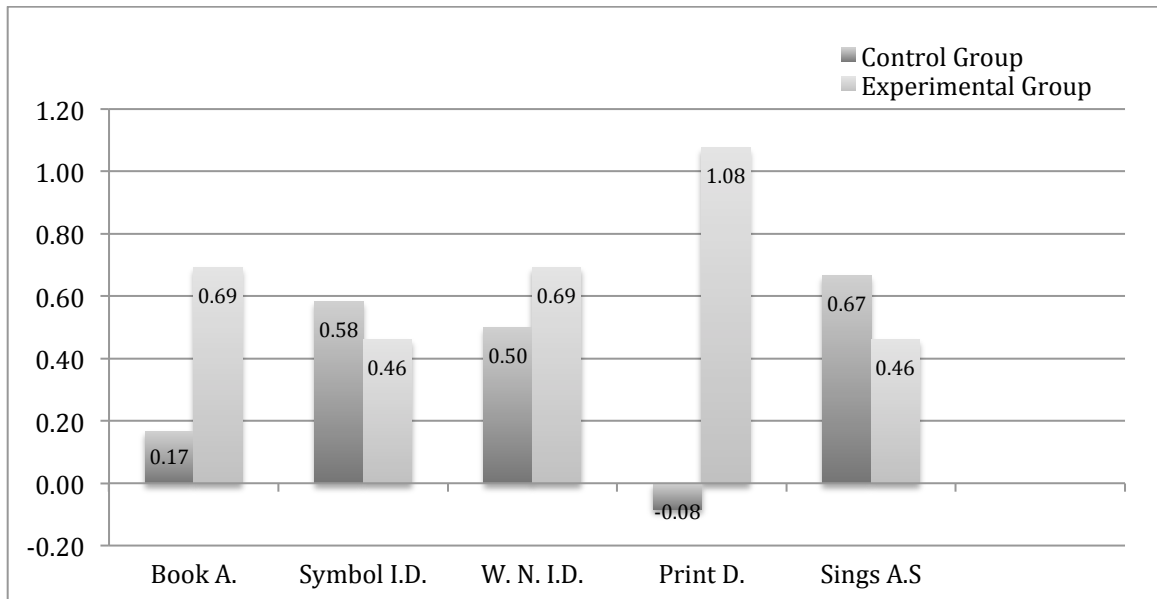
Figure 3.5. Pre/Post score comparisons of the *Emergent Literacy Screening* Print Knowledge subtests. This graph shows the post-test minus pre-test difference of the average total scores for both groups in Book Awareness, Symbol Identification, Written Name Identification, Print Development and Singing the Alphabet Song. Bars on the left represent the control group, while the bars on the right denote the experimental group. The experimental group demonstrated larger gains in Book Awareness, Written Name Identification and Print Development.

Although the hypotheses stated in Chapter 2 cannot be quantitatively accepted or

rejected due to the lack of statistical significance, which is attributed to the small sample

size, results support Hypotheses 1b and 1c based on ad hoc observation and inference.

Table 3.8

Phonological Awareness Comparisons

	Group	N	Mean Difference
Rhyme Identification	Control Group	12	0.25
	Experimental Group	13	-0.08
Rhyme Production	Control Group	12	-0.08
	Experimental Group	13	0.31
Blending Syllables	Control Group	12	0.58
	Experimental Group	13	0.77
Blending Sounds	Control Group	12	0.42
	Experimental Group	13	0.69
Segmenting Syllables	Control Group	12	0.50
	Experimental Group	13	1.00
Segmenting Sounds	Control Group	12	-0.08
	Experimental Group	13	0.15

Pre/Post Score Comparisons
Phonological Awareness Subtests

■ Control Group
■ Experimental Group

1.20	
1.00	1.00
0.80	0.77
0.60	0.58 0.69
0.40	0.50 0.42
0.31	
0.25	0.15
0.20	
0.00	-0.08 -0.08 -0.08
-0.20	

Rhyme I.D.   Rhyme. Prod.   Blending Syl   Blending snd   Seg. Syl   Seg. Snd
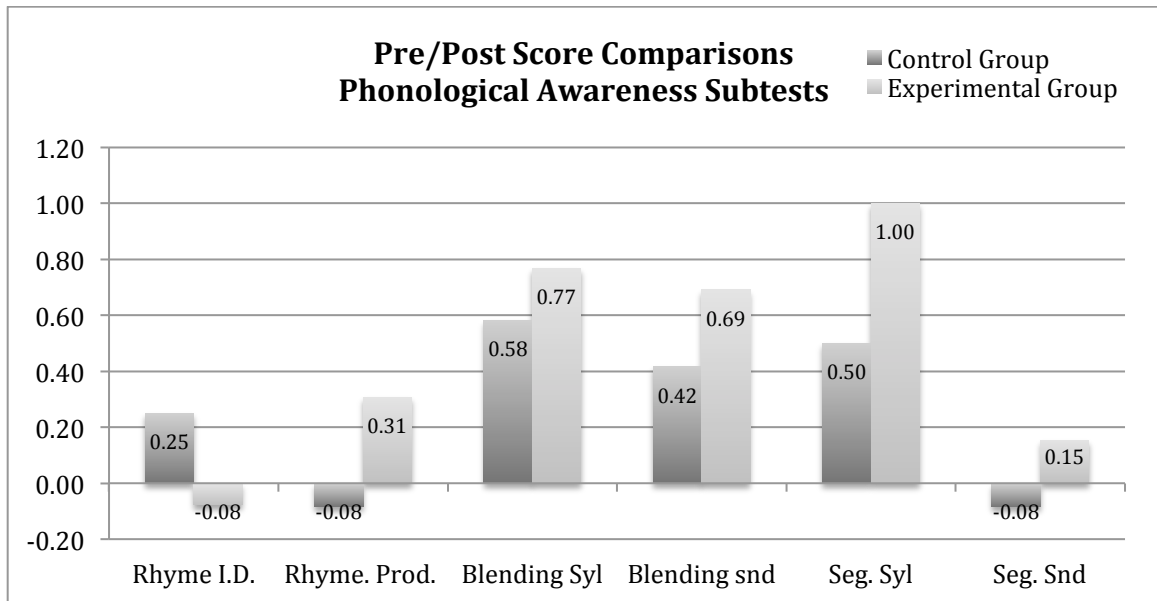
Figure 3.6. Pre/Post score comparisons of the Emergent Literacy Screening Phonological Awareness subtests. This graph displays the post-test minus pre-test difference of the average total scores for both groups in Rhyme Identification, Rhyme Production, Blending Syllables, Blending Sounds, Segmenting Syllables and Segmenting Sounds. Bars on the left denote the control group, while the bars on the right represent the experimental group. The experimental group demonstrated larger gains in Rhyme Production, Blending Syllables, Blending Sounds, Segmenting Syllables and Segmenting Sounds.

Qualitative Evaluation of Ad Hoc Observations

Several behavioral observations were made throughout the course of the research.

At the beginning of the study, participants in both groups were resistant to writing and

did not want to participate in the writing center activities. Once at the writing center, they

appeared to lack the self-confidence and motivation to draw and write. Many subjects

stated that they did not know how to write or spell when prompted to write their story;

consequently, they requested adult guidance and/or assistance. Hand-over-hand guidance

was given to the participants to encourage writing. As the study progressed, the

participants in the experimental group were more willing to participate in the Picture

Story/Word Story strategy. Further, they were more willing to try to write and less

dependent on adult assistance. When encouraged to perform at a higher level, the

students commonly challenged themselves; however, without continued encouragement,

participants in the experimental group would write at a level that was easiest for them.

Discussion

The results from descriptive analyses conducted in this chapter have provided

insight to each of the research questions stated in Chapter 2. The following discussion

will restate the purpose of the research and provide interpretation of the results.

The purpose of this study was to investigate the impacts on early literacy

development in preschool children by engaging them in writing activities that are

intentionally modeled by adults within their typical classroom setting. The independent

samples t-test indicated that the control and experimental group were homogenous in

verbal intelligence and emergent literacy development (see Table 3.3). The Picture

Story/Word Story, a strategy used to facilitate children's development of writing by

supporting their efforts while encouraging them to progress to the next stage, was used to measure the impact of modeled writing instruction on emergent literacy development.

Although the sample size was not large enough to perform comprehensive statistical analyses, ad hoc comparisons of test results for each group suggest that the experimental group performed at a higher level in the areas of writing development, print knowledge, and phonological awareness after the implementation of the modeled writing strategy. Subjects who participated in the Picture Story/Word Story strategy demonstrated faster gains in their writing development, improving an average of two developmental stages in a 10-week session. In comparison, the participants who received only the conventional model of writing improved an average of one developmental stage within that same timeframe.

Within print knowledge, higher achievement in book awareness and print development was noticed within the experimental group. A higher level of phonological awareness skills, especially blending and segmenting sounds and syllables were also observed. In addition to increased writing development, print knowledge and phonological awareness skills, behavioral observations found that participants who engaged in the modeled writing were more willing to write and more self-confident in their writing abilities. The modeled writing intervention served as an effective emergent literacy activity that was easily incorporated into the regular preschool curriculum. The Picture Story/Word Story demonstration added less than five minutes to circle time and children spent approximately five minutes in the writing center working on their own story. Although, this strategy requires teachers to participate in additional training and curriculum modification to include direct instruction of writing, the observed benefits

outweigh the extra time and effort required to implement changes in the preschool setting.

Suggestions for Future Research

This research enhances the literature regarding emergent literacy development. Although inferential statistical analyses were not performed due to the sample size and ordinal level data, comparisons between the two groups of participants were favorable in that those who participated in the writing instruction demonstrated a higher skill level in the areas of writing development, print knowledge, and phonological awareness. In order to apply a more comprehensive statistical test approach using the same methodology, future research should focus on a continuation of direct writing instruction programs with a larger sample size. Further, due to the progression of writing development observed during the study, extending the duration of the Picture Story/Word Story strategy past 10 weeks may be advantageous.

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APPENDICES

APPENDIX A

IRB Exemption

INSTITUTIONAL REVIEW BOARD
for the Protection of Human Subjects
FWA 00000078

Research & Development
University Hall 116
The University of Montana
Missoula MT 59812
Phone 406-243-6670 | Fax 406-243-6330

Date: August 23, 2011

To: Bethany Froehlich Collins/Lucy Hart Paulson, Communicative Sciences and Disorders

From: Dan Corti, IRB Chair

RE: IRB 161-11: "The Effects of Modeled Writing on Early Literacy Development in Preschool Children"

Your IRB proposal cited above is exempt from the requirement of review by the Institutional Review Board in accordance with the Code of Federal Regulations, Part 46, section 101. The specific paragraph which applies to your research is:

_X_ (b)(1) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

____(b)(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i)Information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

____(b)(3) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if: (i) The human subjects are elected or appointed public officials or candidates for public office; or (ii) federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

____(b)(4) Research, involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

____(b)(5) Research and demonstration projects which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (i) Public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs.

____(b)(6) Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

University of Montana IRB policy does not require you to file an annual Continuation Report (Form RA-109) for exempt studies. However, you are required to timely notify the IRB if there are any significant changes or if unanticipated or adverse events occur during the study, if you experience an increased risk to the participants, or if you have participants withdraw from the study or register complaints about the study.

Form RA-108
(Rev. 8/10)

AUG 19 2011
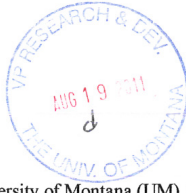
THE UNIVERSITY OF MONTANA-MISSOULA
Institutional Review Board (IRB)
for the Use of Human Subjects in Research
CHECKLIST / APPLICATION

IRB Protocol No.:
161-11

At The University of Montana (UM), the Institutional Review Board (IRB) is the institutional review body responsible for oversight of all research activities involving human subjects outlined in the U.S. Department of Health and Human Services Office of Human Research Protection (www.hhs.gov/ohrp) and the National Institutes of Health, Inclusion of Children Policy Implementation (http://grants.nih.gov/grants/funding/children/children.htm).

Instructions: A separate registration form must be submitted for each project. IRB proposals are approved for three years and must be continued annually. **Faculty members** may email the completed form as a Word document to *IRB@umontana.edu*. **Students** must submit a hardcopy of the completed form to the Office of the Vice President for Research & Development, University Hall 116.

1. **Administrative Information**

Project Title: The Effects of Modeled Writing on Early Literacy Development in Preschool Children	
Principal Investigator: Bethany Froehlich Collins	Title: Masters of Science Student
Email address: bethany.froehlich-collins@umconnect.umt.edu	
Work Phone: N/A	Cell Phone: 493-4487
Department: Communicative Sciences and Disorders	Office location: Curry Health Center

2. **Human Subjects Protection Training** *(All researchers, including faculty supervisors for student projects, must have completed a self-study course on protection of human research subjects **within the last three years** (http://www.umt.edu/research/complianceinfo/IRB/) and be able to supply the "Certificate(s) of Completion" upon request. Add rows to table if needed.*

NAME and DEPT.	PI	CO-PI	Faculty Supervisor	Research Assistant	DATE COMPLETED Human Subjects Protection Course
Bethany Froehlich Collins Communicative Sciences and Disorders	☒	☐	☐	☐	2/23/2011
Lucy Hart Paulson Communicative Sciences and Disorders	☐	☐	☒	☐	1/6/2010
Karen Martin Learning and Belonging Preschool	☐	☐	☐	☒	6/13/2011
Kristin Horejsi Learning and Belonging Preschool	☐	☐	☐	☒	6/7/2011

3. **Project Funding**

Is grant application currently under review at grant funding agency? ☐Yes *(If yes, cite sponsor on ICF if applicable)* ☒No			Has grant proposal received approval and funding? ☐Yes *(If yes, cite sponsor on ICF if applicable)* ☒No	
Agency	Grant No.	Start Date	End Date	PI
Is this part of your thesis or dissertation? ☒Yes ☐No		If **yes**, date you successfully presented your proposal to your committee: 7/13/2011		

For UM-IRB Use Only

IRB Determination:

✓____ Approved Exempt from Review, Exemption # 1 *(see memo)*
____ Approved by Expedited/Administrative Review *(see *Note to PI)*
____ Full IRB Determination
       ____ Approved *(see *Note to PI)*
       ____ Conditional Approval *(see memo)* - IRB Chair Signature/Date: _____
              ____ Conditions Met *(see *Note to PI)*
       ____ Resubmit Proposal *(see memo)*
       ____ Disapproved *(see memo)*

* **Note to PI:** Study is approved for one year. Use any attached IRB-approved forms (signed/dated) as "masters" when preparing copies. If continuing beyond the expiration date, a continuation report must be submitted. Notify the IRB if any significant changes or unanticipated events occur. Notify the IRB in writing when the study is terminated

Final Approval by IRB Chair: _____ Date: 8/23/2011 Expires: _____

1

APPENDIX B

Parent Permission

Parent or Guardian Permission Form

Dear Parents or Guardians,

We would like to ask permission for your child to participate in a classroom study in order to help us learn more about how early literacy skills develop in young children. The purpose of the research project, "The Effects of Modeled Writing on Early Literacy Development in Preschool Children," is to help identify how early writing instruction impacts early literacy skills.

PROCEDURES: As a part of your child's regular classroom activities in the Learning and Belonging Preschool at the University of Montana, an early literacy screening will be conducted with your child using the *Emerging Literacy Screening* tool. This assessment provides an overview of early literacy skill development in the areas of print knowledge, oral language and phonological awareness. The screening involves having your child participate in a number of tasks such as identifying symbols, drawing and writing, singing a song, telling a story, looking at pictures of words that rhyme, and playing with the syllables and sounds of words. The screening will be conducted on September 14th and 15th, 2011, and again in December 2011. It will be administered by graduate students in the Department of Communicative Sciences and Disorders and supervised by a faculty member. A written summary of your child's performance will be provided for you.

In addition, children in the study will participate in a writing program throughout the semester with a trained and qualified researcher for approximately 15 minutes, 2 times a week during their regular classroom small group time. During the writing activity, the researcher will demonstrate the Picture Story/Word Story technique by drawing a picture representing an event and writing a sentence about it. The children will then have the opportunity to make their own picture story/word story while the researcher provides them with support by encouraging them to write at their own developmental level. Children will be divided into a control group and an experimental group based on morning or afternoon placement in the preschool. The control group will be provided with the "adult-like" conventional writing form, while children in the experimental group will be provided with a model of the developmental stages of print. The screening results will be used to evaluate the effectiveness of modeled writing instruction used in this study.

PARTICIPATION IS VOLUNTATRY. Your child's participation in this project is completely voluntary. You may withdraw your child at any time during the study and your child may choose not to participate in any of the activities without loss of benefit.

INORMATION IS CONFIDENTIAL. Within the study itself, all children's identities will remain confidential. Copies of the children's picture story/word story will be saved, without identifying information, and evaluated to determine the effectiveness of the modeled writing instruction provided by the researcher. If you wish, a written summary and explanation of your child's results will be shared with you.

QUESTIONS. If you have any questions, please feel free to contact Bethany Froehlich, graduate student in the Communicative Sciences and Disorders program, at (406) 493-4487 or my advisor Dr. Lucy Hart Paulson at (406) 243-2376.

Please complete the following consent form and return it to your child's teacher. Thank you for your consideration.

Bethany Froehlich Collins   Lucy Hart Paulson
Masters of Science Student   Faculty Advisor
6121 Coburg Ln   Communicative Sciences and Disorders
Missoula, MT 59803   32 Campus Dr.
(406) 493-4487   Missoula, MT 59812
                                                 (406) 243-2376

The Effects of Modeled Writing on Early Literacy Development in Preschool Children

I have read the above description of this research study. I have been assured that a member of the research team will answer any questions I may have. I voluntarily agree to have my child take part in this study. I understand I will receive a copy of this consent form.

I, _____, give my consent for

my child to participate in the study "The Effects of Modeled Writing on Early

Literacy Development in Preschool Children."

Child's Name: _____

Child's Birthdate: _____

Parent or Guardian Signature: _____

Date: _____