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The Influence of the Scaffolded Writing Technique on the Literacy Development of Kindergarten Children

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THE INFLUENCE OF THE SCAFFOLDED WRITING TECHNIQUE ON THE LITERACY DEVELOPMENT OF KINDERGARTEN CHILDREN

By

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ABSTRACT

THE INFLUENCE OF THE SCAFFOLDED WRITING TECHNIQUE ON THE LITERACY DEVELOPMENT OF KINDERGARTEN CHILDREN

By

Kara Teresa Murphy Gregory

This study examined the influence of the scaffolded writing technique on the literacy development of kindergarten children using a pretest-posttest-follow-up quasi-experimental design. Fifty-four children from a middle class Midwestern community participated in the study.

It was hypothesized that the scaffolded writing technique would improve children's literacy development in six areas: early literacy skills (in the areas of letter recognition, sound-symbol correspondence, and sight word recognition), the quality of children's writing, the quantity of high frequency words used in writing, phonological awareness, concepts about print, and oral reading.

Children in both the experimental and control groups participated in a daily morning message and planned writing experiences two times a week in their half day kindergarten program. During one of these

opportunities, the experimental group received instruction with the scaffolded writing technique, while the children in the control group received an equal amount of writing time using journals.

To test the hypotheses, a number of assessments were utilized. Three elements of the Intelligent Teacher Advisor were administered at the pretest, posttest, and follow-up periods. The Kindergarten Quality Analytic Rubric and the Quantity Tally were also used to score children's writing from each period. ANCOVAs were used to analyze these data, controlling for the pretest scores. In addition, the following assessments were administered during the follow up period and analyzed with t tests: Hearing and Recording sounds, Writing Vocabulary Test, Word Test, Oral Running Record, Concepts about Print, and the Yopp-Singer Phoneme Segmentation Test.

The analysis resulted in support for two of the six areas. The scaffolded writing technique had a positive influence on the quality of children's writing in two categories: (1) organization and form and (2) conventions. The scaffolded writing technique also had a positive influence on the quantity of high frequency words which children used in their writing.

ACKNOWLEDGEMENTS

This volume could not have come to pass without the incredible amount of encouragement and support that I have received from countless sources. Many people have influenced me during these past years of study, which led up to this culminating work. In particular, the faculty at Michigan State University with whom I have worked closely, have played a key role in my academic and professional development.

I am deeply indebted to the outstanding professors on my committee who continually challenged me to challenge myself and to go beyond what I thought I knew to better see what I did not know. My advisor, Dr. Marjorie Kostelnik, has been particularly important in my growth. She skillfully created learning situations in both the academic arena and in professional arena, gently scaffolding my progress. Dr. Anne Soderman has been a wealth of continual encouragement, believing more in me, at times, than I did of myself. Our conversations, particularly in the area of emerging literacy have been the springboard for the current study, as well as future research and professional projects. Dr. Thomas Luster has gently

guided me through the valley of statistics, spending countless hours in patient explanation, all the while helping to build my confidence as a researcher. Dr. Alice Whiren has continually challenged me to consider the human ecological impact in all situations. For this, I am grateful. The ecological lens is forever embedded into my thinking. She has also strongly encouraged me to pay closer attention to the classic child development pieces that continue to support the profession today. Finally, Dr. Stephen Yelon has quietly provoked me to examine my ideas and practices and to consider the possibilities.

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could not have been more professional or sincere about proper implementation of the scaffolded writing technique. Their attitude and perseverance throughout the project was warmly appreciated.

Experts in children's writing in the field graciously reviewed the Kindergarten Writing Analytic Rubric and gave suggestions which were much appreciated. These experts included: Sally Edgerton, Gretchen Owocki, Alice Whiren, Jill Seaman, Cindy Esler, Dawn Ulin, and Gwen Graham.

The integrity of the coding of the children's writing was due to the careful scrutiny of Laura Tinsley. The methodical analysis, checking and rechecking each piece of writing, added an extra sense of reliability to the analysis, beyond the numbers.

Above all, my family deserves an enormous debt of gratitude. Their patience and assistance in so many ways made this task attainable.

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TABLE OF CONTENTS

LIST OF TABLES

Table Page

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

With the dawn of the new millennium comes a heightened interest in literacy. As society becomes more and more dependent on technology, what was formerly done verbally is now often communicated through written documentation in the form of facsimiles, emails and web sites. This technological advancement brings with it a greater need for all society's members to be literate not only to contribute to society but also to simply function within the society.

Typically in the past, when people discussed literacy, they were referring only to reading. Currently, however, there is added emphasis on the other components of literacy: speaking, listening, viewing and writing. Researchers have furthermore shown that one cannot separate the literacy process into individual entities of reading and writing. These elements go hand in hand, each supporting and contributing to the development of the other (Teale & Sulzby, 1986). Thus, the new emphasis in the social

arena for making our citizens literate for the 21st century is comprised of both reading and writing.

Literacy is one of the primary developmental tasks for the early childhood years. This is where the foundation is laid for future success in literacy supported activities. The early childhood classroom is a major microsystem where this happens.

The nation is currently involved in a reexamination of literacy. As a result of a three year study funded by the United States Government to look at the prevention of reading difficulties, attention is being directed to the role of teachers in early childhood classrooms. The report, published by the National Research Council's Committee on the Prevention of Reading Difficulties in Young Children, highlights the crucial role of the preschool and kindergarten years in relationship to literacy development. The report states that the experiences during these years set the stage for a child's success or difficulty with literacy in the future (Snow, Burns, & Griffin, eds., 1998).

While there is still much to learn about reading as a process, it is much better understood than writing. Phonological awareness, a component crucial

to reading, has been the most researched reading topic (Snow, Burns, & Griffin, Eds 1998). From the results of this body of research, some very specific recommendations to develop and support phonological awareness in children have been suggested for classroom teachers and parents. Another area that has been well researched, which also focuses on behaviors for adults working with young children, is the process of reading books aloud to young children. Such specific research with related recommendations for curriculum and practice is not available in the area of writing for those who work with preschool and kindergarten children. Further research is necessary to facilitate improvement in both (1) teacher practices in instructional techniques to support the emerging writing process and (2) children's writing development.

Need for the Study

While the process of writing has also been studied greatly (see Graves, 1983), specific suggestions for practice in classrooms are typically aimed at children in the first grade and older. Up to this point in the research and practice arena, there have been few concrete suggestions for teachers of preschoolers and kindergartners to directly enhance the writing

development of children in their classrooms. Key questions that kindergarten and preschool teachers typically ask such as, "How do you get children to write initially? And what do you do with them after that?" have been left unanswered. This lack of research based information, in conjunction with the erroneous idea that writing instruction in preschool and kindergarten is developmentally inappropriate, has served to keep writing out of numerous early childhood classrooms. The National Association for the Education of Young Children (NAEYC) and the International Reading Association (IRA) recognized these misconceptions and released a joint statement in 1998 in support of reading and writing activities in all early childhood classrooms. They stated,

> "IRA and NAEYC believe that goals and expectations for young children's achievement in reading and writing should be developmentally appropriate, that is, challenging but achievable with sufficient adult support," (p. 31).

Once again, however, there were not specific recommendations regarding which strategies are successful with kindergarten and preschool children to develop their writing, nor were there any suggestions as to the teacher's specific role in overall literacy

development. Missing from the joint statement are general guidelines related to what one might expect a kindergartner to be able to write, the amount of writing children can produce and the quality of the children's writing. Also lacking are specifics such as how children's writing impacts literacy in the areas of phonological awareness and reading ability. These oversights may be because the idea that kindergarten and preschool children can write is a new one. It has only been in the last thirty years that preschool and kindergarten writing has been investigated (Read, 1971; Clay, 1975; Bissex, 1980). Additionally, there is very little empirical evidence from experimental studies regarding kindergarten and preschool writing. What we do know about emerging writing has come from qualitative studies focusing on a few focal children at a time or from correlational studies (Mason & Allen, 1986; Teale & Sulzby, 1987; Gunn et al., 1995). More experimental studies need to be conducted looking at kindergartners' writing, the techniques that support writing development, and the contribution certain techniques have on overall literacy development. Also needed are more specific strategies and suggestions for

early childhood educators to facilitate emerging literacy development through writing.

Purpose of the Study

The purpose of this study was to investigate the influence of the scaffolded writing technique on kindergarten children's emerging literacy development. The scaffolded writing technique is a process in which lines are written on paper to represent each word that a child intends to write. The lines are made either by the teacher or the child after the message has been planned aloud. The child then writes on the lines to represent the planned word and reads the message back to the teacher. (See appendix A for a more detailed explanation of scaffolded writing.)

Statement of the Problem

Preliminary studies on the scaffolded writing technique indicate that it has a positive impact on the overall development of literacy concepts in kindergarten children (Bodrova & Leong, 1997). Based on the previous research, this proposed quasi-experimental study attempted to answer the main question, **What influence does the scaffolded writing technique have on the emerging literacy development of kindergarten children?** Specifically, the influence of

the scaffolded writing technique was investigated in six areas: children's early literacy abilities in the areas of letter recognition, sound-symbol correspondence, and word recognition related to the scaffolded writing technique, the quality of the children's writing, the quantity of high frequency words in children's writing, children's phonological awareness as influenced by the scaffolded writing technique, children's knowledge of the concepts about print as influenced by the scaffolded writing technique, and children's reading ability as influenced by the scaffolded writing technique in the beginning of the first grade year.

Research Questions

To support the main research question listed above, six more specific questions were investigated in this study. These were:

1. What influence does the scaffolded writing technique have on children's early literacy abilities in the areas of letter recognition, sound-symbol correspondence, and word recognition?
2. What influence does the scaffolded writing technique have on the quality of children's writing?

3. What influence does the scaffolded writing technique have on the quantity of high frequency words in children's writing?
4. What influence does the scaffolded writing technique have on children's phonological awareness?
5. What influence does the scaffolded writing technique have on children's concepts about print?
6. What influence does the scaffolded writing technique have on children's reading ability?

Conceptual Framework

This research was set within a framework of two theories, developmental contextualism and Vygotsky's theory of learning. The following pages offer a very brief explanation of each theory. This is followed by a general description of the integration of the two and a more specific description of their integration for the purpose of this study.

Developmental Contextualism

Developmental contextualism theory as described by Lerner (1991) is based on the premise that all living things (and their component parts) operate within a context. In development, it is the "dynamic interactional relation" between the living thing (or part) and the context in which it operates over time

that facilitates change. According to developmental contextualism, it is important to look not only at the immediate context within which the living thing functions, but also to consider the other contexts within which it interacts and the larger contexts in which these reside.

Thus, when doing research, the interactions of the subject with the context must be studied and taken into account. For example, when children in schools are being studied, the classroom environment including the teacher, the other students, the curriculum and supplies all form the context. According to developmental contextualism, the changes that occur within children happen because of the dynamic interaction between the child and the classroom (and other contextual components such as the family, neighborhood, and society). Changes are not only occurring in children, they also occur in the context as a result of the interactions. A prime example of this occurs when studying children's writing. Based on what the child says, the teacher (a component of the context) adjusts what he/she will say to the child. This interaction continues back and forth until a

writing product is produced. Both the child and the teacher leave the interaction changed to some degree.

A **developmental contextual model** of person-context interaction by Lerner (1984,1986, 1991) is depicted in Figure 1. For the purposes of this research the focus will be on the dynamic interaction between the school network and the child, particularly between the teacher and the child. It is within this teacher-child interaction that Vygotsky's theory becomes relevant.

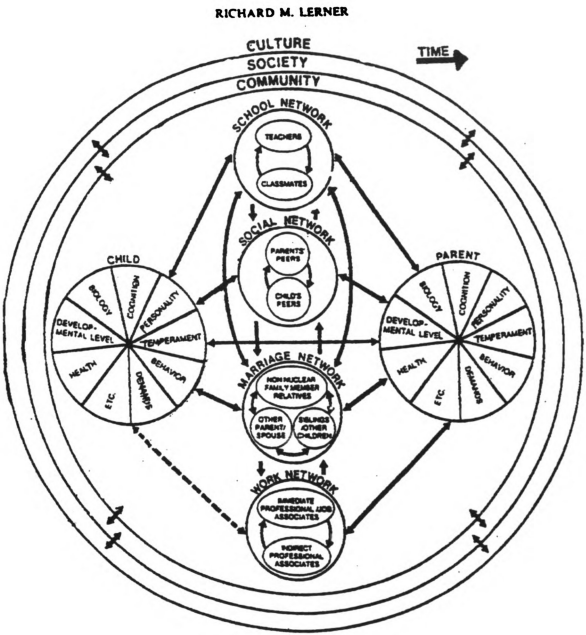


Figure 1: Developmental Contextualism
(A developmental contextual model of person-context interaction by Lerner, R. 1984, 1986).

Vygotsky's Theory of Development

The focus of Vygotsky's sociocultural theory of development is on learning, which he posited leads to development (Berk & Winsler, 1995). He believed that all learning and development that takes place does so within the **cultural context** in which one functions. Vygotsky made a distinction between lower mental functions and higher mental functions. Lower mental functions are fundamental natural mental functions such as memory and attention. Higher mental functions are defined as cultural functions (e.g. writing, reading, mathematics), which are specifically human and appear gradually as the lower mental functions are transformed (Kozulin (ed.), 1986). Vygotsky believed that humans construct their learning using psychological tools and interpersonal relations. To learn and internalize something, it must first be learned from the outside - **socially** and then **internalized**.

Within the social learning environment, there is an "**expert**." This is someone who knows more than the learner, and who assists in "mediating the learning for the learner". Thus, Vygotsky believes that a person cannot move from lower mental functions to higher mental functions without the assistance of another

person who knows more than they do. **Mediation** is accomplished using psychological tools such as gestures, language and sign systems, mnemonic techniques and decision-making systems. It is conducted within the learner's **zone of proximal development**. The zone of proximal development is the area of interest in which the learner cannot be successful when working independently, but can be successful with assistance. In this zone, the learner can work productively with assistance without experiencing frustration. Focusing on skills beneath the zone would be unproductive, since the learner can already independently accomplish tasks below the zone. In the same sense, focusing on skills above the zone of proximal development would only serve to frustrate the learner. See Figure 2 for a pictorial representation of Vygotsky's theory.

Wood, Bruner & Ross (1976) named the mediation process that occurs within the zone of proximal development **scaffolding**. The focus of scaffolding is to continually conduct instruction through mediation within the learner's zone of proximal development. As the learner is able to demonstrate the knowledge and skills of the assisted instruction independently,

his/her current zone of proximal development becomes his/her independent level and a newer, more complex zone of proximal development is then created (see Figure 3). Through this stair-like progression of moving from instruction with assistance to independence, the learner develops. Vygotsky would argue that without mediation, a learner cannot progress as well or as far as he/she would with the mediation. In this study, the scaffolded writing technique represented such mediation.

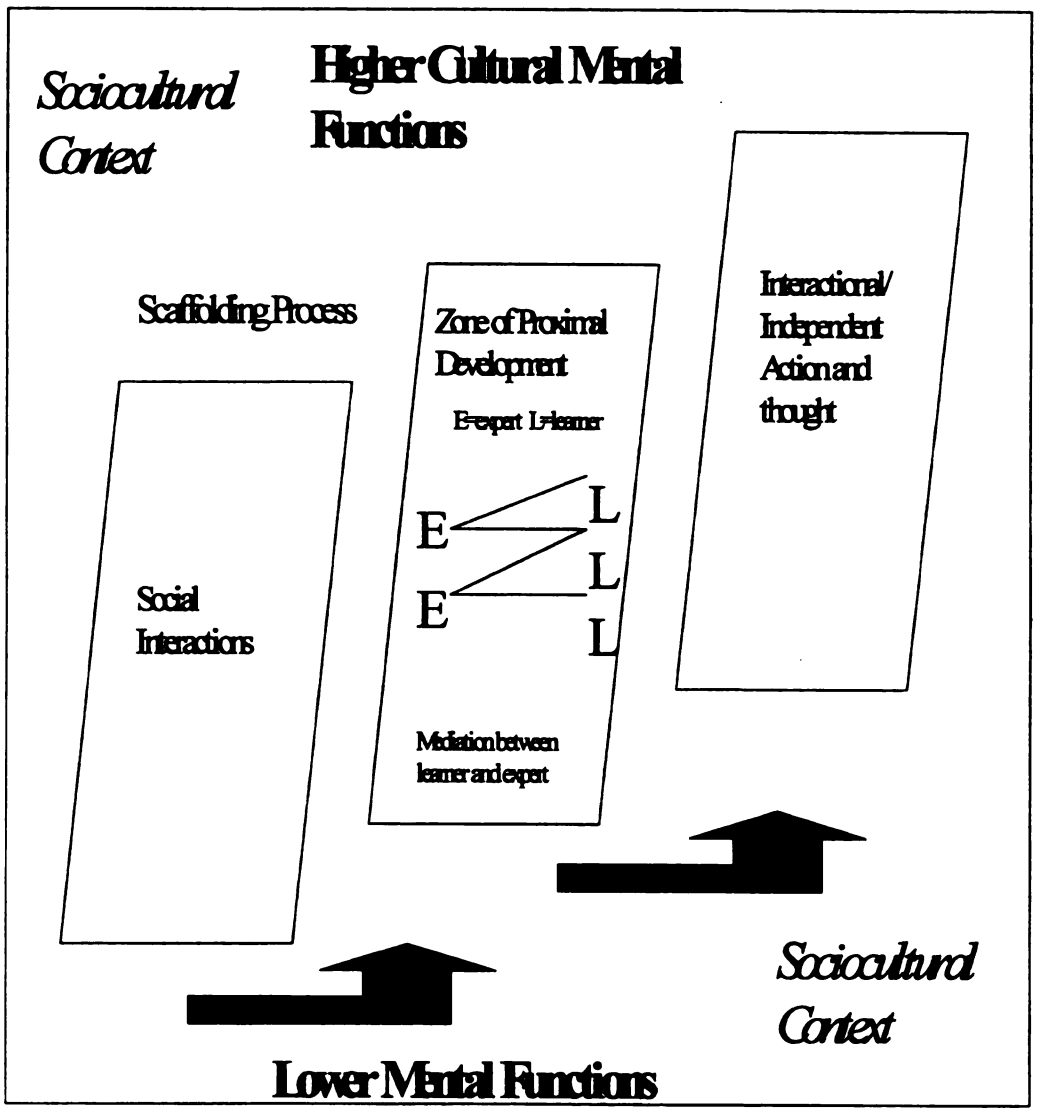


Figure 2: Vygotsky's Theory of Sociocultural Learning and Development

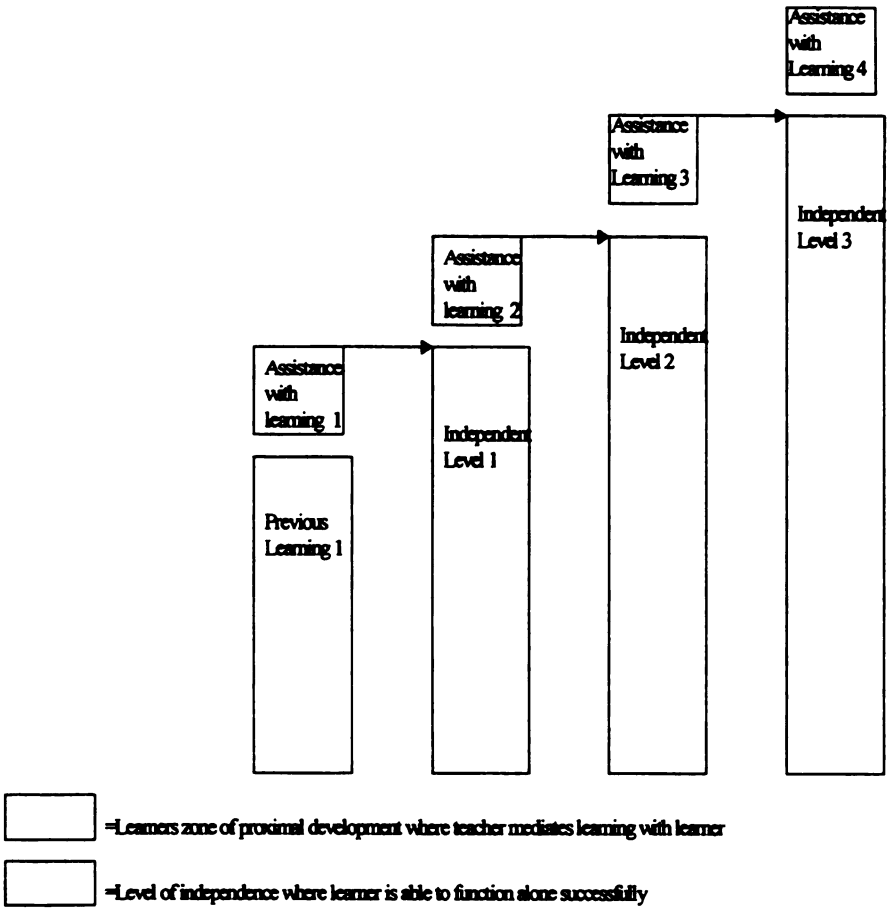


Figure 3: Scaffolding within the zone of proximal development

The Conceptual Framework: A Blending of Developmental Contextualism and Vygotsky's Theory

The theoretical map depicted in Figure 4, shows ways in which a child learns within the school network. The school network is nested within the **context** of the sociocultural network (such as families, neighborhoods, social groups, work groups). The following process occurs within the child's school network:

1. The child interacts within the school network with other students and the teacher at a general instruction level meant to reach all learners in the classroom.
2. The child and teacher or "expert" work within the child's zone of proximal development to mediate something instructionally specific to the individual child (a topic or skill of the moment).
3. The child internalizes this specific piece of instruction or set of processes at an individual level, taking individual action (or thought), and is able to work independently.

Based on both developmental contextualism and Vygotsky's theory, we can describe the interactions as **transactional**, meaning that they are bi-directional

interactions, with each person or set of persons impacted by the dynamic interaction.

This demonstrates Vygotsky's process of discovering or uncovering something in a **social** manner (see 1 on figure 4) from the **cultural context** (concepts, ideas, rules, behaviors, etc.), having it **mediated** with the teacher or "**expert**" within the learner's **zone of proximal development** (see 2, figure 4) and finally individually **internalizing** it (see 3, figure 4). This process happens over **time** and is a recursive one. The cultural context is both a source and a background for learning. The cultural context is utilized throughout the learning cycle. The **sociocultural network** also contributes to the cultural context, just as the school's network contributes to the sociocultural network.

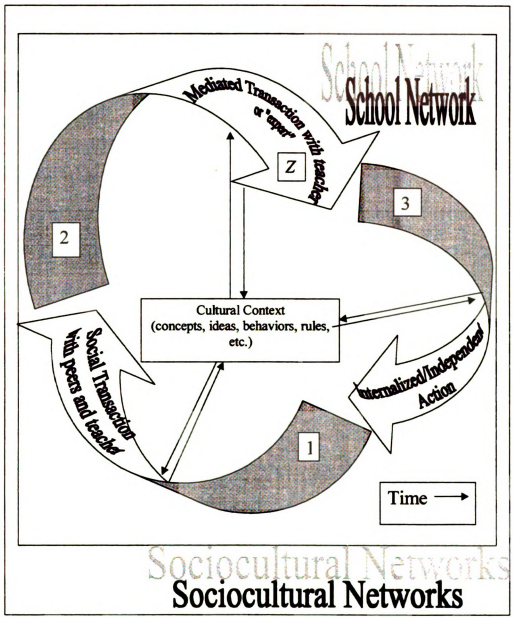


Figure 4: Theoretical map of Lerner's Developmental Contextualism and Vygotsky's theory of Sociocultural Learning and Development within the School Network

The theoretical map can be altered to show the research project at a conceptual level while still retaining the key elements of developmental contextualism and Vygotsky's sociocultural theory of development (see Figure 5). This is accomplished by shrinking the perspective of the school network to view the individual classroom context. In this conceptual map, just as in the theoretical map, the sociocultural context includes other system influences such as families, neighborhoods, social groups, school systems, government, and society at large.

The focus of the **cultural context** for this study is specified as literacy learning with a particular emphasis on writing. This context, as well as the greater **sociocultural network,** serves as the resources from which children draw ideas for writing. These resources are available at any point in children's recursive literacy development.

The **social transaction** with peers and the teacher is shown in (1) on figure 5. From this social transaction, the student develops a **plan for writing.** This plan is then shared with the teacher and the **scaffolded writing technique** *(independent variable)* is implemented (2 on figure 5). At this point, each time

the teacher mediates for the child, it is within that child's **zone of proximal development.** The teacher bases the mediation on the interactions with the child, thus in a transactional manner, adjusting the interactions as needed to suit the child's level (**scaffolding**). From this interaction, a **mediated writing product** is produced, with reference to the original writing plan as needed during the mediating process. The student then moves to working independently on the parts that she is able to do and is also able to practice new learning and understandings that occurred (3 on figure 5). The resulting product from this is a **completed writing product.** While working on the completed writing product, the student is able to refer back to the writing plan and the mediated writing product. This completed product is then shared socially with others and the process continues. The development in writing learning occurs over **time.** See appendix B for an example of a child's scaffolded writing product.

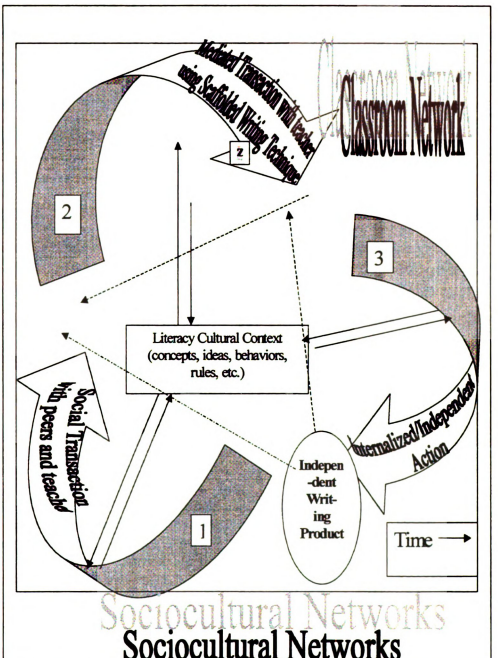


Figure 5: Learning and Development Throughout the Literacy Process within a Classroom Network: A Conceptual Map

It was hypothesized that the scaffolded writing technique would have a positive impact on children's emerging literacy development in the areas of: early literacy abilities(letter recognition, sound-symbol correspondence, and sight word recognition), writing (quality and quantity of writing), phonological awareness (blending, segmenting, hearing and recording phonemes), concepts about print and reading ability. The fourteen separate hypotheses for this general statement are listed in Chapter Three, Methods.

Conceptual and Operational Definitions

The following are key concepts that flow from the conceptual framework.

Writing Samples

Conceptual definition: The writing samples were collected three times: once before any children were exposed to the scaffolded writing technique, once at the end of the kindergarten year, and once at the beginning of the first grade year. Children were given a picture of the zoo to write about and all children wrote about this picture for each of the three samples.

Operational definition: The students read back their writing to the researcher when they were finished writing. The researcher recorded students' report of what had been written on the same sheet of paper. These sheets were analyzed in two of the six areas for the dependent variables: quality and quantity. The writing from both experimental and control groups was mixed together and was rated blindly by a coder hired outside of the study.

Early Literacy Abilities *(Dependent Variable)*
Conceptual definition: skills children need in order to successfully develop more complex literacy behaviors. Of the numerous skills within this category, the following are included in this study: the ability to recognize letters in the alphabet, the ability to correlate sounds in language to their corresponding grapheme (alphabet letter), and the ability to recognize high frequency words.

Operational definition: Early literacy abilities in the area of letter recognition, sound-symbol correspondence, and word recognition were measured using the Intelligent Teacher Advisor, developed by Bodrova, Leong(1998). Three parts of this battery were utilized: visual letter recognition test, sound-symbol correspondence assessment, and the instant word recognition test.

Quality of Children's Writing *(Dependent Variable)*
Conceptual definition: the extent to which children demonstrate proficiency in the ideas and content, organization and form, style, and conventions of print they use in their writing determine Quality. (See Appendix E for a detailed description of these categories.)

Operational definition: The quality of the product was measured with the Kindergarten Writing Analytic Rubric. This rubric measures the ideas and content, style and conventions in a piece of writing.

Quantity of High Frequency Words in Writing *(Dependent Variable)*
Conceptual definition: Quantity of high frequency words in writing is the amount of high frequency words produced in the writing piece.

Operational definition: The writing samples from the pretest, posttest, and follow-up period for both the control and experimental groups were analyzed to determine the number of high frequency words the students used in writing. The Quantity Tally was used to measure this variable.

Phonological Awareness *(Dependent Variable)*
Conceptual definition: Phonological awareness is the ability to hear the sounds in language. Phonemic awareness is the ability to hear the discrete phonemes in language. It was measured in three ways in this study: blending sounds ability, segmentation ability, and hearing and recording phonemes.

Operational definition: Phonological awareness was assessed using: the Yopp-Singer Phoneme Segmentation Test (YS), the Hearing and Recording Sounds assessment (HRS), and the Writing Vocabulary Test (WV).

Concepts about Print (*Dependent Variable*)
Conceptual definition: Concepts about print is children's understanding of the concepts of print which are used in reading and writing.

Operational definition: Children's concepts about print were assessed with the Concepts about Print Test (CAP) by Marie Clay, 1993, which is part of the Observation Survey for Early Literacy Achievement.

Reading Ability (*Dependent Variable*)
Conceptual definition: Oral reading ability is the child's ability to read text aloud.

Operational definition: Two assessments were used to assess this skill: the Word Test, and the Oral Running Record. Numeric scores were assigned for accuracy for each assessment.

Scaffolding
Conceptual definition: Scaffolding refers to the assistance the "expert" or teacher provides the learner within their zone of proximal development. It is meant to assist the learner in moving from the current level which is dependent learning up to the next level in which the learner can function independently.

Operational definition: In this study, the scaffolded writing technique operationalizes scaffolding. (See Appendix A for a description of this technique.)

Assumptions

1. Over time there will be changes in children's literacy development.

2. The Quality and Quantity of children's writing are measurable.

3. The physical environment of the classroom is relatively stable.

Overview

This chapter included an introduction, need for the study, and purpose for the study. It also included a conceptual framework that blended Developmental Contextualism with Vygotsky's theory of learning. Finally, research questions, operational definitions, and assumptions were delineated.

A review of the literature relevant to this study is presented in Chapter II. Chapter III contains a description of the research design, the independent and dependent variables and the sample under study. The research questions with their supporting hypotheses as well as the description of the scaffolded writing technique and the teacher training will also be included. The methodological issues related to the study including instrumentation, data collection, planned analysis of data and limitations of the study

will also be discussed. Chapter IV presents the analysis of the data. Chapter V discusses the results, presents researcher observations, theoretical implications and suggests implications for practice and future research.

CHAPTER TWO

REVIEW OF THE LITERATURE

The review of literature is divided into three main parts. The first presents an overview of emergent literacy and the developmental processes of writing. A description of developmental processes of writing, as well as several ways in which writing has been studied are examined. This section also addresses the need for experimental research to uncover explicit ways to instruct young children in writing. The second part of the review demonstrates the connection between oral language, writing and reading with a particular emphasis on phonological awareness. The third section examines research regarding the scaffolded writing technique.

Emergent Literacy

The term emergent literacy describes the entire process of becoming a fluent user of both spoken and written language (Teale & Sulzby, 1986). Within this term there is a continuum which is used to further depict progress towards literacy fluency. Children develop in a normative sequence as they progress from illiteracy to fluency. Depending on the source, three or four general stages/phases within this emergent

literacy continuum are recognized. For the purpose of this discussion, three stages are described: emerging, early, and fluent (Soderman, Gregory, & O'Neill, 1999). While all three stages may be found within any classroom, children in the emerging stage are generally in preschool and kindergarten. Children in first grade are typically moving from the emerging to the early stage. Those in second grade are often primarily in the early stage moving towards the fluent stage. Children in third grade are mostly moving beyond the early stage towards the fluent stage behaviors, and finally, children in fourth and fifth grade are generally expected to be operating within the fluent literacy stage. See Appendix C for a description of these stages. As the focus of this study was kindergarten children and their literacy development through the avenue of writing, the emphasis of this paper is primarily on the first stage of the emergent literacy continuum.

Developmental Process of Writing

Many researchers have examined writing as a developmental process. Some have focused on children's progression from nonwriting to fluent writing while

others have placed greater emphasis on describing the process of writing.

In the early 1920s, Luria was among the first to study writing development (Klein, 1982). Along with his teacher, Vygotsky, Luria argued that writing is fundamental in promoting cognitive growth. Luria outlined a developmental sequence of writing that was based on his descriptive research of children's writing. In his study, children ages 3-9, were presented with six or eight sentences, one at a time. They were then asked to remember the sentences. Pen and paper were provided by the researchers as part of the study. The children were encouraged to use these materials to help them recall the sentences. Luria analyzed the children's responses to the task.

Luria found that children aged 3, 4, and 5, did not perceive writing to be useful in helping them remember the sentences, even among most kindergarten children. Their writing had no instrumental or functional role. The children made marks which were random, undifferentiated, and had no mnemonic potential. He labeled this stage the *Prewriting or Pre-instrumental stage*.

In the second, *Differentiating stage*, children perceive some purpose and linguistic potential for writing. They try to make a correspondence between the quantity and rhythm of the spoken language and what is written. Thus, long words are represented by long lines and shorter words by shorter lines, while long sentences have many lines and short sentences have fewer. Luria reported that his most significant discovery was that a child could be moved into the Differentiation stage if number or quantity in the dictated sentence was introduced. For example, if the child was told, "seven apples", the number seven would serve to move children to the next stage of writing, instead of the use of the word "apples." He hypothesized that , "It is possible that the actual origins of writing are to be found in the need to record number or quantity (Luria, 1978, p. 87)."

The third stage, which is very brief, is *Picture Writing*. This stage is fully developed by age five or six. In this stage, children express language in picture forms.

The fourth and final stage of development which Luria described is *Ideography*. At this stage, the child understands and exploits the symbolic potential

of language. A child at this stage is able to use writing in an abstract sense.

Luria emphasized that writing development is not linear, but rather is a zig-zag (step-like) process in which children move ahead for a period of time and then regress back for a period before forging ahead again. Luria believed that while his results did not demonstrate symbolic writing with preschoolers, it would be appropriate to begin writing instruction with them to facilitate its development. Luria's theory of children's writing covers the emerging and early stages of the emergent literacy continuum.

Rather than lay out a step-wise progression for writing, Clay(1975) generated principles to describe children's writing based on her ethnographic research in New Zealand classrooms. She abstracted seven principles of writing: the recurring principle, directional principle, generating principle, inventory principle, contrastive principle, abbreviation principle and the flexibility principle. She used these principles to describe the developmental process of children's writing, advocating for teachers to pay closer attention to children's writing to gain a deeper understanding of their literacy development. Clay's

theory covers the emerging and early stages on the literacy continuum.

In 1979 and again in 1982, Ferreiro and Teberosky engaged in literacy research in Argentina and Mexico. They were attempting to understand "the evolution of the systems of ideas children build up about the nature of the social object that is the writing system," (Ferreiro, 1990, p.13). They claim that their theory is not about writing. Instead, it's emphasis is on literacy development (Ferreiro, 1990). Based on Piaget's work, Ferreiro and Teberosky's theory can be described as a constructivist theory. In their studies, children were verbally dictated sentences to write. They were also shown samples of writing and non-writing and asked to read them. From the results of these, three main developmental levels were posited. They are as follows:

Level One consists of children organizing their thinking to distinguish between writing and drawing. Once this is accomplished, children discover how writing and drawing are related. It is within this level that children begin to understand that letters are used to represent objects in the world. This leads to an understanding of how letters are put together to

portray these objects. A major struggle for children at this level is understanding the number of letters needed to make a word.

In Level Two, children try to differentiate between various pieces of writing such as sentences, words, and paragraphs. They pay attention to both qualitative and quantitative variations in the writing i.e., number of letters in words, and how words are shaped differently. Attention may shift between qualitative and quantitative aspects, or may be focused on both simultaneously. The latter is likely in very advanced children. Most children at this level, engage in either qualitative or quantitative evaluation of writing.

Finally in Level Three, children begin to write phonetically. They understand and use syllables in their writing. They have a good understanding of the alphabet but do not yet grasp fully the use of punctuation, spacing, upper and lower case letters, and blends and digraphs.

Ferreiro and Teberosky stop at level three, although children's writing is not yet fluent. This theory would fit within the emerging stage of the literacy continuum.

In the United States, Bissex (1981) observed her son learning to write and carefully recorded his writing progress from the age of four through fourth grade. Gentry (1982) later categorized these observations into a "developmental spelling classification system." There are five categories in this system: precommunicative, semiphonemic, phonetic, transitional, and correct. This system has become the basis for the generally accepted normative sequence of writing development. Gentry's classification has been expanded to include Clay's(1975) mock/scribble writing stage and a pre-phonemic stage. See Figure 6 for a description of the stages. This normative sequence of writing development can be applied to all three stages: emerging, early and fluent within the emergent literacy continuum.

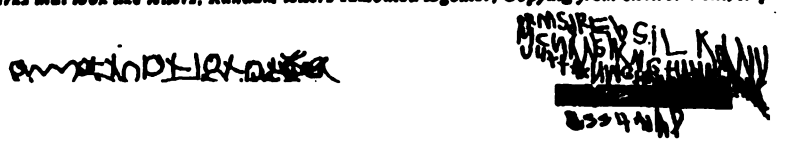
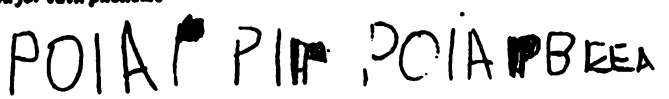
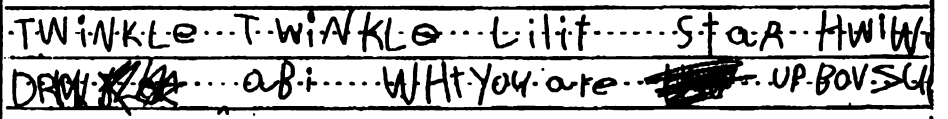
Scribble Stage (Mock Writing)	*Marks* 
Prephonemic Stage	*Marks that look like letters; Random letters combined together; Copying from environment; Repeated letters* 
Semiphonemic Stage	*Using some letters to stand for sounds heard in words – missing letters* 
Phonemic Stage	*Writes a sound for each phoneme* 
Transitional Stage	*Combination of writing sound for each phoneme and some standard spelling of words* 
Standard Spelling	*Dictionary spelling of words* 

Figure 6: Normative Sequence of Writing Development, based on Gentry (1982) and Clay (1975) (Soderman, et. al, 1999)

Sulzby (1986) has also examined children's writing in a number of research and descriptive studies. She contends that children's writing does demonstrate an overall pattern of development moving from less to more sophisticated. She does not suggest that these patterns are linear or static. Sulzby (1992) claims that the linear discrete stages prior to the onset of conventional literacy is flawed. Instead, she contends that children each possess their own constructed understandings about writing and draw from these depending on the task at hand. Thus, in one case a child may write his/her name correctly. Later he/she may use scribble writing at the writing center to write a story. During journal writing time still later in the day, the same child may copy words from the wall or write a list of known words using conventional spelling (Sulzby & Teale, 1985). This demonstrates the variety of stages children are capable of using when writing.

With each of the writing development studies discussed above, there is a general theme. Children, even young preschoolers, possess the potential for writing. Teachers and parents can observe children's writing for information on children's developing

literacy understandings. Due to the general pattern of progression with regressions in the sequence of writing, as described by Luria (1978), Ferreiro & Teberosky (1982), and Sulzby (1992), teachers must pay close attention to the variety of children's writing over time so that they may lead each individual child in his/her literacy learning.

Methods of Studying Writing

Numerous aspects of emergent writing have been studied, though most have focused on the early and fluent stages. Of these studies which look at the emerging stage of writing, the majority have been conducted as ethnographic or observational research (Gunn et. al, 1995). The following is a description of some of the studies that apply to emerging writing skills.

Hildreth (1936) observed children writing their names. From this, she developed a sequence of name writing progression. This progression includes: scribble name, linear scribble name, separate symbols name, name with both mock and correct letters, first name generally correct, consistent first name with sometimes last name, and finally name writing fluency

in which the first name and last name are written in standard form.

DuCharme (1992) examined students' writing over a three month period in her first grade classroom. She analyzed their writing for themes and topic selection. She found that children tended to organize their writing around ten themes: literature, sex differences, feelings, teacher, areas of interest, art drawings, music and songs, family, television, and peer interaction. She concluded that it is important for teachers to observe young writers to gather information on their processing of writing, learning, and constructing meaning.

Chapman (1996) also examined the themes which children use in their writing. Using first grade writing from writer's workshop, she analyzed it for the types of genres children chose to use. She found that two main categories existed: Action/Event Oriented and Object Oriented. Action/Event included chronologies and interactions. The Object Oriented contained non chronologies within which interactions, descriptions, and word plays were found. Chapman emphasized the role of the classroom context in the genres children selected to use.

Over the last three decades, Donald Graves has published a plethora of articles and books on the writing process. His work is based on observations of children writing. He described concrete ways for teachers to implement writing conferences with children. He also listed types of activities to promote writing in the classroom. All of these directions are applicable for children in the early stage in the continuum of literacy, but not for children in the emerging stage. While Graves (1996) suggested that the importance of writing lies in the literacy environment created, his specific instructions focused on teacher modeling and feedback but not helping the learner mediate the process of putting words on paper, which is the primary focus of the emerging writer.

Journal writing is an area which has received a great deal of attention with emerging writers. Hipple (1985) described the process of using journals with her kindergarten students. When taking dictation from the students, some of the children decided to write independently while waiting for her to arrive. This article exemplified the often unrecognized abilities of kindergartners to write independently.

Dailey (1991) took the topic of kindergarten journal writing further. She described how first, when a child learned to talk, they coed, then babbled, then said beginnings of words. She paralleled this with writing, showing how children progress from making scribbles, to marks, to letters, to beginnings of words, etc. She encouraged teachers to allow children to write and to accept their writing attempts as actual writing.

Bouas, Thompson, and Farlow (1997) used their observational classroom research to delineate five conditions that would facilitate journal writing in kindergarten. They suggested the following: first provide a print rich environment; second, consistently schedule writing in the program; third, teachers model writing; fourth, teachers conference with the children while they write for short periods of time and fifth, provide time for children to share their journal entries with the class. While each of the articles on journal writing offer good suggestions to encourage and sustain writing, none discuss the problem numerous children encounter… putting the initial ideas on paper. Missing from all these articles on journal writing in

kindergarten is the critical component: *How* do you start children writing?

Goodman (1986), Harste, Woodward and Burke (1984), and Sulzby (1983) looked at a variety of ways to facilitate children reading and writing. It was concluded that teachers should create risk free environments where children feel they can write without pressure or criticism. Sulzby (1983) suggested that the best way to get children to write is to simply ask them to write (cited in Bouas, Thompson, and Farlow, 1997).

A great deal of research supports the link between reading and writing. The irony is that with reading, the mainstream philosophy is not to just put a book in a child's hands and say, "read." There are many activities and strategies, based on research, for assisting emerging readers in reading. There should thus also be numerous activities and strategies based on research to assist emerging writers in writing. Simply telling a child to "write" would work with the same efficacy as telling these same children to "read" without instruction. In some cases, it may work, but with the majority of children, this is not the case.

Much of this problem lies in the lack of research in the area of beginning writing. There has been heavy emphasis in emergent writing research on descriptive and correlational studies, but little findings based on experimental studies (Mason & Allen, 1986; Teale & Sulzby, 1987; Gunn et al, 1995). Of these studies, very few to date give specific directions for instruction in emerging writing. While great headway has been made in giving children time to write freely since the 1980s (Sulzby, 1992), without concrete instruction for the emerging writing process, we cannot expect to see differences in children's writing from the 1980s to the 2000s. There is a great need for specific techniques to assist emerging writers in the writing process.

Oral Language, Writing and Reading

Oral language an important role in literacy learning (Sulzby, 1996). It provides a foundation for reading and writing long before formal instruction begins. It also serves a facilitation role between the instructor and the learner. Lastly, children use oral language to demonstrate their understanding of both written and verbal messages. Oral language serves as a

mechanism to check understandings and as a mediator to correct misunderstandings.

In the realm of written language, oral language is used to draw children's attention to print. Oral language is the conduit to show children the functions and features of written language (Hiebert, Pearson, Taylor, Richardson, & Paris, 1998). In young children, talk mediates most learning. Therefore, literacy is mediated primarily through oral language (Thomas & Reinhart, 1990).

While much attention in the past has been paid to the parallels between the development of written language and oral language (McGee & Richgels, 1995; Thomas & Reinhart, 1990), there is one striking difference between the two, which makes written language much more difficult to learn than oral language. Oral language takes place within a context. This context helps the meaning of the speaker be understood by the listener. Written language is decontextualized language. This makes the process of both writing and reading more complex than speaking and listening.

Vygotsky (1962) gives four reasons why written language, which he refers to as written speech, is so difficult for children:

1. It requires a high degree of abstraction. It lacks the basic features of oral speech and lacks the "material sound"
2. It is a monologue without an audience.
3. When writing is introduced to children, they are not conscious of thought. Their metalinguistic abilities, the abilities to think about language in an abstract way, are only beginning to develop.
4. It requires children to do consciously what they did unconsciously when learning to speak.

Clay (1975) agrees that written language is more difficult for young children to acquire than was their oral language. She maintains that in order for children to learn to write, they must learn that "print speaks".

Phonological Awareness

One well-researched area of oral language that has a great impact on literacy is phonological awareness. Phonological awareness is the ability to hear the sounds in language and to comprehend them in spoken language (Griffith & Olson, 1992). Phonological

awareness develops through playing with sounds in language (Ayres, 1995). There is currently a debate as to whether phonological awareness is needed before reading and writing or if it develops as one is engaged in the process of reading and writing (Busnik, 1997; Treiman & Zukowski, 1996; Ayres, 1994; Bradley & Bryant, 1983).

Most of the research on phonological awareness has centered on the influence of phonological awareness on reading. However, the ability to manipulate the sounds in words, which has been found to strongly influence reading, are also tapped when children are writing. Invented spelling, the process of writing the sounds one hears in a word, has been found to be an exceptionally powerful activity to develop children's phonological awareness and help them make the connection between letters and sounds (Vandervelden & Seigel, 1995; Adams, 1990).

The ability to manipulate the beginning and ending parts of words (onsets and rimes) has been found to relate very strongly to reading ability when children are able to recognize letters (Stahl & Murray, 1994). In addition, isolating phonemes from the beginning or ending of words, also known as segmentation, is

reported to be "crucial to reading (p. 231)" (Murray, 1994). When children write words, they actively search for the beginning part of the word (the onset) and the ending parts (the rimes). "Sounding-out" words to write the sounds heard, entails isolating one sound from the next. This process is the reverse of that which occurs when decoding while reading. Bradley & Bryant (1983) and Truch (1994) have found a high correlation between phonological awareness and decoding ability.

In addition, children who are able to quickly decode words develop a larger sight word vocabulary. Their reading becomes more fluent and time can be spent on comprehension of the text. The reverse is also true. Children who struggle to decode have little time or energy to become fluent readers and apply less attention to understanding the text (Stanovich, 1986). Children with a strong foundation in phonological awareness are better able to sound out both new and nonsense words. They are able to instantly recognize familiar rime patterns, thus making them more fluent readers (Stanovich, West & Cunningham, 1991).

The important role that phonological awareness plays in literacy development cannot be overlooked

(Soderman et al, 1999). It is through children's writing that we can see evidence of their developing understanding of the sounds in language. Writing appears to be an activity which children can use to practice and possibly improve their phonological awareness, thus improving their reading ability.

Scaffolded Writing

The scaffolded writing technique is based on the work of Vygotsky and later work of his students, Luria and Galperin. Developed by researchers Elena Bodrova and Deborah Leong in the late 1990s, this technique is only recently being used in classrooms and research. Scaffolded Writing is a specific technique to use with emerging writers to develop their writing skills and overall literacy concepts. Vygotsky (1962) states,

> Written speech is the most elaborate form of speech…the evolution from the draft to the final copy reflects our mental processes. Planning has an important part in written speech, even when we don't write out a draft. We usually say to ourselves what we are going to write. This is also a draft, though in thought only. This mental

draft is inner speech, (p. 243, Thought and Language).

One of the key elements in the scaffolded writing technique is the planning process. In the beginning of the scaffolded writing technique, before children begin writing, they must verbalize aloud what they plan to write. This verbal plan is then translated into scaffolded lines. As the child progresses in ability, the plan may not be verbalized aloud to another person, but is continued to be made using the lines to hold the place for words in the message.

Another key element of the process is children's use of private speech during the later stages of use with the scaffolded writing technique. Use of private speech varies for each portion of the technique: the planning, writing the words of the message and rereading the message back.

The third key element is materialization. Galperin (1969) describes materialization as

> using tangible objects and/or physical actions to stand for a concept or strategy as the mental action is being learned. Materialization helps the child focus on the critical aspect of the

concept or strategy that is to be internalized, (Bodrova & Leong, 1998, p. 5).

Scaffolded Writing is the process of moving a child from working with great teacher assistance on his/her writing to eventually working independently on the entire product. It begins with the child planning a message. The child may draw a picture first or discuss his/her plan of what will be written with the teacher. After the child tells the teacher what the message will be, the teacher repeats it back. Once the child agrees that the teacher has the message correct, the teacher tells the child that she is going to make a line for every word in the message. These lines are the materialization.

Using a highlighter, the teacher proceeds to say each word in the message one at a time while making a corresponding line. Lines are long for longer words and short for shorter words. When the message is complete, the teacher points to each line and repeats the message. The child then repeats the message, pointing to each corresponding line on the paper. The child then is told to write something on each line to

help him/her remember the message. This is the actual writing portion.

When the child is finished writing, he/she reads the message to the teacher, pointing to each word/line as it is read. Eventually, the child no longer needs the teacher to make the lines and he/she begins drawing his/her own lines during the planning session. Later, the child will not need the lines to hold the words' place. The lines will disappear from the child's writing. This process differs in time for each child but, in general, most children move from teacher formed lines, to making their own lines by the middle of kindergarten. Some time during their first grade year, they discontinue using the lines.

Thus far, the results of three studies which involved the scaffolded writing technique have been analyzed. Each of the studies has been conducted by the originators of the technique, Bodrova and Leong.

In the first study involving Scaffolded Writing, a total of 426 kindergarten children participated. Children in five project classrooms were matched with children in five non project classrooms. The projects included three teaching techniques: Scaffolded Writing, Written Learning Plans, and Sound Analysis.

The children in the project schools showed significantly more growth between the pre and posttests on pre-literacy variables.

The researchers reported the following results:

"The children in the project group demonstrated significant increases in:

- sound-symbol correspondence;
- the number of words written;
- increase in the complexity of written messages;
- better correspondence between the written story and re-read of that story;
- more consistent use of writing conventions;
- more new words and fewer controlled vocabulary words in writing;
- more accurate spelling in writing;
- better phonemic encoding of words that are not part of the controlled vocabulary in writing;
- better voice to print match in an assessment of reading concepts
- better understanding of a concept of a sentence in an assessment of reading concepts; and

- better understanding of symbolic function of a printed word demonstrated in a reading concepts assessment," (Bodrova & Leong, 1999A).

The second study was implemented in preschool classrooms. Children from four classes participated, with two classrooms using Scaffolded Writing and Written Learning Plans. These classrooms (project vs. non project) were matched for scores on letter recognition and sound to symbol correspondence. Twenty two pairs were matched.

The researchers reported the following:

"Results showed statistically significant increases for the project children in:

- improvement in letter recognition
- better sound-to-symbol correspondence;
- increase in the number of sight words recognized;
- better comprehension of a pattern in a text;
- better understanding of symbolic function of a printed word; and
- better separation of printed words into letters" (Bodrova & Leong, 1999A)

For each of the two studies, the children were administered pre and post test assessments using the

Intelligent Teacher Advisor battery. These included sound to symbol correspondence, letter recognition, and instant words (sight words). Writing samples were also taken at pre and post test times. No level of significance was reported for either of these studies, nor were any other conditions of the interventions discussed.

A third and final study differed from the previous two in that it used only Scaffolded Writing as the sole intervention (Bodrova & Leong, 1998B). It was a case study involving 34 kindergartners from four half day classrooms, both morning and afternoon sections taught by two teachers. The teachers used the Scaffolded Writing technique two times a week in small groups of four to six children. They also modeled Scaffolded Writing at other times during the week.

Baseline writing samples were established in September and compared to a November sample of Scaffolded Writing and a May sample of Scaffolded Writing for each child. In the November sample, the children were continuing to receive assistance from the teacher but in May, the children were working independently at writing. The writing samples were analyzed using Gentry's scale of writing (1993) to

determine children's progress in writing. The samples were also analyzed for quality of the message.

Twenty of the 34 September writing samples were judged to be at the Gentry's first stage of writing, Scribbles & Marks. In November, all but one of the children were writing at one stage higher on Gentry's writing scale than their September sample. By May, none of the children were at stage one. All were representing words in some phonemic way: 9 at stage two (Pre-Communicative), 17 at stage three(semi-phonemic) and 9 at stage four (phonetic/transitional). It is unclear from the results what the researchers definition of quality was, how it was measured, and what its results were.

In each of these studies, Scaffolded Writing appeared to play a role in emerging literacy abilities. The exact role that it plays is not clear. An experimental study using a pretest-posttest-follow-up design is needed to further determine the role which the Scaffolded Writing technique plays in emerging literacy development.

Summary

Emerging literacy is an important stage in the emergent literacy continuum. Writing development has been depicted in a several ways by different researchers in various countries. There are common themes in each, especially with regard to the emerging stage of writing.

There are very few specific instructional techniques which have been researched and discussed for use with emerging writers to facilitate their development. There is a great need to further develop specific techniques to use with the emerging stage and to investigate their impact on children's literacy. While naturalistic observations are important sources for information, more experimental research is needed in the overall area of writing development, especially as it pertains to the emerging years.

Oral language plays a uniquely important role in both reading and writing development. It governs the transactions between the learner and the instructor and the learner and the context. Within oral language lies a powerful literacy tool, that of phonological awareness. The well researched impact of phonological awareness on reading ability speaks to its importance.

While the focus of the research in this area has tended to be primarily on reading, it has logical connections to writing as well. Further research needs to be conducted to look at the link between writing and phonological awareness.

The instructional technique of Scaffolded Writing for emerging writers has demonstrated some positive possibilities for its contribution to literacy development. To further investigate its impact on emerging writers, this researcher conducted an experimental study which controlled carefully for classroom and extraneous variables and followed children past its first year of implementation to assess long term effects. The next chapter describes the methodology to accomplish such a study of the Scaffolded Writing technique.

CHAPTER THREE

METHODS

The purpose of this study was to investigate the influence of scaffolded writing on aspects of emerging literacy development in kindergarten children. This chapter describes the methodology of this study in detail.

The study addressed six questions:

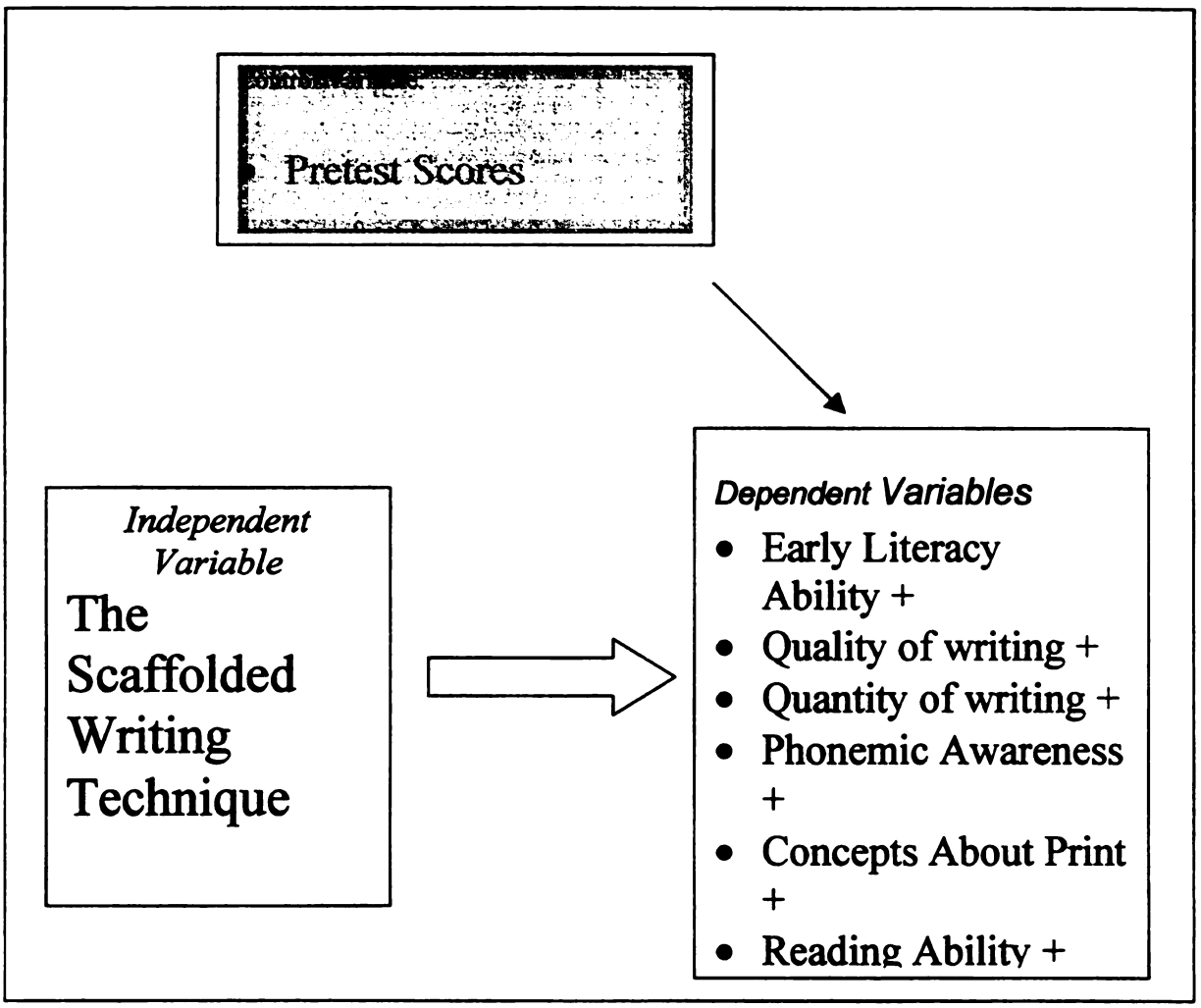
1. What influence does the scaffolded writing technique have on early literacy abilities in the areas of letter recognition, sound-symbol correspondence, and word recognition?
2. What influence does the scaffolded writing technique have on the quality of children's writing?
3. What influence does the scaffolded writing technique have on the quantity of high frequency words in children's writing?
4. What influence does the scaffolded writing technique have on children's phonological awareness?
5. What influence does the scaffolded writing technique have on children's concepts about print?
6. What influence does the scaffolded writing technique have on children's reading ability?

Variables

An operational map depicts the operationalized variables and their relationships to each other in a research study. The operational map for this study is depicted in Figure 7. **Scaffolded writing** is the independent variable. It was assumed that scaffolded writing would have an overall positive effect on children's emerging literacy in relation to all six dependent variables: children's **early literacy** abilities (in letter recognition, sound-symbol correspondence, and word recognition), the **quality of the writing produced**, the **quantity of high frequency words in the writing produced, phonological awareness, concepts about print** and **reading ability**. The variable which was controlled for was the **pretest scores**. Data were also collected on family background variables such as parent's level of education, preschool attendance, number of parents in the household, marital status, and number of siblings. The control group and experimental group were compared on each of these variables to determine if any of these should have been an additional control variable. The differences that age

and gender played between the groups were also analyzed.

Operational Map



Legend:

0 = no predicted influence
\+ = positive influence predicted

Figure 7: The influence of scaffolded writing on children's emerging literacy development when controlling for pretest scores.

Hypotheses

In the current research, fourteen hypotheses were tested to answer the six questions posed earlier regarding the impact of scaffolded writing on children's literacy development.

The following list identifies each research question, followed by corresponding hypotheses:

Question One

What influence does the scaffolded writing technique have on children's early literacy abilities in the areas of letter recognition, sound-symbol correspondence and word recognition?

Hypothesis #1-A

The use of the scaffolded writing technique will increase children's early literacy abilities in the area of letter recognition as determined by the ITA: Visual Letter Recognition test.

Hypothesis #1-B

The use of the scaffolded writing technique will increase children's early literacy abilities in the area of sound-symbol correspondence as determined by the ITA: Sound-Symbol Correspondence Test.

Hypothesis #1-C

The use of the scaffolded writing technique will increase children's early literacy ability in the area of reading sight words as determined by the ITA: Instant Word Test.

Question Two

What influence does scaffolded writing have on the quality of children's writing?

Hypothesis #2-A

The use of scaffolded writing will increase the quality of children's writing as determined by the Kindergarten Writing Analytic Rubric in the area of ideas and content.

Hypothesis #2-B

The use of scaffolded writing will increase the quality of children's writing as determined by the Kindergarten Writing Analytic Rubric in the area of organization and form.

Hypothesis #2-C

The use of scaffolded writing will increase the quality of children's writing as determined by the Kindergarten Writing Analytic Rubric in the area of style.

Hypothesis #2-D

The use of scaffolded writing will increase the quality of children's writing as determined by the Kindergarten Writing Analytic Rubric in the area of conventions of print.

Question Three

What influence does the scaffolded writing technique have on the quantity of high frequency words in children's writing?

Hypothesis #3

The use of the scaffolded writing technique will increase the number of high frequency words in children's writing as determined by the Quantity Tally.

Question Four

What is the influence of the scaffolded writing technique on children's phonological awareness?

Hypothesis #4-A

The use of the scaffolded writing technique will increase children's phonological awareness as measured by the Yopp-Singer Phoneme Segmentation Test.

Hypothesis #4-B

The use of the scaffolded writing technique will increase children's phonological awareness as measured by the Hearing and Recording Sounds Test.

Hypothesis #4-C

The use of the scaffolded writing technique will increase children's phonological awareness as measured by the Known Words Assessment.

Question Five

What influence does the scaffolded writing technique have on children's concepts about print?

Hypothesis #5

The use of the scaffolded writing technique will increase children's concepts about print as measured by the Concepts About Print Assessment.

Question Six

What influence does the scaffolded writing technique have on children's reading ability?

Hypothesis #6-A

The use of the scaffolded writing technique will increase children's reading ability as determined by the Oral Running Record.

Hypothesis #6-B

The use of the scaffolded writing technique will increase children's reading ability as determined by the Word Test

Significance level

A significance level of .05 was selected, meaning that the probability of a type I error is 5 times (or less) in 100. This is a customary level for educational research (Fraenkel & Wallen, 1993). As the directionality of the results was predicted in the hypotheses, one-tailed tests were used.

Subjects

The subjects were children from a population enrolled in public school half day morning kindergarten programs designed to prepare and extend foundations of literacy. A total of 60 kindergartners began the study. Fifty-four children completed the study. Six children moved from the school district during the course of the study. Of the 54 children, 28 were female and 26 were male. The children were from predominately white middle class backgrounds within a Midwest suburban school district. In this district, all kindergartners and first graders attended one elementary school, independent of the other elementary school children. Six hundred eighty children were students in this K-1 building, which housed fourteen kindergarten classes, thirteen first grade classes, and 5 pre-primary impaired classes. As no prescreening of

kindergartners was conducted by the school district and the control group and experimental groups were randomly assigned to teachers, the kindergarten classes were heterogeneously mixed in age and ability.

Subject Recruitment and Selection

The school district's curriculum director was contacted by telephone to determine the district's interest to participate in the research study. A follow up call was made to the principal of the K-1 building. This school district was selected for the study because the school board had adopted the philosophy of developmentally appropriate practice, as defined by the National Association for the Education of Young Children (1997), and its kindergarten teachers all planned their curriculum and daily activities together. Many of their classroom plans were based on commonly shared bi-weekly themes which they planned during their common weekly planning period. All classrooms implemented the same curriculum mandated by the school district. Each classroom contained an equally plentiful supply of materials to foster literacy development. The physical space of each classroom was equivalent. In each kindergarten classroom, very similar literacy activities occurred

daily. All classrooms included the following literacy activities: journal writing, daily morning message, calendar activities, shared book readings and read-alouds and a twice/weekly literacy block. During the literacy block, the teacher meet with one to two small groups of children a day for guided or shared reading while the other children worked on a variety of literacy activities. The ONLY planned literacy event which differed systematically between the classrooms during the study year was the use of the scaffolded writing technique with the experimental group.

Classroom Selection

Classrooms were selected randomly for participation in the study either as experimental or control groups. All of the names of kindergarten teachers who were interested in participating were placed into a hat. The first name drawn was trained in scaffolded writing and her pupils were designated as the experimental group. The second name drawn was designated as the control group teacher. Her pupils constituted the control group. If a teacher who teamed with another teacher had her name drawn, the entire team was included in the study together under the same designation of experimental or control. (A team was

defined as two teachers who share a common classroom space). The teachers in the experimental and control groups were asked to sign a letter agreeing to participate in the study. The principal of the building decided that the study was part of natural classroom instruction and did not wish to send a letter of permission to the parents of the students in the classes. The principal sent a letter to the parents of the selected classrooms (both control and experimental) congratulating them on having their child's classroom selected to participate in literacy research.

Experimental and Control Group Conditions

Every effort was made to standardize the writing programs across the experimental and control group classrooms with the exception of the scaffolded writing technique intervention.

Control Group Procedures

Initially, the control group consisted of one teacher and twenty children. Two children left during the course of the study, leaving 18 children in the control group who completed the study. The teacher and students in the control group did not use the scaffolded writing technique at all during the school year.

The teacher of the control group implemented her writing lessons as she always had in the past, encouraging her children to write and recording their messages beneath their writing if messages were not readable by adults. No new strategies were implemented during this year in the control group room with regards to writing.

The teacher of the control group was required to plan for her students to engage in required writing two times each week. One of the required writing sessions had to be conducted using the children's journals. The second required writing, was either in the journals again, or with some other medium, at the teacher's discretion. The children were also free to visit the writing center at any point during the daily free choice time. To keep the experimental and control groups consistent, the teacher also wrote a morning message each day with her class. A morning message consists of two or three sentences which are jointly composed by the teacher and students, with the teacher writing the message on chart paper for all to see.

Each time the researcher visited the school building, she visited the control group teacher to monitor her classroom activities and to help her feel

important in the study. This was meant to reduce the threats to external validity of reactive effects of evaluation in which the awareness of being in a study leads to changes in performance. It would have been immediately apparent if the teacher was using any scaffolded writing with her children by glancing through the children's journals and looking at the teacher modeled group writing on the chart paper pad. If the scaffolded writing technique were being used, the lines that the teacher and children make would have been clearly visible. No evidence was observed that indicated that the control group ever experienced the scaffolded writing technique.

The researcher also wrote with the control group children once a month. This was intended to minimize the interaction effects of research with children. If the teacher was not able to work with all children on writing in a given week, she was asked to call the researcher to work with some children so that all children continued to receive the scheduled amount of weekly writing.

Experimental Group Procedures

One team, originally consisting of two teachers and 40 children constituted the experimental group.

Four children in this group left the school district during the course of the study. Thirty-six children remained in the group.

Children and teachers assigned to the experimental group used the scaffolded writing technique. In order for this to take place, teachers received training in the scaffolded writing technique

Training Experimental Group Teachers

Training was ongoing throughout the intervention of the research, which was October-May of the children's kindergarten year. The researcher met with the experimental teachers the last week of September of that year. At that time, the experimental teachers were introduced to the technique of scaffolded writing.

The researcher gave the teachers a written description of the scaffolded writing technique and demonstrated the process (see Appendix D for an example of the demonstration). The researcher then explained the two uses of scaffolded writing in the classroom:

1. The scaffolded writing technique was to be modeled by the teacher each day at group time during the morning message in the last sentence of the message.
2. The scaffolded writing technique was to be implemented once a week with each child individually

as he or she wrote during a required writing time in a small group setting.

Following the description and demonstration, the teachers took the training materials home and read them. The following week, the researcher modeled the technique in the experimental group's classrooms both during large group, writing the morning message, and with individual children who were writing. During the teachers' preparation period, the researcher answered any questions they had at that time. The researcher then attended their classes for the rest of the week daily to be sure the technique was being carried out accurately. The researcher observed during these visits and stepped in to model only if needed. (Need was determined by either researcher or teachers or both). The researcher then visited the classrooms once a week for the next month to monitor progress and assist the teachers.

For the remainder of the intervention, from December to May, the researcher visited the experimental classrooms one-two times a month. On each visit, the researcher checked the teachers' progress and answered any questions. If the teachers were not able to work with all children on scaffolded writing in

a given week, they were instructed to call the researcher to work with some children so that the treatment was provided to all children weekly. The teachers were also instructed to call the researcher at any time if any questions or problems arose during the course of the intervention. The teachers kept a record of each of the children's intended writing messages during their scaffolded writing for the entire course of the intervention.

In addition to the once-a-week scaffolded writing time, the children in the experimental group wrote one other time each week in a required in-class writing. This other type of writing was up to the teacher's discretion. As the control group and experimental group teachers planned the kindergarten program together with the other kindergarten staff, this second writing activity was frequently the same in both the experimental and control groups. However, during this other writing experience, the children were not instructed with the scaffolded writing technique. The writing center in the classroom was also available to all children during the daily free choice time. Scaffolded writing instruction did not take place in the writing center either. Table 1 summarizes the

conditions of the study for both the experimental and control groups.

Table 1

Summary of the Conditions of the Study

Experimental Group	**Control Group**
The researcher trained the experimental teachers in the scaffolded writing technique. The researcher monitored their progress and assisted as needed.	The researcher established weekly writing schedule for control group with control teacher.
The researcher modeled the use of scaffolded writing during the group time morning message. The researcher modeled the use of scaffolded writing during required writing time with small groups of children.	The researcher observed the control group's group time morning message and journal writing time.
The researcher monitored the scaffolded writing technique in use in the experimental group classrooms, stepping in to assist teachers as needed.	The researcher monitored the control group for evidence of scaffolded writing use.
During whole group time, the teacher used the scaffolded writing technique during morning message. *Daily group time.*	During whole group time, the teacher wrote the morning message using NO scaffolded writing. *Daily group time.*
Children wrote during	Children wrote during

a required writing time using the scaffolded writing technique *Individual- one time per week*	a required writing time in their journals. *Individual - one time per week*
Children wrote either in journal or some other medium during a required writing time with no instruction in the scaffolded writing technique. *Individual - one time per week*	Each child wrote either in journal or some other medium during a required writing time. *Individual - one time per week*
The writing center was open during free choice time. Children could choose to visit this area, but did not receive instruction with the scaffolded writing technique. *Individual choice - available daily*	The writing center was open during free choice time. Children could choose to visit this area. *Individual choice - available daily*

Instrumentation

Intelligent Teacher Advisor(ITA)

The Intelligent Teacher Advisor consists of numerous tests which were designed to measure early literacy abilities. All of the tests in the *ITA* were developed by Elena Bodrova and Deborah Leong (1998A). All were field tested with children. Experts, consisting of educators in the field, were consulted for content validity. These measures were also compared with numerous school district's standards for content validity. According to Bodrova and Leong (personal communication, 1999), all of the tests have external validity. This is because they are accepted techniques for assessing this content in the field and there is no interpretive gap. Following a test-retest procedure, the tests were also deemed to have individual internal validity. Three assessments from the ITA were used in this study: the Visual Letter Recognition test, the Sound-Symbol Correspondence, and the Instant Words test.

The Visual Letter Recognition Test

This test was designed to assess children's knowledge of letters in the alphabet. The children were shown a row of letters. Upper case, lower case

and symbols which resemble letters were used. Each letter (or symbol) in the row was pointed to one at a time. The children were asked, "Which letter is this?" The adult marked the child's answer. The response was considered correct if the child did any of the following: gives the correct letter name, gives the correct letter sound, or says a word that starts with the target letter. One point was assigned for each correct response. There were 60 possible points.

Sound-to-Symbol Correspondence

This test was designed to assess children's knowledge of the relationship between sounds and a corresponding letter symbol. In the assessment, the children were shown cards with three letters on them, one card at a time. For each card, the adult asked, "Which letter might make the sound --?" The target sounds for each card were highlighted on the test protocol. The child pointed to the letter. One point was assigned for each correct response. There were fifteen possible points.

Instant Words

This test was based on the "100 Most Frequent Words in Beginning Readers" (Bodrova & Leong, 1998A). It was designed to assess children's ability to read

common words. In the test, the child was shown a list of words. He or she was asked first if he or she could read any words on the list. If the child could not, the first five words were pointed out, one at a time and the child was asked if they could read each. If the child could not read more than five words on the list, the test was over. If he or she could read five or more, the next list was shown. The child progressed in this manner for each list. There were four word lists in all. Each list contained twenty-five words. Each correct response received one point. 100 points were possible.

Quality of the Writing

The Kindergarten Writing Analytic Rubric (KWAR), based on the quality rubric developed by the State of Michigan to assess fifth grader's writing on the Michigan Educational Assessment Program, was adapted to assess the quality of children's writing in kindergarten. The writing samples, collected at the pretest, posttest and follow-up periods, provided the data for this assessment. This rubric was developed by the researcher with assistance from numerous knowledgeable professionals in the field. Experts in

the field were consulted for content validity. Changes and adaptations were made based on their suggestions.

Quality was assessed with the Kindergarten Writing Analytic Rubric (KAR) in four areas: content and ideas, organization, style/voice, and conventions (see appendix E). Each of these quality components were scored according to the specifications within the KWAR and awarded a score of 1,2,3,4 or 5 points (one representing the lowest quality and five the highest).

A professional in early childhood education who was unaware of the contents of this study, was hired to code the data for quality. To establish reliability of coding and to add strength to the scoring process, the coder randomly selected four writing samples to score one at a time using the KWAR. Two weeks later, the coder recoded this same set of samples. The researcher verified the coding between the first coding and the second coding on an item by item basis. The level of agreement between the first coding and the second coding was .93, which is considered adequately reliable. In addition, to further ensure the coding remained equivalent across the numerous samples, the coder scored one category at a time. As these were

completed, she sorted them by score and compared items in each pile with the criteria on the KWAR.

Quantity of High Frequency Words in the Writing

The *Quantity Tally (QT)* was used to assess the quantity of high frequency words used in the children's writing. All of the writing samples for the pre-test, posttest and follow-up periods provided data for the QT.

To score the Quantity Tally, the researcher counted the number of high frequency words found in the list of the 100 of the most frequent words (Bodrova & Leong, 1999B) (see appendix F for this list). Children received one point for each word from that list that appeared in their writing and spelled correctly. Words which were repeated in a writing sample were only awarded one point for the first occurrence.

Phonological Awareness

Phonological awareness is the ability to hear sounds of language in speech. Phonemic awareness, a more developed concept within phonological awareness, is the ability to hear the individual phonemes in speech (Soderman, et al., 1999). To assess phonological awareness, three tests of phonemic awareness were used: the Yopp-Singer Phoneme

Segmentation test, Hearing and Recording Sounds in Words, and the Writing Vocabulary test.

Yopp-Singer Phoneme Segmentation Test

The purpose of the *Yopp-Singer Phoneme Segmentation Test* (*YS*) was to evaluate each child's ability to segment phonemes. The Yopp-Singer is considered the hallmark phonemic awareness test. (See appendix G for a copy of this assessment). The process of the assessment was as follows: the examiner pronounced a monosyllabic word. The child then was asked to repeat each sound in order, thus breaking the word into its constituent sounds. There were 22 items on the test. Children received one point for each correct response. The Yopp-Singer was administered individually to the children during the follow-up period in first grade.

Hearing and Recording Sounds in Words

The purpose of the *Hearing and Recording Sounds in Words Test (HRS)* was to evaluate the number of phonemes emerging writers and readers hear and can record. This test was originally developed by Marie Clay (1993)and has established reliability of Cronbach alpha=0.92(Pinnell, McCarrier & Button, 1989).

The test was administered to children in small groups. Two standard sentences were read aloud from Form A, Observation Survey for Early Literacy Achievement (Clay, 1993). Children were told to listen to the sentence in its entirety. Next, they were asked to write the sentences as they are repeated, one word at a time. The children wrote as many sounds as they could hear in the sentence. The writing was scored by awarding one point for each correct phoneme the child had recorded, according to the scoring guidelines from the Observation Survey. There were a total of 39 possible points. Children could score from zero to thirty-nine. (See appendix H for the sentences and scoring).

The HRS was conducted once during the follow-up. The HRS was not administered during the pretest nor posttest period as the Observation Survey, from which this originates, is generally given to children at the beginning of the first grade year.

Writing Vocabulary

The Writing Vocabulary (WV) is also part of Marie Clay's Observation Survey. It provides additional information as to how well children are hearing sounds in words and translating these words to a sight word

vocabulary. It is reported to have a test-retest reliability of Pearson=.62 (Pinnell, et. al, 1989).

Working with a small group of children, they were asked to write individually on their paper all the words that they can. They were given ten minutes to write. If they were stuck, they were prompted with, "Can you write mom or dad, or cat or dog?" The children receive one point for each word that they could both spell correctly and read back to the researcher.

This test is part of the Observation Survey of Early Literacy Achievement (1993). It is used nationally each year with all Reading Recovery testing. The WV was given once at the beginning of first grade as part of the follow-up assessments.

Concepts About Print

The *Concepts About Print* (CAP) test was administered on an individual basis to assess children's knowledge of the concepts about print. This test is also part of Marie Clay's Observation Survey of Early Literacy (1993). In this test, children were handed a book and asked to pick out features such as: the front of the book, a word, a letter, direction for reading, etc. The test consisted of 24 items.

Children received one point for each question they were able to demonstrate/answer. This test was given during the follow-up testing at the beginning of first grade.

Reading Ability

Oral Running Record

The purpose of the *Oral Running Record* was to obtain a sample of each child's current oral reading ability. This assessment followed the directions designated by Marie Clay (1993). Each child was given a book from the list used for Reading Recovery assessments. These books were selected due to their common usage with first grade readers as well as their recognized standard categorization of book levels. As the children individually worked with the researcher, each was given one book at a time to read aloud. If the child was able to read the book above 94% accuracy, the next level book was given to him/her to try. While the child read, the researcher took a running record, recording the child's actual reading behaviors. If the child read below 90% accuracy, a lower level book was located for the child to try. The child continued reading the books until one was found in which the child could read with an accuracy rate of between 90% and 94%, which is considered the instructional level.

This level was then recorded. The accuracy rate was computed by dividing the number of words in the text by the number of errors the child made while reading.

This assessment was conducted at the beginning of the first grade year during the follow-up period and was administered individually. The *ORR* was not administered during the pretest period or posttest period because it has not been validated for general use prior to the beginning of first grade (Clay, 1993).

Word Test

The Word Test (WT) was conducted to assess children's ability to read individual words. This test is from Marie Clay's Observation Survey of Early Literacy Behaviors (1993). It was administered individually. Children were instructed to, "Read this list of words." Children received one point for each word read correctly. 15 points were possible. This was administered during the follow up period.

Research Design

This study was a quasi-experimental design referred to as the non-equivalent control group design (Campbell & Stanley, 1979). Traditionally this type of design includes a pretest, intervention and posttest. In this case, a follow-up test was also be used (see

Table 2). Timing of the instrumentation is depicted in Table 3.

This design was selected because the experimental and control groups come from "naturally assembled collectives…as similar as availability permits but yet not so similar that one can dispense with the pretest (Campbell & Stanley, 1979, p. 47). The assignment of the intervention, scaffolded writing, was random which adds strength to this design. "Even though the groups may differ on initial means O (in the pretest), the study may approach true experimentation," (Campbell & Stanley, 1979, p. 50). To strengthen conclusions drawn about the intervention, the follow-up was conducted to see if the differences between the control and experimental groups held over time or diffused after the treatment had been withdrawn. This design controls for the main effects of history, maturation, testing and instrumentation. Threats to invalidity with this design are primarily of interactions between selection and the effects mentioned above. The danger lies in misinterpreting the effect of scaffolded writing (X) as due to the intervention and not a selection interaction effect. In the case of this study, the selection interactions are not very likely. Threats to external

validity are the interaction of selection and scaffolded writing (X) and reactive arrangements. The former is less likely in this design than in a true random experiment. The latter is less likely in this study because an entire class was selected as the control or experimental group rather than individuals from within the classes.

Table 2

Design of Study

Group	Pretest	Interven-tion	Posttest	Follow-up
Control	O	O	O	O
Experimen-tal	O	X	O	O

Table 3

Design of Study with Data Collection

Pretest	Posttest	Follow-up
ITA	ITA	ITA
QT	QT	QT
KWAR	KWAR	KWAR
		HRS
		YS
		WV
		CAP
		ORR
		WT

Key:

ITA = *Intelligent Teacher Advisor consisting of the Visual Letter Recognition test, the Sound-Symbol Correspondence test, and the Instant Words test.*

QT = *Quantity Tally (number of high frequency words)*

KWAR = *Kindergarten Writing Analytic Rubric (for quality of writing)*

HRS = *Hearing and Recording Sounds*

YS = *Yopp-Singer Phoneme Segmentation(for phonological awareness - segmenting sounds)*

WV = *Writing Vocabulary Test*

CAP = *Concepts About Print*

ORR = *Oral Running Record (to assess reading ability*

WT = *Word Test*

Pretest-Posttest-Follow-up

Pretest Period

One writing sample was collected from each child during the pretest period. These were assessed with the *Kindergarten Writing Analytic Rubric* and *Quantity Tally* assessments. In addition to this, three parts of the *Intelligent Teacher Advisor: Visual Letter Recognition, Sound-Symbol Correspondence, and Instant Words* were administered to all children individually.

Intervention (between pretest and posttest)

During the intervention, the experimental group received instruction incorporating the technique of scaffolded writing. The control group did not receive scaffolded writing instruction. All other aspects of the classroom content remained basically the same between the experimental and control group classrooms.

Posttest Period

At the end of May and the first week of June, writing samples were collected from all children in the study. These were assessed with the *Kindergarten Writing Analytic Rubric, and Quantity Tally.* All students were also administered three assessments from the *Intelligent Teacher Advisor: Visual Letter*

Recognition, Sound-Symbol Correspondence, and Instant Words.

Follow-up Period

The summer recess, occurring from mid June to the end of September (a fourteen week period), served as a post training interval in which the children experienced no scaffolded writing instruction. The function of this phase was to assess which aspects of developing literacy could be maintained over time. At the end of this period, during the last weeks of September and the beginning of October, samples of writing were collected from all children in both the experimental and control groups. All of these writing samples were assessed using the *Kindergarten Writing Analytic Rubric, and Quantity Tally.* In addition to these, three assessments from the Intelligent Teacher Advisor: *Visual Letter Recognition Test, Sound-Symbol Correspondence, and Instant Words, as well as Hearing and Recording Sounds, Writing Vocabulary, Concepts about Print, Yopp-Singer Phoneme Segmentation Test, Word Test,* and *Oral Running Record* were administered to each child individually.

Data Collection

Data on various family background characteristics was obtained from the elementary school's database. This data included the following variables: parents' education level, preschool attendance, marital status, number of parents in the home, and number of siblings. As a group, the children wrote independently at the same time on the pretest, posttest and follow-up directed writing activities. The pretest and posttest writing took place in the children's classrooms. The follow-up writing took place in the school cafeteria. Children's writing was collected at the end of each writing session. At each of these sampling times, the children were asked to write about a picture of the zoo which was at the top of their paper. The researcher recorded children's responses below their writing as they read it to her when they were finished writing. These samples were assessed with the *Kindergarten Writing Analytic Rubric* and the *Quantity Tally.*

The *Writing Vocabulary* and *Hearing and Recording Sounds* was conducted in small groups during the follow-up time period.

The *Intelligent Teacher Advisor, Yopp-Singer, Concepts About Print, Oral Running Record,* and *Word*

Test were each administered individually. The *Intelligent Teacher Advisor* was administered in each time segment, pretest, posttest and follow-up. *The Kindergarten Writing Analytic Rubric and the Quantity Tally* were also utilized for writing samples from the pretest, posttest, and follow-up periods. The rest of the assessments were used at the follow-up period.

Analyses

Each of the family background characteristic variables: parent's level of education, preschool attendance, marital status, number of parents in the home and number of siblings was individually compared between the experimental and control group using t-tests to determine if any of these should be added as control variables in the data analysis. In addition, gender and the age of children were evaluated to determine if significant differences existed between the groups.

A series of one-tailed t tests were performed on the means of the *ITA* pretest data and the means of the *KWAR* and *QT* pretest scores to determine whether significant differences existed between groups before the intervention of scaffolded writing.

A number of ANCOVAs were conducted using the *three items from the Intelligent Teacher Advisor: Visual Letter Recognition, Sound-Symbol Correspondence, and Instant Words,* the *Kindergarten Writing Analytic Rubric* data and the *Quantity Tally data* from the pretest, posttest, and follow up to determine if the observed effects on early literacy abilities, the quality, and the quantity of high frequency words in writing were due to scaffolded writing or to random variability. An analysis was run first on the posttest results, controlling for the effect of the pretest scores. For each variable, a second analysis was run using the follow-up results, controlling for the pretest scores. The results of the posttest and follow-up tests were compared to determine if the effects found in the posttest analysis held over time, or if they diminished.

One way t-tests were conducted to determine if the differences between the experimental and control groups on *Word* test, *CAP, Writing Vocabulary Test, Yopp-Singer* phoneme segmentation test, *Hearing and Recording Sounds,* and *the Oral Running Record* were due to differences in the population or due to the scaffolded writing technique.

Limitations

The size of the sample was a limitation of this study. "Cohen suggests that studies be designed to achieve alpha levels of at least .05 with power levels of 80 percent" (Hair, Anderson, Tatham, and Black, 1998, p.12). With a smaller sample size, a larger effect size was needed to detect an effect. For a sample of 60 and alpha set at .05, a moderate Effect size of .5 is needed to produce a power level of .775. It was important to calculate the effect size to determine the power of the test.

Although complete random assignment would have been preferred, due to the fact that children were assigned to classrooms prior to the beginning of the study, it was not possible to randomly assign children to experimental and control groups. Instead, entire classes were assigned. There may be some inherent within-classroom event which influenced results of the study.

There was no pretest information available for the Hearing and Recording Sounds, Writing Vocabulary, Word Test, Yopp-Singer, Concepts about Print and Oral Running Record. Therefore, it was not possible to directly conclude that differences between the groups

on these measures were similar in the beginning. Instead, this assumption was indirectly made using the results from the Visual Letter Recognition, Sound-Symbol Correspondence, Instant Words and Pretest writing samples analyzed with the Kindergarten Analytic Rubric for Quality and the Quantity Tally.

Summary

It was hypothesized that the use of scaffolded writing with kindergarten children would have an overall positive impact on their literacy development. In order to test the hypotheses, the following assessments were used: three elements of the *Intelligent Teacher Advisor (Visual Letter Recognition, Sound-Symbol Correspondence, and Instant Words)*, *Kindergarten Analytic Rubric (KAR)*, *Quantity Tally (QT)*, *the Yopp-Singer Phoneme Segmentation test (YS)*, *Hearing and Recording Sounds (HRS)*, *the Writing Vocabulary Test(WV)*, *Concepts about Print (CAP)*, *The Word Test (WT)* and the *Oral Running Record (ORR)*. Samples of children's writing were collected before and after the implementation of scaffolded writing in a pre-test, post-test, follow-up manner.

A total of 54 children in all were involved in the entirety of the study, 36 in the experimental group and

18 in the control group. The teachers of the experimental group were trained in the use of the scaffolded writing technique and closely followed throughout its implementation.

The data analysis included: (a) t tests to determine equivalence of groups initially using pretest data from the Pre-test Intelligent Teacher Advisor (*Visual Letter Recognition, Sound-Symbol Correspondence, and Instant Words), Kindergarten Writing Analytic Rubric, and Quantity Tally* as well as to determine equivalence of groups on family background characteristics; (b) ANCOVAs to determine if the observed effects on children's early literacy abilities, the quality of writing as assessed by the *Kindergarten Analytic Rubric,* and the quantity of high frequency words assessed by the *Quantity Tally* were due to scaffolded writing or to random variability; and(c) One way t tests to determine if the differences between the groups on the *Yopp-Singer Phoneme Segmentation test, Concepts about Print, Writing Vocabulary, the Word Test, Hearing and Recording Sounds,* and the *Oral Running Record* were due to differences in the population or due to scaffolded writing.

A complete analysis of the data is presented in Chapter IV.

CHAPTER FOUR

RESULTS

In this chapter, the demographic characteristics of the groups will be presented first, followed by a comparison of the experimental and control groups on their pretest scores. The results of the statistical analyses will then be presented in order of the six research questions with the posttest results presented first, followed by the follow-up results.

ANCOVAs were used to analyze questions one, two and three. As the variables in questions four, five and six were only collected at the follow-up. T-tests were conducted for these.

To examine the effect size of the treatment, the change in r square from hierarchical regressions is reported. In the hierarchical regressions, pretest scores were entered on the first step and the treatment group variable was entered on the second step. The percentage of variance accounted for by the treatment group after partialling out the effect of the pretest scores was of interest. A table summarizing the results for each hypothesis is presented at the end of this section.

Demographic Characteristics of the Sample

Demographic data were collected on the experimental group and control group. Table 4 depicts a comparison of the groups on gender, marital status, number of parents in the home, preschool attendance and mother and father's levels of education. T-tests were conducted to compare the demographic characteristics of the experimental and control group. No significant differences were found between the groups on any of the variables as indicated in Table 5.

In addition, gender was run as a covariate in ANCOVAs and was not a significant factor for any of the measures. Thus, gender was not included in the final analysis.

Table 4
Comparison of Demographic Variables between Experimental and Control Groups

Variable	Experimental Group		Control Group	
	n	%	n	%
Gender				
Male	17	44%	9	50%
Female	19	56%	9	50%
Marital Status				
Married	33	91.7%	18	100%
Divorced	2	5.6%	0	0%
Remarried	1	2.8%	0	0%
Number Parents in Home				
1	2	5.6%	0	0%
2	34	94.4%	18	100%
Preschool Attendance				
Attended	31	86.1%	15	83.3%
Did not	4	11.1%	3	16.7%
Education Level -Mother				
H.S.	5	13.9%	2	11.1%
Post H.S.	0	0%	0	0%
Assoc.	3	8.3%	1	5.6%
Bach.	19	52.8%	12	66.7%
Post Bach.	2	5.6%	0	0%
Master's	3	8.3%	1	5.6%
Ph.D./M.D.	1	2.8%	0	0%
Education Level -Father				
H.S.	6	16.7%	4	22.2%
Post H.S.	0	0%	2	11.1%
Assoc.	2	5.6%	0	0%
Bach.	14	38.9%	8	44.4%
Post Bach.	1	2.8%	0	0%
Master's	8	22.2%	1	5.6%
Ph.D./M.D.	3	8.3%	1	5.6%

Table 5

Demographic Data and Comparison between Experimental and Control Groups

Variable	n	M	SD	t-value	Sig.
Age					
Experimental	35	62.00	3.66		
Control	18	63.00	3.38	.193	.848
Gender					
Experimental	36	1.55	.51		
Control	18	1.5	.51	-.379	.716
Marital Status					
Experimental	36	.94	.23		
Control	18	1.00	.00	1.435	.160
#Parents in Home					
Experimental	36	1.94	.23		
Control	18	2.00	.00	1.010	.312
#Siblings					
Experimental	36	1.58	.91		
Control	18	1.28	.75	-1.232	.220
Preschool					
Experimental	35	.89	.32		
Control	18	1.06	.42	1.642	.107
Mother's Level Of Education					
Experimental	33	3.82	1.55		
Control	16	3.69	1.20	-.297	.768
Father's Level Of Education					
Experimental	34	4.26	2.02		
Control	16	3.38	1.96	-1.466	.150

Note: Two-tailed test. The following variables were coded:

Gender: 1 - male, 2-female; Marital status: 1- Married, 0- not married; Preschool Attendance: 1- attended, 0- did not attend

Comparison of Group Pre-test Scores

Table 6

Pretest Scores by Group

Variable	n	M	SD	t-value	Sig.
ITA: Visual Letter Recognition					
Experimental	35	43.26	19.26		
Control	18	43.00	21.41	-.044	.964
ITA: Sound Symbol					
Experimental	36	9.11	3.35		
Control	18	9.72	3.14	.644	.520
ITA: Instant Word Recognition					
Experimental	36	3.83	13.54		
Control	18	.00	0.00	-1.698	.098
KWAR: Ideas & Content					
Experimental	36	2.17	.61		
Control	18	2.11	.58	-.320	.750
KWAR: Organization & Form					
Experimental	36	1.61	.64		
Control	18	1.83	.38	1.344	.186
KWAR: Style					
Experimental	36	1.47	.65		
Control	18	1.22	.43	-1.469	.148
KWAR: Conventions					
Experimental	36	1.44	.56		
Control	18	1.22	.43	1.484	.144

QT:					
Number of high frequency words					
Experimental	36	.17	1.00		
Control	18	.00	.00	-.704	.484

Note: Two-tailed test. ITA= Intelligent Teacher Advisor; KWAR= Kindergarten Writing Analytic Rubric; QT= Quantity Tally

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Explanation

T-tests were conducted to compare the control and experimental groups on their pretest scores. Two of the variables, the early literacy abilities and the Kindergarten Writing Analytic Rubric(KWAR), consisted of multiple tests, each with its own hypothesis. The Quantity Tally (QT) encompassed only one variable. No significant differences were found between the groups on any of the variables (see Table 6).

Question One

What influence does the scaffolded writing technique have on children's early literacy abilities in the areas of letter recognition, sound-symbol correspondence and word recognition?

Three Hypotheses correspond with Question One. None were supported in the analysis.

Hypothesis #1-A

The use of the scaffolded writing technique will increase children's early literacy ability in the area of letter recognition as determined by the ITA: Visual Letter Recognition test.

Hypothesis #1-B

The use of the scaffolded writing technique will increase children's early literacy ability in the area of sound-symbol correspondence as determined by the ITA: Sound-Symbol Correspondence Test.

Hypothesis #1-C

The use of the scaffolded writing technique will increase children's early literacy ability in the area of reading sight words as determined by the ITA: Instant Word Test.

Posttest

Table 7

Summary of Analysis of Covariance for the elements of the ITA: Intelligent Teacher Advisor Posttest

Variable Group	Pretest mean	Posttest mean	Diff. in mean	Post. SD	F (main effect of group)
Letter Recognition					
Experimental	43.271	58.1944	14.9234	1.7537	1.813
Control	43.000	55.3333	12.3333	13.3461	
Sound-Symbol					
Experimental	9.1111	14.8571	5.746	7.7541	.543
Control	9.7222	13.8889	4.1667	.8324	
Word Recognition					
Experimental	3.8333	30.1944	26.3611	32.3409	.132
Control	.0000	23.0000	23.0000	26.5795	

Explanation of Posttest

An Analysis of Covariance was conducted for each hypothesis, using the variable's corresponding pretest score as the covariate (table 7). The main effect for group was not significant for any of the variables in

this analysis. No significant differences were found on the posttest scores.

Follow-up

Table 8

Summary of Analysis of Covariance for the elements of the ITA: Intelligent Teacher Advisor Follow-up

Variable Group	Pretest mean	Follow-up mean	Diff. in mean	Follow-up SD	F (main Effect Of group)
Letter Recognition					
Experimental	43.2571	54.8889	11.6318	8.8213	.357
Control	43.0000	56.2222	13.2222	3.6711	
Sound-Symbol					
Experimental	9.1111	12.9167	3.8056	1.4417	.511
Control	9.7222	12.7778	3.0556	1.4371	
Word Recognition					
Experimental	3.8333	35.6111	31.7778	37.4076	.238
Control	.0000	26.1111	26.1111	30.9076	

Explanation of Follow-up

In the analysis of the follow-up data, an Analysis of Covariance was conducted for each hypothesis, using the variable's corresponding pretest score as the covariate (table 8). The main effect for group was not significant for any of the variables in this analysis. No significant differences were found on the follow-up scores; therefore none of the hypotheses were supported.

Question Two

What influence does scaffolded writing have on the quality of children's writing?

There were four hypotheses which corresponded with this research question. #2-B and #2-D were supported in the analysis.

Hypothesis #2-A

The use of scaffolded writing will increase the children's writing as determined by the Kindergarten Writing Analytic Rubric in the area of ideas and content.

Hypothesis #2-B

The use of scaffolded writing will increase the quality of children's writing as determined by the Kindergarten Writing Analytic Rubric in the area of organization and form.

Hypothesis #2-C

The use of scaffolded writing will increase the quality of children's writing as determined by the Kindergarten Writing Analytic Rubric in the area of style.

Hypothesis #2-D

The use of scaffolded writing will increase the quality of children's writing as determined by the Kindergarten Writing Analytic Rubric in the area of conventions of print.

Posttest

Table 9

Summary of Analysis of Covariance for the KWAR: Kindergarten Writing Analytic Rubric Posttest

Variable Group	Pretest mean	Post-test mean	Dif in mean	Post-test SD	F (main effect of group)
Ideas and Content					
Experimental	2.1667	4.3611	2.1944	.6825	.842
Control	2.1111	4.1667	2.0556	.8575	
Organization & Form					
Experimental	1.6111	4.5833	2.9722	.6918	11.949**
Control	1.8333	3.7778	1.9445	1.1660	
Style					
Experimental	1.4722	4.3611	2.8889	.7232	3.492*
Control	1.2222	3.8889	2.6667	1.2314	
Conventions					
Experimental	1.4444	4.2500	2.8056	.9063	3.866*
Control	1.2222	3.6667	2.4445	1.1376	

Note: *=p<.05 **= p<.001, One-tailed test

Explanation of Posttest

An Analysis of Covariance for the posttest scores was conducted for each variable within the Kindergarten Writing Analytic Rubric, using the corresponding pretest score on each variable as the covariate (table 9). The main effect for group was significant in three of the analyses: Organization and Form (p=.0005),

Style (p=.034) and Conventions (p=.0275). The main effect was not significant for Ideas and Content.

Follow-up

Table 10

Summary of Analysis of Covariance for the KWAR: Kindergarten Writing Analytic Rubric Follow-up

Variable Group	Pretest mean	Follow-up mean	Diff. in mean	Follow-up SD	F (main effect of group)
Ideas and Content					
Experimental	2.1667	3.9706	1.8039	1.0294	.064
Control	2.1111	3.8889	1.7778	1.1318	
Organization & Form					
Experimental	1.6111	4.5000	2.8889	.9293	4.814*
Control	1.8333	3.7778	1.9445	1.3956	
Style					
Experimental	1.4722	4.0588	2.5866	.7762	1.234
Control	1.2222	3.6667	2.4445	1.3720	
Conventions					
Experimental	1.4444	4.2353	2.7909	1.0168	6.015*
Control	1.2222	3.3889	2.1667	1.1950	

Note: *=p<.05, One-tailed test.

Style (p=.034) and Conventions (p=.0275). The main effect was not significant for Ideas and Content.

Follow-up

Table 10

Summary of Analysis of Covariance for the KWAR: Kindergarten Writing Analytic Rubric Follow-up

Variable Group	Pretest mean	Follow-up mean	Diff. in mean	Follow-up SD	F (main effect of group)
Ideas and Content					
Experimental	2.1667	3.9706	1.8039	1.0294	.064
Control	2.1111	3.8889	1.7778	1.1318	
Organization & Form					
Experimental	1.6111	4.5000	2.8889	.9293	4.814*
Control	1.8333	3.7778	1.9445	1.3956	
Style					
Experimental	1.4722	4.0588	2.5866	.7762	1.234
Control	1.2222	3.6667	2.4445	1.3720	
Conventions					
Experimental	1.4444	4.2353	2.7909	1.0168	6.015*
Control	1.2222	3.3889	2.1667	1.1950	

Note: *=p<.05, One-tailed test.

Explanation of Follow-up

Using the follow-up data, an Analysis of Covariance was conducted for each variable within the Kindergarten Writing Analytic Rubric, using the corresponding pretest score on each variable as the covariate (table 10). The main effect for group was significant in two of the analyses: Organization & Form (p=.016) and Conventions (p=.009). The main effect was not significant for Ideas and Content and Style. Hypotheses #2-B and 2-D were supported in the follow-up results for question two.

To analyze the amount of variance in the outcomes for Organization & Form and Conventions which is explained by the treatment of scaffolded writing, two hierarchical regressions were conducted. For Organization and Form, the Scaffolded Writing technique explained 9% of variance. The F for change in r square was 4.814, p=.016 (one-tailed). For the variable Conventions, the Scaffolded Writing technique explained 10.6% of the variance. The F for change in r square was 6.015, p=.009 (one-tailed).

Question Three

What influence does the scaffolded writing technique have on the quantity of high frequency words in children's writing?

One hypothesis was proposed for question three. It was supported by the analysis.

Hypothesis #3

The use of the scaffolded writing technique will increase the number of high frequency words in children's writing as determined by the Quantity Tally.

Post Test

Table 11

Analysis of Covariance for Quantity Tally Posttest

Variable Group	Pretest mean	Posttest mean	Diff. in mean	Post-test SD	F (main effect of group)
Number of High Frequency Words					
Experimental	.16667	2.4857	2.31093	1.5024	4.000*
Control	.0000	1.5000	1.50000	1.7235	

Note: *=p<.05, One-tailed test.

Explanation of Posttest

An analysis of covariance for quantity tally posttest was conducted, controlling for the effect of the pretest scores (table 11). A significant difference was found between the two groups (p=.025).

Follow-up

Table 12

Analysis of Covariance for Quantity Tally Follow-up

Variable Group	Pretest mean	Follow-up mean	Diff. in mean	Follow-up SD	F (main effect of group)
Number of High Frequency Words					
Experimental	.1667	2.4571	2.2904	1.6511	3.583*
Control	.0000	1.5556	1.5556	1.4642	

Note: *=p<.05, One-tailed test.

Explanation of Follow-up

An Analysis of Covariance was conducted for Quantity Tally Follow-up, controlling for the effect of the pretest scores from Quantity Tally Pretest (table 12). A significant difference was found between the groups (p=.032). The hypothesis was supported.

To ascertain the amount of variance in the outcome which can be explained by the effects of the scaffolded writing technique, a hierarchical regression was conducted. The Scaffolded Writing technique explained 7% of variance. The F for change in r square was 3.583, p=.032 (one-tailed).

Question Four

What influence does the scaffolded writing technique have on children's phonological awareness?

Three hypotheses correspond with question four, which is concerned only with the follow-up. None of the hypotheses were supported in the analysis.

Hypothesis #4-A

The use of the scaffolded writing technique will increase children's phonological awareness as measured by the Yopp-Singer Phoneme Segmentation Test.

Hypothesis #4-B

The use of the scaffolded writing technique will increase children's phonological awareness as measured by the Hearing and Recording Sounds Test.

Hypothesis #4-C

The use of the scaffolded writing technique will increase children's phonological awareness as measured by the Known Words Assessment.

Follow-up

Table 13

Phonemic Awareness Follow-up Results

Variable Group	N	Mean	SD	t	Sig. (One-Tailed)
Yopp-Singer Phoneme SegmentationTest					
Experimental	36	11.3056	7.0825	-.867	.195
Control	18	9.6111	6.0696		
Hearing and Recording Sounds					
Experimental	36	28.000	7.5442	-1.219	.114
Control Group	18	25.2778	8.1226		
Known Words					
Experimental	36	11.6667	5.0934	-.638	.263
Control	18	10.6667	6.0682		

Explanation of Follow-up

Differences between the experimental and the control groups on the results of the three assessments for phonological awareness were analyzed using t-tests (see table 13). No statistically significant differences were found between any of the groups on any of the assessments. The hypotheses were not supported.

Question Five

What influence does the scaffolded writing technique have on children's concepts about print?

One hypothesis was posed for question five. It was not supported in the analysis.

Hypothesis #5

The use of the scaffolded writing technique will increase children's concepts about print as measured by the Concepts About Print Assessment.

Follow-up

Table 14

Concepts About Print by Group

Group	N	Mean	SD	t	Sig. (one-tailed)
Experimental	36	17.3333	2.8385	-.766	.223
Control	18	16.7222	2.6078		

Explanation of Follow-up

A t-test was conducted to compare the groups on Concepts about Print during the follow-up (table 14). No significant results were found. The hypothesis was not supported.

Question Six

What influence does the scaffolded writing technique have on children's reading ability?

Two hypotheses correspond with question six. Neither was supported in the analysis.

Hypothesis #6-A

The use of the scaffolded writing technique will increase children's reading ability as determined by the Oral Running Record.

Hypothesis #6-B

The use of the scaffolded writing technique will increase children's reading ability as determined by the Word Test.

Follow-up

Table 15

Reading Ability by Group and Variable

Variable Group	N	Mean	SD	t	Sig. (one-tailed)
Oral Running Record					
Experimental	36	8.2778	8.9174	-.973	.167
Control	18	6.1111	4.2549		
Word Test					
Experimental	36	7.7222	7.2175	-.375	.354
Control	18	7.0000	5.3468		

Explanation of Follow-up

Two t-tests were conducted to compare the groups on the Oral Running Record and the Word Test (table 15). No significant differences were found on either test. The hypotheses were not supported.

Summary

In this section, the results were presented according to each question. The results are summarized by hypothesis in Table 16.

Table 16

Summary of Hypotheses

Hypothesis	Supported/Not supported
Hypothesis #1-A The use of the scaffolded writing technique will increase children's early literacy ability in the area of letter recognition as determined by ITA: Visual letter Recognition.	Not supported
Hypothesis #1-B The use of the scaffolded writing technique will increase children's early literacy ability in the area of sound-symbol Correspondence as determined by ITA: Sound-Symbol Correspondence.	Not supported
Hypothesis #1-C The use of the scaffolded writing technique will increase children's early literacy ability in the area of reading sight words as determined by the ITA: Instant Word Test.	Not supported
Hypothesis #2-A The use of scaffolded writing will increase the children's writing as determined by the Kindergarten Writing Analytic Rubric in the area of ideas and content.	Not supported
Hypothesis #2-B The use of scaffolded writing will increase the quality of children's writing as determined by the Kindergarten Writing Analytic Rubric in the area of organization and form.	Supported

Hypothesis #2-C
The use of scaffolded writing will increase the quality of children's writing as determined by the Kindergarten Writing Analytic Rubric in the area of style. Not Supported

Hypothesis #2-D
The use of scaffolded writing will increase the quality of children's writing as determined by the Kindergarten Writing Analytic Rubric in the area of conventions of print. Supported

Hypothesis #3
The use of the scaffolded writing technique will increase the number of high frequency words in children's writing as determined by the Quantity Tally. Supported

Hypothesis #4-A
The use of the scaffolded writing technique will increase children's phonological awareness as measured by the Yopp-Singer Phoneme Segmentation Test. Not Supported

Hypothesis #4-B
The use of the scaffolded writing technique will increase children's phonological awareness as measured by the Hearing and Recording Sounds Test. Not Supported

Hypothesis #4-C
The use of the scaffolded writing technique will increase children's phonological awareness as measured by the Writing Vocabulary Assessment. Not Supported

Hypothesis #5
The use of the scaffolded writing technique will increase children's concepts about print as measured by the Concepts About Print Assessment. Not Supported

Hypothesis #6-A

The use of the scaffolded writing technique will increase children's reading ability as determined by the Oral Running Record. Not Supported

Hypothesis #6-B

The use of the scaffolded writing technique will increase children's reading ability as determined by the Word Test. Not Supported.

The research questions asked the impact of the scaffolded writing technique on six different literacy areas: early literacy abilities, the quality of writing, the quantity of writing, concepts about print, phonological awareness, and reading ability. From the analysis, the scaffolded writing technique does appear to have an impact on the quality of kindergartner's writing as well as on the quantity of writing.

The next chapter discusses the results and possible implications as well as suggestions for further research.

CHAPTER FIVE

DISCUSSION

This study investigated the effect of the scaffolded writing technique on the literacy development of young children from the first month of kindergarten through the second month of their first grade year.

Six research questions guided the study. Fourteen hypotheses corresponded to the questions. In this chapter, a discussion of the results is presented as they relate to the original questions and corresponding hypotheses. Researcher observations, theoretical implications, implications for classroom practice and implications for future research will also be presented.

Question One

What is the influence of the scaffolded writing technique on children's early literacy abilities in the area of letter recognition, sound-symbol correspondence and word recognition?

Hypotheses for Question One:

1-A: The use of the scaffolded writing technique will increase children's early literacy abilities in the area of letter recognition.

1-B: The use of the scaffolded writing technique will increase children's early literacy abilities in the area of sound-symbol correspondence.

1-C: The use of the scaffolded writing technique will increase children's early literacy abilities in the area of word recognition.

None of the preceding hypotheses were supported by the data. This may be due to a number of factors. First, the children entering kindergarten (assessed at the pre-test phase of the study) recognized a large portion of letters on the letter recognition test. (See table 17). On average, children were able to perform accurately on nearly two-thirds of the test at the beginning of the kindergarten year. A ceiling effect may have occurred in which differences in learning between the control group and experimental group were not great enough to be statistically significant.

Table 17

Comparison of Pretest ITA Scores in Control and Experimental Groups

Assessment Group	N	Mean	SD
Letter Rec.			
Experimental	35	43.2571	19.2604
Control	18	43.0000	21.4092
Total	53	43.1698	19.8094
Sound Symbol Correspondence			
Experimental	36	9.1111	3.3533
Control	18	9.7222	3.1400
Total	54	9.3148	3.2669
Instant Words			
Experimental	36	3.8333	13.5425
Control	18	.0000	.0000
Total	54	2.5556	11.1553

Note: Possible scores: letter rec.=60, sound-symbol=15, word recogntion=100

Second, two skills, letter recognition and sound-symbol correspondence, are areas that generally constitute a large part of every kindergarten curriculum. Both the experimental group and the control group experienced numerous literacy activities focused on this curriculum goal. The scaffolded writing technique itself made no appreciable difference between the two groups on achieving letter recognition or sound-symbol correspondence.

Third, both the control group and the experimental group experienced a morning message each day. This was a procedure in which teachers asked children for ideas and wrote the children's words on chart paper while the children observed. Being exposed to repeated writing each day may have contributed to similar gains in word recognition between the experimental group and the control group.

Fourth, in the English language, there is at least one sound for each individual letter, with some vowels and consonants having more. Typically in sound symbol correspondence assessments, such as the Michigan Literacy Progress Profile (MLPP), children are asked to supply one sound for each letter in the alphabet. The assessment used, the *Sound-Symbol Corr*espondence assessment which was part of the *ITA*, asked the children to discriminate among three letters to select the one that corresponded with the given sound. There were only fifteen letter sounds assessed with this assessment. Fifteen may not have been a large enough number to observe true differences in children's abilities in letter-sound associations, especially considering the small size of the control group.

The findings attained here contradict findings reported in prior studies examining the use of the scaffolded writing technique on children's early literacy ability using the same measures (Bodrova & Leong, 1999A). However, the previous research on the scaffolded writing technique looked at the effects of the combination of two and three techniques, which included scaffolded writing, and did not examine the effect of scaffolded writing exclusively.

Question Two

What influence does the scaffolded writing technique have on the quality of children's writing?

Hypotheses for Question Two:

2-A. The use of the scaffolded writing technique will increase the quality of children's writing as determined by the Kindergarten Analytic Rubric in the area of ideas and content.

2-B. The use of the scaffolded writing technique will increase the quality of children's writing as determined by the Kindergarten Analytic Rubric in the area of organization and form.

2-C. The use of the scaffolded writing technique will increase the quality of children's writing as determined by the Kindergarten Analytic Rubric in the area style.

2-D. The use of the scaffolded writing technique will increase the quality of children's writing as determined by the Kindergarten Analytic Rubric in the area of conventions.

The results of the posttest administration of the measures for quality indicated there was a statistically significant difference between the control and experimental groups in three of four quality areas: (1)organization and form, (2)style and (3)conventions of print. However, the follow-up administration of the measures yielded significant differences in only two of the four areas, (1)organization and form and (2) conventions, with the experimental group showing significant growth.

Based on this study, the scaffolded writing technique demonstrated no significant influence on ideas and content. For the element of style, there was an initial positive difference in favor of the experimental group but the groups became more similar by the follow-up test indicating that the differences did not last. Scaffolded writing had an initial effect on style which did not hold beyond the posttest. This may mean that the rubric used was not sensitive enough to detect more subtle differences between the groups, or that maturation reduced the differences between the experimental and control groups. The researcher's conclusion is that the scaffolded writing technique has

an initial positive influence on style which does not last over time.

The results clearly indicate that while the scaffolded writing technique does not have a long lasting effect on style or an effect on ideas and content, it does have a significant influence on organization and form and conventions. The very nature of the scaffolded writing technique in leaving spaces between words and emphasizing the composition of complete thoughts corresponds to the criteria for organization & form. Consequently, it makes sense that this area of quality was statistically significant through the follow up writing sample.

The element of conventions consists primarily of the manner in which the child represents each word in the writing, moving through Gentry's stages of writing /spelling development. As children write "something to remember their message" on the scaffolded lines (a specific direction in the technique), attention is focused on sounds within each part of the word. It may be that the line itself holds the place not only for the word a child wants to write, but also for the sounds within that word that correspond to position along the line (beginning, middle, end).

Bodrova and Leong (1998B) also used Gentry's development of writing/spelling to assess children's writing samples using the scaffolded writing technique. They reported children's writing to be at higher developmental levels on Gentry's stages at the end of kindergarten as a result of use of the scaffolded writing technique. For example, a child beginning kindergarten may have been writing at the prephonemic stage. By the end of the study, that child was writing using at least the next stage of writing, semiphonemic. The results of the current study support their findings.

Question Three

What influence does the scaffolded writing technique have on the quantity of children's writing?

Hypothesis 3

The use of the scaffolded writing technique will increase the quantity of high frequency words in children's writing as measured by the Quantity Tally.

This hypothesis was supported by statistically significant results in the analysis. The children who used the scaffolded writing technique wrote more high frequency words on both the post-test and the follow-up writing samples than were written by those in the

control group. No prior studies on scaffolded writing have reported similar results.

These outcomes may be due to the nature of the scaffolded writing technique. As part of the scaffolded writing process, the teacher draws the child's attention to words or features of words that the child has used frequently in writing. Often these are high frequency words. This strategy may have helped children notice the spelling of high frequency words, which they later incorporated into their independent writing.

Question Four

What influence does the scaffolded writing technique have on children's phonological awareness?

Hypotheses for Question Four:

4-A
The use of the scaffolded writing technique will increase children's phonological awareness as measured by the Hearing and Recording Sounds Test.

4-B
The use of the scaffolded writing technique will increase children's phonological awareness as measured by the Known Words Assessment.

4-C
The use of the scaffolded writing technique will increase children's phonological awareness as measured by the Yopp-Singer Phoneme Segmentation Test.

The scaffolded writing technique incorporates the use of invented spelling, writing the sounds one hears in language. Invented spelling has been identified as contributing to children's development of phonological awareness (Vandervelden & Seigel, 1995; Adams, 1990). It was hypothesized that the scaffolded writing technique would increase children's level of phonological awareness. However, the results of this study show no difference in ability between the experimental and control groups on phonological awareness ability. None of the hypotheses were supported. The scaffolded writing technique did not significantly influence phonological awareness.

This may be due to the fact that in journal writing, which is the writing method used with the control group, invented spelling is also utilized. Therefore, both groups received equal opportunity to use invented spelling which may account for the lack of difference between groups.

Second, research has indicated that phonological awareness ability naturally develops over time in 75-80% of all children (Joint statement by the IRA and NAEYC, 1998). The lack of difference between the groups could be due to maturation.

Third, within kindergarten classrooms, numerous strategies to develop overall literacy also influence phonological awareness. It would seem from the results of this study, that the scaffolded writing technique alone did not impact the children's phonological awareness beyond the level achieved by the combined strategies teachers use normally.

Question Five

What influence does the scaffolded writing technique have on children's concepts about print?

Hypothesis for Question Five

The use of the scaffolded writing technique will increase children's concepts about print as measured by the Concepts About Print Test.

There was no statistical support for this hypothesis. Children in both groups performed equally well on the assessment. It may be that the daily modeling of the morning message in both the experimental and control groups facilitated all children's understanding about the concepts about print.

Question Six

What influence does the scaffolded writing technique have on children's reading ability?

Hypotheses for Question Six

6-A The use of the scaffolded writing technique will increase children's reading ability as determined by the Oral Running Record.

6-B The use of the scaffolded writing technique will increase children's reading ability as determined by the Word Test.

Neither of these hypotheses were supported in the study. There was no statistical evidence that any differences existed between the experimental and control groups on reading ability. Although this was a study of writing intervention, due to the strong link between reading and writing, it was hypothesized that increased writing skills would lead to increased reading ability. The scaffolded writing technique alone did not contribute to increasing children's reading ability.

The lack of differences between the experimental and control groups may have been affected by the point in time in which children's reading ability was examined. A difference may have been found between the groups at an earlier point in time rather than at the beginning of first grade. In addition, the use of the

daily morning message may have contributed to children recognizing and reading a similar number of high frequency words, as found in the results of the Word Test. Maturation may also have played a role in the results related to these hypotheses.

Summary of the Findings

Of the fourteen hypotheses, three were supported. The scaffolded writing technique demonstrated statistically significant results in the areas of organization and form, conventions, and the number of high frequency words. In each, there was strong evidence to show a difference between the experimental and control groups. The scaffolded writing technique had no lasting impact on letter recognition, sound-symbol correspondence, word recognition, ideas and content, style, phonological awareness, concepts about print, and reading ability.

When examined more closely, these results were able to account for a statistically significant amount of variance in the model. The scaffolded writing technique accounted for 10.7% of the variance on Organization and Form, 9% of the variance on Conventions, and 7% of the variance in the quantity of high frequency words used in the children's writing.

For a relatively low-cost and low effort intervention, which required only one scaffolded writing session each week per child and daily modeling of the technique, positive results are evident.

While this is the first experimental study on this technique that the researcher could find that was based on a pretest-posttest-follow up test design, the positive results lend support for prior suggestions to facilitate journal writing in kindergarten. For example, Bouas, Thompson, and Farlow (1997) recommended five classroom practices to support kindergartners' writing. Of these five, the scaffolded writing technique incorporated four: a consistent schedule for writing; teachers modeling writing; teachers conferencing with children while they write, and time for children to share their writing.

From his observational research, Graves (1996) has suggested that the two most powerful things teachers can do to support writing is to (1) model writing and (2) give feedback to children on their writing. Both of these activities were standard components in the scaffolded writing technique. Thus, this research lends empirical support to Graves' suggestions.

Up until now, many authors have suggested that the best way to encourage children's emergent writing is to simply give children unstructured opportunities to write. These findings suggest that direct instruction also plays a role in emergent writing.

In addition to the quantitative results, there were less formal observations that the researcher made.

Researcher Observations Beyond the Data

Attitudes and Approaches

A consistent impression the researcher had throughout the study was that both teachers and the children were very enthusiastic about writing and using scaffolded writing as a teaching/learning strategy. The teachers reported that they had not previously realized that the children could write so well. The teachers frequently related that in the past, they experienced dread over writing time because they felt like they were, "pulling teeth," to get the children to write and that the scaffolded writing technique virtually eliminated these concerns. They claimed that using the technique made the majority of children confident in their writing abilities.

The teachers also claimed, that as a result of using scaffolded writing, they knew their children much better and could give more accurate reports to parents on report cards and at conferences. This may have been due to the fact that teachers had personal conversations each week during the writing time with each child. They also kept a record of each child's writing which served as a good documentation for progress reports.

The researcher observed that the children in the experimental group appeared more confident in their attitudes about writing and the conventions of writing than the control group. When the children in the experimental group were unsure of how to write a word, they seemed to have no problem skipping over that word and going on to another word, then coming back to it. This may have been due in part to the fact that the scaffolded line held the place of that word. Children in the experimental group seemed to use the line to sort out the parts of a word. If they knew the last sounds, but not the first, they would often write the ending sounds at the end of the line, then work on the beginning sounds.

When asked to reread their current messages and prior messages, the experimental group consistently read back their messages while the control group often could not read what they had written or made up new messages. The experimental group also used good reading behaviors when stuck on a word while rereading a message. Without direct instruction on these behaviors, they would skip over an unknown word and go on, look at the picture, look at the beginning or ending of a word, or would read it and decide it did not make sense and reread. These are all reading behaviors which are typically taught in first grade as part of reading instruction.

The teachers of the experimental group reported that children used the scaffolded lines in other forms of writing throughout normal classroom experiences. This transfer of use within the kindergarten year was apparent. However, once in first grade, all but two children dropped the use of the lines to help them write. This may have been because they no longer needed the lines as a support for writing. On the other hand, it is possible that some children would have continued to benefit from using the scaffolded

lines, but were unable to transfer the use of the lines from kindergarten to first grade.

The researcher's observations of the children's independent writing gave her the impression that the largest differences between the experimental and control groups seemed to occur in January and February. By the end of the school year, there were less obvious differences. It appeared that the scaffolded writing technique gave children a head start on writing.

Ecological Impacts

It appeared to the researcher that there were various ecological factors at work within this study. In keeping with Vygotsky's and Lerner's theories of the importance of the social context within human interaction, it is interesting to consider the role that the various interactions played in concert with maturation.

For example, within the small groups in the experimental classrooms, while one child was working with the teacher either planning the message or rereading what was written, the other children were busy interacting with each other. Often this took the form of children assisting one another in finding the letters to correspond with the sounds in the word that

they were stretching out, or practicing rereading their message to each other. Children within the small groups seemed very supportive of other writers within the group. This did not appear to be the case in the control classroom. There, the children worked more independently, with less conversation about the writing. The positive difference between the experimental and control group therefore, could be partially due to the nature of the scaffolded writing technique. As part of the scaffolded writing technique, children must verbalize their plan and reread their writing aloud. This procedure may have helped create a more child to child supportive atmosphere for peer interactions.

The teachers in the experimental group seemed to take more time working with the children on their writing. They actually reported to the researcher that they understood their role and how they could assist the child much more using the scaffolded writing technique than they had in the past. The child to teacher interaction in the experimental group appeared warm and supportive.

As there were two teachers from two classrooms who participated in the experimental group, they served as

a support for each other to share ideas and problem solve interactions as needed. This teacher to teacher dynamic could also have contributed to the success demonstrated from the use of the scaffolded writing technique.

Overall, there was a generally supportive atmosphere in the building in which the research was conducted. Writing improvement was a school goal for the North Central Accreditation process and all staff appeared interested in promoting children's writing. Within the experimental classrooms, there seemed to be even greater enthusiasm over writing with children. As the teachers learned the scaffolded writing technique and saw its results, they became more pleased with their children's writing. The atmosphere about writing seemed to differ between the experimental and control group classrooms. This may have been due to the added enthusiasm of the experimental teachers above and beyond the general school interest.

Theoretical Implications

This study was cast within the framework of Lerner's theory of developmental contextualism and Vygotsky's theory of learning and development. Results

of the research provide support for the basic premises of those two theories.

First and foremost, Vygotsky proposed the notion of scaffolding the learning process. Data from this study provided evidence that the scaffolded writing technique helped children move from assisted learning to independent performance. The scaffolded writing technique functioned as Vygotsky had predicted. There were a variety of other factors that may also have influenced the outcome of the study. Within the classroom, the children experienced interactions with each other, interactions with the teacher, and interactions with the environment. This observation lends support to the idea that the classroom is a dynamic context in which learning occurs, as proposed by developmental contextualism. The outcomes of the research further support Vygotsky's theory that learning and development take place within the cultural context in which one functions.

Implications for Classroom Practice

This section includes several suggestions for classroom practice involving the use of the scaffolded writing technique. These suggestions have been

developed from both the discussion of the data and the observations of the researcher.

1. During the scaffolded writing technique, features of words children had written were pointed out to them. The results indicated that children who received the scaffolded writing technique used more high frequency words in their writing. A useful practice regardless of the technique used, would be for teachers to always make a point to have children reread their writing and use their writing as a springboard for learning, with the focus on one teaching/learning point per session.
2. To enable teachers to better scaffold children's attempts at writing, no matter what technique is used to facilitate the writing, it would make sense to review with teachers elements in the quality kindergarten analytic rubric. This would assist teachers in recalling/learning key components, especially the developmental levels of writing, which could be then used as focal points for instruction.
3. The scaffolded writing technique does not demand a lot of time within the already content intensive kindergarten curriculum and it appears to provide good results. It would be beneficial to train more

kindergarten teachers in this technique to provide them with a concrete method for assisting emerging writers.

4. As discussed earlier, some children may continue to benefit from the use of the scaffolded writing technique. To facilitate transfer of use from kindergarten to first grade, first grade teachers could also be trained on this technique.
5. Since numerous literacy concepts are supported through daily modeling of the morning message, it would be useful to include this in all kindergarten classrooms. The final sentence in the message could be used to model the scaffolded writing technique, thereby giving children daily exposure to both writing in general and the use of scaffolded lines as place holders for words.
6. The children in the study received individual scaffolded writing assistance once a week within a small group setting. It may have been the individual attention/instruction that enhanced the children's writing. It is suggested that teachers alter the method of journal writing to incorporate some direct instruction with individuals into this time.

7. The teachers in the experimental group reported knowing where their students were on the writing development continuum so much more than in other years, it would be helpful for all teachers, no matter what technique they used to assist children with writing, keep a written teacher log of children's writing including the student's intended message and any other relevant comments.
8. Children did not appear, in general, to know they could continue using the scaffolded lines to assist them with writing in the first grade year. Teachers should point out to children all of the places outside of the kindergarten classroom where they could incorporate the use of the scaffolded writing technique. This would facilitate transfer for children who continue to benefit from the technique.

Implications for Future Research

This section includes several suggestions for future research involving the use of the scaffolded writing technique. These suggestions have been developed from both the discussion of the research and observations of the researcher.

1. While there were statistically significant results in this study, they can only be generalized to a

population similar to the sample. It would be useful to replicate this research project with other populations to see the impact of the scaffolded writing technique on at risk students, rural students, and urban students.

2. The sample size for the study was small. Because of the limiting size, some of the effects that may have been found with the use of the scaffolded writing technique may not have been discovered. This study should be replicated using a larger sample size.
3. The children in the study were in small groups during writing time. It would be interesting to compare the effects of using the scaffolded writing technique with children in small groups with children writing as a whole group.
4. The children's writing used in this study focused on children writing on an assigned topic, the zoo. A future study could analyze both free writing samples and assigned writing sample to see how results compare.
5. As suggested in the discussion, some of the effects of the scaffolded writing technique may have an impact at earlier points in the kindergarten school

year. It would be interesting to replicate this study, taking measurements in January, March, and May to see if there are other benefits.

5. This study followed children through kindergarten into the first grade school year. It would be beneficial to continue to follow the children through the end of first grade and into second grade to see if the differences between groups continued.
6. It may be that the scaffolded writing technique works better with some types of writers or students than others. Future research, which looks at the impact of the scaffolded writing technique on differing ability students, would be interesting. Also research that examines the impact of the technique on different types of learners, such as primarily kinesthetic versus auditory learners would be interesting.
7. The discussion suggests that the mere inclusion of the daily morning message may have a strong impact on children's literacy development. Future research should look at the individual effect of the morning message with regard to emergent literacy.
8. It could be hypothesized that the more one knows about writing, the better he/she is able to scaffold

a child's writing attempts. If scaffolded writing, as this study seems to suggest, is a useful tool in assisting children with writing, would it be more effective if teachers knew more about the development of writing? Future research could compare the difference between two groups using scaffolded writing, with one group of teachers only learning the scaffolding technique and another group learning both the scaffolded writing technique and the components of the kindergarten writing analytic rubric.

9. Since this study utilized classroom teachers to implement the scaffolded writing technique, future research could look at the effects of using para-professionals, parents, and older students to implement the technique within the microsystem of the classroom.

10. Often, kindergarten parents want to know ways to help their children improve in literacy behaviors. It would be interesting to train parents on the scaffolded writing technique along with teachers, thus creating a mesosystem for writing between home and school and then examine the results to see if a more powerful effect could be attained.

11. Numerous children are enrolled in both kindergarten and child care simultaneously. It would be interesting to train the child care providers and the kindergarten teachers on the scaffolded writing technique, thus creating a mesosystem for writing between these two microsystems, and measure to see if the combination generates more powerful results.
12. The discussion of the results of this study are based on quantitative data. There may be some benefits of the scaffolded writing technique that were not uncovered using this type of analysis. It may be useful to also examine the children's writing in a qualitative fashion looking for trends and patterns.
13. In the researcher observations, differences were noted between the children's ability to reread what they had previously written, with the experimental group being consistently better able to do so. A future study could examine this phenomenon in a more systematic way to determine if the supposed differences were actual.

Summary

This research effort has indicated that the use of the scaffolded writing technique with kindergarten children does influence the quality of writing they produce in two areas: (1)organization and form and (2) conventions. Children who experienced the scaffolded writing technique also produced writing which had a significantly higher number of high frequency words.

As noted earlier in the study, the early childhood classroom is one of the major microsystems in a young child's world. It is typically the primary context in which literacy-related tasks are completed. The strategies that teachers choose to use to influence children's literacy competence should be selected judiciously. This suggests that it may be fruitful to incorporate the scaffolded writing technique into kindergarten and early first grade classrooms to foster development in some competency areas of literacy.

However, as noted earlier, this was the first study which used an experimental pretest - posttest-follow-up design to examine the impact of the scaffolded writing technique. From the results, it seems that further study is needed to expand the foundation of knowledge about the scaffolded writing

technique and the role that it plays in emergent literacy in the microsystem of the early childhood classroom and beyond.

APPENDIX A

Directions for Scaffolded Writing

The Scaffolded Writing Technique

Developed by Elena Bodrova and Deborah Leong of MCREL Denver, Colorado.
Based on the learning theory of Vygotsky

To be most successful in using this technique, it should be modeled on a daily basis with the children in your classroom, such as during the Morning Message. The entire writing need not be done in scaffolded writing, rather the last sentence could be written using this technique.

Please keep in mind that this is a technique to use with emerging writers. It is child specific, altered to the needs of individual children and gradually fades out of use as the child becomes more proficient with writing.

This technique works best in small groups. It can be done in larger groups with multiple adults, however, in this case it is vital that all components of the technique are used for optimum results.

Preliminary research on this new technique shows it can be a very powerful tool for both teachers and children.

Procedure for modeling the technique and for children just being introduced to scaffolded writing:

1. Child thinks of a message. *This may be accomplished by first talking about it, or drawing a picture, or combination of both.*
2. Child tells you, the adult, the message. Repeat the message back to the child (in the child's words) to clarify the message. *This verbal interaction is very important.*
3. Say to the child, "I am going to make a line for every word in your message."
4. Using a highlighter, the adult says the message word by word, drawing a line as each word in the message is said. Proper punctuation is placed at the end of the message. *Note: the length of the lines should correspond with the length of words: short lines for short words, long lines for long words - keeping in mind that the children will be writing on the lines.*

5. Model going back to the beginning of the sentence to say what the message will read, pointing to each line as the intended word is said. *Note: Do not tell the child you are reading the lines, you are saying what will go there.*
6. The child then takes his/her finger and points to the lines, saying what will go onto each. If the child gets stuck, you can assist. If the child needs more direction, you can point with the child or help the child move his/her finger along. *This kinesthetic piece is very important.*
7. The child is then ready to begin writing. Tell the child, "Put something on each line to help you remember the message." *Note: You are not looking for book spelling, you are encouraging emergent writing, wherever that child is. Progression through the stages will come and you will be amazed with the results.*
8. If the child has difficulty, lend some assistance where necessary to prevent frustration. This may take the form of you writing one word and the child working on the next, or you writing parts of a word with the child adding the parts he/she is comfortable with. Write as little for the child as possible, but remember all are at different levels and some may need this one on one modeling while others will do fine with encouragement.
9. *Crucial step*: The child reads and points to each word in the message when he/she is finished writing.
10. *At this point, you can carefully select one teaching point to use with the child.* This may take the form of helping the child think of an additional sound in a word, starting the sentence with a capital letter, or finding a high frequency word within the room such as on a poster or big book. If the child is scribble writing, you will probably choose to skip the teaching point.

If the child has been using scaffolded writing for a while, or is further along in understanding the process of writing, the child may take over making his/her own lines with the highlighter. However, the other steps remain important. The first few times a child writes his/her own lines, monitor closely to ensure that the lines are for each word and not each syllable and that they are long and short appropriately. The

conversations you have before the lines are made can help clarify these concepts for the children.

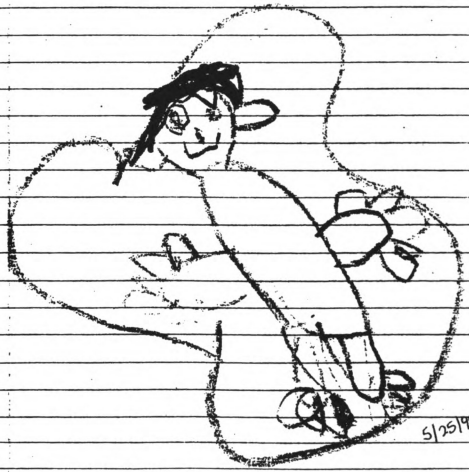
Eventually, the child will no longer need the lines to scaffold his/her writing. Often the children enjoy using the highlighter and will continue making lines, but will make them after they have written the message. This is a clear signal to you that they are no longer needed.

Handout Prepared by Kara Gregory

APPENDIX B

Sample of Child's Scaffolded Writing with the Scaffolded Writing Technique

MY DAD IS AT THE FLPENSEA



APPENDIX C

Description of Emergent Literacy Stages

Emergent Literacy Stages

Adapted from training materials for the Michigan Literacy Progress Profile.

Emerging Stage	**Early Stage**	**Fluent Stage**
Children begin to play with language, may enjoy rhyme. Enjoys playing with language. Children may know names of some of the alphabet letters. Is developing an understanding of how books work (directionality, punctuation, letters). Enjoys a book and wants to read. Can retell simple or familiar stories. Recognizes some word in the environment. Beginning to recognize some words in books. Uses pictures to retell the story.	Continues to play with language. Can rhyme, segment words, and blend words regularly. Knows letter names and sounds for nearly all letters. Has mastered all concepts about books. Enjoys books, tries to read, can read some. Typically more comfortable reading fiction. Primarily reads aloud. Is developing decoding strategies and word recognition strategies. Predicts events in books which	Reading is often more silent. Reads to learn as well as for enjoyment. Is able to read both fiction and non fiction. Reads with a deeper understanding of author's intent. Is able to anticipate difficulties and solve them before errors occur. Are also able to use the text to solve difficulties. Is able to integrate cues and adapt strategies flexibly for a variety of purposes.

(Emerging cont.) Can begin to make some one to one correspondence between sounds and letters. Writes with pictures and beginning sounds. May use some ending and middle sounds.	are familiar. (Early cont.) Writes with initial consonants, including some vowels. Uses more sight words in writing. Is beginning to recognize when words are missing letters. Connects the text to pictures when writing. Uses some detail when writing. Is acquiring a bank of high frequency/sight words.	

APPENDIX D

Example of Demonstration of Scaffolded Writing

Example of Demonstration of the Scaffolded Writing Technique

Sally sits at table with three other children. Researcher says to Sally, "Draw a picture or tell me what you'd like to write about today."

Sally says, "I'll draw about the park. We were at the park yesterday." She proceeds to use crayons to make her picture. When she appears finished, the researcher asks,

"Are you ready to plan your message?" As Sally nods, the researcher says, "Tell me your message."

Sally says, "We went to swing at the park."

The researcher says, " So your message is, "we went to swing at the park, right?" Sally nods. The researcher continues, "I am going to make a line for every word in your message." The researcher draws a line with a highlighter and simultaneously says, "we," draws another line while saying "went…" The researcher proceeds in this manner until the entire message is represented by lines. When she finishes, she says to Sally, "I am going to point to the lines and say the words that will go on these lines."

Pointing to the lines, one at a time, the researcher says, "We went to swing at the park. Now you point to the lines and say what will go there."

Sally points to the lines and mimics the process the researcher had demonstrated.

"OK, now write something on these lines to help you remember your message."

Sally looks at the researcher with a puzzled look. The researcher suggests, "How did your message start?" Sally tells her. "OK, what do you think you could write to help you remember the word WE?" Still puzzled, the researcher poses, "We and Wendy start the same way. What does Wendy's name start with?" Sally looks on the letter chart of the alphabet sitting on the table. She looks up at the researcher. The researcher then suggests, "Let's go look at Wendy's name card and see." Together they go find Wendy's name card. Sally spots the W. The researcher

suggests they take the name card back to the table and copy the W. Sally writes W on the first line. On the second line, she stops. The researcher asks her what her message was. Sally repeats it. The researcher then says, "OK, we have something for we, now what should you write for went?" Sally looks at her. The researcher asks her if it reminds her of anyone's name in the room.

Sally smiles and says, "Wendy?" The researcher nods and Sally eagerly writes another W on the line for went.

"OK, what about the next word in your message?" Pointing to each line, the researcher repeats, "We went…"

Sally chimes in, "TO! But I don't know how to write that."

The researcher suggests, "Is there a place in the room where you can find that word?"

Joey, who is at the same table in her small group says, "It is in the morning message!"

Together Sally and the researcher go to the morning message and read it, as the researcher points to each word. Sally stops her at to. "Hey, that you just said to!" They go back to the table and Sally writes to.

Sally rereads what she has written, "We went to…I know, swing at the park!" She puts some scribble writing in each of the rest of the blanks, saying the word that it represents.

"OK, now read your message to me, pointing to every word in the message," requests the researcher.

"We went to swing at the park," Sally says proudly as she points to the lines.

"Wow," says the researcher, "You wrote the message. I think there is one more letter you know that could go in the message. Let's look at swing. Listen to the first sound that the first letter makes….sssss…does that start like any word you know?"

Sally grins, "Just like Sally."

"That's right. Why don't you add that to the beginning of swing to help you remember that says swing." Sally adds the s. The researcher and Sally reread the message one last time together, then Sally leaves the table to go to another area.

APPENDIX E

Kindergarten Writing Analytic Rubric

Kindergarten Writing Analytic Rubric: Ideas and Content

Description	Score
Brief Picture. Form not recognizable. When telling teacher, child cannot say what he/she wrote.	(Pre-Emergent) 1
Picture is recognizable. May have a few letters or scribbles, but picture is lacking in detail. May also have multiple topics unrelated to the zoo (subject about which required to write).	(Emerging) 2
May contain numerous evidence of related thought but little or no writing yet. Picture has some detail (to support idea), picture often primarily conveys meaning. Some letters may be used. Multiple topics with some type of relationship to the zoo.	(Developing) 3
"Words" *and* picture convey meaning. Picture and words are related. Writing makes sense. Single topic discussed.	(Capable) 4
Words convey the meaning (picture may also be present). Single topic with detail.	(Mature) 5

KINDERGARTEN WRITING ANALYTIC RUBRIC:
Organization and Form

Description	Score
Picture only. No writing.	(Pre-emergent) 1
Scattered pictures with letters. Appears to lack organization. Writing attempts are evident. May write with scribbles. Does not appear to have a representation of some kind for each word.	(Emerging) 2
Writing appears to flow from left to right. No spaces between words.	(Developing) 3
Infrequent use of spacing between words. Ex. May leave spaces between high frequency words, but not those with invented spelling. Uses a sentence.	(Capable) 4
Consistent spacing between words.	(Mature) 5

KINDERGARTEN WRITING ANALYTIC RUBRIC: Style

Description	Score
Scribble writing/and or picture only.	(Pre-emergent) 1
Writes single word or letters.	(Emerging) 2
Writes words or phrases. Words are apparent. Has representation for each word.	(Developing) 3
Writes one sentence with noun and a verb and possibly an adjective.	(Capable) 4
Writes sentence(s) with multiple nouns, and/or verbs, and/or adjectives, and/or adverbs.	(Mature) 5

KINDERGARTEN WRITING ANALYTIC RUBRIC: Conventions

Description	Score
Picture only and or random marks or Scribble writing.	(Pre-emergent) 1
Marks resembling letters or strings of letters without relationship to beginning sounds.	(Emerging) 2
Reader can eventually figure out some words. Beginning sounds used or ending sounds evident. Infrequent use of both in words. There is a connection between spoken language and written language.	(Developing) 3
Reader can read writing. Beginning and ending sounds used consistently. May attempt middle sounds on one or two words. May use one or two high frequency words. May use capital letters at the beginning of the sentence or ending punctuation.	(Capable) 4
Writing is fully readable. Numerous sounds included in writing. Beginning and ending sounds with attempt at medial vowels. Uses high frequency words in writing. Uses capital letters at the beginning of sentence and/or ending punctuation.	(Mature) 5

APPENDIX F

100 Most Frequently Occurring Words
(Bodrova & Leong, 1998)

100 Most Frequently Occurring Words
Bodrova & Leong, 1999B

Am
A
All
Are
And
At
An
As
Away
Big
But
Be
Back
By
Can
Come
Came
Cat
Do
Down
Day
Dog
Did
Dad
Eat
For
From
Go
Get
Going
Got
Good
Had
Help
He
Has
Have
Home
How
House
His
Here
Her
It

I
In
Is
Into
Just
Like
Little
Look
Long
Me
Make
Mom
Made
Not
No
Now
On
Out
Of
One
Over
Or
Put
Red
Some
So
Said
See
She
Saw
This
The
Then
Too
To
Two
That
They
There
Them
Tree
Time
Up
Very
Went
With
What

Will
We
Was
When
Water
Where
You
Your

APPENDIX G

Yopp-Singer Test of Phoneme Segmentation

Yopp-Singer Test of Phoneme Segmentation

Student's name_____ Date _____

Score (number correct)_____

Directions: Today we're going to play a word game. I'm going to say a word and I want you to break the word apart. You are going to tell me each sound in the word in order. For example, if I say "old," you should say */o/ - /l/ - /d/*." (*Administrator: Be sure to say the sounds, not the letters, in the word.*) Let's try a few together.

Practice items: (*Assist the child in segmenting these items as necessary.*) ride, go, man

Test items: (*Circle those items that the student correctly segments; incorrect responses may be recorded on the blank line following the item.*)

1. dog	_____	12. lay	_____
2. keep	_____	13. race	_____
3. fine	_____	14. zoo	_____
4. no	_____	15. three	_____
5. she	_____	16. job	_____
6. wave	_____	17. in	_____
7. grew	_____	18. ice	_____
8. that	_____	19. at	_____
9. red	_____	20. top	_____
10. me	_____	21. by	_____
11. sat	_____	22. do	_____

APPENDIX H

Hearing and Recording Sounds

Hearing and Recording Sounds Form A

From: An Observation Survey of Early Literacy Achievement, Marie Clay, 1993

I		h	a	v	e		a		b	I	g		d	o
1		2	3	4			5		6	7	8		9	10

g		a	t	H	o	m	e.	T	o	d	a	y	I	a	m	g	o	I
11		12	13	14	15	16		17	18	19	20			21	22	23	24	25

n	g	t	o		t	a	k	e	H	I	m		t	o		s	c	h
26	27	28			29	30			31	32	33					34	35	

o	o	l.	
36		37	

APPENDIX I

Research on Human Subjects Approval Letter

MICHIGAN STATE
UNIVERSITY

October 4, 1999

TO: Marjorie KOSTELNIK
107 Human Ecology Building

RE: IRB# [illegible] CATEGORY: 1-A

APPROVAL DATE: October 4, 1999

TITLE: THE INFLUENCE OF THE SCAFFOLDED WRITING TECHNIQUE ON THE LITERACY DEVELOPMENT OF KINDERGARTEN CHILDREN

The University Committee on Research Involving Human Subjects' (UCRIHS) review of this project is complete and I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project.

RENEWALS: UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Projects continuing beyond one year must be renewed with the green renewal form. A maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for a complete review.
REVISIONS: UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the green renewal form. To revise an approved protocol at any other time during the year, send your written request to the UCRIHS Chair, requesting revised approval and referencing the project's IRB# and title. Include in your request a description of the change and any revised instruments, consent forms or advertisements that are applicable.
PROBLEMS/CHANGES: Should either of the following arise during the course of the work, notify UCRIHS promptly: 1) problems (unexpected side effects, complaints, etc.) involving human subjects or 2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved.

If we can be of further assistance, please contact us at 517 355-2180 or via email: UCRIHS@pilot.msu.edu. Please note that all UCRIHS forms are located on the web: http://www.msu.edu/unit/vprgs/UCRIHS/

Sincerely,

David E. Wright

David E. Wright, Ph.D.
DEW: bd
cc: Kara Gregory

OFFICE OF
RESEARCH
AND
GRADUATE
STUDIES

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