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The Development of Written Expression in Young Children

Eilene Kay Glasgow

Western Washington University

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THE DEVELOPMENT OF WRITTEN EXPRESSION IN YOUNG CHILDREN

by

Eilene K. Glasgow

Accepted in Partial Completion
of the Requirements for the Degree
Master of Education

Dean of Graduate School

Advisory Committee
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ABSTRACT

THE DEVELOPMENT OF WRITTEN EXPRESSION IN YOUNG CHILDREN

This study investigated written expression development of forty-six children ages three to nine. "Written expression refers to the written productions of the child which reflect intentional symbolic representation of ideas, but which may not necessarily use the ideographic symbol system" (Klein, 1981).

The two purposes of the study were:

1. To examine the types of writing strategies used by young children to record the verbal cues of a guided writing task. The responses were compared to responses reported by A. Luria in his original study (1977-1978).

2. To determine if use of elicitation cues containing quantification or color/contrast modifiers would improve task performance by assisting movement from lower-level to higher-level writing strategies (as categorized within a written expression development framework modified from Luria's).

The subject was told to put down something which would help him remember a series of six to eight cues. The subject then "read" the cues back. Classification was based upon writing and reading behaviors, and the written sample.

It was found that sixty-eight percent of the subjects used undifferentiated, differentiated and pictographic writing strategies, as identified by Luria. Thirty-two percent used alphabetic strategies which were not common in Luria's study. A modified framework was developed which incorporated the Lurian stages and the alphabetic stages. The types of responses varied with age and previous experience. Quantification, color/contrast modifiers, and very familiar concrete images aided performance for many subjects. The "experimental-genetic" method used was found to successfully stimulate a wide variety of responses.

Implications of the findings were that:

1. There is a natural pattern of development of knowledge of writing purpose and procedures which should be considered in early literacy instruction.

2. Many children are ready for functional writing at an earlier age than previously recognized.

3. Young children need to explore writing to come to an understanding of its symbolic aspects. Early school writing experiences should be planned to focus on communicative intent rather than on mechanics of writing.

4. Exploration of pictography by preliterate children should be facilitated to develop their understanding of the symbolic potential of writing.
THE DEVELOPMENT OF WRITTEN EXPRESSION IN YOUNG CHILDREN

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A Thesis
Presented to
The Faculty of
Western Washington University

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In Partial Fulfillment
Of the Requirements for the Degree
Master of Education

* * * * * *

by
Eilene K. Glasgow

July 1982
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CHAPTER I
INTRODUCTION AND STATEMENT OF PURPOSE

Introduction

Literacy is accepted as one of the most important goals of formal education in this society. As such, much thought and controversy have arisen over the "best" way to initiate formal literacy instruction.

In spite of philosophical differences, two assumptions about literacy have predominated in planning school language arts programs and in early literacy instruction, particularly in the areas of reading and writing. The first assumption is that the young child begins formal schooling with little or no knowledge of reading and writing behaviors and purposes. The second, that ability to write develops only after extensive formal instruction and practice in various component areas of literacy, among them reading, handwriting and spelling.

Research by Luria (1977-1978), Clay (1975), Harste (1980), Graves (1980), and others indicates that these assumptions may be inappropriate as bases for initial written language instruction. Their work suggests that the young child has intuitively discovered a great deal more about the purposes of writing and the general features of our writing system than was previously recognized. Specific knowledge of the elements of written expression appears to be acquired in a systematic fashion, which, though unique to each child in order

The study reported here employed a methodology derived from Luria's work to examine the development of written expression in young children. The methodology and modifications which were made will be more fully explained in Chapter Three of this study.

Statement of Problem

This study investigated two questions: First, what types of writing strategies do three-to nine-year-old children use to record the verbal cues of a guided writing task? Second, will using elicitation cues which contain quantification or strong contrast/color descriptors improve task performance by assisting movement from undifferentiated use of written expression into an increasingly differentiated use?

Significance of the Study

The study has significance in three areas— theoretical, methodological, and instructional.

The investigation was a modified replication of innovative work done by Alexander Luria during the late 1920's in children's development of written expression. The current study provided cross-cultural validation of Luria's original theory, which outlined a general developmental sequence for acquisition of skills and concepts of written expression, and which delineated features of stages within that framework.

Methodological significance lies in the developmental approach which was used to examine children's writing. In 1975, Donald Graves observed that "To date, the need for developmental studies related
to children's writing has been virtually ignored." (Graves, 1975).

In a review of current research on the nature of writing and its
development, Whiteman (1980) reiterated the need for further work in
this area:

"We still know hardly anything about how people learn
to write, what composing processes they use, whether
or not there are any natural stages of development,
or whether adults differ from children in such learning." (p. 151)

She also indicated the need for information which would
provide baseline data on the natural course of writing development,
and concluded that much more research must be done in this area if
there is to be any effect on educational practices and curriculum.

These concerns are echoed by Vukelich and Golden (1981), and
King and Rentel (1979). The latter two state even more specifically
the need for developmental information in the area of written expres­sion:

"What is needed is a framework for understanding how
children's intentions in learning interact with varying
learning contexts as they make the transition from speech
to writing, and in particular, a framework that focuses
on how children develop control over the written medium." (emphasis added) (p. 243.)

The third area of significance is instructional. The develop­
mental framework provides a set of criteria by which the written
productions of young children may be evaluated with greater consis­tency and accuracy. Further, it offers an organizational scheme
which could aid construction of curriculum models built upon a more
accurate understanding of a young child's written language develop­
ment and the constellation of concepts an individual child organizes
at given points within the general framework.
Hypotheses

This study has two hypotheses:

1. Children progress through identifiable stages in the strategies they use to record verbal cues in writing. These stages are age-related.

2. Quantification and strong contrast/color-based descriptors in elicitation cues assist performance, such that movement from use of lower-level to higher-level strategies is evident.
Definition of Terms

Writing: "Refers to the ability to use pen and paper to denote ideas or facts in a symbolic fashion. This also implies the ability to use those marks as mnemonic or idea cues." (Klein, 1981)

Written Expression: The written productions of the child which reflect intentional symbolic representation of ideas. This product may not necessarily utilize the common symbol system of ideographs. (Klein, 1981)

Use of Written Expression-Undifferentiated: Use of written expression in a way which does not reflect the meaning potential of the writing act or product or the psychological attributes underlying task performance.

Use of Written Expression Differentiated: Use of written expression in a way which reflects essential understanding of its purposes and meaning potential.

"Undifferentiated" and "Differentiated" mark the extremes of a developmental framework denoting qualitative differences in demonstrated understanding of the writing task and subsequent product.

Handwriting: Describes the expression of letters and words in culturally-standard patterns and formats.

Developmental Framework: The theoretical construct which posits an evolutionary acquisition of skills and concepts developing from a global understanding to one which is increasingly differentiated and refined (DeFord, 1980, Hiebert, 1981; Holdaway, 1979).

1. This progression of understanding is reflected in a growing ability to synthesize and orchestrate a complex set of concepts (Harste, 1980; Forester, 1980).

2. Growth is dependent on a number of interactive factors such as general cognitive and perceptual abilities, motivational factors, and environmental input (Holdaway, 1979).

3. The acquisitional sequence of specific skills and concepts varies widely from individual to individual, but general stages are identifiable (Hiebert, 1980).
CHAPTER II
REVIEW OF LITERATURE

Introduction

In surveying the literature on writing and writing development, one soon learns that there is no consensus on what constitutes "writing", nor on which skills and concepts are proper elements of a definition. It is only recently that this area has begun to receive serious attention, so it is not surprising that the definitional boundaries are unclear. Whiteman (1980) estimated that writing research is at least 50 to 100 years behind reading research, and current instructional practices could be estimated to lag perhaps another 10 to 20 years behind theory.

What writing is has seemed so self-evident that conscious attempts to conceptualize it are few and very recent. Related research in the areas of cognition, metalinguistics and psycholinguistics have offered new perspectives and have helped to shape an expanded, more powerful definition of writing.

Many of the studies examined for this review did not provide operational definitions. In these cases, a definition was inferred from looking at the type of problem chosen, treatment of the data, and conclusions. Two main definitional focuses were identifiable in the literature: one, the concept of "writing-as-mechanical-performance", and the other, the perception of "writing-as-conceptual-act".

From the perspective of "writing-as-mechanical-performance", the written product is most important. The actual writing act is seen
as consisting of a coming-together of various discrete skills such as handwriting, spelling, and fine-motor coordination, mastery of which are important primarily for their effect on the visual quality and legibility of the written production. Elements of writing such as creative expression, symbolic intent, message organization and communicative quality are grouped in a separate category of "content skills", which require different kinds of cognitive abilities and instructional approaches. As will be discussed, this first concept of writing, "writing-as-mechanical-act", may have overlooked key elements of writing behavior and contributed to a rather impoverished conceptualization of this process.

In the mid-seventies, research into various aspects of metalinguistic awareness gained momentum. As the importance of writing as a cognitive assist to metalinguistic understanding was revealed, a definition of "writing-as-conceptual-act" developed.

"Writing-as-conceptual-act" "... refers to the ability to use pen and paper to denote ideas or facts in a symbolic fashion. This also implies the ability to use those marks as mnemonic or idea cues" (Klein, 1980).

This definition differs from the first in an important way: it relates the actual production of writing to the cognitive force that recognizes writing as an expressive tool, a tool which can not only communicate information, but which can be used to abstract and symbolically represent meaning apart from contextual or situational constraints.

The connection made between mechanics and cognition means that all the skills--handwriting, spelling, ability to produce a message,
etc. are necessarily considered as being related. The developmental patterns of usage of "mechanical" skills are seen as manifestations of qualitative changes in understanding the various aspects of the writing process—the usage patterns function as external "sign-posts" of cognitive development. Much of the current research has been aimed at understanding more about the complex and subtle interrelationships which exist between these various areas of writing.

This review looks first at the concept of "writing-as-mechanical-act", and examines the research in handwriting and spelling. Next, some relationships between metalinguistic awareness, "writing-as-conceptual-act" and other language skills are identified, and the respective contributions of each to the conceptualization of writing presented here are noted. Finally, the specific research and theory from which this study was derived is explicated, and a framework offered which provides a context for the study.

2.1 Writing-as-Mechanical-Act

One concept of writing views it as a coalition of skills which unite during production, but which can be separated out and taught individually. Component skills, such as handwriting and spelling, are not believed to be naturally acquired by the child, and so require structured presentation and practice. This "common-parlance" definition has been the operative one in school instruction through simple force of tradition, yet it has remained critically unexamined for the most part. Until quite recently, its assumed validity has served to unnecessarily limit the scope of investigations of writing.

The emphasis on the need for formal presentation of skills has focussed research efforts on comparing methods, materials and sequence of presentation. This focus is particularly evident in the literature
on the two skills, handwriting and spelling, which will be discussed in this section.

2.1.1 Handwriting

Handwriting may be defined as the expression of letters and words in culturally accepted patterns and formats. The literature on handwriting deals predominantly with procedural and mechanical elements. Developmental frameworks have been sketched for certain skills, mostly to support the notion of "handwriting readiness". The work on the sequence of development in writing alphabetic forms, and on instructional methods which facilitate development will be the focus of this section of the review.

With regard to "readiness", Allen and Wright (1974) suggest that Donoghue's (1971) criteria which include physical, emotional and language maturity, perceptual ability, interest in writing, and a mental age of 6.6 to 7.0 years, are appropriate. Lamme (1979) considers many of the same factors but does not specify a certain mental age, noting merely that children should not be pushed into handwriting before attaining the requisite pre-handwriting skills.

A distillation of current opinion on handwriting and handwriting instruction includes:

1. Early teaching of the formal skills of writing must be carefully planned. For some children formal instruction may be inappropriate because of a lack of necessary motor coordination and perceptual abilities. These children may need a sequenced program of pre-handwriting skills development.
2. "Readiness" skills should be systematically taught. Some prerequisites for instruction are small muscle development, eye-hand coordination when holding a writing tool, ability to form basic strokes, adequate visual discrimination, and orientation to printed language. (Lamme, 1979)

3. Formal handwriting instruction is necessary to help children "bridge the gap to writing" (Allen and Wright, 1974).

4. Instruction should be part of the language arts program and practice activities should be meaningful.

5. Knowledge of the alphabet is not necessary for successful handwriting. (Lamme, 1979)

In virtually all of the studies, definitional distinctions between "pre-handwriting", handwriting, and functional writing were not made clear, and pre-alphabetic attempts at symbolizing meaning were not considered at all.

An early study by Hildreth (1936) touched on some elements of writing as a conceptual act, but did not note any association between growth in conceptual understanding and improvement of the written product through maturation. Her findings on the development of children's ability to write their names indicated that ability to write first, and later, last names improved without instruction from ages 3.0 to 6.5. Considerable overlap in performance ability was evident between age levels as well as wide variation in developmental rates of children of the same age.

The general task response varied as well. The younger children were easily distracted and often would attempt to avoid the task or alter its intent by their response—many responded to the request to write by drawing instead. Task
response became increasingly more uniform with age, evidently because of greater experience with writing and print situations.

Hildreth suggested that the child's ability to write his name was a reasonable test of readiness for writing skills instruction. Clay (1975) too, commented that "The child's own name is a good word to use as a starting point for his insights about written language." (p.47)

From close observation of classes of five-year-olds, Clay (1975) found that young children learned the features of the standard ideographic system by testing and confirming self-generated "principles of writing" as they wrote. Five of the thirteen principles she identified have particular applicability to handwriting and preliterate writing development:

1. Recurring principle: Repetition of elements, often in variable patterns. This is an important feature of the alphabetic system.

2. Flexibility principle: "Creation of new symbols by repositioning or decorating the standard forms."

3. Directional principle: In written language, it is necessary that the pattern of writing movement occur according to certain conventions (left-to-right; top-to-bottom, etc.).

4. Inventory principle: The systematic listing of knowledge revealing a conscious structuring of learning.

5. Contrastive principle: Creation of contrasts between units (such as letters and words). This may indicate a way by which knowledge is ordered and compared.

Clay stated that through repeated experiences of "testing" these principles, children become more skillful in production of writing. Contrary to generally accepted notions, the performance of students she observed who received specific instruction in elements of handwriting did not seem to differ significantly from that of students who received no instruction, but who had
many writing opportunities. Through dictation, tracing, copying, recall of word forms and independent invention, the latter group practiced and improved their handwriting skills.

Clay conceived of handwriting as the production means to a communication end—important to the degree that it aided transmittal of meaningful information. She found that physical skills developed naturally in realistic contexts, and the child himself created practice opportunities as he experimented with the possibilities and limitations of print. This view of writing interrelates the cognitive demands of learning to write with the actual production of written material.

With the exception of Clay, the work surveyed here shares a similar conceptualization of handwriting as the purely external act of using a tool to write symbols on paper. The elements of the act perceived as most salient for formal instruction are the organization of the physical movements into patterns, and the proper formation of forms on paper.

Assumptions which remain unchallenged in the research (though elements have been peripherally addressed in studies of other aspects of literacy) include the concept of teaching "readiness" or "pre-handwriting" skills—is mechanical or semi-mechanical practice in the discrete particulars of handwriting such as letter formation or alignment beneficial? It may be that if a child is "ready for readiness", he may be equally ready to begin actual functional writing. And, is a formal, carefully sequenced program of handwriting necessary? Clay suggests that sufficient functional opportunities exist which
allow a child to test and self-correct his handwriting, and thus, naturally sequence skills acquisition.

It appears that important connections between actual handwriting and the cognitive forces which conceive the intention and drive the act have not yet been fully realized. A definition of writing is offered later which seeks to explain those connections. Within this definition, handwriting is found to be only one aspect of a complex cognitive activity.

2.1.2 Spelling

Spelling, like handwriting, was initially thought to be a primarily mechanical act. Because of the consistency with which certain types of spelling errors were made by children of certain ages, cognitive and mechanical connections have been researched in greater depth than in handwriting, and developmental factors acknowledged.

Important work by Read (1971) noted relationships between children's phonological knowledge, spelling acquisition and metalinguistic development. This seminal study moved spelling research from the narrower concern of instructional strategy effectiveness (prior to Read almost the sole focus of work) to examination of developmental factors.

In *Foundations of Literacy* (1979), Holdaway states that "traditionally [spelling] was not taught, only tested and corrected." As more insight into the psychology of memorization has been acquired, "The strategies recommended to children have become increasingly less mechanical and more functional" (p. 35).
The need to understand the cognitive strategies which underlie spelling development is now more widely acknowledged.

In the last decade, research in early spelling was particularly influenced by the work of C. Chomsky (1971) and Read (1971). Chomsky reported on a case study of a child discovering sound-symbol correspondence, and Read analyzed pre-school children phonological knowledge, and how this knowledge was applied in developing spelling strategies. These two studies provided important insights into the progressive-approximation learning strategies used by the young child as he develops understanding of conventional spelling.

The child's organization and systematic application of language rules was examined in detail by Chomsky in a 1971 case report. She pointed out that a child need know only a few letter names and sounds to begin to spell. It is possible, then, for a very young child to successfully involve himself in active exploration of writing.

"If the child writes first, the written word grows out of his own consciousness and belongs to him. Let him trust his linguistic judgments, and ... accurately express his own perceptions using the means available to him. With this background and familiarity, conventional spelling poses no problem when he comes to it gradually later on." (p. 299)

In Read's study, the spontaneous "invented" spellings of twenty subjects were compared to the standard English orthography to determine how knowledge of speech sounds was utilized in initial writing. Read reasoned that the preschool child must already have a degree of abstract understanding of the phonological system to competently attend to spoken language. Otherwise,
any variations in aspiration, pitch, even dialect would make the speech he heard seem unintelligible. Categories of important features which had already been tacitly abstracted from oral language experiences were applied by the child to his initial print productions. Though spellings in these early writings differed greatly from the standard, they were based on a logical, consistent system derived from unconscious knowledge of speech sounds. Some examples of the consistencies within this system demonstrate the use of a letter-name strategy to represent certain sounds or entire syllables. For example, "beat" might be spelled "BT", or "ladder", "LADR".

Read stated that "Differences between the two systems (phonological and standard English spelling) may define a large and central part of what a child must learn in order to read and write." (p. 3) An important point here is the need to recognize the considerable linguistic resources with which the young child approaches writing.

"We can no longer assume that a child must approach reading and writing as an untrained animal approaches a maze--with no discernible prior conception of its structure." (Read, 1971, p. 32)

Both Read and Graves (1978) suggested that early writing experiences could be structured to assist the child as his self-directed proximations approach standard orthography. Paul (1976) established four stages of invented spelling based on Read's findings. The first stage begins when the child writes the first letter or phoneme of a word to represent the entire word (F = Friday). Next, the final phoneme of the word or syllable is added, with vowels still omitted (HL = hill). The child then begins to represent short vowels in some
way (.DOORDY WOTAR). In the final stage, near-standard form is achieved in spelling. Paul's stages were confirmed informally by Henderson, Estes and Stonecash (1971) and similar stages were noted independently by Forester (1980). Beers and Henderson (1977) found that children continued to use letter-name strategies systematically even after exposure to formal instruction.

Clay (1971) found no discernible order in acquisition of letters, words and sentences--control on all levels developed in concert. At times, attempts to refine or control an element of one area would cause apparent regression in another. This pattern of development appears to be characteristic of learning in general (Vygotsky, 1978).

Spelling research, then, has begun to examine the concepts which guide early spelling development. The interrelations between acquisition of spelling and that of other features of written language still remain to be investigated. Graves (1975) commented that though, "There are separate bodies of research on handwriting, spelling and composing. . .only in rare instances have data connected the three." (p.241) The few studies which have examined these connections have dealt primarily with school-age children's writing in the classroom. These studies are discussed in the next section of the review.

2.2 Writing-as-Conceptual-Act

We have seen that research in writing has focussed on external attributes, with attention on how the child obtains sufficient control of the medium to produce a "correct" product. The development of concepts which eventually lead to the acceptable product has been largely overlooked. In this section, writing is discussed as a complex orchestration of a number of conceptual strands. The importance of writing as a metalinguistic assist in development of abstractive
abilities is examined, and the specific theory and research which support the current study are reviewed.

Birnbaum (1980) described written language as serving three purposes.

"(It) enlarges our capacity to shape our experiences into meaning, to represent meaning to ourselves and others and to represent ourselves to others in our environment." (p. 202)

Meaning, rather than mechanics, is the focus in defining writing as a conceptual act. Halliday (1973) noted that there are motivational similarities between learning to write and learning to talk.

"The impetus for reading and writing is a functional one, just as was the impetus for learning to speak and listen in the first place. We learn to speak because we want to do things that we cannot do otherwise; and we learn to read and write for the same reason." (Halliday, 1973: p. iv.)

Halliday suggested, however, that there are some fundamental differences of purpose in the ways oral and written language are used. For the young child, the first and main purpose of oral language is communicative. It is shaped by the demands of the situation and interactions. The primary function of writing, on the other hand, is to organize and explicate the ideas, as well as internal and external responses and experiences of the writer, independent of the situation. It is this "ideational function" of writing (Halliday, 1973)--its ability to transcend situational constraints--that makes it a critical assist in development of abstraction and cognitive skills.

Vygotsky (1978) characterized writing as the apogee of a developmental abstractive sequence. The sequence begins with gestures as the first steps in visual representation of actions or objects.
"The gesture is the initial visual sign that contains the child's future writing as an acorn contains a future oak. Gestures, it has been correctly said, are writings in air, and written signs frequently are simply gestures that have been fixed." (p. 107)

According to Vygotsky, development of symbolizing ability is furthered by imaginative play, in which the child "operates with meanings detached from their usual objects and actions" (a stick symbolizes a horse, for instance), and in drawing. Simple mark-making gradually develops into deliberate representation of things. The process of naming these "first-order" abstractions (so-called because they are directly representational) provides the first association of language with a visual sign. When the child discovers that speech, too, can be drawn, he begins to be able to comprehend and use arbitrary symbols as representations of ideas.

Understanding "writing-as-conceptual-act" begins when the child makes marks with the intention of representation, and then makes use of the marks to retrieve his original idea.

By this definition, true writing may begin before the child has knowledge of conventional ideographs. Conversely, a child may be able to write letters and words and still have no more than a superficial concept of writing.

The child's ability to manipulate written language appears to follow a developmental pattern similar to that which has been charted for oral language (Bloom, 1975; Cazden, 1972). Some important similarities exist between the two patterns:

1. Knowledge moves from more generalized, diffuse notions to progressively more differentiated ones--from imitation to awareness of underlying purposes (Hiebert, 1980).
2. Development shows general stages within which a skein of features is organized simultaneously. Attention to one aspect may cause an apparent regression in another as the child tests various hypotheses (Clay, 1975; Graves, 1978; Vygotsky, 1978).

3. Active manipulation of language occurs, and the boundaries of meaning are tested through strategies such as language play and use of inventory, contrastive and recurring principles (Clay, 1975; Bissex, 1981).

4. Environmental exposure influences development: What opportunities are available for interaction with the medium? To what degree and for what purposes do people in the child's environment use this medium for communication? What amount of support is given the child for exploration of the medium? (Harste, 1980; Graves, 1980; Clay, 1975; Lavine, 1972).

Similar strategies to those used in oral language learning are applied to understanding and controlling written language. However, the belief that writing strategies develop only after speaking, listening and reading may reflect traditional instructional patterns rather than natural learning patterns, and is not well supported in recent literature.

In a print-rich environment, the young child appears to recognize the utility of print for others, and is motivated to explore it at the same time his oral language skills are expanding (ages two-to-four).

"While children seemingly master speech before they produce written products or read, this simply may not be the case; but rather, may only reflect the fact that we have not recognized children's initial efforts in these areas." (Harste, Burke, Woodward, 1979)

The definition of "writing as conceptual act" set out here is a considerable departure from the definition of "writing as mechanical act" which was discussed earlier. This new focus occurred partly as a result of the exchange of perspectives on written language among the disciplines of linguistics, psycholinguistics, sociolinguistics and anthropology.
The first examinations of children's developing conceptualization of writing occurred most often as incidental findings of work which was focused on other aspects of language development. Studies in reading often included discussion of writing behavior and development. More recently, the role of written language in metalinguistic development has been examined.

The literature indicates a close interrelationship between development of metalinguistic concepts and writing concepts. In the next section of this review, findings in several sub-areas of metalinguistics which pertain to writing are discussed. Comparisons of methodology and the implications of method on the resulting conceptualization of children's knowledge of language is examined. Studies which investigated similar aspects of written language development are discussed together in sections on technical vocabulary, pragmatic awareness/environmental influences, and development of conventions. The work of Vygotsky and Luria, which served as the basis for the current study, will be detailed in a final section.

2.2a Metalinguistic Awareness and Writing

Ability to recognize language as a symbolic system which can be examined and manipulated independent of the object world is called metalinguistic awareness. In order to fully use the language system, the child must realize the arbitrary nature of language conventions and the rules by which language operates for communication. Studies by Papandropoulou and Sinclair (1974), Evans, Taylor and Blum (1979), Hiebert (1981), Mason (1980), and Templeton and Spivey (1980) have confirmed the developmental nature of acquisition of metalinguistic concepts, and the importance of written language in making "language-as-object" visible to the child.
Templeton and Spivey (1980) distinguished between two methods used to investigate children's metalinguistic awareness. Conclusions about the level of children's language concept awareness seemed to depend considerably upon which research method was used. In performance-based studies, the extent of the child's understanding was inferred by observing how the task or activity was carried out.

Most of the early studies, however, examined verbalizable knowledge of language—the degree to which the child understands and correctly uses the "technical vocabulary" of written language.

2.2.1 Technical Vocabulary Studies

Reid (1966) examined awareness of the technical vocabulary with which five-year-olds began formal reading and writing instruction, and the development of these metalinguistic notions. She concluded that the children had little understanding of the reading process or purpose, or of the relationship between sound and symbol. Notions of writing seemed somewhat more advanced than those of reading: most of the children could distinguish between drawing and writing, and were able to reproduce isolated ideographs.

Reid's work provided an important service in extending research attention from the area of reading only, to the broader area of metalinguistic awareness. Further, it presented the concept of a developmental sequence in early literacy understanding, and refocussed attention on the interrelatedness of language concepts and the potential this held for written language instruction.

Downing's replication of the Reid study (1971-1972) supported and extended the original conclusions. The "cognitive clarity"
theory derived from Downing's investigation delineated three concepts necessary for acquisition of literacy: The child must (1) realize written language's symbolic function; (2) develop command of the technical vocabulary; and (3) understand the decoding process.

Downing's characterization of the learning-to-read process as "a series of discoveries of solutions to the subproblems which constitute the total complex problem" echoes an earlier observation by Luria (1977), when he commented on the development of written expression as "...a whole series of little inventions and discoveries (the child) made...that enabled him gradually to use this new cultural tool." (p. 70). The idea of a self-initiated discovery process in understanding aspects of written language has proven central to current attempts to organize a framework of developmental features of literacy.

In their study of reflective knowledge of the concept of "word", Templeton and Spivey (1980) found that ability to discuss language was related to the level of cognitive development as set out in Piaget's theories. Preoperational children were unable to talk about language in the abstract. Linguistic concepts such as "word" tended to be equated with meaning units in speech (i.e., "up-and-down" was a word). Transitional-level children would respond to the same question by offering examples--defining a word or using it in a sentence. They had formed some tacit understanding of the concept, but did not yet have the technical vocabulary to explicate it. Only children at the concrete-operations level were able to use language successfully to talk about language.
The tendency for many of the metalinguistic investigations to focus on overt linguistic knowledge many have led in part to the belief that young children have little organized understanding of language purposes and functions.

Performance-based research by Harste (1980), Harste, Burke, and Woodward (1979), Harste and Burke (1978), and Hiebert (1981) have indicated that this is not so.

Hiebert cited Wellman as noting that:

"...conclusions about preschooler's deficiencies in various cognitive domains may reflect the use of tasks which do not fully capture young children's abilities. Further study of preschooler print awareness should continue to use environmental situations and concrete materials to adequately tap young children's competencies."

(259)

2.2.2 Pragmatic Awareness and Environmental Influence Studies

According to Harste (1980), any instance of written language must be viewed as the "orchestration of a complex social event". In studying the growth of written language from a "social event" perspective, Harste and Woodward found that young children demonstrated high levels of language awareness in all forms as a "communicative contract".

As an example of this, Harste tells of one young child who was asked what the words said on a fast-food drink cup. She read "Wendy's" correctly, then read "hamburgers" as "cup", commenting, "That's a long word with a short sound!" Her active hypothesis-testing of a sound-symbol correspondence is evident, though the hypothesis was not correct. It is clear that she made use of the environmental information available to her to decode the meaning, and also that she sensed a discrepancy between her guess and the correct response. Harste and Burke point out that continued
encounters with print would allow this child to refine her knowledge of print conventions, and to revise and reconstruct her hypotheses on higher levels.

Hiebert (1981) found that within meaningful environmental settings, three-four-and five-year old children demonstrated tacit awareness of literacy behaviors and the conventions of print. The skills and concepts appeared to be strongly interrelated, and their acquisition was a gradual process in which control developed simultaneously over both general and specific features of print.

Holdaway (1979) and Clay (1975) suggest that awareness of the graphic elements of written language may stem from many exposures to written language through early observation of environmental print, modelling, and through book-handling experiences.

Bissex (1980) notes:

"...children's early rehearsals or pretend versions of reading and writing establish the context in which details, such as letter-sound correspondences, can be meaningful. As specific features of print and strategies for responding to them are increasingly differentiated, these are integrated into a hierarchic structure governed by broad concepts about print and by purposes in reading and writing." (p. 206)

Durkin's (1966) study of early readers indicated that most were even earlier writers. They came from homes in which reading and writing were important and frequent activities. Modelling and informal instruction encouraged these children to explore print as producers and consumers.

Hall, Moretz and Statom (1976) reported that books and writing materials were readily available in the homes of the early writers they studied, and that writing, reading, and being read to were
frequent family activities.

Graves (1975) noted that role-models of writing are few in the school environment. Teachers do not perceive themselves as writers and do not model the behavior in any sustained way. Additionally, few opportunities are provided for writing which allow enough time for substantive exploration.

2.2.3 Development of Conventions

Clay (1975, 1977), Graves (1975), Bissex (1980), and Harste (1980) characterize the child's language learning as a process of learning to control and organize the features of written language concurrently at the symbol, meaning, word, and word group levels.

Clay (1975) identified thirteen organizational principles of writing over which children must establish control. In experimenting with these principles,

"The first things learnt will be **gross approximations** which later become refined and weird letter forms, invented words, make-believe sentences. . .Because early learning is both approximate and specific any one new insight may change the child's perception of the entire system drastically. This seems to be because, at first, there is so little system and so much that is new." (p. 15)

The principles Clay determined necessary for the child to master include:

1. The sign concept: A sign carries a message.
2. The message concept: Speech can be written.
3. Copying Principle: Forms can be imitated.
4. Flexibility Principle: Symbols can be varied within certain boundaries (i.e., upper- and lower-case).
5. Recurring Principle: The same elements occur in variable patterns.
6. Generating Principle: New statements can be invented by arranging elements in different ways.

7. Directional Principle: There are certain conventions of pattern and order.

Though the particular sequence of learning the different conventions varies depending on prior experiences of the child, some general stages of conceptual acquisition are discernible.

Clay, in common with other researchers, chose to begin examination of writing at the point at which the child first interacts with ideographs in the school setting. She assumed, rightly, that each child brings to this initial encounter a body of past experiences with print in the environment. She did not, however, deal with the question of how and when the child initially comes to grasp the symbolic potential of writing such that he is able to utilize or at least, begin to explore the ideographic system in a systematic way when it is presented to him.

Harste (1980), and Harste, Burke and Woodward (1979), examined initial encounters and production of print from a social-context perspective. They pointed out the unique character of each response, and the need to carefully consider the total environment in analyzing a written production. These are important considerations, but they fail to provide a rationale for the creation of a particular response, or to place it in any perspective with other productions. The limitations of the analysis lie in the lack of generalizations which might provide clues for a richer understanding of the early development of written expression.
Graves et al. (1975), and Calkins (1980), through careful longitudinal study of children from grades 1-5, are "building a tentative developmental map of how children change composing, penmanship and spelling behaviors during the writing process." (Calkins, 1980) The "map" reveals some important development hallmarks of understanding the writing process and purposes, but the study is not yet at the point of yielding a clean framework of attributes which could be used to analyze written productions.

Again, Graves et al., began their study of the writing process at the point when the child has some control over the standard ideographic system and accompanying phonetic correspondences. Their conclusions have many implications for the early teaching of writing, but still do not address the prerequisite concern of initial symbolic understanding.

It is evident that many questions necessary to construct a comprehensive writing development framework have not yet been satisfactorily addressed: What is the preliterate child's concept of writing? How does the child move from having no functional awareness of the purposes of written language to mastery of this complicated symbol system to convey meaning? What mechanisms of development might "trigger" the movement from a superficial to a conceptually sophisticated approach to the writing task? What early instruction methods might facilitate such movement?

Work by Russian developmental psychologists Lev Vygotsky and Alexander Luria in the 1920s addressed many of these questions.
Unavailable in translation until 1977-78, their findings confirm many current research conclusions, and offer additional insights which will enrich future investigations.

2.3 Origins of Writing

Vygotsky perceived play and writing to be crucial to the cognitive development of the young child. His theories were the bases upon which his student and colleague Alexander Luria devised imaginative studies for early writing development.

The origins of writing, according to Vygotsky, lie in the gesture. Gesture, the initial visual indication of thought, "... contains the child's future writing as an acorn contains a future oak."

(1977, p. 107) A young child's scribbles are gestures which have been fixed on paper. A running motion made with the fingers is transferred intact to the paper because the child happens to be holding a pencil, and the resultant marks record the action of the hand. For the child the drawing is incidental to the motion, and it is of no consequence that the marks for "running" might be identical to those for "jumping" or "walking". The tendency, evident even in the earliest use of paper and pencil, is to "indicate" general attributes graphically, rather than to draw what is actually seen, or what actually occurred.

As the child increasingly differentiates self from the environment, this indicative function extends even further. The child draws from his memory of an object's attributes, not from what is present and/or visible. Thus, a picture would show not only Mommy, but the keys in her pocket, the wallet in her purse and the money in the wallet.
The drawing is then a graphic form of a story, in which the child draws everything he knows about the features of the subject. This graphic representation comes close to the abstract mode of verbal representation.

"The schemes that distinguish children's first drawings are reminiscent in this sense of verbal concepts that communicate only the essential features of objects... giving us grounds for regarding children's drawing as a preliminary stage in the development of written language." (1977, p. 112-113)

Play, in Vygotsky's view, operates as a mode in which meaning is separated even further from the immediate environment: a box becomes a car, blocks become a bridge, and imaginary sandwiches are eaten on an imaginary picnic. Imaginative play provides a transitional means by which the child begins to act on internal, cognitive demands, shaping the situation to the requirements of his play, rather than having his actions determined by the environment or the objects.

An example of this metamorphosis can be seen in the evolution of a child's play with a hobby horse. At first it resembles a horse, and for the child it is a horse. If it falls apart a broomstick is substituted. The child acts with the broomstick as if it were a horse. In doing so he is acting on the meaning which he has unconsciously assigned to the broomstick. If questioned, the child would acknowledge that the broomstick is indeed a broomstick; but concomitantly, he is able to use it in a functionally symbolic way to represent the hobby horse, and more distantly, the concept of "horse".

This ability to sever meaning from an actual object and then to invest that meaning in another object foreshadows the skills of abstraction needed in writing and higher-level cognition.
Klein (1980), terms the movement (from object reality to symbolic reality):

"... a critical first step in the development of a more refined metalinguistic sensitivity which many developmentalists and reading authorities argue is fundamental to the development of the more abstract skills of literacy in reading and writing (Downing, et al.)" (p. 46)

and concludes with Vygotsky that the symbolic representation evidenced in the play and drawings of young children suggests that learning to write at preschool age would be a developmentally natural step.

Vygotsky states:

"Indeed, if younger children are capable of discovering the symbolic function of writing, as Hetzer's experiments have shown, then the teaching of writing should be made the responsibility of preschool education." "A second conclusion is that writing should be meaningful for children . . . [and] . . . that writing be taught naturally." (author's emphasis) (1978, p. 116, 118)

2.4 Development of Written Expression

Luria's studies of writing development, were undertaken in conjunction with Vygotsky's general research of the late 1920s. Luria sought to explicate the "prehistory" of writing and to note some developmental landmarks which would give context to an examination of young children's written productions.

Writing, to Luria, was one of a number of culturally devised "tools" employed by man which provide a means of efficient organization of internal cognitive operations.

For a child to utilize such a tool he must first differentiate himself from the object world, so that things with which he interacts are perceived either as desired objects or goals, or as functional aids to achieving such objects or goals. He must also be able to cue his own behavior through use of such aids.
The role of play and drawing was discussed previously as the first steps in differentiation of the young child's relationships to objects, with play in particular operating as a vehicle for the development of behavior controlled by meaning and psychological significance. Writing, a more refined cultural device, further assists the child in removing self from the immediate perceptual boundaries of time and the object world. Through attempts to utilize writing, the covert, functional awareness is slowly transformed into an overt, metalinguistic awareness which utilizes written symbols as an arbitrary system capable of "drawing not only things but also speech" (p. 115)

From Vygotsky's work, A. Luria derived the philosophical and psychological principles upon which he based his study of writing. Perceiving writing as a complex cultural technique requiring integration of a whole range of skills and abstract concepts, he assumed that there must exist a "prehistory" which prepares the child for formal writing. This preparation is accomplished through experimentation with various primitive techniques, for the most part self-discovered by the child, which are similar in purpose and method to writing.

To get at this prehistory of writing, Luria adopted Vygotsky's "experimental-genetic" method. Vygotsky characterized it as a method which allows observation of the higher-level psychological processes usually hidden beneath automatic or habitual patterns of behavior. The "experimental-genetic" method consisted of constructing a problem-solving task and then interrupting the habitual behavior by either introducing a difficulty into the situation, or assigning a
task beyond the child's current knowledge and capability. Through analysis of the way in which children at different ages coped with a task which did not allow them to use their usual problem-solving strategies, Vygotsky sought to reveal the changes in cognition which occur during development. The point of this type of experiment was not the final result or performance, but the process which led to that response. Analysis of the process might then reveal the ways in which a child organized and assimilated experiences at different points of development.

Luria utilized this method for constructing the writing task used with the young subjects in his study. Presented with a number of phrases and sentences beyond his capability to remember, the child was given paper and pencil and told to write something that would help him recall the cues. Thus, the child had to have some understanding of the symbolic/mnemonic function of marks: that meaning lay not in the marks themselves, but in the ideas they arbitrarily denoted. It was immediately apparent by the way the child used the aids and responded to the task whether or not this understanding existed and with what degree of sophistication it was organized within a conceptual system.

Analysis of the children's responses ages three to nine revealed distinct patterns of response to the task. These patterns were somewhat dependent on age, but more clearly related to metalinguistic awareness and cognitive maturity. Luria noted as a caveat that previous literacy experiences and environmental factors influenced the duration of the writing development stages and he precluded making any rigid correlations between a child's age and his stage of writing development.
Luria termed the first stage of writing development the Preinstrumental Stage, occurring within the age range of three to five years. For the most part, children of this age range exhibited little or no understanding of writing as a mediating act. Their response to the task of remembering cues via writing was imitative and completely external. Some even began writing before hearing the cue, making it clear that they had made no association between the physical act of writing and its symbolic intent. Most remembered fewer cues after having written them than when relying only upon memory, indicating that the physical activity itself impeded memorization. When asked to recall the cues, the subjects often would ignore the writing entirely, and attempt to recall them through direct memory.

The written production most often consisted of undifferentiated zig-zag scribbles written in lines across the page, a reflection of the adult writing the child had observed. Lack of variation in form indicated that the child was not yet aware of what Clay (1975) termed the "flexibility principle": that writing consists of a number of forms which are used in a variety of patterns. The lack of differentiation would make it even more difficult to use the writing for recall.

Luria observed, however, that some young children were able to make use of their scribbles in recall. To do this, the child would place the marks in a certain order or in specific places on the paper. This physical ordering operated as a mnemonic aid in recalling the cue. The child associated a specific cue with a certain mark, though the marks were still not "read". Luria termed this use of the marks to be the first true form of writing, though the child as yet does not realize the symbolic nature of this activity and may easily revert to an undifferentiated use of writing.
Stage Two, the Differentiation Stage, occurred when the child began to reflect the rhythm and length of the utterance by altering the length of the scribble. A short scribble was made for a short word or phrase, and a longer scribble made for a longer cue. Certain marks might be linked to specific words or phrases. Though the differentiation at this stage may have stemmed from an almost unconscious reflection of the external rhythm of the utterance, it indicated the first tentative insight for the child into the symbolic potential of writing. Since the child did not attempt to reflect content, but merely the external rhythm, his writing attempts at this stage might easily have revert to an undifferentiated approach again.

The next sub-stage was initiated when the child attempted to express in some way a particularly striking or significant element of the cue utterance. Luria found that two factors were most likely to bring about a transition from undifferentiated or rhythmic representation to differentiated: quantification (the expression of a number or quantity), and a condition of strong contrast or form.

For the child, this may be the most significant realization made in the evolution of his perception of writing as a functional cultural tool. Luria notes that:

"By introducing the factor of number into the material, we could readily produce differentiated graphic activity in four to five year old children by causing them to use signs to reflect this number." (p. 87)

and

"Quantity and conspicuous shape lead the child to pictography. Through these factors the child initially gets the idea of using drawings (which he is already quite good at in play) as a means of remembering, and for the first time drawing begins to converge with a complex intellectual activity." (p. 89)
The example of Brina Z., a five year old girl, clearly demonstrates this series of discoveries leading from an undifferentiated to functional use of writing. In the first session, Brina drew lines arranged in columns for the cues: (1) The bird is flying. (2) The elephant has a long trunk. (3) An automobile goes fast. (4) There are high waves on the sea. (5) The dog barks. She recalled only two of the five cues; the same number she recalled earlier when relying solely on memory. She did not look at the paper during recall.

Over the next few sessions, quantity was introduced into the cues. Sentences contained both determinate and indeterminate number, e.g., A man has two legs. There are many stars in the sky. The hen and four little chicks.

By the fourth session, not only was Brina indicating quantity by varying the number of marks, but she was successfully using, in fact, reading, the marks to recall virtually all content.

"...the subject discovered the instrumental nature of such writing and worked out her own system of expressive marks, by means of which she was able to transform the entire remembering process. Play was now transformed into elementary writing, and writing was now able to assimilate the child's representational experience. We have reached the threshold of pictographic writing." (p. 97)

Stage Three, the Pictographic Stage, occurred between ages four-to-six. Pictographs were created by the child as aids to remember specific thoughts. The child attempted to utilize what was written during recall, rather than simply relying on memory. The differentiation created by drawing pictures make this a successful strategy for recalling specific ideas.

By this time, the child is quite familiar with drawing as a self-contained, representational activity, and is quite proficient at
it. This proficiency may cause considerable difficulty for him as he attempts to break away from the expressive possibilities of drawing, to use it in the role of symbolic mediation. The greater the child's ability to draw, the more difficulty he may have in writing with the aid of drawing. Movement back and forth between the two modes in common are demonstrated by Marusya G. She represented, "Chimney sweeps are black.", by drawing a little box (chimney), then went on to draw a flower. She recalled only the flower and was clearly unaware that she had not fulfilled the task of representing specific meaning. She had turned it into a self-contained, self-fulfilling art activity. Because of the introduction of ideographs in school, this stage may not develop fully.

We have now reached the point at which the child is first introduced to culturally standard ideographs. This is also the first systematic attempt to "teach" the child the various elements of literacy, including directionality, spacing, etc. This is a particularly interesting juncture between the new, externally imposed, "correct" knowledge of conventions and purposes, and the child's previous self-derived hypotheses.

Luria noted an interesting pattern of development as one technique gradually replaced the earlier, more primitive one:

"Development . . .may be described as a gradual improvement in the process of writing, within the means of each technique and sharp turning points marking a transition from one such technique to another. But the profoundly dialectical uniqueness of this process means that the transition to a new technique initially sets the process of writing back considerably, after which it then develops further at the new and higher level." (p. 106)
Even after mastery of the letter forms, and with the understanding that these forms are used to record content, Luria found that the child still has little understanding of the mechanism of writing.

"He understands that he can use signs to write everything, but he does not yet understand how to do this; he thus becomes fully confident in this writing yet is still totally unable to use it. Believing completely in this new technique, in the first stage of development of symbolic alphabetic writing the child begins with a stage of undifferentiated writing he had already passed through long before." (p. 107)

As an example, six-year-old Vasya G. knew the letters A and I. He confidently wrote a series of A's and I's to record the spoken cues. He read the letters back, totally disassociating them from the cues.

The fact that this lack of deeper understanding continues for a long time after the child is functionally writing with letters was ingeniously demonstrated when Luria required school-age, literate children to write without using letters. He found that many of the children had extreme difficulty in coping with the task, mainly because they did not think to use pictographs, and instead attempted to use some form of undifferentiated symbolic writing. The children eventually recapitulated the earlier discovery of the need for differentiation through rhythmic means, and finally, the movement into graphic representation.

To make clear the movement from pictographs into symbolic representation, Luria gave cues which contained an abstraction, such as "The girl wants to eat". Unable to depict the condition of "hunger", 8½-year-old Shura drew the girl, then drew an arbitrary mark ○ (used in previous sessions in a completely undifferentiated way), which signaled the abstract term "wants to eat".
It appears then that the child may be able to manipulate the symbolic writing system with considerable sophistication and yet still have limited understanding of the full complexity of form and purpose. It is only after many opportunities to work with the form in a functional setting, that conceptual understanding will finally "catch up" with mechanical ability.

As Luria says,
"It is not understanding that generates the act, but far more the act that gives birth to understanding--indeed, the act often far precedes understanding." (p. 113)

This, to Luria was a critical finding: the very process of attempting to use the tool of writing transforms a child's behavior from that of primitive reaction to the environment and simple imitation, to a culturally complex, mediated activity.

The parallels which exist between Luria's findings and the findings of recent work are obvious: parts of stages Luria set forth have been described by Graves, Clay, Harste, etc. As yet, it has not been possible to propose a cohesive developmental framework for writing from onset of writing-like behavior to final communicative competence.

It is believed that the study reported here validates Luria's basic theory, and also offers a foundation for development and elaboration of such a developmental framework.
CHAPTER III
DESIGN OF STUDY AND MODIFICATIONS

3.1 Design of the Study

This was a qualitative descriptive study which investigated two questions: (1) What types of writing strategies do three-to-nine-year old children use to record the verbal cues of a guided writing task? And (2) Will the use of elicitation cues containing quantification or strong contrast/color descriptors improve task performance by assisting movement from undifferentiated use of written expression into an increasingly differentiated use?

Intended to reconstruct and replicate as much as possible a study by Alexander Luria in 1929, the current work also attempted to systematize data treatment by constructing consistent elicitation protocols and administration procedures. The study also standardized the specific language items used.

This chapter describes the modifications of the Lurian framework which were made, the design of the tasks, selection of the sample population, the procedure used to administer the task, and data evaluation procedures.

3.2 Modification of the Luria Framework

Some important differences exist between the population Luria examined, and the group reported on in this study. Environmental factors which affect literacy behaviors were very different in the Russian peasant villages from which Luria's sample was drawn. Universal
Literacy was not a reality in the 1920s in the Soviet Union. Prior to formal instruction at age seven, a village child had little opportunity to explore print—it was not a salient feature of the home or public environments, nor was it important in the lives of village adults. The opposite is true for the sample of the current study. In the United States today, children are surrounded by print from birth. They observe adults using print in many ways each day, and are themselves actively involved in recognizing print in various contexts (traffic signs, cereal boxes, T.V. programs) long before formal instruction begins. They bring knowledge and numerous expectations to their early school instruction, based on previous print experiences.

When the writing samples for this study were examined, certain patterns were seen which were much less evident in Luria's samples. Luria noted that children who were able to write alphabetic forms were unable to use the forms to write meaningfully. Confident that writing the symbols expressed ideas, they did not connect the marks with any specific content, and often did not use the marks for recall, much in the way very young children believe their undifferentiated scribbles are just like adult writing. This recapitulation of previous stages occurred in the Russian sample in the work of children ages seven and above, according to Luria's description. He believed that this recapitulation indicated that these children had not had sufficient opportunity to explore symbolism through pictographs, and that the early introduction of alphabetic symbols hindered the child's development of metalinguistic understanding.

It may well be the case that the child who chooses to limit his writing expression to alphabetic symbols has chosen a longer, more
conceptually difficult path. However, among the American subjects of the current study, this choice seemed to be a common one, and what may be more important, occurred at a much earlier time. Four- and five-year-olds attempted to use this technique before receiving any formal instruction. In Luria's less print-sophisticated population, this apparently did not occur so early.

Luria noted that many children did not fully exploit the pictographic stage before receiving instruction in ideographs. It seems plausible that for the preliterate subjects of the current study, gradual recognition of the symbolic purposes of writing may necessarily develop solely through the ideographic mode. Their own early hypotheses about the nature of writing, and the writing instruction they receive in school, starting in kindergarten, make it unlikely that they would go through the pictographic stage.

The emergence of these two paths to symbolic understanding (the Lurian and the alphabetic) in the writing samples of the current study, led to creation of a framework of early written expression development which could accommodate both. Tables I and II present the Lurian stages and the alphabetic stages that were developed.

Both have the common starting point of Stage I, the Preinstrumental stage. During Stage II, the Differentiated Stage, children following the alphabetic path (Table II) begin to use letters, numbers, and letter-like forms. These forms are used in a manner very similar to the non-alphabetic forms of the Lurian path (i.e., at first writing reflects the cue only rhythmically, then it occasionally reflects cue content, then refers more consistently to quantity and contrast of the cue). (Stage II substages correspond approximately to the Lurian
substages with the same Arabic letters.) The alphabetic development then proceeds into the early stages of sound/symbol correspondences (as identified by Read, 1971; and Beers and Henderson, 1977).

The Lurian stages, presented in Table I have been elaborated, mostly through the organization of specific features of task performance and recall within each stage. Stage I is given basically as Luria described it. Stage II formalizes the Rhythmic (A) and Symbolic (C) substages. Substage (B) (Transitional) was added when sample analysis revealed that a number of children occasionally incorporated symbolic elements into their scribbles and had some success in recall, but did not use the symbolic strategy consistently.

The three substages of Stage III (Pictographic) were organized from the characteristics Luria noted, and which were confirmed in the pictographic samples of this study. The movement from overgeneralized to specific notions, and from elaborated to economical representations is consonant with Vygotsky's learning theories, from which Luria's framework was derived.

Stage IV (Ideographic) was divided into four substages. Luria described literate children as "recapitulating" the earlier stages (I, II, III) when they were restricted from using alphabetic symbols. The letters i, ii, and iii refer back to those preliterate stages. Also implied are the various substages described within the earlier stages. Substage iv recapitulates the various stages at the symbolic level, as the child attempts to develop his own "code" of arbitrary symbols. Substage iv was a common strategy in the study reported here. This substage was not explored by Luria beyond his
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
</table>
| I. Pre-instrumental (Undifferentiated) | A. Undifferentiated: Scrawls in imitation of adult writing. Not used in recall.  
B. Mnemonic: Scrawls put in certain order or place on page. Still look undifferentiated. May be used in recall. |
B. Transitional: Occasionally symbolic representation of strong image, of personal importance. Often reverts to rhythmic or undifferentiated representation. Sometimes used in recall.  
C. Symbolic: VITA QUANTITY, CONTRAST. Primitive differentiation via color, number. May not use in recall. |
| III. Pictographic | A. Altered Task Focus: Pictographs reflect cue, but may be elaborated into own drawing, or developed into own story, with the original purpose forgotten. May not use pictographs in recall.  
B. Inexact: Pictographs used to recall main idea or noun of cue. Easily reverts to previous substage. Difficult concept may be shown by drawing entire situation surrounding it.  
C. Exact: Economical pictographs, used to recall cue in similar or exact language. Difficult concept may be represented by arbitrary sign (i.e., "hungry"). Devices such as representing a whole by a part (i.e., one star representing many) may be used. |
| IV. Ideographic: FORMAL LITERACY INSTRUCTION BEGINS | When child is asked to represent meaning without using learned ideographic system, he recapitulates elements of previous developmental pattern.  
i. Pre-instrumental: Uses non-standard symbols in an undifferentiated manner. Unable to use in recall.  
ii. Differentiated: Uses non-standard symbols, differentiates by units (if cue is four words, four signs are made) May be unable to use in recall.  
iii. Pictographic: Develops simple pictographs to represent meaning. Recalls via these pictographs.  
iv. Invents Own Symbol System: Develops system of arbitrary signs which replace word, letter, or meaning units consistently. Eventually uses in recall. May recapitulate sequence as develops system. |
SUMMARY OF ALPHABETIC STAGES OF WRITTEN EXPRESSION DEVELOPMENT

I. Preinstrumental (Undifferentiated)
   A. Undifferentiated: Scrawls in imitation of adult writing. Not used in recall.
   B. Mnemonic: Scrawls put in certain order or place on page. Still look undifferentiated. Random patterns of a few letters may be used. May be used in recall.

II. Differentiated
   A. Rhythmic: May use a few letters (often from name) or letter-like forms. ("NOAANONOA") Sometimes used in recall.
   B. Transitional: Uses wider variety of letters or letter-like forms. May say letter names in recall, rather than cue. ("NOAPATNOES")
   C. Symbolic: Begins to use learned numbers to reflect quantity. May attempt a few first letter/word correspondences of most important noun or idea of cue. Easily reverts to Substage B. (TWO DOGS = "2 D") May use a few memorized words ("ZOO")

III. Ideographic

BEGINNING LITERACY (Merges with Stage IV-Lurian)
FORMAL LITERACY INSTRUCTION MAY BEGIN
CHILD MAY BE UNABLE TO CONSIDER AN ALTERNATIVE SYMBOLIC SYSTEM, IF RESTRICTED, UNTIL QUITE ADVANCED IN LITERACY SKILLS

1. Beginning sound/symbol correspondences: Most salient idea of cue represented, usually the noun. Later, more words are represented. First letter of word only. ("Little doll" = "D")

2. Initial and final letters of the word are represented. Later, median consonants. (WAS = "WZ")

3. Vowels closest to sound in word as it "feels in the mouth" are used, according to the letter name. (THEY = "TAE")

4. Increasingly closer match to standard orthography, based on growing sight-word, semantic and phonetic knowledge (THEY = "THAY", later "THEY". WAS = "WUZ", later "WAZ", "WAS")

(Read, 1971; Beers, Henderson, 1977)
Figure 1

Lurian/Alphabetic Framework
note that the genesis of symbolic writing lay in a child's use of an arbitrary mark with a pictograph to denote a pictographically difficult concept ("hungry").

One last point remains to be mentioned, and that is the connections between the two divergent paths to symbolic understanding which have been sketched here. Each path stems from a common beginning, and they meet again at the point of initial literacy (sound/symbol correspondence). Stage III (Alphabetic) and Stage IV (Lurian) essentially exist side-by-side. A child at any point in the "invented spelling" sequence of Stage III (Alphabetic) could be expected to approach the Lurian task at some level of Stage IV (Lurian). In fact, some subjects moved not only up and down in a "zippering" pattern between stages and substages of a given path, but also "crossed over" at times to incorporate elements of the other path (i.e., a child who used State IIIC alphabetic symbols might use a pictograph for a particularly visual cue).

The widely varied and fascinating responses of the forty-four subjects of this study were successfully accommodated within this framework. Informal field testing of the framework indicated that classroom teachers, when familiarized with it, had little difficulty categorizing writing samples according to the guidelines.

3.3 Design of Elicitation Cues and Protocols

The translation in 1978 of A. R. Luria's 1929 report on research in the writing development of Russian children served as the basis for the current study. Because a number of studies in several settings were reported together, some specifics of protocol design were not included in the translation. A goal of the current modified
replication of the Luria study was to flesh out and test the design and protocol formats Luria described.

Elicitation cues were selected from those of the original report. Some items which seemed unlikely to be within the experiential background of the present-day subjects were modified or substituted. Cue protocols were constructed to reveal the maximum movement possible during the task sessions. Thus, the cues for each session were chosen to vary in ideational focus and degree of abstraction.

The number of interviews was limited to three, set in most cases about one week apart. The preliminary study group was interviewed two times. (The data from the preliminary group are included and discussed because of the richness of the samples. The group was at the age (4.0 - 6.0) which showed the greatest variety of responses to the task, and thus provided valuable comparison opportunities.)

In Session One, cues consisted of a set of six concrete or easily visualizable phrases or short sentences. In Session Two, the cues added the factor of quantification, both specific ("A horse has four legs.") and indeterminate ("There are many children in school.") Session Three cues were a combination of the previous two types with the addition of more abstract elements ("The girl is hungry.")

**ELICITATION CUES**

**Session I (Non-Quantitative)**

1. Cat
2. Little red car
3. It's raining
4. I hurt my knee
5. Black smoke
6. A spooky ghost
Session II: (Quantitative)

1. Two dogs are chasing the cat.
2. The big hen and four little chicks.
3. There are many children in school.
4. A horse has four legs.
5. Give me three pieces of candy.
6. Five crayons are in the box.

Session III (Combination of non-quantitative, quantitative, abstract)

1. Skinny dog
2. The mouse eats five pieces of cheese.
3. That girl is afraid.
4. One thousand stars are in the sky.
5. I see you.
6. It's dark in the basement.
7. Fat boy with a striped shirt

Cues were given in a normal, expressive reading style, and repeated if requested. If the subject seemed to misunderstand the task or to have difficulty with it, encouragement was given, but no direct assistance offered.

3.4 Description of Sample

3.4.1 Population

The population consisted of three-and four-year-olds from two preschools; five-and six-year-olds from an afternoon half-day public school kindergarten; and first, second and third grade students from a private Catholic elementary school. All subjects lived in Bellingham, Washington, a town of 39,375.

3.4.2 Sample

The sample consisted of a total of forty-four students from the schools. The breakdown by age and sex is shown in Table 3. The subjects are grouped according to the number of sessions in
which they participated. The initial group of fourteen (numbered 31-44) had two sessions, and the main group (numbered 1-30) had three sessions. Subjects 45 and 46 were single session.

3.4.3 Selection of Subjects

Three-, four-, five-, and six-year-old subjects were chosen at random by the researcher from a list of those in each class who had returned the authorization form. First, second and third grade subjects were chosen from the parent-authorization lists by their teachers as being representative of their classes.

With the exception of one bilingual four-year-old, all subjects were native English speakers.
### TABLE III

**SUBJECTS BY SEX, AGE, GRADE LEVEL**

<table>
<thead>
<tr>
<th>Subject Number</th>
<th>Name</th>
<th>Sex</th>
<th>Age</th>
<th>Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sarabeth</td>
<td>F</td>
<td>3.7</td>
<td>Preschool</td>
</tr>
<tr>
<td>2</td>
<td>Laurel</td>
<td>F</td>
<td>3.9</td>
<td>Preschool</td>
</tr>
<tr>
<td>3</td>
<td>Hugh</td>
<td>M</td>
<td>4.0</td>
<td>Preschool</td>
</tr>
<tr>
<td>4</td>
<td>Windy</td>
<td>F</td>
<td>4.1</td>
<td>Preschool</td>
</tr>
<tr>
<td>5</td>
<td>Nathan</td>
<td>M</td>
<td>4.3</td>
<td>Preschool</td>
</tr>
<tr>
<td>6</td>
<td>Leah</td>
<td>F</td>
<td>4.8</td>
<td>Preschool</td>
</tr>
<tr>
<td>7</td>
<td>Nina</td>
<td>F</td>
<td>4.8</td>
<td>Preschool</td>
</tr>
<tr>
<td>8</td>
<td>Charlie</td>
<td>M</td>
<td>4.8</td>
<td>Preschool</td>
</tr>
<tr>
<td>9</td>
<td>Christy</td>
<td>F</td>
<td>4.11</td>
<td>Preschool</td>
</tr>
<tr>
<td>10</td>
<td>Matthew</td>
<td>M</td>
<td>5.0</td>
<td>Preschool</td>
</tr>
<tr>
<td>11</td>
<td>Mia</td>
<td>F</td>
<td>5.1</td>
<td>Preschool</td>
</tr>
<tr>
<td>12</td>
<td>Amy</td>
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<td>Preschool</td>
</tr>
<tr>
<td>13</td>
<td>Chance</td>
<td>M</td>
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</tr>
<tr>
<td>14</td>
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<td>F</td>
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<td>Kindergarten</td>
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<td>15</td>
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<td>F</td>
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<td>Jeff</td>
<td>M</td>
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<td>Lavonne</td>
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<td>Kindergarten</td>
</tr>
<tr>
<td>18</td>
<td>Debby G</td>
<td>F</td>
<td>5.10</td>
<td>Kindergarten</td>
</tr>
<tr>
<td>19</td>
<td>Tanya</td>
<td>F</td>
<td>6.10</td>
<td>First</td>
</tr>
<tr>
<td>20</td>
<td>Nikolas</td>
<td>M</td>
<td>6.11</td>
<td>First</td>
</tr>
<tr>
<td>21</td>
<td>Amy S.</td>
<td>F</td>
<td>7.0</td>
<td>First</td>
</tr>
<tr>
<td>22</td>
<td>Jenny</td>
<td>F</td>
<td>7.2</td>
<td>Second</td>
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<tr>
<td>23</td>
<td>Sean M.</td>
<td>M</td>
<td>7.3</td>
<td>First</td>
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<td>Duhilani</td>
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<tr>
<td>25</td>
<td>Jeff S.</td>
<td>M</td>
<td>8.2</td>
<td>Second</td>
</tr>
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<td>26</td>
<td>Shawn</td>
<td>M</td>
<td>8.7</td>
<td>Second</td>
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<td>27</td>
<td>Mykelle</td>
<td>F</td>
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<td>Third</td>
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<td>M</td>
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<td>Third</td>
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<td>F</td>
<td>8.11</td>
<td>Third</td>
</tr>
<tr>
<td>30</td>
<td>Eric</td>
<td>M</td>
<td>9.10</td>
<td>Third</td>
</tr>
</tbody>
</table>

**Grand Total:** 26 F, 12 M
3.5 Interview Procedure

Each subject was given a sheet of unlined paper and a pencil, and requested to "put something down on the paper" which would help him to remember the cues. Preliterate subjects were given no directions as to the manner in which cues could be represented. Functionally literate subjects (first, second, third grade and a few kindergarten children as identified by the classroom teacher) were instructed to not use letters or numbers, but were given no other instructions as to what methods could be used. Interviews lasted from ten to thirty minutes, depending on the age of the subject, and his approach to the task.

After hearing the item, the subject "wrote" on the paper. After the entire set had been dictated, the subject was asked to "read" what he had written. Pre-determined questions were then asked in flexible order about various responses ("Which one said__?"; "What did this one say?"), to determine to what extent the written productions were used to recall specific cues.

As an informal "cross-check" of overt metalinguistic knowledge, questions similar to those of the Reid (1966), Downing (1971-1972) and Templeton and Spivey (1980) studies were asked at the conclusion of the interview. (See Appendix C for transcriptions of sessions; Appendix A for protocol and questioning formats.)

Every effort was made to keep the sessions informal, positive and non-judgmental in tone. The subjects seemed to consider the task to be a "thinking game", and were proud of their efforts. Of the forty-six subjects originally tested, only two were unable to finish the series.
3.6 Data Collection

A data-collection form was developed which provided space to record cues, initial responses, and recall attempts, anecdotal comments, diagrams of the written productions and additional evidence of literacy behaviors (Appendix B).

Each session was also tape-recorded. After some initial curiosity, recording did not appear to interfere with the elicited responses or spontaneous comments of the subjects.

3.7 Data Evaluation

After the data were obtained, it was clearly appropriate to reconsider and revise some of the initial assumptions which had guided the pre-planning of individual and group data sample analysis. Analysis of the task response patterns led to modifications of Luria's original framework, as discussed in Section 3.2 of this chapter.

Each interview was analyzed using the modified Lurian/Alphabetic framework as a basis of categorization. The characteristics of the written sample and the investigator's intuitive analysis of the subject's verbal and behavioral responses to the task determined stage and sub-stage assignment. The task performances and written samples were examined to determine what, if any, movement across stages was evident. A descriptive summary of the data and responses was prepared (examples given in Appendix B).

The modified framework appeared to reasonably accommodate the responses of all the subjects. Consideration of both the individual cases and the group trends provided evidence of developmental patterns, rather than any single subject's response, or predetermined group data treatment.
To establish face validity of the evaluation procedures, three data samples were independently categorized by two experts familiar with the Lurian model and the modified framework.
CHAPTER IV
FINDINGS AND DISCUSSION

In this chapter, the results of the three written tasks and interview sessions are presented. First the group performance is evaluated. Next, individual examples of specific stages and substages of both the Lurian and Alphabetic frameworks, as well as examples which "crossed" between the two modes are shown and discussed. Finally, each session's cues are analyzed and the kinds of pictographic responses that were made are noted.

4.1 Developmental Stages

This study investigated whether stages identified by Luria were evident in the strategies which preliterate and literate children used to record verbal cues with paper and pencil. It was hypothesized that these stages, if confirmed, would be age-related.

Stages in writing development clearly existed in the 44 samples that were analyzed. Luria's stages appeared to adequately describe the task approach and written samples of 30 of the 44 subjects (68 percent). After analyses were made of the remaining 14 samples, the investigator constructed an "alphabetic framework" which complemented and expanded the Lurian framework. Virtually all the elements of this alphabetic framework were described, but not systematized, by Luria in the original study. Framework modifications were discussed in Chapter 3, Section 3.2. Use of this expanded framework allowed all samples to be placed.
4.1.1 Developmental Stage By Age, and Movement Between Stages

There was a general relationship between age and the developmental stage of the subject. Of the 10 three- and four-year-olds, four initially demonstrated Stage I responses, four demonstrated Stage II, and only two could be placed at Stage III-Lurian. None placed in Stage IV-Lurian. Two of the ten used a non-functional alphabetic strategy. Of the 24 five- and six-year-olds, one placed at Stage I initially, while ten placed at Stage II, ten at Stage III, and three (two were first-graders) at Stage IV. Only one of the five-year-old subjects at Stage III attempted to use an "invented spelling" (i.e., functional alphabetic) strategy. All seven-, eight- and nine-year-olds were functionally literate and placed at Level IV.

By the final session, three of ten subjects in the three/four-year-old group showed movement between stages (two moved from Stage I to II; one from II to III), and one showed movement between the substages of a stage (from IIIA to IIIB). Three of the five/six-year-olds showed movement between stages (two from II-Alphabetic to III-Alphabetic; one from IIIB-Alphabetic to IIB-Lurian to IIC-Lurian). Four moved between substages of a stage (from IIIB to IIIC). Two of the seven/eight/nine-year-olds moved between substages of Stage IV (from iii to iv).

A total of 29.5 percent of all subjects, or 34.3 percent of the preliterate subjects (excluding the first-, second- and third-graders), exhibited a shift in approach sufficient to change substages or stages. Some shifts by Stage IV-iii subjects
(the functionally literate group) were not figured into the chart (Table IV) data.*

The main purposes of this study, (to examine the writing behaviors of preliterate children, and to substantiate a general and flexible framework of writing development as proposed by Luria) did not require such a degree of specificity. Many of the Stage IV children did, however, show growth in the exactness of recall and the economy of their pictographs across the sessions. This finding was noted in individual analyses.

Most of the very young Stage I and II subjects also showed increased organization of response and more specificity of recall, though their overall approach remained categorized within one stage or substage. Again, this finding was most appropriately noted in analyses of individual samples.

Only five of all the preliterate subjects ages three to six continued use of an ineffective strategy throughout sessions. Four of these used the alphabetic mode, and were unable to develop a more productive strategy within this mode. Evidence to be discussed indicated that children who used this mode at an early age had a longer and more difficult path to understanding the functions of writing, and to demonstrating their understanding. It is likely that a longer series of experiences with the Lurian

* For the purpose of simplicity, Stage IV substages i, ii, iii and iv were not further broken down to A, B, and C as were the corresponding preliterate stages I, II, and III. As mentioned earlier, the substages A, B, and C were implied in IV i, ii, and iii. Thus, it was possible for Stage IV iii subjects to progress from inexact (B) to exact (C) use of pictographs.
task would eventually reveal movement for the children who did not change an ineffective approach in the course of the three sessions.
### TABLE IV

**NUMBER OF SUBJECTS AT EACH STAGE (INITIAL AND FINAL PLACEMENT)**

<table>
<thead>
<tr>
<th>AGE</th>
<th>LURIAN</th>
<th>I-A</th>
<th>I-B</th>
<th>II-A</th>
<th>II-B</th>
<th>II-C</th>
<th>III-A</th>
<th>III-B</th>
<th>III-C</th>
<th>III-4</th>
<th>IV-i</th>
<th>IV-ii</th>
<th>IV-iii</th>
<th>IV-iv</th>
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<td>3.0-3.11</td>
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<td>1</td>
<td>1</td>
<td>1</td>
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<td>5</td>
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* Subject used both modes equally during session
Figure 1

Subject by Development Stage (Summary)
4.2 Lurian Stages of Written Expression Development (Modified):
Examples and Discussion

68 percent of the subjects used a representational method which was classifiable within the modified Lurian framework. The responses of the three- and four-year-olds fell most often within Stages I and II, with a few in an early part of Stage III. Five- and six-year-olds overlapped in Stages II and III with a very few in Stage IV. The first grade six-year-olds, and the second and third graders, were all within Stage IV. Examples of written work and task performance from each stage are discussed and contrasted, and general trends summarized in this section.

4.2.1 Stage I Preinstrumental (Undifferentiated)

Subjects at this stage typically made similar marks for all cues, often in a non-standard placement pattern (i.e., going down the right side of the paper; in a clock-wise circular pattern; randomly placed; piled on top of each other or incorporating a previous mark into a new one). Marks were not elaborate-- mock-cursive scrawls, circles or other simple geometric shapes, and vertical lines were all common. Most important, perhaps, is that the subject did not use, or seem to be aware of the role that the written production was supposed to play in recall: to aid the writer in remembering specific ideas. The subject rarely looked at the paper when asked to read what she/he had written. Indeed, as Luria noted, writing may have actually interfered with their capacity to simply remember several cues.
EXAMPLE 1 STAGE IA UNDIFFERENTIATED: Subject 46 Kim, age 3.10

This subject had an understanding of some of the surface elements involved in writing: It goes in one direction consistently, and from the top to the bottom of the paper. A left-hander, she wrote right to left, including a perfect reversal of her name. Cues were placed randomly on the page, and there were no differences in line lengths. She did not recall any cues, did not look at the paper, nor make any correct identifications when assisted with prompts ("Which one says ___,").

EXAMPLE 2 STAGE IB (MNEMONIC): Subject 1 Sarabeth, age 3.7

Wiggling her tongue constantly, Sarabeth seemed nervous about attempting the task. She made slow, careful faint circles—two or three for five of the six cues, from page top to the bottom, and finished with two squiggles for her name. For Cue 3 ("It's raining.") however, she made several vertical lines instead.

Many of the youngest subjects were the most responsive to this cue, usually making primitive pictographs (a higher-level response for most). The cue's simplicity and familiarity made it particularly appealing to them.

Sarabeth recalled two of the six (6 and 2), but did not look at the paper. At Sessions 2 and 3 the same general pattern was followed, with a little more variety of forms (circles, vertical lines grouped in two's, and squares). Writing was never looked at for cue recall and only one cue was recalled at each session.
EXAMPLE 1
Kim
Session 1

EXAMPLE 2
Sarabeth
Session 1
4.2.2 Stage II Differentiated

At this point, the written production begins to show more response to the cues, through rhythmic reflection of the cue length (Substage A), through greater variety of forms (Substage B), and some use of primitive differentiation for color, number or visually strong, personally important images (Substage C). These responses easily lapse back into less differentiated forms. Occasionally a subject develops a response into a "story" or elaborates the picture as she/he draws, in the manner of an early Stage III pictograph. An important difference between the Stage II and the Stage III writer lies in the use made of the pictograph: The Stage III writer is more likely to refer to the pictograph for recall, or to at least understand that there is a connection between the writing and recall events.

EXAMPLE 12 and 13 STAGE IIA (RHYTHMIC), Subject 40 Bobby, age 5.10

The clearest example of rhythmic reflection of a cue was seen in the samples by Bobby, who is discussed in Section 4.3.2. There were few subjects who chose only the rhythmic response to a cue. It appeared more often as a part of a IIB or IIC response. Several kindergarten-age subjects referred to a cue as being long or short, but didn't necessarily reflect that observation in their writing.

EXAMPLE 3 STAGE IIB (TRANSITIONAL), Subject 2 Laurel, age 3.9

Laurel demonstrated a wonderfully literal response to the direction "Put something on the paper that will help you remember 'cat'": She picked up a stuffed animal lying nearby and placed it on her paper! Only with urging, and with the specific instruc-
tion to write something did she faintly scribble a line. She refused to do 2, 4, 5, and 6, saying she couldn't do those. She tried to give the pencil back to the investigator after each writing attempt. Again, cue 2 ("It's raining.") was a breakthrough for the subject. She made a strongly physical representation of several vertical lines. It was the only cue she recalled. Her only other response being to draw a happy face and say, "Smiles".

In the second and third sessions, the subject became more and more involved with the task, but redefined it as a drawing/story task, whose meaning she was able to control through "free association" from the cues.

SESSION 2

Investigator: A big hen and four little chicks.

Subject: That's a chick. Just going to get it black. This is a little airplane. Here's a chickadee....

RECALL:

Subject: It's your birthday. . . . rain. . . . my candles . . . airplane.

SESSION 3

Investigator: Fat boy with a striped shirt.

Subject: Fat, fat, fat. Stripe, stripe, stripe. That's a kite.

RECALL:

Subject: Monster. Kite.

Her active working with the ideas, even if not directed toward recall of cues, as well as the more careful ordering of
responses and continued use of pictographs (which were occasionally accurate and were based initially upon the cue ideas) moved this subject from Stage IIB to IIIA across the three sessions.

EXAMPLE 3
Laurel
Session 1
EXAMPLE 4 STAGE IIC (SYMBOLIC), Subject 4 Windy, age 4.1

Windy responded most strongly to the concrete/visual cues, and unlike most subjects, recalled more of the first session cues (4/6) than the following sessions (0/6 and 0/7 respectively). In Session 1, she recalled the nouns "car", "kitty", "rain" and "smoke."

Session 2 and 3 showed less differentiation between the cues than she had used in the first session, with many depicted in scribbles and circular shapes. She also began to divert herself somewhat from the task purpose, much in the way Sarabeth (EXAMPLE 2) had done, commenting similarly on the cue and extemporizing the picture from her comment as well as the cue. Recall was 0 for both sessions.

This subject's work is an excellent example of the ambiguity of purpose in the transitional and symbolic substages of Stage II. Though she used very simple pictograph-type representations, she was not able to hold on to the concept of cue idea/picture association. As she became more comfortable with the task, she drew more freely and in a less-differentiated manner, which was less useful for recall. She did not demonstrate any consistent understanding of the relationship between the writing and recall portions of the task.

Windy also provides a clear demonstration of the Vygotskian notion that ability to perform a certain act (in this case, pictographic representation) precedes the understanding of the act (here, understanding the specific mnemonic/symbolic potential of the drawings).
4.2.3 Stage III Pictographic

The pictographic stage responses were the most widely varied of any of the stages. The drawing competence of most of the children gave these subjects a confidence in cue idea representation that the subjects at earlier stages, or those attempting to use ideographs, did not generally share.

Many subjects at this stage showed rapid improvement in the economy of their pictographs and exactness of recall across the three sessions. Often a subject who recalled only the nouns of most, but not all, cues of Session 1 was able to recall all Session 3 cues exactly.
EXAMPLE 5 STAGE IIIA (ALTERED TASK FOCUS), Subject 15 Trisa, age 5.5

The child at this substage responds to the cue with a pictograph, but may elaborate his response into a drawing ("drawing for drawing's sake"), or develop it into a story as he draws. The original intent is forgotten, and the pictograph may not necessarily be used in recall. Trisa's lack of understanding of the task purpose was quickly revealed through the comments she made as she drew.

SESSION 1

Investigator: Cat
Subject: I'll just put a butterfly.
RECALL:
Subject: Butterfly.

SESSION 2

Investigator: Two dogs are chasing the cat.
Subject: I don't know how to do dogs. I'll put a mop. (draws cat, mop)
RECALL:
Subject: There's a mop. There's a cat. A flower is growing. The rain is coming down.

Trisa's representational skills were well developed. Quite possibly this very facility was partially responsible for the alteration of the task focus into "drawing for drawing's sake", with the result that the original exact symbolic intent was not preserved.
EXAMPLE 6 STAGE IIIB-C, Subject 13 Chance, age 5.2

In contrast, the pictographs drawn by Chance appeared less skilled than Trisa's. At Session 1 (Quantitative) his first response to the task was to repeat that cue verbally. He did not begin to write until requested to do so. First session recall was only 2/6 (gave quantity and noun only), but he could accurately identify all cues when prompted.

In Sessions 2 and 3, pictographs remained small, simple, and poorly formed. Recall was 8/8 (inexact) for Session 2 and 7/7 (exact) for Session 3. Though his motor skills were less developed than Trisa's; this subject's understanding of the task was conceptually advanced from hers. This was particularly noticeable in performance across sessions: Chance rapidly refined his recall, whereas Trisa moved further from the task into her own self-determined task.

EXAMPLE 5
Trisa
Session
EXAMPLE 6
Chance
Session 1

Chance #1 Non-quar.
EXAMPLE 7 STAGE IIIB (INEXACT), Subject 6 Leah, age 4.8

At this substage, the child moves towards a closer correspondence between meaning and picture. The pictograph reflects the cue, and the child is able to recall the main idea or noun. Sometimes the vocabulary or sentence structure is re-cast into a more familiar word or pattern. A difficult concept may be shown by drawing the surrounding situation (i.e., "A thousand stars in the sky"--the child draws the entire night sky, the groundline with a tree, flowers, etc.). The child may easily revert to the previous substage.

Young Leah had great difficulty beginning the task, because she could not think of a way to do it. Cue 3 ("It's raining.") again proved to be sufficiently familiar to give her the idea of making a picture. She said, "Raindrops" and drew them. She was then able to represent all the other cues, including the two she could not do at the start. The situationally-difficult cue (4: "I hurt my knee.") was indicated by a bandaid. Four of the six cues were recalled correctly by noun only ("rain", "smoke") and one by the adjective and noun ("spooky ghost"). "I hurt my knee" was recalled as "bandaid"--the symbol she had chosen to represent the difficult-to-draw concept of "hurt".

Session 2 pictographs were equally economical, and two cues were recalled exactly, one by noun only, for a total of three out of six. The subject continued to find it hard to begin, but proceeded with assurance once she had begun. All cues were recalled almost exactly in Session 3.

In drawing 5, the subject commented, "I don't know how to make stars. I can't make 1000--I'll make one." Part-for-whole repre-
sentation of a difficult concept is identified by Luria as a more sophisticated cognitive strategy than that of representing the entire situation. (See also Stage IViii responses to this cue.) Within Leah's age group, it was unusual to find so abstract a device used. Part for whole representation did not appear regularly in samples until Stage IViii.

EXAMPLE 7
Leah
Session 3
EXAMPLE 8 STAGE IIIC (EXACT), Subject 18 Debby G., age 5.10

At this point the child is in control of both representational means and symbolic purpose. Pictographs are economical and are referred to in recall. Cue recall is in exact or close language. Common symbolic devices which are used include part-for-whole representation, and use of a substitute pictograph or arbitrary sign to represent a difficult concept. According to Luria, the child now has the conceptual maturity to learn ideographic writing and reading.

This subject felt she couldn't do the task, but agreed to try. She then said she could do the dogs or cat, but decided to do the cat. Cue 2 ("A hen and four baby chicks.") was also difficult. When asked what she could put on the paper to help her remember, she decided to draw a banana (symbolic substitution). For Cue 3, she said, "I'll just do heads, okay?" (part for whole representation). Her recall was almost exact, with the intent of each cue preserved (i.e., "The teacher had so much children" retained the indeterminate quantity of the original cue.). Cue 2 ("A hen. . .") was recalled with no reference made to the banana.

In Session 2, pictographs became even more abbreviated ("I'll just do a cat face."). A moon was used to represent "little red car", but she recalled "moon" rather than the cue. A bandaid represented 4 ("Hurt knee. . .") and was recalled as "The boy hurt his knee."

In Session 3, the subject used both pictographs and ideographs (III-3 alpha). Pictographs were used for visual and/or
simple quantitative cues, and "invented spelling" and numerals were used for the two more abstract, and difficult cues ("I see you" and "A thousand stars in the sky."). Recall was 7/7 and almost exact.

The maturity of this subject's responses is evident in the ease with which difficult concepts were represented, "placeheld" through symbolic devices, or finally expressed through the ideographs she knew. She was able to move between the two symbolic systems with relative ease, a mark of those subjects who were more advanced in literacy skills and metalinguistic awareness.
4.3 Alphabetic Stages of Written Expression Development: Examples and Discussion

Thirty-two percent of the total sample did not appear to show movement through a pictographic stage. These subjects began to use ideographs in a rhythmic way (Stage II) initially (a few began in Stage IB) and continued to use them even though they were generally ineffective for recall. Some of the more advanced subjects (mostly kindergarteners) proceeded directly into the beginning stages of "invented spelling", a strategy which sometimes provided sufficient differentiation for successful recall. The alphabetic mode was less successful for recall and retention of the cues, but the strength of the conviction that "this (letters) was how one wrote" kept these subjects from considering any alternatives.

The children who experienced the greatest difficulty were those who had just begun to learn letters, a few sight words and initial sound/symbol correspondences. They believed completely in the power of their newly-acquired alphabetic skills. (Sometimes they also realized that there was much they did not know yet.) When these subjects were instructed to "find a way to put something on the paper that doesn't use letters or numbers", they had extreme difficulty. In some cases, the subjects were completely unable to think of another way to represent meaning. A few actually mentioned pictures, but rejected this mode immediately. Clearly, to them writing and drawing were separate activities with very different purposes.

4.3.1 Stage I Preinstrumental (Undifferentiated)-Alpha

This stage is the same in most aspects as Stage I of the Lurian framework. It would be difficult to predict which mode a child might subsequently follow from examining their Stage I written sample.
Substage A (Undifferentiated) consists of scrawls which imitate adult writing, and which are not used for recall. In Substage B (Mnemonic) the marks may be placed in a certain order on the page. They may still look undifferentiated, and may occasionally be used in recall. A few children in the sample began using ideographs in a similar undifferentiated way. For example, a subject might have used only two or three letters repeatedly (see Example 9, Nathan), in patterns which did not correspond to either the rhythm or the content of the cue. The involvement with the physical activity of writing, the lack of awareness of underlying purpose, and inability to use the symbols in any meaningful message-bearing manner are characteristic of the Stage I understanding.

The subjects who fit this profile were mostly kindergarten-age. They had been in school for three to five months at the time of the first interview, and in that time had been exposed to most of the alphabet letters through various "letter of the week" activities and handwriting practice. Some had learned a few words from siblings ("cat", "God", "stop"). One child had had formal reading instruction at home, and could read primer-level books. Except for that child, none of the subjects were known to have initiated any functional writing activities independently at school. Most were inhibited about attempting the task, and many said that they did not know how to write or read.

This group of fourteen subjects used an alphabetic strategy throughout the sessions. Comments such as "That's a big D.", "T--short line, long line." "I'm gonna make the E a different way." revealed their focus on the writing act and form, rather than on the purpose of the production.
EXAMPLE 9 STAGE IB-ALPHA, Subject 5 Nathan, age 4.3

The subject wrote strings of N's, O's and T's for all cues at each session 1. He said, unconcernedly, at the start that "I don't know what I'm doing!"—and he was correct. His recall scores were 1/6, 2/6, and 1/7 respectively for the three sessions. He made many comments about what he was doing as he wrote, but seemed unaware of his failure at the task.

Nathan used a limited number of symbols in varying, but unsystematic patterns which filled up the pages entirely. His involvement with the physical activity was typical of a Stage 1 subject.

EXAMPLE 9
Nathan
Session 2
4.3.2 Stage II Differentiated-Alpha

In the three substages of this stage, the child moves from using a few letters (often from his name) or letter-like forms; to using a wider variety; and then to using learned numerals to reflect quantity and a few sound/symbol correspondences of the most important noun or idea of the cue. In Stage IIA-Rhythmic the letter-patterns are sometimes used in recall; in Stage IIB-Transitional, the letter names may be said, rather than the cue, in recall. In IIC-Symbolic, the use of numerals, and an occasional learned word in the midst of the letter-patterns may allow the child to recall successfully. The child may want to list, almost as a ritual, the words he "knows". He may or may not be able to read them. The child may easily revert to earlier stages.
EXAMPLE 10 STAGE IB/IIA-ALPH, Subject 39 Jess, age 5.10

Session 1: Jess made careful lines of varying patterns of nine different letters, including lower- and upper-case D's and E's (E's all reversed). Each line was slightly longer and larger than the previous, and a more elaborate combination of letters. She ran her finger under each line when finished in a "proof-reading" motion, though she could not explain this action. She recalled 0/6 initially, then remembered 'cat', "Because you said it first." In that instance only, the writing served as a primitive mnemonic device, triggering an association by its placement on the page. Though the subject noted that some of the spoken cues were longer than others, this did not seem to determine the length of the line that was written. Rather, the momentum of the writing act seemed to lengthen her response to each cue as the session progressed.

EXAMPLE 11 STAGE IB/IIA-ALPH, Subject 39 Jess, age 5.10

Session 2: Again, Jess began writing with no hesitation, and "proof-read" after a few lines. In this session, the first line was longest, and successive lines got shorter—a reversal of the previous session's pattern. There was a slight correspondence between cue length and length of the writing ('car' was shortest, 'the little doll' was longer). The writing was again used mnemonically ("I know 'little doll' because it was the second one"; "Car was the last one you said"). Recall was 1/6, and one more was recalled after the prompt, "What did that one say?"
EXAMPLE 10
Jess
Session 1

EXAMPLE 11
Jess
Session 2

1. PHYSIO IT THROE
2. COINS IN B
3. OAMOBSTHERB
4. ONSPIRHEF^[PSC
5. BRAEOOT
6. TIAOE

Jess
#2-Quan.
EXAMPLE 12 STAGE IB/IIC-ALPH, Subject 40 Bobby, age 5.10

Session 1: Quantitative. This child was very concerned with doing things "right", and needed considerable encouragement to begin. After hearing the directions and the first cue, he asked to "Write all the words I know" ('dog', 'cat', 'zoo', and 'God'). He began his list with the two words in the cue that he could write. Beginning with the second cue, he scribbled unconcernedly in an undifferentiated mock-cursive style, pausing once to comment "Aren't I fast?". He was unable to recall any cues, but identified 1 and 5 correctly when prompted ("Show me ___.").

EXAMPLE 13 STAGE IB/IIC-ALPH, Subject 40, Bobby, age 5.10

Session 2: Non-quantitative. The same pattern as in Session 1 was followed in this session, however the scribbles rhythmically reflected the number of syllables in the cues: Three syllables = three scribbles. For Cue 2, Bobby scribbled three times, then said "I know how to spell 'car'", erased the third scribble and wrote the word. For "I hurt my knee", the subject wrote "I", then scribbled the remainder.

Recall performance was greatly improved, with five of six correct and almost exact wording. The words he wrote among the scribbles distinguished the writing enough for successful recall, and indicated a beginning imitative understanding of symbolic purpose.
EXAMPLE 12
Bobby
Session 1

DOG CAT ZOO GOD

Bobby Session #1
Quan.

EXAMPLE 12
Bobby
Session 2

CAT NEVER

BOBBY SO DERMEOO

YES

Bobby Session #2
Non-quant.
4.3.3 Stage III-Ideographic-(Alph)

The child who is at this stage is beginning a functional exploration of ideographs, writing and reading. He attempts sound/symbol correspondences independently, utilizing the letter names he knows. At first, only the most salient idea of the cue is represented, usually the first letter of the noun ("the little doll = 'D'"). Next, initial and final letters of the words are written (WAS = "WZ"), and then median consonants. Vowels are then determined by how they "feel in the mouth" and by letter name (THEY = "TAE"). Growing sight word, semantic and phonetic knowledge (through both formal instruction, and observation) leads to an increasingly closer match to the standard orthography.
EXAMPLE 14 STAGE III-I IDEOGRAPHIC-(ALPH), Subject 45 Matthew M., age 5.6

This subject revealed a more advanced alphabetic strategy of associating the initial sound of a word with a corresponding symbol ('cat' - 'K'). He had great difficulty in beginning the task, and his comments showed clearly that he realized he did not have enough skills to be very successful.

Subject: K first, right? Here's a K.
Investigator: All done with 'cat'?
Subject: What? (bewildered) Just--k? (unbelieving tone)
Investigator: Do you want to put more?
Subject: Well, K will help me remember. Just K.
(Later cues)
Subject: I'll just write fast, okay? I'll just write 'black hat' (writes 'B'). Just 'boy' ('B'). Rrrr-just 'rained' (writes 'Y' for 'Yesterday it rained.')

RECALL:
Subject: What was this one? Doll something? Katie the doll?
Investigator: If you look at these do they help you remember?
Subject: (disgusted tone) I was looking at them a minute ago and they didn't help me remember.

The subject showed an understanding that signs record content.

The technique which he used differentiated on the basis of the initial sound/symbol correspondences, but was not sufficiently developed to help him when cues began with similar sounds, such as "cat" and "car", "black hat" and "boy".
To him, writing was alphabetic symbols only. When asked if he could think of a way that would have helped him remember, he replied, "Yeah, I could have drewed pictures." He then drew a cat and a car, but plainly separated this activity from the writing, and immediately went back to the alphabetic technique.

It was unlikely that Matthew would have chosen, or would have had the opportunity to use pictographs to represent meaning, at this point in his development. He appeared to have come to some tentative understanding of the symbolic purposes of ideographic writing on his own, and would seem to be ready for some more specific instruction in functional writing.

EXAMPLE 14
Matthew M.
Single Session

Matthew
#1 Non-quiet.
SESSION 1: This subject offers an illustration of some of the difficulties a newly-literate child has when restricted from use of the ideographic system. Debbi was the only kindergarten subject receiving regular phonics and reading instruction. She could read primer-level stories and quite a few words. It was interesting that she said she couldn't write, and was hesitant to begin the task. She was very concerned that she might spell some of the words incorrectly. When pressed, she finally chose to draw lines to "placeholder" words she couldn't spell.

For those cues in which she knew most of the words, and which contained only one or two placeholder blanks, the subject recalled successfully (numbers 1, 2, 3, and 6). The cues which contained more unfamiliar words (and, therefore, which were written mostly as blanks) did not have enough information to trigger the associated meanings. The choice of lines to placeholder unknown words was an undifferentiated (Stage I) approach, and proved to be unsuccessful when substituted for the advanced word strategies the subject had been attempting to use. This choice of strategy supports Luria's contention that a child who is able to write with the symbolic alphabetic system "...begins with a stage of undifferentiated writing he had already passed through long before." (p. 107)

The subject was asked if there was any way she could think of to remember words she couldn't spell. After long and careful thought, she wrote the letters "G Th P U k" ("Give me three pieces of candy.") This strategy, which was seen in Example 15 (Matthew M.)
as the first step in the Stage III "invented spelling" sequence, represented a considerable leap in quality of understanding. Some correspondence, and thus, differentiation, was now evident between the cue and the written production.

EXAMPLE 16 STAGE III-IDEOGRAPHIC (ALPH), Subject 14 Debbi B. age 5.3

Session 2: In this session the subject began, with no hesitation, to use a Stage III-3-Ideographic "invented spelling" strategy, representing both consonants and vowels quite accurately. After three cues, the investigator asked her to think of a way to write without using letters or numbers. She sat stymied for almost five minutes, then with a look of inspiration, said "Ohh! Draw it!" She used pictographs for the rest of the cues. Recall was six out of seven.

The quality and economy of the pictographs is notable. "I see you." is shown by two faces turned towards each other; "It's dark in the basement." by a simple black square; and "A thousand stars in the sky." by four stars.

This subject concisely recapitulated the various stages of undifferentiated, beginning differentiated, and fully realized invented spelling and pictographic stages, as Luria described these stages occurring for children at the point of literacy. It is interesting to note the concept of her own writing proficiency with which this subject began and ended the sessions. Initially she seemed to feel that she did not know how to write, and that spelling was the measure of writing competence. With encouragement
she began to use her own considerable knowledge of alphabetic principles, as well as the representational means of drawing to complete the task successfully.

**EXAMPLE 15**
Debbi B.
Session 2

**EXAMPLE 16**
Debbi B.
Session 3

Debbi B. #3 Mixed
4.3.4 Mixed Use of the Lurian and Alphabetic Approaches: Examples and Discussion

Some subjects moved between the alphabetic and Lurian modes of representation, sometimes using one method for one session, and the other for the next session; or using elements of both modes in the same session. This finding reveals greater flexibility of approach than originally hypothesized by Luria.

Clay (1975) pointed out that there are aspects of writing which the child learns to control concurrently. These include directionality, repetition and economy of forms, and contrasts between forms. Even across only two or three sessions, some subjects of this study attempted to organize multiple elements each time. This may account for the "zippering" pattern between meaning (as shown through use of the "higher-level" pictographs) and form (as shown in the preliterate use of alphabetic forms and patterns, with a corresponding loss of meaning), such as in examples 17, 18, and 19. The organizational confusion usually meant that cue content was not preserved for recall.
EXAMPLE 16 MIXED-STAGES IB, IIIA and IIA-ALPH, Subject 3 Hugh, age 4.0

Hugh made only undifferentiated "windows" (Stage IB) to represent the three cues he attempted in Session 1. He remembered only one of the three, and made no accurate associations when prompted. In Session 2, he reluctantly attempted three cues, using a Stage IIIA pictographic strategy, but would not attempt recall. He was able to associate all the pictographs with the correct cue when asked. He reverted to a Stage IIA alphabetic strategy for Session 3, and represented each cue with a letter. The letters were not related to sounds in the cues. The use of different letters for each cue is only slightly more differentiated than his first "window" strategy, but shows a realization that a limited number of symbols are used in ideographic writing. Though he had greatest success with the pictographs of Session 2, he did not show any understanding of the connection between what he wrote on the paper, and why he was supposed to write it. Consequently, he did not recognize the success of this strategy.
EXAMPLE 17 MIXED-STAGES IIIA and IIA-ALPH, Subject 33 Michael, age 5.2

Michael began the task with a Stage IIA alphabetic strategy ("cat" marked #1 in the illustration), but asked if he could "make" the second cue, "little red car". All other cues were expressed in Stage IIIB pictographs. He recalled only the nouns in the first session. Second session recall was exact, and the pictographs were more detailed and precise.

Michael had received some informal instruction in writing his name and other letters. His knowledge of alphabetic features was limited, which he tacitly acknowledged by his immediate switch to the more productive and more comfortable pictographic method. He was one of the few children who began with an alphabetic strategy and then voluntarily abandoned it for the rest of the sessions.

\[ \text{EXAMPLE 17} \\
\text{Michael} \\
\text{Session 1} \]
EXAMPLE 18 MIXED-STAGES IIA-ALPH and IIIA, Subject 7 Nina, age 4.8

Nina, age 4.8, used a Stage IIA alphabetic strategy throughout the sessions, but drew a dog for the cue "Two dogs are chasing the cat." Her recall strategies were ineffective, but showed considerable qualitative change across sessions. In Session 1, she merely said the letter names; in Session II, she commented on the content, though not accurately; and in Session III, she recalled exact cue content of two cues (which showed increased understanding of the cue meaning/written product relationship), but did not associate them correctly with her writing.

Nina was very absorbed in naming the letters she wrote, comparing them to animal shapes and elaborating them into other designs. Because of her preoccupation with the surface features and elaborated meanings, she was unable to recognize the more meaningful strategy of pictography when she "accidentally" used it. Like Hugh, she moved back immediately into production of letters, which she seemed to have defined for herself as being "real" writing.
Each of these children initially focussed on the different aspects of controlling form. The elements of the alphabetic mode which had been taught to them were still new and shaky acquisitions and each of them, to a greater or lesser degree, were trying to find out just how these elements were supposed to be used. It is interesting to note that of the three, only Michael (a kindergartener) recognized that the point of the task was to represent and remember specific cues, and moved from ideographs to a system with which he had had more experience in representing meaning.
4.3.5 Stage IV - Ideographic (Lurian)

After instruction in writing and reading begin, Stage III-Ideographic-(Alph) merges into Stage IV-Ideographic-(Lurian).

Subject 15, Debbi B. offered insight into the problems a child may have when beginning to use ideographs, and then when she/he is restricted from using them. It was seen that development of an alternative meaning-learning system proceeded through the same steps for the neophyte literate child as for a preliterate child just beginning to understand symbolic purpose.

This section will examine written samples of more advanced literate children who were asked to represent and remember cues without using the familiar ideographs. It will be seen that certain elements of the previous preliterate developmental patterns are recapitulated even among these functionally literate subjects, but at a more sophisticated level than had been observed by Luria.

The substages which may be observed are: (i.) Pre-instrumental: The child uses non-standard symbols in an undifferentiated manner, and is unable to use the writing for recall; (ii.) Differentiated: Non-standard symbols are used, and differentiation is by units (i.e., if the cue is four words, then four signs are made). The child may be unable to use the writing for recall; (iii.) Pictographic: Simple pictographs are developed to represent meaning, and are used for recall; (iv.) Invents own symbol system: The child develops his own system of arbitrary signs which replace word, letter or meaning units consistently. He may recapitulate the developmental pattern of pre-instrumental, differentiated, etc. when evolving his system. Eventually this system can be used for recall.
These subjects were enough beyond the beginning stages of literacy that their metalinguistic perspective included both writing and drawing as acceptable modes of representing meaning. All subjects except one used pictographs to do the task. Most had little difficulty deciding on this strategy, and it was used effectively. A range of responses revealed that even within a group of literate subjects, some had a more refined concept of the task, and chose higher-level strategies than others.
The subjects provided a variety of responses to the Session 1 cue 4 ("I hurt my knee."). Jeff S. (Subject 25, age 8.2) drew a sad-looking man lying next to a tree and holding his knee. The subject drew the entire situation to show the result, a lower-level pictographic strategy. Eric (Subject 30, age 9.10) drew a slightly more economical pictograph. He showed a crying man, with blood running down his knee. Shawn (Subject 26, age 8.7) was even more brief: he drew only the mid-section of the leg, with a "hurt" mark on the knee. The most abstract, and highest-level representation was Mykelle's (Subject 27, age 8.8) simple bandaid.
Eric
Session 1

1. Dog
2. Tractor
3. Rainclouds
4. Man
5. House
6. Castle

Eric #1 Non-Quan

Mykelle
Session 1

1. Bird
2. Car
3. Mushroom
4. Plane
5. Foot
6. Doll

Mykelle #1 Non-Quan.
The level of approach remained about the same across sessions, as can be seen in the three examples from Session 3 (Cue 6, "A thousand stars in the sky.").

(EXAMPLE 23) Eric showed the most elaborated "picture", including unnecessary details such as a tree, flower, the moon and a couple hundred dots for stars. Jeff's (EXAMPLE 24) is less detailed, with only fourteen square "stars" and a figure. Mykelle's (EXAMPLE 25) is brief: two stars and the moon.

Recall across sessions became increasingly exact for all subjects, and with a higher number of cues recalled.
Two subjects invented their own ideographic system to do the task. This response was unlike any reported by Luria. Developmentally, it fit naturally into the framework, and the evolution of the responses fit the established pattern.

Session 1 (mixed non-quantitative and quantitative): Paul was the only subject who used only an invented ideography strategy. After hearing the directions, he asked, "Like a code? Special marks or something?"

For cue 1 ("cat") he replaced each letter with a symbol $C (\bigcirc) A (\chi) T (\bigtriangledown)$. For 2 ("little red car") he carried over the "c" and "a" symbols, but used a new one for the "t" in the word "little". By 3 ("It's raining") this system was becoming confusing. (He had not made a key to correlate the letters and his invented symbols.) He used the "t" from "cat" in "It's", but was not consistent on other letters. On 4 ("There are many children in school."), he asked how to spell "children". The investigator repeated, "Put it anyway that will help you remember.", and he said, "Oh, I thought I had to write one thing for each letter." After that, he wrote symbols arbitrarily, with little or no correspondence to the number of letters in the words. After writing six clusters of intricate designs for 5 ("A horse has four legs."), he checked the number of clusters "A HORSE HAS 4 FOUR LEGS", and erased the extra cluster. As his symbols became more decorative, the line length grew also. He recalled only the first three of the six, and did not look further at the other cues.
This subject began with a high-level meaning strategy (letter substitution) which required great concentration to be successful since there was no key. The reversion to a lower-level strategy of dealing with only surface elements required less energy, though it was concomitantly less effective. Paul realized that his approach in this session was unsuccessful.

Session 2: A rhythmic strategy was used, with each word-unit replaced by designs. Nouns and verbs were primitively pictographic. Connectives and articles each received a scribble. Paul's concept was still that of making a code—he never mentioned drawing or pictures. Recall was 6/7, though not exact.

Session 3: After Paul began with the scribble strategy of the earlier sessions, he was told to be sure and remember all the cues this time. He responded, "You didn't tell me that before!" and started over. This time, he drew one scribble sign, then a long, thin sign, and then a dog ("The skinny dog."). He continued to show every element of the cues, using pictographs for nouns and verbs, scribble designs for connectives and articles. Recall was 8/9, exact. (See Appendix C for Paul's discussion of the use of codes.)

It can be seen that in development of his own system, Paul went through the undifferentiated, rhythmic, pictographic and finally pictographic/ideographic stages. Recall moved similarly from 50 percent/very inexact to 88 percent/exact.
EXAMPLE 26
Paul
Session 1

EXAMPLE 27
Paul
Session 2

EXAMPLE 28
Paul
Session 3
EXAMPLE 29 STAGE IV-iii/iv: Subject 23 Sean M., age 7.3

Sean M. moved from economical pictographs used for story-type recall (Substage A: Altered Task Focus) to inexact recall (Substage B). In Session 3, he drew two pictures per cue, then marked the correct one "yes", or checked it, and marked the incorrect one "no". (Example: "A skinny dog." A circle was made and marked "no", then a long thin line, marked "yes".) He then wrote his name in a wonderfully pictographic code: A sun for "S", an egg for "e", an apple for "a", and a nut for "n".

EXAMPLE 29
Sean M.
Session 1

EXAMPLE 29
Sean M.
Session 2

Sean M. #1 Non-Q.

Sean M. #2 Quan.
EXAMPLE 29
Sean M.
Session 3

No b Yes
1. Yes 2. No 3. Yes
5. Yes

Sean M. #3 Mixed
**TABLE V**

SUBJECTS RECALL SCORES AND DEVELOPMENTAL STAGES

<table>
<thead>
<tr>
<th>Subject</th>
<th>Age</th>
<th>Session 1 Recall</th>
<th>Session 2 Recall</th>
<th>Session 3 Recall</th>
<th>Developmental Stage by Session</th>
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<td>6/6 b.</td>
<td>5/7</td>
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<td>8/9 b.</td>
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</table>

a. didn't look to recall
b. exact recall
c. used pictograph one time only
d. initial use of pictograph
# TABLE VI

SUBJECTS RECALL SCORES AND DEVELOPMENTAL STAGES

<table>
<thead>
<tr>
<th>Object Number</th>
<th>Age</th>
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<th>Developmental Stage by Session</th>
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</table>

a. didn't look to recall
b. exact recall
c. used pictograph one time only
d. initial use of pictograph
Figure 2
Correct Recall: Mean % By Age
Unlike Luria's literate subjects, most of this group of children did not return to the earliest stage of development, but instead switched easily into the pictographic system. The one subject who took a totally ideographic approach did show the complete developmental sequence.

It can be concluded that once the child is fluently literate, he has greater flexibility of approach. This agrees with Piaget's view that conceptual development moves from the specific to the general, from rigid categorization to more broad and flexible categories. The child may still not fully understand the complexity of the system, and he may be unable to articulate exactly what he is doing, or why. If the task is very different or more difficult than previous ones, or if he chooses to use an approach he has not used before, he will most likely approach the task with a lower-level strategy.

4.4 Elicitation Cues: Analysis and Discussion

Elicitation cues were chosen and/or adapted from those Luria cited. The cues are discussed here primarily in terms of the success each had in stimulating a meaningful response, (usually pictographic), and to note the range of responses. Alphabetic responses were varied enough among subjects that generalizations about responses to particular cues would not be as relevant.

4.4.1 Session 1 Cues

These cues were familiar and strongly visual. Two had a color modifier, two were situational, and one had an imaginative/emotional adjective ("spooky").
1. "Cat". For even the youngest subjects, this cue was familiar enough to allow most of them to begin the task. It did not seem to stimulate a pictographic response any more frequently than other, more difficult cues, however. For children who chose the alphabetic mode, the familiarity of the cue idea did not seem to make a difference.

2. "Little red car". Size and color were important in this cue. Many of the younger subjects wanted a red crayon to draw it, but most were able to recall the color modifier without the color actually indicated in the pictograph.

3. "It's raining." This was the single most successful cue of the six for elicitation of a meaningful response. Ease of depiction (vertical lines by the youngest subjects) and familiarity stimulated a pictographic response from very young subjects, and from those who otherwise used an alphabetic strategy. A number of children remembered this cue during later sessions.

4. "I hurt my knee." This cue incorporated a familiar, personal experience with a concept ("hurt") which was potentially difficult to represent in a picture.

   Luria noted two types of responses to such a cue: one was the representation of the entire situation within which the incident could have happened, and the other, the creation of an arbitrary symbol or mark which would represent the concept indirectly.

   Both responses were seen in examples at all age levels. An example of a typical, less sophisticated response was the depiction of a boy standing by a tree, tears coming down his face, and pointing to a bleeding knee. More advanced response was showing
just the leg with the "hurt" on it. Some high-level responses included drawing just a bandaid or just the blood. One interesting abstract response was a picture of a banana ("Because I can't draw a knee." Subject 18, Debby G.). She recalled the cue accurately, making no reference to the picture of the banana at all.

5. "Black smoke". Luria asserted that strong color modifiers such as "black" and "white" seemed to stimulate pictographic responses from subjects otherwise operating at lower levels, and assisted the movement into higher-level strategies. This cue did serve this function for some of the youngest subjects, who simply scribbled very darkly. Older subjects sometimes had difficulty, evidently feeling that their drawing needed to reveal the source of the smoke, and so the pictograph might be elaborated unnecessarily.

6. "A spooky ghost". This was a favorite cue. Very young subjects often verbalized scary sounds as they drew. The simple shape allowed even subjects with less motor coordination to produce a recognizable figure. That, coupled with the pleasurable "spookiness" seemed to make this cue easier to recall.

The Session 1 cues functioned well for eliciting responses from the age range of the subjects. The cues held the subjects' interest and offered a variety of expressive possibilities pictorially.

One difficulty was recognized in the course of using this group of cues: rhythmic length and grammatical structure of each cue was about the same, thus possibly masking a Stage II-A
(Differentiated-Rhythmic) response. A variety of phrase lengths, as in Session 3, should be incorporated into Session 1 cues in future work, to correct for this.

4.4.2 Session 2 Cues

This group of cues all contained a quantitative element. Five of the six had a specific number included (5 was the greatest number used), and one was an indeterminate quantity ("many").

Luria contended that the need to express quantity was a very strong factor in first moving a child into symbolic representation. Use of only quantitative cues in the second session was intended to reveal such movement for some of the subjects who had used lower-level strategies in Session 1.

1. "Two dogs are chasing the cat." This cue had both quantity and familiar visual appeal. Three figures proved somewhat overwhelming for some young subjects to draw. Many of the subjects carefully detailed the figures to make the species clear.

2. "Big hen and four little chicks." The size factors and simpler figure shapes made this cue easier to represent for many. The words "hen" and "chicks" were less familiar vocabulary, and substitutions were common (chickie, chicken, bird, duck, rooster) during recall.

3. "There are many children in school." This cue elicited a wide range of responses, like the abstract cue 4 of Session 1. Some subjects handled the situation of "school" by drawing a detailed picture with many extraneous elements associated with school. The most sophisticated responses were abbreviated and often incomplete—for instance, two or three heads.
4. "A horse has four legs." This was a straightforward which was not usually much elaborated upon. It was most useful as a means of stage confirmation when compared to other responses.

5. "Give me three pieces of candy." This received a variety of interpretations. Some subjects attempted to show the act of "giving", but most merely showed the candy.

6. "Five crayons are in the box." The slightly unusual structure of this sentence was challenging for exact recall. Some subjects changed it to "There are five crayons in the box.", a more comfortable grammatical pattern. Interpretations ranged from showing the box, complete with "writing" on the sides and the crayons within, to five simple vertical lines.

The quantitative cues did spur younger subjects to more pictographic representations, but also seemed to aid exactness of recall. Many subjects who recalled noun only of the Session 1 cues, recalled the Session 2 phrases closely. The subjects using the alphabetic mode were sometimes able to represent the quantity with numerals, along with their strings of letters. Sometimes this meaningful symbol aided recall.

This group of cues, like the Session 1 cues, tended to be of a similar rhythmic length, which might have masked a Stage II-A response. Future work should revise this group to vary more in length from one or two word cues to longer, more complex sentences.

4.4.3 Session 3 Cues

These were a mixture of concrete/visual, quantitative, and abstract phrases, intended to confirm the types of responses received in Session 1 and 2. These were concrete, visual images,
one was quantitative-specific, one was quantitative-indeterminate, one was abstract-concept and one, abstract-situation.

1. "A skinny dog." (concrete/visual) This cue was seen as somewhat humorous by many subjects. "Skinny" was a little more difficult to represent than "fat".

2. "That girl is afraid." (abstract concept/emotional element) Subjects identified themselves with this cue, some offering reasons why the girl was afraid (monsters, ghosts, the dark), or recounting a story when they were afraid. In recall, "afraid" often became "scared."

3. "The mouse eats five pieces of cheese." (concrete/quantitative/situational) Drawing the cheese and the mouse was not a problem, but some subjects recognized a need to represent "eats", and had difficulty. This problem was solved variously by drawing an open-mouthed mouse, or by showing one piece of cheese with a missing bite.

4. "A thousand stars in the sky." (indeterminate quantity) Though a specific number is given, to most children, it is large enough to be as if it were indeterminate. Subjects represented it in many ways, from making two or three perfunctory dots or star shapes, to drawing a complete night sky filled with stars, the moon, a groundline, trees, etc. Interestingly, older subjects, for whom the number one thousand might have more meaning, sometimes had more difficulty making an economical pictograph. They wished to truly show 1,000 but knew it was not possible in the task time-frame.
5. "I see you." This cue posed an interesting difficulty. First, some very young subjects, still strongly context-bound, had difficulty perceiving the cue as a cue. They took it as a statement of the actual situation. Also, children who were not yet at the stage of being able to draw side-views found it difficult to show this situation on paper. Some recalled this cue in the past tense or third person.

The association with peek-a-boo and hide-and-seek games inspired some subjects to show the situation occurring within a game. Often, one figure would be pointing to another to indicate "see".

6. "It's dark in the basement." (concrete/visual, color modifier) This cue was relatively easy to depict for most, though a few children added situational elements, such as showing the stairs down into the basement.

7. "Fat boy in a striped shirt." (concrete/visual) "Fat" and "striped" were strong images which had great visual appeal. This cue was added to ensure that the number of cues remained just beyond short-term memory capacity, after the task was familiar to the subjects.

For some of the older subjects who had been very successful with the task and recall, two additional, more difficult cues were added. These were (8.) "Ouch!" (situational ambiguity/emotional) and (9.) "Go around, please." (situational ambiguity/command with etiquette expression).

The cues were successful in eliciting a wide range of responses from subjects. Task performances and responses followed similar patterns to those reported by Luria.
It is recommended that in the event that future similar work is conducted, an analysis of grammatical structure, idea types and phrase lengths be undertaken to systematically provide greater variety of lengths and types for each session's cues.
CHAPTER V
SUMMARY, CONCLUSIONS AND IMPLICATIONS

Summary

This study examined young children's writing development. In Chapter I, two questions were asked: The first, what types of writing strategies did three- and nine-year-old children use to record the verbal cues of a guided writing task? Second, would using cues which contained some element of quantity or strong contrast/color modifiers assist task performance by increasing the sophistication of the response?

Forty-four children were interviewed either two or three times. The subjects were given paper and pencil and instructed to put something on the paper which would help them recall the verbal cues. Six to eight cues were given at each session. The subject then was asked to "read" the responses back. Stage placement was determined by writing and reading responses, and analysis of the written sample.

1. It was found that children chose a variety of strategies in recording cues, from simple scribbles to brief pictographs to patterns of ideographs. The cues were not necessarily utilized for recall.

2. Sixty-eight percent of the subjects used strategies similar to those described by Luria in the original study, with some additional types noted by the current investigator. The most important difference between the results of the two studies was that thirty-two percent of the preliterate subjects in the current study responded using ideographs. Very few of Luria's subjects responded in this manner. The extensive exposure to
environmental print and early interaction with print by modern-day American children was offered as an explanation for this difference. Pictography did not appear to be a necessary or likely stage of development for these children, as Luria had asserted it should be.

3. The metalinguistic sophistication of the responses varied with age: the stages were age-related, but not age-dependent. Older children tended to use higher-level strategies than young children. There was great variation among individuals, however, and two children of the same age might respond at very different levels.

Children who had just begun to learn ideographs had the greatest difficulty thinking of an alternative symbol system when not allowed to use ideographs. When older functionally literate children were prohibited from using letters and numbers, it was found that most reverted easily to a pictographic mode. This finding was also different from Luria's.

4. Use of modifiers (number or visual contrast) in cues prompted some young children to respond at a higher level than their usual response. Certain very visual, familiar cues ("It's raining.") also improved the symbolic quality of the response.

5. There was improvement seen for many of the children in ability to represent ideas on paper, and utilization of writing to recall a cue idea.

6. The study generally confirmed Luria's original findings, but expanded the developmental framework he proposed to include the new findings on the use of the alphabetic strategy.
7. Despite differences of time, culture and level of sophistication between the Russian subjects of the original study and the American subjects of the current study, Luria's findings described the stages of early written expression development with great accuracy.
Conclusions

In Chapter I, two questions were raised about the developmental patterns of writing strategies used by young children, and about which elements of verbally given cue ideas aided this development. It was shown that, through analysis of the behaviors and the written product, a child's understanding of writing purpose and process could be revealed. Luria's stages of written expression development, upon which this study was based, were shown to be remarkably accurate.

Two-thirds of the subjects were categorizable within the Lurian framework. Another third of the preliterate subjects responded by using ideographs. These subjects did not appear to go through the pictographic stage as they moved from non-functional to functional use of ideographs. They did have greater difficulty than did the Lurian-path subjects in understanding the symbolic function of ideographs. Because of the onset of formal alphabetic instruction, it appeared unlikely that these subjects would experience the pictographic stage.

A progression was evident for many of the children in ability to represent ideas on paper. Though progression through the stages was loosely hierarchical, there was considerable flexibility in individual response. Across the sessions, or even within one session, "zippering" was common between substages or stages or between the Lurian and alphabetic modes.

For some "Lurian-path subjects" color/contrast and quantity aided differentiation of the written cues, and raised the metalinguistic level of their responses.
The key for these subjects appeared to be realization of the correspondence between the sound and the symbol, and the beginning utilization of phonetic knowledge when writing. These neophyte literates had extreme difficulty considering any form of symbol representation except ideographs.

Functionally literate students who were already past the initial confusion and misinterpretation of alphabetic usage had no difficulty broadening their concept of a symbolic system to re-include pictographs. When they were restricted from the use of ideographs, these older subjects developed economical pictographs to express cues. The findings supported Luria's contention that beginning literate children would recapitulate the early stages of preliterate development as they attempted to understand ideographs, but did not support this contention for more advanced literates. (To truly test this, a larger sample of older literates should be tested. The one subject who attempted to develop his own ideographic system for the task did recapitulate all the early stages. This indicates that perhaps a more difficult or slightly different task would better identify the true level of these subjects' understanding.)

Limitations

1. The subjects were chosen at random from class lists, with incoming levels of writing ability and knowledge unknown. The total number of subjects insured a fairly wide range of abilities were represented, but there may be certain developmental features which did not show up as clearly because there were few subjects within that developmental range during the course of the study. To confirm the accuracy of the "map" of developmental features established here, further work should select a sample which appears to cover all intervals of development.
2. In section 4.4 certain revisions of the elicitation cues are suggested to establish a similarity across sessions in the types of rhythmic lengths and grammatical patterns presented in each session. It is possible that similar line length might have "masked" certain rhythmic responses to the cues of Sessions 1 and 2.

3. The findings are generalizable to similar populations. More cross-cultural validation, as well as validation with various types of learners (learning disabled, gifted, slow, etc.) would extend the generalizability. If the sequence of concept acquisition holds for other populations, then it has a promise of universality much in the manner of initial stages of oral language acquisition.

Implications for Future Research and Educational Practices

The Lurian/alphabetic framework, and the elicitation technique used in the study offer some intriguing areas for further consideration in research and practice. This study may be most important not for the questions it answered, but for the questions that it has brought to light about young children's writing development.

1. Would using techniques such as the guided practice method over a longer period of time aid children in discovering the symbolic potential of writing earlier? The number of children who improved performance over two or three sessions suggest that this method may have some pedagogic value in early childhood programs. (One English educator, Lily Gostelow, has developed a method, The Picture Story Approach to Infant Teaching, 1973, which, unbeknownst to her, admirably
translated Luria's theories into practice.) What is the potential of such methods for aiding the transition from pre-literacy to literacy?

2. What is the effect of cultural setting and prior print exposure on ability to perform this task, or more broadly, on ability to learn initial print behaviors and to understand the symbolic intent of writing? What differences might exist between children of print-salient and print-nonsalient environments? Cross-cultural work by Lavine (1972) suggested that differences of print environment may play a part in acquisition of literacy concepts. The current study's results, when compared to the original Russian study, showed many similarities in order of concept acquisition between children from two very different environments.

3. What is the nature of the relationship between the child's ability to use writing symbolically and his ability to discuss language-as-object? What is the "lag time" between ability to perform the act and to understand the performance? It was seen that children often wrote symbolically well before they used the symbols for recall. What effect would practice and instruction have on this "lag"?

What changes in the conceptual bases of pre- and initial formal reading/writing instruction are implied by the findings here? Some changes were mentioned earlier in this study: One, a focus on communication through meaningful writing and reading opportunities, rather than on mechanical practice of discrete skills. Also, that writing, rather than reading,
may be the more developmentally natural first step in literacy acquisition. This implies major changes in early childhood curricula, and in the role of preschool and kindergarten in fostering language skills. Finally, this study provided additional evidence for the conclusion that formal learning should be guided by perceptive evaluation of an individual child's written productions and literacy behaviors, rather than by adult-conceived skills lists.

As Vygotsky said, "The act precedes the understanding." (op. cit.)

The act of investigating a relatively unknown area such as writing development opens up to educators new understandings upon which more accurate and appropriate research and instruction can be based. It remains for future educators and researchers to evaluate, confirm, and generalize the theories discussed here; to connect these findings with other new work in the areas of reading development, metalinguistics and oral language acquisition; and to develop and encourage educational practices that are consonant with the new insights into children's natural language development patterns that have been gained.
APPENDICES
APPENDIX A

ELICITATION PROTOCOL

1. Show child tape recorder. Have child practice saying name and age. Tape this and listen. Set machine to record and begin.

2. Say, "I'm going to say some things to you. I'd like you to put them down on the paper any way that will help you to remember them. Use the pencil and the paper any way that will help you remember what I tell you. When we're done, I'll ask you to read them back to me."

   (If seems unable to proceed with task) What's a way you could remember? Can you put your way on paper?

   (If asks how to spell a word) I just want you to put your own way, the best way you can. If you're not sure, it's okay. Just do your best job. I don't expect you to be able to do everything. That's why you're in school, right?

   (If unwilling to read or check comprehension) Do you remember which one was _____? What does this line say? How did you know how to read that?

3. At end of session, play back a little bit of the conversation for the child. Thank for helping. Have child push the "stop" button of recorder.

Sentences: Six used per session in Sessions 1 and 2. Eight used in Session 3.

Session 1 (non-quantitative) 1. Cat
2. Little red car
3. It's raining
4. I hurt my knee
5. Black smoke
6. A spooky ghost

Sentences: Six used per session in Sessions 1 and 2. Eight used in Session 3.
Session 2 (quantitative)
1. Two dogs are chasing the cat.
2. The big hen and four little chicks.
3. There are many children in school.
4. A horse has four legs.
5. Give me three pieces of candy.
6. Five crayons are in the box.

Session 3 (mixed, quantitative & non-quantitative)
1. Skinny dog
2. The mouse eats five pieces of cheese.
3. That girl is afraid.
4. One thousand stars are in the sky
5. I see you.
6. It's dark in the basement.
7. Fat boy with a striped shirt
APPENDIX B
DATA SHEET

child's name ___________________________ teacher ___________________________ school ___________________________

age (yr.mo) ___________________________ Grade ___________________________ Date ____________

current language curriculum/program used ___________________________ attended preschool? (assigned #)

nia: NON-QUAN. _______ QUANT. _______ SEN.GRP I _______ II _______ III _______ (IV) _______

riting: Sequence: L-R _______ R-L _______ Random Order: Top-bot. _______ Bot-top _______ Random _______


rding/recall: Which one says: _______ What did this one say?

Circle/word:

Line/letter:

Box/sentence?

it is writing?
APPENDIX C

Session Transcriptions

Sarabeth, Sessions I, III
Nina, Sessions II, III
Bobby, Session II
Debbi G., Sessions I, II, III
Debbie B., Session III
Sean, Session I
Paul, Sessions I, II
SARABETH

SESSION I

I: Sara, can you say your name? Can you say Sarabeth?
S: Sarabeth.
I: How old are you?
S: Three.
I: Oh great. Okay Sarabeth, this is what I'd like you to do today. I'm going to tell you some things. I'm going to tell you some things and I want you to put something on the paper. Okay? And then when I'm done I'd like you to read what's on the paper to me okay? I want you to remember what I'm going to tell you.

Here's the first thing I'd like you to put on the paper, to write on the paper. Cat. Can you write Cat on the paper? Can you think of a way to write Cat on the paper? Can you show me? Show me how you can put Cat on the paper. Okay? That's a girl. Show me how you can write Cat on the paper. You're doing a good job Sarabeth. I wonder what you're going to show me when you're all done. Isn't she doing a good job? (to someone in the background) She's really being careful and thinking about Cat. You tell me when you're all done okay? Are you all done? Okay. Oh what a good job you did.

Okay, here's the next one Sarabeth. Little red car. Little red car. What can you put on the paper? It's okay, you can do it your own way. You all done? Oh, good job, I can really see that writing this time.

Here's the next one Sarabeth. It's raining. It's raining. What are you thinking? Can you tell me what you're making? Are you making rain? I thought you were. What a smart girl. Are you all done making rain or did you want to make more?
S: All done (whispered).
I: All done? Okay. I thought you were when I saw you making those dots.
I: Here's the next one. *I hurt my knee.* *I hurt my knee.* Okay. What a good writer you are.

I: Here's the next one Sarabeth. *Black smoke.* *Black smoke.* All done?

Here's the last one: *A spooky ghost.* *A spooky ghost.* Okay. You all done? Sarabeth, can you read them to me now? Can you tell me what it says? Can you remember? What can you remember, Miss Wiggly Tongue? I see a wiggly tongue in there huh? Do you remember any of those things? What does that tell you? Can you remember those? Can you say one to me?

S: *A spooky ghost.*

I: *A spooky ghost.* Good remembering. Can you remember any other ones? You sure did a good job didn't you?

Can you write your name Sarabeth? Will you write your name on this paper? Can you show me how you write your name?

You all done writing your name, or almost? Oh, you've got more. You all done writing your name? What a good writer you are. You're so careful.
SARABETH

SESSION III

I: Sarabeth, how old are you again?
S: Three.
I: Three. That's right. Remember how we did it before? I told you some things and you put something on the paper to help you remember, and then you read 'em back to me and you did such a good job.
S: I remember.
I: You're a really smart girl, aren't you?
S: Yeah.
I: Okay, ya all ready? Here's the first one: A skinny dog.

Oh, good one. The next one: The mouse eats five pieces of cheese.

Okay for the next one? That girl is afraid.

Fast today, aren't you? Here's the next one, Sarabeth. It's dark in the basement.

The next one: I see you.

The next one: 1000 stars in the sky.

Now here's the last one: Fat boy with a striped shirt.

Okay, Sarabeth, can you read those to me now?

I: Oh, good one. Anything to remember the others? Thinking real hard.

Can't remember? That's okay.

Can you think about which one says, The mouse eats five pieces of cheese?

That one. Oh. How about which one says, Fat boy with a striped shirt?
I: That one? Which one says, I see you?

Which one says, That girl is afraid?

Ah. Boy, you're a good rememberer. How about which one says, hm...Skinny dog.

That one? Oh. How about which one says, 1000 stars in the sky?

What did this one say?

S: 1000 stars in the sky.

I: Ah. Good remembering, Sarabeth. How about this one. What'd that one say? Remember that one?

That's okay. How about that one, remember that one?

It's okay, I gave you lots of them didn't I? Yeah. Sarabeth can you put your name on this paper?
NINA

SESSION II

I: Can you say your name?
S: Nina.
I: How old are you?
S: Four and a half.
I: Okay, Nina, here's the first thing I'd like you to do today: Two dogs are chasing the cat.
S: Uh (breathes out emphatically). I want a turtle.
I: Well listen to Two dogs are chasing a cat. What could you put on there to help you remember? Two dogs are chasing a cat.
S: And should I write it?
I: You just do whatever will help you remember, okay. You decide how you want to do it.
S: Is that the dog's body?
I: You tell me.
S: (laughs) Dogs... dogs have, um, you know, those things on the bottom of their chocho.
I: Um-hm. And so they can go to the bathroom, right?
S: Just like...
I: Yeah. That's right. You tell me when you're done with your picture, Okay. When you're done writing there, and then I'll tell you the next one. You all done?
S: Um-hm.
I: Okay, here's the next one: The big hen and four little chicks.
S: That is a "S". (laughs) Eeh, look what I did.
I: Um-hm. Be sure to tell me when you're ready for the next one, okay Nina. When you're done with that one.
S: Okay. Done.
I: Here's the next one: There are many children in school.
S: (laughs under her breath)
I: You all done there?
S: Um...Yeah.
I: Okay. Here's the next one: A horse has four legs.
S: (laughs) How about a lion?
I: You write whatever will help you remember A horse has four legs.
S: (laughs) "R". "N".
I: Are you all done?
S: I can draw that now.
I: What could you draw?
S: This. That.
I: Are you all done with that one Nina?
S: Yup.
I: Okay, here's the next one.
S: Could I have a sticker now?
I: Got two more. Got a little more work to do. Then you can choose your sticker. Okay?
S: Okay.
I: Here we go. Give me three pieces of candy.
S: (laughs) Um, I don't have any more room. I'll do it on the top.
I: Okay.
S: How about one more?
I: Okay. This is the last one: Five crayons are in the box.
S: Five?
I: Five crayons are in the box.
S: "T".
I: Okay, can you read those to me now, Nina?
S: What?
I: Can you read those to me now?
S: Mm. . . I can't remember what things are these. What words.
I: Well, can you think about any of 'em?
S: Um. . . Remember last time you did rain?
I: Um-hm. That was a neat one wasn't it?
S: Uh-huh.
I: Can you remember any of the ones we did this time?
S: What?
I: Can you remember any of the ones we did this time?
S: No, I can't remember.
I: Okay.
S: See that neck? (laughs)
I: Uh-huh. Well, do you think you could remember which one said, Two dogs are chasing the cat?
S: Yeah.
I: Which one was that?
S: Um, I think it was that one.
I: I see. Well which one said, A horse has four legs?
S: It was that one.
I: And which one said Five crayons are in the box? And which one said, The big hen and four little chicks? Which one said, Give me three pieces of candy? I see. Okay. Well what did that one say?

S: I don't know.

I: Don't remember that one? Okay. That's okay. Nina, can you put your name on the paper?

S: Uh. . .

I: Okay. Nina can you put a circle around a word on this page? What is that word?

S: Um. . .Nina.

I: Nina. That's a special word isn't it? Can you put a line like that under a letter on this page?

S: Under?

I: Under a letter.

S: That one already has a line and that one has a line.

I: You can put another line under a letter if you want to choose one that already has a line. Okay. And what letter did you put your line under? Can you tell me what that is?

S: Uh, I don't know what that is, though. When could I have another sticker?

I: We're almost done. You're doin' a good job Nina. Okay, one more question. Can you put a box like that around a sentence on this page? A sentence? you know what that is?

S: (laughs)

I: Well, I'm not interested in that side today, Nina. Not yet.

S: I want to write a circle.

I: Well, okay, make a circle.
SESSION III

I: Okay, Nina, how old are you?
S: Four and a half.
I: Four and a half, that's right.
S: And I'll be five on June 7th.
I: June 7th. Wow you're gonna be old, huh? Okay.
S: A real big girl.
I: You sure will be.
S: Than my big brother. Than my little brother, than my big brother.
I: Okay, yeah, boy.
S: Can I start to write now?
I: I'll tell ya, just a sec. Do you remember how we do it? I tell you some things and you put something on the paper that will help you remember. And then when we're all done you read it back to me. Okay?
S: 'Kay.
I: Okay, here's the first one Nina. A skinny dog.
S: (laughs)
I: That's a funny one isn't it?
S: Yeah.
I: A skinny dog.
S: To help me remember?
I: Um-hm.
I: All done?
S: Yup.
I: Okay.
S: And I don't need to do anymore.
I: For that one?
S: Yeah.
I: Oh that's great. Well here's the next one. The mouse eats five pieces of cheese.
S: (laughs)
I: (I) wonder what you'll do for that one?
S: Oh, it had three "N's".
There, now that's all I have to do.
I: Okay. Ready for the next one then?
S: No.
I: It goes, That girl is afraid. That girl is afraid.
S: That girl is afraid. Whoah.
I: What could you write to remember that one?
S: I don't know.
I: Can you think about that one, That girl is afraid, Nina?
S: No.
I: What could you put down for that one? You're such a smart girl. You did the other two really good.
S: Well, Kimberly she does good too.
I: Yes she does.
S: I'm gonna write my name first.
You know what? These kind of "A's" I can't do. I could do these "A's".
I: Can you think about That girl is afraid.
S: I can't.
I: Can't do that one?
S: This is only the thing.
I: What is?
S: This.
I: Oh, your name?
S: Yeah.
I: Okay, well I'll tell you the next one. You think about that. It's dark in the basement. What could you put on the paper to remember that?
S: That's how it will help me to remember. This side and this side.
I: Okay. Nina, there's three more. One goes, I see you. What could you write to remember that one?
S: (laughs) That one's a silly one.
I: I know. It is. I see you. I wonder what you're going to put to remember that one.
S: There. That's all I have to... It will help me remember.
I: Okay. Well here's another one.
S: No! No!
I: Just two more, Nina, and it'll all be done okay?
S: Then I get to have a sticker?
I: Yeah. When we're done with two more and remember, you read 'em to me and then when we're done with that then you get to have a sticker, okay? Okay. 1000 stars are in the sky. 1000 stars are in the sky.
S: One...
I: 1000 stars are in the sky.
S: Will help me remember? That will help me remember.
I: Where? I didn't even see you you were so fast.
S: Um, it's...
I: Oh, in the middle there, huh.
S: Yeah.
I: Oh. Okay. Here's the last one: Fat boy with a striped shirt.
S: (laughs) He maybe had a pillow inside of him.
I: Maybe.
S: Tryin' to make the kids laugh.
I: Yeah. What can you use to remember that?
S: There.
I: Okay.
S: Two things.
I: I see.
S: And that's all.
I: Okay. Now Nina, can you read those to me?
S: This says... I don't remember. This says about the fat boy.
I: Okay, good.
S: With a striped shirt.
I: Okay, can you think of any others?
S: Remember we did the rain?
I: Yeah, that was a long time ago wasn't it?
S: Yeah.
I: You have a good memory. What else can you remember?
S: I can remember... I can remember...
I: On this page.
S: I can't remember anything on this page.
I: Oh. Can you remember on the other side?
S: No. Now can I speak?
I: What would you like to say Nina?
S: I would like to say, "I have a cold."
I: Okay.
S: I have a cold.
I: Very good. Okay. Well Nina, can you show me which one says...
S: And one more word. I have nailpolish on.
I: Okay. That's enough now so it can work. It needs to do its job. Okay Nina, can you show me the one that says, I see you? Which one says, I see you?
S: That one.
I: Okay. Which one says, Fat boy with a striped shirt?
S: That one.
I: Okay. Which one says, 1000 stars are in the sky?
S: That one.
I: Oh, how 'bout which one says, It's dark in the basement.
S: That one. And...and...and... it says...I can remember one that says, I...That girl is scared.
I: Oh, that's right. Do you remember which one says that?
S: What?
I: Do you remember which one says, That girl is scared?
S: Yeah.
I: Can you show me?
S: Um. That one.
I: That one. Okay. Why don't you turn over to the other side. Nina, let's look at those for a minute 'cause we have hardly looked at those ones. You did a lot of work on that side didn't you?
S: Yeah.
I: Remember which one says, A skinny dog?
S: That one.
I: Okah. How 'bout which one says, That girl is afraid?
S: That girl is afraid?
I: Yeah. Remember that one?
S: Yeah. I. Whi-
I: Which one said that one?
S: This one.
I: Oh ho. Well how 'bout the one that says, The mouse eats five pieces of cheese?
S: (laughs) That one, that one.
I: Oh. Okay Nina, well what did that one say?
S: Um... Five pieces of cheese.
I: Okay. How 'bout that one that you wrote so nice and big? What'd that one say? Remember that one?
S: It said... I just can't remember again.
I: Okay. That's okay if you can't remember. Can you put your name on the paper for me Nina? I know you remember that, right?
S: Right. You see I just gotta erase this.
I: Oh, okay.
S: There.
I: There. Oh. Good work Nina.
BOBBY

SESSION II

I: Okay. Say it now.
S: My name is Bobby.
I: And how old?
S: Five. I know how to write zoo.
I: Okay. You know how to write zoo? Well, you can write things down any way you want to that'll help you remember. Okay? You can use your pencil any way you want to that'll help you remember what I say, and then you can read it to me when you're done. Okay. Here's the first thing that I'd like you to put on the paper. Two dogs are chasing the cat.
S: Do you want me to spell it?
I: You can put it on the paper any way you want to that will help you remember that. Do you want to hear it again? Two dogs are chasing the cat.
S: I know how to... 
I: You can use the eraser on that pencil if you want. I'm sorry that one doesn't have one.
S: I have a pencil at home. I did both sides of them. I haven't finished.
I: If one breaks you'll still have some more.
I: A lot.
S: There now. See.
I: Whatever you think will help you remember.
Okay. You are done? You tell me each time when you're done so I know to tell you the next thing.
S: Yeah. I know somethings that I want to write.
I: Are you done with that one though, or did you want to write some more on it?

More.

You go ahead. Take all the time you need.

S: Zoo.

I: Oh, you wrote that. Sometimes I might write something too just to remember what we talked about. You all done with that one?

S: I'm doing some more. I know some more.

I: Okay.

S: That's a "D." God.

I: You wrote a lot didn't you? You be sure and tell me when you're done, so I can tell you the next thing.

S: "G" "Cat" "Zoo" "Dah-God." How's that much?

I: Okay. Are you ready for the next one?

S: I don't know what to say.

I: I'll tell you and you try and put it on the paper. The big hen and four little chicks.

S: I don't know how to spell that.

I: Well, you just do the best you can. I don't expect you to know everything. You just write the best you can that'll help you remember what I say, Okay?

S: What's this for?

I: That's--we don't even need to bother with that.

S: Um. What was that?

I: Would you like to hear that again, what I just said? Or do you know it?

S: I know it. At least I knew it. I forgot, now I know it.

I: You can do whatever you want that will help you to remember that.

S: Faster, wasn't I?
I: Yeah. Are you all done?
S: I know how to spell.
I: Are you ready for the next one? Okay. There are many children in school.
S: Oooh. On here. How come it says stop over there? (looks around trying to change subject)
I: Bobby, I need you to think about what I told you, and see if you can figure out a way to put it on the paper that'll help you remember.
S: I don't remember what you said.
I: I said, There are many children in school.
S: Oooh.
I: What's a way that you can put that on the paper that'll help you remember it?
Okay. Are you all ready for the next one?
S: More?
I: Yes, this is the fourth one. There's going to be six and then we'll be done. The next one is, The horse has four legs.
Are you all ready for the next one? Or did you want a little more time?
S: I can do a couple more.
I: A couple more? Okay. I'll give you the next one then. Give me three pieces of candy.
S: Huh.
I: Okay. All done?
S: More!
I: You want more? Okay. Here's the last one I'm gonna give you. Five crayons are in the box.
S: I can do more.
I: You can do more, huh.
S: We've got time.
I: It's almost recess time, so I don't want to take over your recess.

S: I'll do a stool, one more.

I: Okay. I was wondering if you might be able to read those to me. The ones I just told you.

S: I don't remember. The dog chasing. Dog cat. The dog--that says God--God. What does that say?

I: You just do the best you can.

S: I don't know what it says.

I: Can you think of what any of the others were?

S: Give me a piece of candy.

I: Give me a piece of candy. Yah.

S: Three pieces of candy.

I: That's right. How did you know that said give me three pieces of candy?

S: Smart.

I: Yah, you are. Can you make a circle for me, Bobby, around a word that you wrote?

S: That I wrote?

I: A circle around a word that you wrote.

S: There's one. Another. Another.

I: Can you show me a word that you wrote?

That one. What is that one?

S: God and no, that's dog--Jesus--or God.

I: You put the circle underneath Dog. Can you put a circle around it, around the word?

S: Whoops.

I: Okay. Can you put a line like this underneath a letter, under a letter?

S: (scribbles grouchly) Okay. Fast, aren't I?
I: Yah. Can you make a box around a sentence? Do you know what that is, a sentence?

S: Uhuh.

I: Not too sure. Okay, Bobby, would you put your name on this piece of paper for me.

S: I know how to write it. How do you like that "B"?

I: It's very clear.

S: Here's a better one.

I: You have lots of "B's" in your name, don't you?

S: There.

I: Good work. How did you learn so much about writing and reading, Bobby?

S: I don't know. Just smart.

I: That's right.

S: Do you know how big I am?

I: You're growing fast this year, aren't you?

S: I'm eating more.

I: Do you remember what this part said right here?

S: I spelled God and zoo.

I: And zoo. Can you remember what this part spelled right here?

S: I can't remember.

I: Which was the one that said five crayons are in the box?

S: This one?

I: How about the one that said two dogs are chasing the cat? The first one. Yeah.

How about the one that said there are many children in school?

How about the one that said a horse has four legs?

S: I just remembered that one.

I: You just did. How about the one that said give me three pieces of candy?
I: All right. Good remembering, Bobby.

S: You don't have to tell me this one. I already know.

I: You know that one really well, don't you?

S: I know these and this and this.

I: Are there any others that you can remember that you wrote down there?

S: This one and this one and this one and this one.

I: Did I read a part about God?

S: No. I just know how to write it.

I: You know how to write it, so you wrote it down. That's good.

Well, Bobby, I think we're all done. Thank you very much for your help.
DEBBI G.

SESSION I

S: My name is Debbi.
I: How old are you?
S: Five.
I: This is what we're going to do today. I'm going to tell you some things and I'd like you to write them on the paper so you'll remember them. When I'm done, you'll read them back to me. We did that a long time ago, remember? (Repeats directions.) Here we go; are you ready for the first one? Cat.
S: I'll just make a cat face.
I: You do it any way you want to that'll help you remember.
S: A cat.
I: It has a smiley face, too.
S: Can I make a body? I want a body, too.
I: You can do it all by yourself today.
S: (Sighs.)
I: Just do what will help you remember.
S: Here's a tail; I made a tail.
I: Oh, I see.
S: There. There's my cat.
I: Are you ready for the next one? Little red car.
S: (Sighs.) I'll make a moon, to remember that.
I: You write whatever will help you remember.
S: Then you can read it.
I: You be sure and let me know when you're done. It's raining.
S: That's ended.
I: Okay. Black smoke.
S: There's no black color crayon.
I: No, there isn't. Done? A spooky ghost.
S: Done.
I: One more, Debbi. That boy is afraid.
S: (Sighs.) I just wanted to make a straight face. I'm done.
I: Can you read them back to me now?
I: I bet I'll hear that when I play it back. Can you show me the one that says It's raining?
S: Let's mark it X. (She X'd out each one as she identified them.)
I: Can you show me Spooky ghost? Can you show me the one that said Little red car? How did you remember that one?
S: I just did.
I: Oh, you just did. How about the one that said I hurt my knee?
S: Oops! I did that one first. No, that one; that was hurt knee.
I: Oh, Okay. Then what was that one?
S: The boy was afraid.
I: All right, Debbi, can you put your name on this paper for me?
S: I did it in cursive.
I: What is cursive?
S: Right there... that kind.
I: Can you put a circle, Debbi:. around a word on this page?
S: This one.
I: And what is that word?
S: A spooky ghost.
I: Ooh, that is one, too, isn't it? Can you put a line like this underneath a letter on this page?

S: (Thinking.) Uh... a letter.

I: And what letter did you put?

S: D.

I: Can you put a box like this around a sentence on this page?

S: (Sighs.)

I: What's the sentence? What is that sentence?

S: A cat.

I: A cat? Okay, Debbi, would you look at the paper a minute and tell me what is writing on this paper? What part is writing?

S: Taps at paper, pointing.

I: And what part is that?

S: My name.

I: What's the rest of it? That isn't writing? What are all the other things you put on there? What are they?

S: (Sighs)

I: They aren't writing? Or they are writing? Which? Debbi, the part that says Debbi is writing? But what is this, is this writing too? Is there any drawing on this page? Where's the drawing? (Debbie points.) Everything? Is this drawing? And this is drawing? Is there any difference between drawing and writing?

S: Mm hmn.

I: What's the difference?

S: (Sighs) I don't know.

I: Well, tell me what you do when you're writing.

S: (Sighs) Make pictures.

I: Pictures? What do you do when you draw?

S: The same thing.

I: Do you think they're the same thing... writing and drawing?
S: (Irrelevant comment made. Child seemed uncomfortable with previous question and attempted to change subject)

I: Debbi, are you in the group that Debbi B.'s mom is teaching? What are you doing in that group? What are you reading?

S: We're practicing sounding out letters; we're learning how to.

I: So you're sounding out letters? Is that how you knew what letters were on this page? Is this a letter here?

S: No.

I: What's this?

S: That's the cat. These are letters (pointing).

I: These aren't the same as these (comparing letters and drawing)? I'm all confused. . . .because I thought you told me they were all writing!

S: They're all writing, but these aren't letters (pointing to drawing).

I: What are they, then?

S: This. . . is fake (pointing to drawing).

I: Fake! You're kidding!

S: This is a fake ghost and a real moon; and this is a real person. Real rain (sighs); a real bandaid; real smoke; real cat.

I: And what's this real (pointing to name)?

S: Letters.

I: Is this a real Debbi? A real Debbi on the paper? What are you? (In fun.)

S: A person.
DEBBIE G.

SESSION II

S: I'm five and I'm Debbie.

I: Debbie, I am going to read you six things and you can put them on the paper with your pencil any way you want to to help remember. In a little while I will ask you if you will read them to me, read what is on your paper. Here is the first thing I want you to put on your paper. Two dogs are chasing the cat.

S: I don't know how to do a dog or cat.

I: You can write any way you want to.

S: I'll do---cat.

I: You all ready? Here is the next one. The big hen and four little chicks.

S: (sigh) I don't know how to do the hen. Any way I want? Any way?

I: Is that a hard one? Can you think of anything you can put on the paper that would help you remember that one?

S: A banana.

I: Would a banana help you remember that sentence?

S: (nods)

I: You can put anything you want to help you remember. Here's the next one. There are many children in school.

S: I'll just do heads, okay?

I: You do it any way you want to. Here's the next one. A horse has four legs.
S: A horse is a hard one.

I: It is a hard one, but you can put it on your paper any way you want to to remember so you can read it to me.

S: It looks like a turtle.

I: Give me three pieces of candy.

This is the last one. Five crayons are in the box.

I: Debbie, can you read me the first one?

S: A dog chasing a cat. A chicken and a... three? Three little chicks. (sigh) Read the other one about the children.

I: Why don't you just kind of guess?

S: The teacher had so much children. The horse has four legs. Give me three pieces of candy. There is five color crayons in the box.

I: Okay. You are a good reader. Debbie, do you know what a sentence is?

S: (points to paper) Pictures.

I: Do those pictures help you remember those sentences I told you? That's great.
DEBBI G.

SESSION III

I: Debbi what?
S: Debbi Gordon.
I: And Debbi Gordon, how old are you?
S: I don't know.
I: You tell me. Six? No, huh. When was your birthday again?
S: January.
I: January. Let's see, you were just a little bit before me. What date was that?
S: The sixth.
I: The sixth, yeah. Just went back from school. Okay, Debbi, do you remember how we did it? I told you some things for you to remember and you put them down on the paper. And then you read them back to me when we were all done. Okay? These are going to be different things than I told you before.

Here's the first one. A skinny dog.

Here's the next one: The mouse eats five pieces of cheese.

Oh, are you done?
S: No.
I: Sorry.
S: (Sigh)
I: Now are you all done? Okay. It's dark in the basement.

All done? I see you. I see you.
S: Okay. I see you, you, you.
I: Um hm. All done? 1000 stars are in the sky.
S: I can't make one without you.
I: You've gotta figure it out for yourself, Debbi. I know you can.
S: All done.
I: All done? Fat boy with a striped shirt.
Okay, Debbi, that's all of them. Can you read them to me now?
S: (Sigh) The dog. (Sigh) That's for the stars. It's dark in the basement. A girl's afraid. Five pieces... A mouse eats five pieces of cheese. 1000 stars in the sky.
I: Debbi, you really did a good job. You remembered every single one of them. Which was the one that said, Fat boy with a striped shirt? Debbi, can you just point with your finger when I ask that?
Which one said, It's dark in the basement.
That one. Oh, I thought I might fool you on that one. I didn't.
Which one said, I see you?
Which one said, A skinny dog?
Which one said, That girl is afraid.
Debbi, what did this one say?
S: It's dark in the basement.
I: Oh. Well, how about this one?
S: That what?
I: This one? What did that one say?
S: A skinny dog.
I: Yeah. How about that one?
S: A skinny dog.
I: Yeah. How about that one?
S: A thousand stars in the sky.
I: How did you know that said, A thousand stars in the sky?
S: Because I remembered how to make a thousand.
I: Yeah? That said 1000. How about the rest, how'd you remember that part?

S: Which one?

I: The stars in the sky part. How'd you remember that? Just did, huh.

S: I already did.

I: I see, you did. Okay, Debbi, could you write your name on that paper?

Gonna be a surprise, huh?

Oh. That's smart Debbi. Okay, Debbi, I'm kinda curious. You did two ways of putting it on the paper this time, didn't you? What two ways did you do?

S: I knew how to do it.

I: You knew how to do what?

S: A picture.

I: Uh huh.

S: That was the easy way to do it.

I: Oh. What other way did you do it? How come you did this one like that?

S: Because I didn't know how to do it. So...

I: Oh. Well, where did you learn how to do it that way?

S: I didn't learn any way.

I: You didn't? You just knew.

S: 'Cause that was supposed to be easy and um, and it's, no. And it's easier, um, and it started, you know.

I: So you knew that. Do you do this way other times? Do you make it that way?

You do? Well, Debbi, could you put a circle around a word on this page for me?

What word did you put a circle around?

Oh, you put two. You circled each one. How come you did that?

S: And one more for with name.
I: And which ones are words?

This one's a word? Any others? Are they all words? Which one's a word?

I see. Debbi, would you make a line under a letter. Make a line underneath a letter?

Now I just said one line. Gotta listen. I may wanna trick you. What letter did you put a line under?

S: Dih.

I: Dih?

S: Dih. "D".

I: "D". Oh, you made the sound of that too, huh? Debbi, can you make a box around a sentence?

S: A box?

I: A box around a sentence.

Ah, what is that sentence?

S: Skinny dog.

I: Skinny dog. Is skinny dog a word too?

S: Yup.

I: Oh. Could you show me the writing on this page? What part's writing?

S: All of it.

I: All of it. Any drawing on that page?

S: Yup.

I: Which part's drawing?

S: All of it.

I: All of it. Oh, it's the same, huh. It's the same at the at the same time. I see. Debbi, is there anything else you'd like to write on that page?

S: Nope.

I: Can't think of anything?

S: Nope.
DEBBIE B.

SESSION III

I: Here's the first. **Skinny dog.**

I: Here's the next one. **That girl is afraid.**

I: All done? You're a fast writer, aren't you? **The mouse eats five pieces of cheese.**

I: All done? Oh, you're so fast!

Now, can you put a line under that? We're going to do something a little different... a different game. This time I'm going to tell you some things, Debbie, and I want you to write them down. But here's the special part: This time I don't want you to use any letters... any alphabet letters. You can use any other kinds of marks you want that will help you to remember. Okay?

S: This is weird.

I: I know it's weird, but it's fun. Okay, think you can figure out a way?

S: Mm hmm.

I: **Fat boy with the striped shirt.** You can't use letters, but you can use anything else you want to.

What could you put on that paper that could help you remember?

**Fat boy with the striped shirt.**

What could you do with your pencil that could help you remember... **fat boy with the striped shirt**?

I: Say that you saw this person and he was a fat boy with a striped shirt. You wanted to remember that, but you didn't know how to write numbers or letters at all. You'd never ever written them in your life.

S: Mm hmm.
I: I know you do, but what if you didn't know how? How could you remember that? ... Fat boy with the striped shirt. Say you wanted to write something to someone else. How could you do it, Debbie?

S: (light dawns) Oh. Draw it!

I: Do you think that would work? Why don't you try it.

I: Long legs, huh? Okay, ... so, are you all done with that one? That was a good, clever idea; good thinking there. How about this one? One thousand stars in the sky.

Remember, you can't use letters or numbers.

S: Takes long to write that many. (Sigh.)

I: So are you done, or are you going to make more?

S: Done.

I: You're done? Okay, here's the next one: I see you.

S: No letters.

I: Yah, that's tricky; I know it.

S: No, it's not.

I: It's not for you, huh?

Oh, it wasn't tricky for you, was it? Well, how about this one? It's dark in the basement.

I: Okay, Debbie, can you read all the ones you've done for me now. ... on that page?

S: I forgot what that one said. ... on the first one.

I: Well, you just do as much as you can think of, Okay. Just do whatever parts you can.

S: That girl is afraid. The mouse ate--eats--three pieces of cheese. A fat boy with a striped shirt. A thousand stars in the sky. I can see--I see-you; It's dark in the basement.

I: What a good memory you have. You remembered almost all of them, didn't you? Oh, you put your name on it even. Okay Debbie, will you tell me which one says, The mouse eats five pieces of cheese? Okay. And which one says, A thousand stars in the sky? How about. ... which one says, A skinny dog? Is that the right one? how do you know?
S: 'Cuz it says, A skinny dog.
I: Guess you were right. What did this one say?
S: It's dark in the basement.
I: How did you know that's what it said?
S: 'Cuz it's dark.
I: And the dark helped you remember, huh?
S: Uh huh.
I: What did this one say?
S: A skinny dog.
I: How about this one?
S: I see you.
I: I can't fool you one bit today, can I? How about this one?
S: That girl's afraid.
S: Hello, my name is Sean. I'm 8 years old.

I: Sean, this is what we're gonna do today. I'm gonna tell you some things. Six things, okay? And what I'd like you to do is, put something down on the paper that'll help you remember those things. But, here is the trick. You can't use the letters of the alphabet, Okay? It's kind of a game. You've gotta figure out a way to write those things down so you can remember them. But you can't use the regular alphabet or numbers.

S: What can I use then?

I: You can use any other way you can figure out with a pencil. Okay? But you can't use alphabet and you can't use numbers. It's gonna make you think a little bit I know, but, you know, you just do the best you can.

S: Okay. (breathes out as he says it)

I: Okay, ready? here's the first one: Cat. And you can just take as long as you want and just let me know when you're done. Oh, I forgot to. . . .Sorry, I forgot to tell you another thing. When you're done with those things then I'd like you to read them back to me.

S: Okay.

I: So what you want to do is write them down so later it can help you remember it.

All done?

S: Um hm.

I: Okay here's the next one: Little red car.

Here's the next one: It's raining

Okay? The next one is: I hurt my knee.
(Here's) the next one: **Black smoke.**

**Spooky ghost.**

Could you read those to me now Sean?

**S:** 'Kay. **A red car.** It is raining. **A hurt knee.** **Black smoke.**

**I:** Okay, which was the one that said, *It's raining?*

Which was the one that said, **Black smoke?**

How 'bout the one that said, um, **Cat?**

Okay. And which one said, **A spooky ghost?**

Which one said, **A little red car?**

Okay, which one said, **I hurt my knee.**

What'd that one say?

**S:** **Cat.**

**I:** How 'bout that one?

**S:** Um, **Spooky ghost.**

**I:** 'Kay Sean, can you write your name on this paper?

Okay.
PAUL

SESSION I

I: Okay.
S: Paul.
I: Paul what?
S: Paul.
I: Letters; yeah, there any other way?
S: Oh-oh.
I: You're gonna have to do a little bit of thinking I know. But I think you'll be able to come up with something. You can use any pencil you want to use. Okay. So are you ready? Here's the first one: Cat.
S: Um...
I: And just take as long as you want. And whatever you want to do, it's fine.
S: 'Kay.
I: You all ready?
S: Yeah.
I: Ah, that's interesting. Here's the next one: Little red car.
S: The whole thing?
I: Uh-huh.
S: "L" could be a... Wait a minute... "L". How do you sp-- Oh, never mind. How do you spell little? L-I-T-T-L-E.
I: You figure it out, okay? However you want to do it.
S: Okay. Gringe. This oughta look... Little red car, right? Okay.
I: Here's the next one: It's raining. I'm sorry. You can do it any way you want to on the paper, okay?
S: Oh, okay, 'cause I don't want to...
I: You think there's a lotta work there, huh. I'm sorry. I thought I said that.

S: (talking to himself) There went two hundred in time. There.

I: Hm. Okay. Here's the next one. 'Kay, the next one is: A horse has four legs.

S: A horse has four legs. I wrote too much. Did you say, "A horse has four legs?" Okay.

I: Okay. All done? Okay. Here's the last one: Five crayons are in the box.

S: There are five crayons in the box.

I: Five crayons are in the box.

S: Hm. It continued down to there.

I: I see. Okay, and the last one goes all the way down. Okay. Can you read those to me now?


I: I know. That's okay. If you don't think you can remember it you can just go on.

S: Um. That one is... I know one has a cat in it. (sigh) The second you told me, I get it.

I: That's okay now if you forget 'cause I know I gave you a lot for the first time you did it. Yeah, you had a long one.

S: Is that the cat one?

I: What is this one again?

S: Cat. That was the cat one. Oh, a car, it's raining. Is there a lot of children at school. There are a lot of children in school? One of them? Okay. Don't know which one. Is that the children one? At school?

I: I don't know. You tell me. Well which one do you think says, It's raining?

S: That one.

I: Okay. How 'bout which one says, Five crayons are in the box?
S: It's in the third (3 taps), fourth.
I: Okay, how 'bout which one was . . .
S: You mean the fifth one is crayons in the box right? The crayons are in . . . No, this one says, The crayons are in the box.
I: So that's the . . .
S: Fourth.
I: Fourth one. Then which one was, a little red car?
S: Car.
I: And how 'bout, There are many children in the . . .
S: Right there.
I: Okay. And how 'bout, a horse has four legs? Can you put your name on that for me?
S: Oh--this is a horse has four legs and this was the children at school.
I: Okay. So that one's, a horse has four legs and that's number five.
S: Yeah. 'Cause A--horse--has--four--legs, yeah.
I: Okay.
S: There--are--children--at--school.
I: Got it. Okay. Wanna put your name on now? We'll write your name just regular.
S: We'll be sittin' there days tryin' to figure it out.
I: Okay, Paul, would you circle a word on the page for me?
S: A word?
I: Uh-huh. If there's any words on the page.
S: Um. I think I'll circle "Raining".
I: It's raining?
S: Um-hm.
I: Okay. Would you put a line under a letter on this page?
S: "A".
I: "A". Okay. Would you put a box around a sentence?
S: I'll just make kind of a oval box but it's kind of a round end.
I: Okay, Paul, on this page show me the part that's writing; just the part that's writing.
S: My name.
I: Your name. Okay. Anything else?
S: This kinda looks like a "B".
I: The end there?
S: Yeah.
I: Anything else that's writing?
S: Um. That looks like a "P".
I: Would you show me what's on this page that's drawing? If there's any drawing on this page?
S: Right there; it's kind ol' a flying saucer.
I: Uh-huh. That's an interesting one. Well what's the difference between the writing and the drawing?
S: Well, the drawing part's kinda like a code. You can't really just tell it right off.
I: And what's the writing? The drawing part's kinda like a code So waht's the writing part like?
S: It's kinda like you can just, you know, look at it, you can say the word.
I: So is this writing then, or drawing.
S: Yup.
I: That's writing? Well, what about before you knew how to read then? What was it?
I: It was just like paper? Oh, I get it. Okay. What's the difference between this part and, say, this part right there?
S: Well, that has three words in it. And that has only one.
I: Okay. But you said that this is drawing, this is writing. Well I don't quite understand why they're different. Like, just say this part right here, this word right here. How come that's different from that?

S: Because it's just been made by someone else and you've never seen it before.

I: How did you decide your code there?

S: I just drew some just physical lines.

I: And so how did it help you when you wanted to remember?

S: It didn't at all. It confused me.

I: It did? Well I think you did a really good job. I give you some compliments today. Hey, where did you learn all this? So much about writing, and drawing and codes and all that?

S: You mean in books, stuff like that.

I: Have you read some books on that?

S: Yeah. I read about five code books.

I: You've had quite a lot of experience with it, huh. Why do you think people might use codes?

S: Well it's like, like in civil wars and stuff like that, you have to have codes and only that army. . .Like this army know it, this army doesn't. So you know you could send it and they could catch it, but they wouldn't know what it said. You could say, plan of the battle attack on northeast or western Washington or whatever, and then do it, and if they caught it they wouldn't know what it said. They could send another one, a different one, and could keep fighting.

I: How would you, if you really had something you wanted to remember, and you didn't know how to write like this, would you be able to do that with a code? And would you be able to remember it even if nobody else got to see it? How would you do it?

S: No camera or anything?

I: No. Uh-uh.

S: Oh.

I: Just a pencil and a piece of paper is all you have to remember it.
S: Well, I'd draw the picture.
I: You'd draw the picture.
S: Well as close as I could get to it.
I: I'm interested. How come you decided to do it this way instead of to draw pictures? You know how to do both ways, right, to remember something. What made you decide to do one way and not the other?
S: Well, I decided this way because it kind of looks better.
I: Looks better? What do you mean "looks better"? Looks better than what?
S: Well you know, drawing pictures you have to draw what it looks like. But this you can just, you know, do something you know.
I: So it may be a little easier some way or . . .
S: Yeah.
I: Okay.
PAUL

SESSION II

S: My name's Paul and I'm age eight. June 23rd.

I: Okay, remember last time I told you some things and you had to put something on the paper that would help you remember them, and then read it back to me when you got done. There was a trick, remember, that you couldn't use any letters, alphabets, or numbers. We're still gonna do that today, okay? You can use any word you can think of that will help you remember. Well, you can use any way you can think of. If you want to do a different way from last time that's fine. Any way that'll work for you to help you remember. Okay?

Here's the first one: Two dogs are chasing the cat.

Okay? Here's the next one: The big hen and four little chicks.

Here's the next one: There are many children in school.

S: Okay.

I: The next one: Two snakes, a long one and a short one.

S: Okay.

I: Okay. The next one: The girl wants to eat.

The next one: Ouch.

S: (laughs)

I: Can you read those to me?

S: This one is: There are many children at school. This one: Two snakes, a long one and a short one. Ouch, um, The girl wants to eat. Ouch, and I can't remember the other two.

I: Okay, which ones couldn't you remember?

S: I think it was the one. . .Okay, this one is. . .There are many children in the school. This one is, Two snakes, a long one and a short one. The girl wants to eat. Ouch. And I can't remember these two, three.

I: Okay.
S: The last one's, you know, I can't remember it.
I: Okay. That's alright.
S: Did I do better today?
I: You did a lot of them didn't you. What was your secret today?
S: Well, for *This girl wanted to eat* I kind of made a mess. I put kind of like a, kind of a human in it, you know, so you couldn't tell. And then that's a plate of food.
   Long snake, short snake.
I: What's the part in-between here? That part.
S: One and, see one and one are real sloppy. It's just a word. You know, the same letter but. And I made this. See, over here. . .
   Oh, you know, *children at school* can be high school. I mean but high school kids are tall.
I: So you made a tall line.
S: Yeah. And now but you have to remember 'em. "Cause when you go "Ouch", you know, a lot of air comes out.
I: So you made it look like a lot of air coming out, kind of. Well that's an interesting way to do it. It seems to help you, huh.
   Now how come you decided to do it this way then, and that was different from last time?
S: I don't know.
I: What was this one back here?
S: Um, snakes.
I: The snakes.
S: Well, *Two snakes, a long one and a short one*. Okay now, this was. . .
I: Okay, you weren't sure about what that one said?
S: Uh-uh.
I: Okay. And that one you're not sure?
S: Yeah, and this one right here.
I: Okay . . .Okay, can you put your name on that paper, Paul?
S: How will?
I: Any way you like it. (two taps in background)
S: How do you know that? Okay.
I: Okay, you put it both ways, huh. Okay, would you circle a word on that page today?
S: Um . . .I can't think. Long.
I: And what was the word?
S: Long.
I: Long. And that was the snake one, right?
S: Right.
I: Okay, how 'bout a letter on that page?
S: Oh-oh, I didn't make letters, I just made words.
I: Oh you did? Well if there's no letters you're going to have to circle one.
Okay, how about a sentence. Could you put a box around a sentence?
Okay, and what was that that you circled?
S: Um, that's the one I put it in a circle.
I: But you know that it's a sentence?
S: Yes.
I: Okay, how do you know all that?
S: It's got three different thoughts in it.
I: Oh, okay.

S: Three different thoughts, three different words. Oh, this is just one big word.

I: Yeah, okay. I see how you did it now. Okay, would you tell me which part on that page is writing? Is there any writing on that page?

S: That kind of looks like a messy "8", you know? Um, I guess I made a lotta "8's". Um, what are those called? That looks like a radish.

I: Any other writing?

S: You mean letters? Or words?

I: Oh, whatever you think is writing on this page.

S: Or can it be draw? Can it be. .

I: Whatever you consider writing, find that on this paper.

S: Looks like an egg being tied, 'cause it goes in like that and it's got two pieces.

S: Yeah, it's gettin' tight. Then this one, right here, looks like you know, like a little ship with a laser right in front.

I: (Asks what he would do if a snake was coming to bite his friend in another room and he wanted to tell him to get out of there, but couldn't make any noise. All he has is a piece of paper and pencil. He says he'd write in a code. I ask what if they couldn't read the same code or language.)

S: Tick--tick--tick--tick. And if they knew, um.

I: Say, the only way that you could tell 'em was to put something on the paper and that paper would mysteriously go into the other room. But you couldn't go, you couldn't use any kind of noise.

S: Oh, is this kinda, you know, like a mail slit you can just stick it through?

I: It would just go. Pretend this is the 21st century and you would write on the paper and it would go in there.

S: Well, er, I. Well, maybe, you know, they might know the code so good that they could just you know, they might have had it for five years and they could know it real good.
I: So it would be just like reading for them?
S: Yeah. Like the Chinese. That's a word to them--the letter.
I: Well what if they didn't know your code; what if they knew some other code? Then you didn't know the same code.
S: I'd try to figure out the other code.
I: But now you remember, the snake's comin' toward your friend. It's gonna bite him any minute. You have about one minute to let him know about that snake, and you don't have time to figure out a code.
S: I'd grab a code book.
APPENDIX D

Consent Forms and Letters to Parents
CONSENT FORM

PARTICIPATION IN WRITTEN LANGUAGE STUDY

*I hereby consent to have my child participate in the written language project, if chosen.

*I understand that I may choose to not sign this form; and that I may withdraw my child from participation at any time by notifying either Dr. Nelson or Eilene Glasgow.

*I understand that my child may not be chosen, in which case he or she will continue to participate in all the regular activities.

**YES, MY CHILD CAN PARTICIPATE IF CHOSEN.

NAME OF CHILD

SIGNATURE OF PARENT OR GUARDIAN

DATE

++A NOTE TO PARENTS: If you wish to discuss participation in this project with your child, please explain in terms such as "helping to find out what children know about writing", and that "we'll be doing some writing". Using the same terminology I will be using will be helpful in creating a comfortable "work-atmosphere" for your child. Also, if a child has specific prior knowledge of procedures purpose, it might invalidate the results. Thank you for your understanding and cooperation.--Eilene Glasgow

PLEASE RETURN THIS FORM TO THE HOME EC PRESCHOOL - DR. MARTHA NELSON

For your information:

Eilene Glasgow (project director): Miller Hall 251A, WWU 676-3336
Home: 676-4844

Dr. Martha Nelson (Director, preschool): Old Main 585A 676-3370

Dr. Marvin Klein (Chairman, thesis committee): Miller Hall 301 676-3327
Dear Parents:

The preschool years are a vital part of a child's total learning experience. The importance of understanding and discovering more about cognitive development during this formative period cannot be underestimated. For this reason, I have chosen a thesis project exploring this area as partial fulfillment of the requirements for my master's degree in Early Childhood Education. This research project will be under the supervision of Dr. Marvin Klein (Associate Professor, Elementary Education), and Dr. Martha Nelson (Preschool Director and Assistant Professor Home Economics), during Winter and Spring quarters.

This study will investigate the development of understanding of written language in young children. Most children of this age understand superficially how adults write, but they don't necessarily understand the purposes of writing. I am interested in seeing how they will handle a task they may understand externally, but which they probably don't understand in its symbolic functions.

4-6 children on each age level (an equal number of boys and girls) will be chosen at random from those whose parents return the consent form agreeing to their child's participation. Each child will be informally "interviewed" three times, about one week apart. (A session lasts about 15 minutes.) The sessions will be tape recorded and later transcribed for analysis. The child will be asked to use pencil and paper to "write" 4-6 phrases, words and sentences spoken by the interviewer. He or she will then be asked to recall them, and asked a few questions about what was written.

The results of this study may have implications for teaching pre-reading and writing skills, as well as for beginning reading and writing, to young children. It may help those who work with children by providing an informal method to determine what skills and concepts a child has about language, and in what areas the child may need assistance.

There will be no adverse effects from participation in this project to the children involved. Each child's participation is completely voluntary, and you may choose to not sign the consent form, or to withdraw from participation at any time.

The procedures which will be used have been informally field-tested with over 25 young children, and their reactions have been very positive. They seemed to enjoy the comfortable one-to-one interaction with the interviewer, and were interested and involved with the task. Engrossed with the "game-like" quality of the sessions, many asked when they could "do it again". All seemed to feel proud of the work they had done.

If you are willing to have your child participate if he or she is chosen, please sign the attached consent form and return it to Dr. Nelson as soon as possible.

Thank you for your assistance with this project.

Sincerely,

Eilene Glasgow

Eilene Glasgow
Graduate student and teaching assistant
CONSENT FORM

PARTICIPATION IN WRITTEN LANGUAGE STUDY

* I consent to have my child participate in the written language project, if chosen.

* I understand that I may choose to not sign this form; and that I may withdraw my child from participation at any time by notifying my child's teacher, or Eilene Glasgow.

* I understand that my child may not be chosen, in which case he or she will continue to participate in all the regular activities.

**YES, MY CHILD CAN PARTICIPATE IF CHOSEN.

__________________________________________
NAME OF CHILD

__________________________________________  ____________
SIGNATURE OF PARENT OR GUARDIAN                DATE

************************************************
CUT ALONG LINE AND RETURN TO ASSUMPTION SCHOOL, TO YOUR CHILD'S TEACHER.
BY FEBRUARY 20, 1981 (FRIDAY).

For Your Information:

Eilene Glasgow (project director and interviewer): Miller Hall 251A, WWU 676-3336
Home: 676-4844

Dr. Marvin Klein (Chairman, thesis project committee): Miller Hall 301, WWU 676-332

THANK YOU!
February 12, 1981

Dear Parents:

Writing is one of the most important skills children learn in school, and yet, we really know very little about their understanding of it. It is only recently that we have begun to realize that a child's understanding of the purposes of writing may affect development in both reading and writing. For this reason, I am doing a project in this area as part of my master's degree work in Early Childhood Education at Western Washington University.

I have discussed this project with Sister Helen, and she has agreed to allow me to work with 4-6 children from the 1st, 2nd and 3rd grades at Assumption School. These children will be chosen at random from those who return the consent form (attached to this letter). The children chosen will be worked with three times for about 15 minutes, at one-week intervals. The child will be asked to write some phrases, and read them, and then the writing will be discussed. The sessions are very informal and "game-like".

The procedure is being developed as a possible way of informally determining what skills and concepts a child has about written language, and in what areas he or she may need assistance.

There will be no adverse effects from participation in this project to the children involved. Each child's participation is completely voluntary, and you may choose to not sign the consent form, or to withdraw from participation at any time.

I have used the procedure described above with over 30 children, ages 3-7, and their reactions have been very positive. They seemed to enjoy the comfortable one-to-one interaction with the interviewer, and were interested and involved with the task. Engrossed with the "game-like" quality of the sessions, many were eager to "do it again, please!" All seemed proud of the work they had done.

If you are willing to have your child participate if he or she is chosen, please sign the attached consent form and return it with your child to his or her teacher by this Friday, February 20th.

If you have any questions, please feel free to call me at my office (676-3336, WWU), or at home (676-4844).

Thank you for your assistance with this project.

Sincerely,

Eilene Glasgow
Graduate student and teaching assistant in Early Childhood Education, WWU

**SPECIAL NOTE: If you wish to talk about participation in this project with your child, please explain in terms such as "helping to find out what children know about words", and that "we'll be doing some writing". Using the same words I'll be using with them will be helpful in creating a comfortable work-atmosphere for your child. Also, if a child has specific knowledge about procedures or purpose, it could invalidate the results. Thank you for your understanding and cooperation.**
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