PRE-SCHOOL CHILDREN'S UNDERSTANDINGS OF THE SIGNIFICANCE OF LETTER ORDER AND WORD SIZE

by

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ABSTRACT

This study examines the manner in which children develop understanding about the letter order and word size (number of letters) of written words. It also examines the relationships between the understandings children develop while learning the written form of their own names and those developed while learning other words.

Twelve children, aged three, four, and five, were selected. The study involved the presentation of three tasks to the children. The first task was designed to provide information regarding the children's current expertise with letters, numbers and the written form of their own names. The second task was designed to ascertain how children read their names, the relative values they assign to the various parts of their names and to determine under which conditions the children would no longer accept a given string of letters as their names. The third task examined how the children read words, the relative value they assign to parts of words and to determine under which conditions the children would no longer accept a given string of letters as the same words.

The following is a summary of the major findings of this study:

1. The younger of the 12 subjects (mean age 3 years and 9 months) were least able to write their names in standard form and in general, the older children (mean age 5 years and 1 month) tended to have more expertise with letters and numbers than the younger children.

2. Most children appeared to generally apply their understandings about letter order and word size (unique to each child) to all the presented words. The number of incorrect responses with regards to letter order and word size did not differ substantially between manipulations performed on the children's names and those performed on the other words.

3. Of the eight children who did not insist on a particular letter order for their names, seven did not insist on a particular letter order for the other words.

4. All of the four children insisting upon a specific letter order and word size for their names also insisted upon a specific letter order and word size for the other words.

5. The four children insisting upon a specific letter order and word size for their names and for the other words, were able to write their names in standard form.

6. The percentage of incorrect responses did not vary substantially between letter order and word size.

Children aged three to five years can hold definite understandings about written words. Their understandings appear to reflect relatively sophisticated levels of knowledge about words. Further, they indicate general expertise regarding our written language system.

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Table of Contents

List of Tables

List of Figures

List of Appendices

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Dedication

This thesis is dedicated to

Sheena,

Mackenzie,

and

Stewart.

Thank you for giving me our time.

A.D.

Chapter One

Introduction

This study examines the manner in which children develop understandings about the relevance of letter order and word size in written words. Further, it examines whether there is a relationship between the understandings children develop while learning the written form of their own names and those developed while learning other words.

Learning one's own name, in written form, is a unique event. The child's own name is almost invariably the first written word learned (Clay, 1975). A commonly observed progression is from recognition of the initial letter as a sort of monogram to the eventual mastery of all the appropriate letters. This progression is viewed by Clay (1975) as a crucial aspect of children's early written language development since the repetition of this familiar word "may establish some very important concepts, namely, the invariant set of letters and orders of letters that make up a remembered word" (p. 46). This study proposes to test Clay's assertion by examining children's

knowledge of the concepts in reference to their names and then comparing these concepts with those held with regard to other words. The results may clarify the role of children's own names in early written language development.

Ferreiro & Teberosky (1981, 1982) have explored the manner in which children construct a knowledge of written language. Ferreiro states that "the child does not bring into play a special learning technique", but "goes on to discover the properties of symbolic systems through a long constructive process" (Ferreiro, 1981, p.6). Once a child has a theory, regardless of how primitive, attention to results will confirm or contradict that theory. Contradiction may lead the child to construct another theory that would take the new features into account. In this way, a few examples can raise the child's understanding to another level (Duckworth, 1979).

Ferreiro, in her Introduction to Literacy Before Schooling (1982), describes children as "learners who actively try to understand the world around them, to answer questions the world poses. They are not learners who wait for someone to transmit knowledge to them in an act of benevolence. To the contrary, they learn primarily through their own actions on external objects, and they construct their own categories of thought while organizing their world" (p. 12). An examination of children's

interactions with written language, particularly their own names, should reveal some of their understandings.

The issues which provide a focus for this research are:

1. The relationship between the children's preference for a specific word size for their own names and that of other words when manipulations of word structure are observed by the children.

2. The relationship between children's preference for a specific letter order for their own names and their requirement for a specific letter order for other words when manipulations of word structure are observed by the children.

3. The relationship between the children's preference for a specific word size for their own names and that for other words when manipulations of word structure are not observed by the children.

4. The relationship between the children's preference for a specific letter order for their own names and that of other words when manipulations of word structure are not observed by the children.

5. The relationship between the children's understandings regarding word size and those regarding letter order.

Chapter Two

Background of the Study

The trend of recent research has been to view the child as an active constructor of written language knowledge (Ferreiro & Teberosky, 1982). Researchers have begun to investigate the knowledge of written language possessed by children prior to commencement of formal instruction (Goodman & Altwerger, 1981; Harste, Burke, & Woodward, 1983, 1981; Mason, 1982; Ferreiro & Teberosky, 1982). There are three areas of research that are especially pertinant to the present study: research examining the written language knowledge children gain through interaction with their environment, research into the meaning of children's early writing and research focusing on the role of the children's own names in the development of their written language knowledge.

Written Language and The Environment

In a comprehensive study of early readers, Clark (1976) observed that "there was seldom any direct teaching of reading but rather a shared language interaction out of which development of an understanding of the printed word was a natural extension, since print features so much in our enviroment" (note 8, p.4). The importance of children's interaction with environmental print in literacy development is emphasized again by Mason (1982). She concludes that the concepts children form are "affected by the amount of print in the environment, by the use to which print is put by significant others, by the clarity with which the experiences they have in reading signify meaning, and by the extent to which they obtain opportunities to test their ideas and identify, interpret and use printed information" (p. 11).

Recent studies have focused on the child's reading experiences in a print dominated environment. Goodman and Altweger (1981) explored preschoolers' awareness of and responses to environmental print and their attitudes and concepts regarding reading and writing. Eleven three to

five year olds were studied. It was found that the frequency of correct responses was related positively to the amount of context supporting the print. Similar results were reported by Mason (1982). She found that kindergarten children were able to read words on labels with pictures with 97% accuracy. Further, when the words were given without the pictures they were read with 79% accuracy. This led Mason to assert that many words, such as children's own names, names of important people, objects, labels, and explicit signs are learned before school entry.

Children's initial reading experiences tend to be with materials found in their environment. Instances of environmental reading are steeped in context and as such provide children with reading experiences full of meaning. If children, as proposed by Gibson & Levin (1976), attend to the meanings of words rather than to the word's phonetic or graphic features when they begin to read, then it would appear that children's initial reading experiences tend to be essentially meaning-getting. This very possibility is highlighted by Harste, Burke & Woodward (1983) when they write, "The young child"s question, 'What did I write?' after putting marks on the paper signals that he or she has inferred that the marks should mean" (p. 116). If children do seek meaning when they read, then an examination of those words which hold

of lot of meaning for children should provide insights into the acquisition of their understandings regarding letter order and word size.

Children's Early Writing

Research into early writing indicates that children's knowledge about writing varies with the volume of print in the environment (Lavine, 1972). Children seem to develop sensitivity to features of graphic materials simply by having plenty of graphic displays at which to look (Gibson & Levin, 1976).

Lavine (1972) investigated children's ability to recognize writing as different from other graphic displays. Samples of true writing were labeled in some way as writing by 86% of the three years olds, 90% of the four year olds, and 96% of the five year olds. Lavine concludes that children use linearity, variety (non-repetiveness of units), and number of aligned forms as criteria for determining readability. Ferreiro & Teberosky (1982) found that the children they studied required a minimum of three characters before they would deem a graphic display to be readable.

Other researchers have noticed that children

attend to words in a unique way during literacy development. Lamme and Childers (1983) studied the composing behaviors of three young children between the ages of two and four over a six month period and found that distinctions were made between the form and function of print. The children made alphabet and mock letters but seldom read them as communication. Words on the other hand were written and read. Ehri (1978) states that learning to write "influences the emergence of word consciousness, word identity, and knowledge of print conventions' (p. 28). The kinds of rules and structures children form are influenced by print production (Ehri, 1978; Clay, 1975).

Leslie and Shannon (1981) examined the relationship among orthographic knowledge, age and two aspects of beginning reading achievement: letter recognition and word recognition. Their data indicate that children have an orthographic concept of "word-like" before they are able to read words; regardless of age those children who could name most of the letters knew that numerals did not belong in words. Ferreiro & Teberosky (1982) demonstrated that the children included in their study had specific requirements that needed to be met before they would categorize a collection of graphic symbols as a word such as a minimum of three characters. The requirements differed and appeared to be related to

the child's general knowledge and understanding of written language. Harste, Burke & Woodward (1983) report that attempts to determine "wordness" were frustrated and resulted in their concluding that, "when a child makes one blob for 'a dog', another for 'a tree', and a third for 'a bear', the basic notion of wordness is evidenced" (p.91). They go on to say that "the notion [of wordness] has so little power to explain growth in literacy that violations, 'non-wordness' decisions like Sara's WASAPANATAEM (once upon a time) are more significant in understanding the evolution of literacy, than are incidences of the concept" (p.91).

Research in the area of children's early writing emphasizes the importance of meaning. Children's initial writing attempts appear to be meaning-conveying. If children are using print to convey meaning then an examination of the words children are interested in writing will provide researchers with clues as to the acquisition of children's understandings of letter order and word size. One of the words children are interested in writing is their own name.

Children's Own Names

Children are interested in reading words that have

meaning and they are interested in conveying meaning when they write. One of the first words most children learn to write and to recognize or read is their own name (Clay, 1976). Researchers are beginning to view children's understandings of the written form of their own names as both revealing and worthy of study.

In their book Literacy Before Schooling Ferreiro & Teberosky (1982) describe investigations into the development of children's hypotheses regarding reading and writing, including children's developing concepts regarding their personal names.

Ferreiro & Teberosky view the child's name as the first stable written string and the prototype of subsequent writing. The name is endowed with meaning. Ferreiro & Teberosky (1982) suspect that it is a "typical middle class cultural pattern" to provide children with early opportunities to write (and read) their names (p. 213). This ordering may be purely a culturally influenced event. Clay (1975) states that "it is only a rare child that learns any other words before attempting to write some of his own name" (p. 44).

One portion of Ferreiro & Teberosky's investigations was designed to illustrate the hypotheses children use when reading their names. Children were asked to write their names. If unable to produce the graphic characters they were offered moveable letters. If

they could neither write nor compose their names the researchers tried to see if they could recognize their names when made for them. Once a name was produced, it became the basis for a series of manipulations. Portions of the written string were covered and various transformations were made. The children were involved in a discussion designed to reveal the basis on which decisions were made as to whether a written string was their name. Ferreiro & Teberosky (1982) found that the children appeared to go through different stages which illustrated some of the understandings that children have regarding written language. The stages reflected the changes in understanding that may occur as children approach a more adult-like understanding of written language. The children at each level or stage described by Ferreiro & Teberosky used increasingly sophisicated hypotheses. Children in the first stage appeared to find the transformations irrelevant. Children in the final stage rejected the transformations but tried to read them. The argument for rejecting the transformed string was always that the original word had been modified and another word created which was readable but different from the first (Ferreiro & Teberosky, 1982).

It seems clear that children's views of their printed name as a stable unit (with a fixed order and number of letters) may signal tremendously important

personal literacy milestones which should be explored further. While events surrounding children's development of stable written forms of their names have been featured in recent research (Clay, 1975; Ferreiro & Teberosky, 1982; Harste, Burke & Woodward, 1983; Hiebert, 1978), they have not been the primary focus. The present study focuses upon children's understandings of letter order and word size with particular emphasis on the role of their own names.

This study examines children's understandings of letter order and word size during the time when they are beginning to learn to write and read their own names. By studying the knowledge three, four and five year olds hold regarding their name and its letter order and word size, insights into children's early written language development may be gained.

Chapter Three

Methodolgy

Introduction

This chapter describes the method and procedures used to examine the understandings held by very young children with regard to letter order and word size. A description of the tasks and associated procedures will follow a section outlining the subjects' general characteristics and the selection procedures followed.

Subjects

Twelve children were selected from a daycare centre according to the following criteria:

2 females and 2 males approximately 3 years old

2 females and 2 males approximately 4 years old

2 females and 2 males approximately 5 years old.

The center was operated by a nearby college and used to provide practicums for students in the Early Childhood Program. This meant that the children would be used to seeing and working with a variety of adults and it would then take less time to develop a trusting, sharing relationship. The daycare centre was not generally used as a research facility.

The children were divided into three groups by the staff roughly on the basis of age. The Junior group was composed of mostly three year olds, the Senior group was mostly four year olds and the Kindergarten group was mostly five year olds. The children selected for the purposes of this study were all attending either the Junior or Senior group with the exception of Tricia who had begun to attend the Kindergarten during part of the day.

The activities in the Junior and Senior rooms covered the normal range of nursery school activities, such as painting, play dough, and Circle Time, which usually included a story read to the group. There were periods of outdoor free play as well as indoor free play with puzzles, blocks, dress-up clothes and a selection of toys. Some activities included letter and number activities similar to those found in many homes.

Observation of group activities showed that work

involving the children's personal names tended to be restricted to the printing of their names on the back of artwork or the placement of a name card in order that their spot for eating lunch could be easily identified. While the children's experiences with their own names prior to this study cannot be detailed, most children referred to instances of parents or siblings writing their names during discussions with the researcher.

The children came from primarily low income families, attendence at the center mostly being paid for through the use of goverment subsidies provided to the parent(s). Further, as demonstated in Table 1, most children came from one-parent families.

Although children were pre-selected for this study on the basis of age and sex, the final choice of subjects was made after Task 1 on the basis of two factors:

1) Some of the subjects selected must be able to write their own name in standard form.
2) The subjects must show a willingness to work and cooperate with the researcher.

Children able to write their own names, it was assumed, are more experienced written language users. They would be more likely to expect a certain letter order and word size for their names. Children unable to write their own names, it was assumed, are less experienced written

language users. They may not insist upon an invarient letter order and word size. A combination of children able to write their own names and those unable to write their own names would provide information concerning the differences in written language knowledge between the two groups of children.

Table 1

Ages of Children Studied and Number of Parents

Names	Single (S) or Both (B) Parent Families	Age	Mean Age
Aaron	S	3y, 2m	
Jamie	S	3y, 2m	3y, 5m
Michael	S	3y, 7m	
Melissa	B	3y, 8m	
Gabriel	S	3y, 10m	
Alexis	S	4y, 0m	4y, 3m
Nikki	S	4y, 6m	
Camrin	B	4y, 8m	
Tricia	S	5y, 2m	
Kenton	S	5y, 1m	5y, 2m
Annia	B	5y, 3m	
Michael	S	5y, 3m	

Procedures and Materials

Each child studied was presented with a series of three tasks. The first task was designed to provide information regarding the children's current expertise with letters, numbers and the written form of their own name, and the other two tasks were of a problem solving nature. This section will describe each of the three tasks and the materials involved and then describe the timing and administration of each task. All interactions were taped by the researcher for subsequent analysis.

Task 1 This task consists of questions and activities designed to illustrate some of the children's knowledge and understandings with respect to letters, numbers, and the written form of their own first names.

The questions and activities are:

1. What is your name?
2. Do you know how to make your name?
3. Would you make it for me please? (A selection of thin and thick markers were available.)
4. This is a pile of letters, numbers, and other things. Would you please put the letters here, the numbers here, and the other things here.

5. Is one of these your name? (Choice among four words: the child's, one with the two initial letters the same as the child's name and the same length, one short word and one longer word.)
6. Which one of these is your name? (choice of upper and lower case letters)

During this task the researcher began to develop working relationships with the children. Further, these activities provided information that was to be used in materials preparation for Tasks 2 and 3.

The materials required for Task 1 were: selected magnetic letters, numbers, and other symbols, a page displaying child's name in upper and lower case, a page displaying child's name as one of four words, blank paper and markers.

Task 2 This task was designed to ascertain how children read their names, the relative values they assigned to the various parts of their names and to determine under which conditions the children would no longer accept a given string of letters as their names. The activities were also expected to present the children with a problem. It was assumed that the children's

stategies and assumptions would be more easily observed while they were attemping to resolve a problem (Ferreiro & Teberosky, 1982).

Eight manipulations were selected for Task 2. They are displayed in Table 2. The manipulations involved four manipulations of letter order and four manipulations of word size. In each case, the letters were printed on paper squares measuring 3.25 cm x 5.0 cm. The children were presented with their names in standard form and then the letters were manipulated into their new positions. For example:

> This says Benji .
>
> Does this (manipulations performed without referring to letter names) say Benji ?

At this point, a conversation about the children's answer would usually be initiated or, as was often the case, the children themselves would spontaneously explain their actions, or by their questions or comments indicate some of their thinking. Further interaction and dialogue usually served to clarify, although at times the interaction merely gave rise to more questions regarding the children's thinking.

The sequence of manipulations was repeated again

on a subsequent day, however then the children were not permitted to observe the manipulations being performed on the word. During the second exposure, the manipulated forms were prepared in advance of the working session. The manipulated name form was printed on a strip of paper measuring 21 cm x 5 cm The procedure, as outlined in Table 2, was again followed.

Table 2

Manipulations of Letter Order and Word Size In Child's Name

	Prior To Manipulation	After Manipulation	Manipulation
1.	Benji	Bejin	medial and final letters switched
2.	Benji	njiBe	initial and final letters switched
3.	Benji	nBeji	initial and medial letters switched
4.	Benji	ijneB	word printed right to left
5.	Benji	enji	removal of initial letter
6.	Benji	Benujit	addition of two letters
7.	Benji	B	removal of all except initial letter
8.	Benji	Enji	remove initial letter and capitalize second letter

(If the child had preferred the uppercase mode for her name during Task 1 the eighth manipulation would have been:

8(a)	BENJI	benji	all letters lowercase)

* In the actual study, the child's own name was used.

Task Three This task was intended to ascertain the relative values children assign to parts of words that were not their names and to determine under which conditions the children would no longer accept a given string of letters as a particular word. The manipulations performed on the words during Task 3 were identical to those performed during Task 2. The children viewed two words undergoing the manipulations, one word was the same length as their own name and the other was a common word. Table 3 indicates the words used.

Table 3

Word Selection for Task 3

Word the Same Length As Name	
If Name is...	Word Selected Would Be...
3 Letters	cat
4 Letters	frog
5 Letters	hippo
6 Letters	rabbit
7 Letters	giraffe
8 Letters	elephant

Word Commom to All Children
house

The manipulations during Task 3 were the same as Task 2. They involved four manipulations of letter order and four manipulations of word size. In each case, the letters were printed on paper squares measuring 3.25 cm x 5.0 cm. The children were presented with the word in standard form and then the letters were manipulated into new positions with the same procedure as with Task 2. For example:

This says hippo .

Does this (manipulations performed without referring to letter names) say hippo ?

At this point, a conversation about the children's answer may have been initated or, as was often the case, the children would explain their actions, or by their questions and comments, indicate some of their thinking.

The sequence of manipulations was repeated again on a subsequent day when the children were not permitted to observe the manipulations being made. During the second exposure, the manipulated forms were prepared in advance of the working session. The manipulated word form was printed on a strip of paper measuring 21 cm x 5 cm. The same procedure as outlined for Task 2 was followed.

Counter-balancing of Tasks

Harste, Burke & Woodward (1981) mention that a child can learn a lot from a "single significant encounter" and that "having once had an encounter, subsequent encounters are governed, at least in part, by their understanding of what worked last time". (p. 13) Concerns such as these indicated the need for counter-balancing the tasks in order to prevent the possibility that the findings might be merely the results of 'significant encounters' of the children with their own names. Table 4 demonstates the counter-balancing of the task order.

Table 4

Task Counter-balancing

Subjects	Sex	Name Presented First	Common Word Presented First
Aaron (3y, 2m)	M		X
Jamie (3y, 2m)	F	X	
Michael(3y, 7m)	M	X	
Melissa(3y, 8m)	F		X
Gabriel (3y,10m)	M	X	
Alexis (4y, 0m)	F		X
Nikki (4y, 6m)	F	X	
Camrin (4y,8m)	M		X
Tricia (5y,2m)	F		X
Kenton (5y, 1m)	M	X	
Annia (5y,3m)	F	X	
Michael (5y, 3m)	M		X

Chapter Four

Results

Introduction

The three tasks of this study were designed to assist in a comparison of children's understandings of letter order and word size of their own names and those of other words. This chapter will summarize, primarily through the use of tables, the quantitative data produced by the three different tasks. The related qualitative data will be presented during the discussion of the results in Chapter Five.

Task 1

In general, the younger subjects were least able to write their name in standard form. Table 5 presents the sex and mean age differences between those children able to write their names and those unable to do so.

Four children were able to write their names in standard form, two boys and two girls. The mean age of the males was 4 years, 11 months and the mean age of the females 5 years, 2.5 months.

Table 5

Characteristics of Children and Writing Their Own Names

Names	Sex Of Child	Number of Subjects In Category	Mean Ages Of Subjects In Category
Children Not Able to Write Names In Standard Form			
Aaron (3y, 2m)	M		
Michael (3y, 7m)	M	4	3y, 11.5m
Gabriel (3y, 10m)	M		
Michael (5y, 3m)	M		
Jamie (3y, 2m)	F		
Melissa (3y, 8m)	F	4	3y, 6.5m
Alexis (4y, 0m)	F		
Nikki (4y, 6m)	F		
Children Able to Write Their Names In Standard Form			
Camrin (4y, 8m)	M		
Kenton (5y, 1m)	M	2	4y, 11m
Tricia (5y, 2m)	F		
Annia (5y, 3m)	F	2	5y, 2.5m

Subjects' ability to select their own name from a list of four words is compared to their ability to write their own name in standard form in Table 6. The subjects are grouped into the eight unable to write their names in standard form and the four able to do so.

Those children unable to write their own names in standard form were not consistent in their ability to recognize their names in a list of four words. Three were able to select their names and four were unable to do so. Children able to write their own names in standard form were able to select their names from a list of four other words.

Table 6

Identification and Production of Names

Name (age)	Able to Select Own Name	Able to Write Own Name In Standard Form
Aaron (3y, 2m)	Yes	No
Jamie (3y, 2m)	No	No
Michael (3y, 7m)	No	No
Melissa (3y, 8m)	No	No
Gabriel (3y, 10m)	No	No
Alexis (4y, 0m)	No	No
Nikki (4y, 6m)	Yes	No
Michael (5y, 3m)	Yes	No
Camrin (4y, 8m)	Yes	Yes
Tricia (5y, 2m)	Yes	Yes
Kenton (5y, 1m)	Yes	Yes
Annia (5y, 3m)	Yes	Yes

Table 7 compares the children's ability to write their names to the use of letters in the actual writing of their names. The children are grouped into the eight children unable to write their names in standard form and the four children able to do so.

In general, the children appeared to be confident about their ability to write their own names. Ten of the twelve children stated that they were able to write their name though only four children made their name in standard form and only eight used letters to make their name. Six of the eight children who were not able to write their name in standard form stated that they were able to write their own name, yet none of these six was able to do so.

Four of the eight children in the first group use symbols other than letters with which to make their names. Three of these same four children stated that they were able to make their names. Of the four children in the first group who stated that they were able to write their name, only three used letters.

Those children able to write their names in standard form all stated that they were able to write their names and all used letters.

Table 7

Characteristics of Children's Name Production

Name (age)	Children's Answers Regarding Ability To Write Own Names	Use of Letters To Write Own Names
Children Not Able to Write Names In Standard Form		
Aaron (3y, 2m)	No	No
Jamie (3y, 2m)	Yes	No
Michael (3y, 7m)	Yes	No
Melissa (3y, 8m)	No	Yes
Gabriel (3y, 10m)	Yes	No
Alexis (4y, 0m)	Yes	Yes
Nikki (4y, 6m)	Yes	Yes
Michael (5y, 3m)	Yes	Yes
Children Able to Write Their Name In Standard Form		
Camrin (4y, 8m)	Yes	Yes
Tricia (5y, 2m)	Yes	Yes
Kenton (5y, 1m)	Yes	Yes
Annia (5y, 3m)	Yes	Yes

To provide some indication of the children's general ability to distinguish among some written language symbols, they were asked to sort a collection of letters, numbers, and other symbols into the appropriate categories. Results are summarized in Table 8. The children have again been grouped according to their ability to write their names in standard form.

Table 8 displays the tendency for the older children to be able to distinguish correctly among letters and numbers than the younger children. The youngest six children were unable to sort the symbols correctly and the oldest six children could do so.

Of the eight children unable to write their name in standard form, six were unable to sort the symbols correctly. All of the children able to write their names could sort the symbols correctly.

Table 8

Categorization of Letters, Numbers and Other Symbols

Name	Categorization Correct
Children Not Able To Write Their Names In Standard Form	
Aaron (3y, 2m)	No
Jamie (3y, 2m)	No
Michael (3y, 7m)	No
Melissa (3y, 8m)	No
Gabriel (3y, 10m)	No
Alexis (4y, 0m)	No
Nikki (4y, 6m)	Yes
Michael (5y, 3m)	Yes
Children Able To Write Their Names In Standard Form	
Camrin (4y, 8m)	Yes
Tricia (5y, 2m)	Yes
Kenton (5y, 1m)	Yes
Annia (5y, 3m)	Yes

Task 2 and 3

As outlined earlier, Task 2 required the children to make decisions with regards to the letter order and word size of their names. However, Task 3 required the children to make decisions with regard to letter order and word size in reference to two other words. Task 2 differed from Task 3 in order that comparisons could reveal whether the children treated their names as unique words. It was expected that the decisions made by the children during the course of the task would reveal some of the children's understandings about letter order and word size. Further, such decisions might give some indication as to whether or not the children formed understandings unique to their name and formulated other, different understandings about words in general.

Task 2 and Task 3 required the children to observe all the manipulations of letter order and word size as they were being made. Both tasks also required that the same manipulations be made but that the children should see only the product of the manipulations. This was intended to determine whether they were basing their decisions on differences in

letter order and word size between the original word and the manipulated word or as a result of viewing the manipulations themselves and deciding that words should not be handled in that manner.

Table 9 illustrates that there were four children who generally insisted on a specific letter order and word size for their names and of these, all four tended to insist on a specific letter order and word size for the other words. These four children were the same four children able to write their names in standard form. Eight children did not insist on a specific letter order and word size for their names and of these, seven did not insist on a specific letter order and word size for the other words.

Table 9

Response to Manipulation of Names and Manipulation of Other Words

Preference Of Specific Letter Order and Word Size for ...OTHER WORDS		
	Yes	No
Yes	4	0
No	1	7

N = 12

* Results regarding letter order and word size have been collapsed in this table.

The first two columns of Table 10 show the number of instances the children identified a manipulated word as being the same as the unmanipulated word even though they had observed the change being made. The figures in these two columns are totals for all manipulations of letter order and word size. These figures refer only to observed manipulations.

The average difference between the first and second columns is 16%. Children responded to manipulations of their names in much the same way that they responded to manipulations of other words. Those children unable to write their names (the first group) had the greatest range of difference. The second group, those children able to write their own names, differed less between their name and other words.

The second two columns of Table 10 list the percentage of INCORRECT responses between manipulations of letter order and word size. The average difference between letter order and word size was 16%. In general the children tended to react to manipulations of letter order in much the same way as they reacted to changes of word size. Children able to write their own names (second group) were more likely to refuse manipulations of any kind. (The children's specific responses to each manipulation are detailed in Appendices B, C, and D.)

Table 10

Percentage of INCORRECT Responses

(Manipulations Observed By Children)

Names (Ages)	Name*	Other Words*	Letter Order	Word Size
Children Unable To Write Their Own Names In Standard Form				
Aaron (3y, 2m)	50	50	41.7	58.3
Jamie (3y, 2m)	87.5	100	100	91.7
Michael (3y, 7m)	25	75	50	66.7
Melissa (3y, 8m)	87.5	93.8	100	83.3
Gabriel (3y, 10m)	75	87.5	91.7	75
Alexis (4y, 0m)	100	68.8	75	83.3
Nikki (4y, 6m)	75	12.5	50	16.7
Michael (5y, 3m)	12.5	6.3	16.7	8.3
Children Able To Write Their Names In Standard Form				
Camrin (4y, 8m)	12.5	6.3	16.7	0
Tricia (5y, 2m)	12.5	6.3	16.7	0
Kenton (5y, 1m)	12.5	6.3	16.7	0
Annia (5y, 3m)	0	0	0	0
Number of Manipulations	8	16	12	12

* Results regarding letter order and word size have been collapsed in this columns.

Table 11 refers only to instances where the manipulations of letter order and word size were not observed. The first two columns of Table 11 detail the number of instances the children identified a manipulated word as being the same as the unmanipulated word. The figures reflect totals for all manipulations of letter order and word size. The average difference between the first and second column is again 16%. Children responded to manipulations of their names in much the same way that they responded to manipulations of other words.

The second two columns of Table 12 detail the percentage of INCORRECT responses between manipulations of letter order and word size when the manipulations were not observed by the children. The average difference between letter order and word size was 22%. (The children's specific responses to each manipulation are detailed in Appendices B, C, and D.)

Table 11

Percentage of INCORRECT Responses

(Manipulations Not Observed By Children)

	Name*	Other Words*	Letter Order	Word Size
Children Unable To Write Their Names				
Aaron (3y, 2m)	62.5	81.3	100	58.3
Jamie (3y, 2m)	100	87.5	83.3	100
Michael (3y, 7m)	100	81.3	91.7	83.3
Melissa (3y, 8m)	75	93.8	100	75
Gabriel (3y, 10m)	75	81.3	83.3	83.3
Alexis (4y, 0m)	75	93.8	91.7	83.3
Nikki (4y, 6m)	25	43.8	58.3	16.7
Michael (5y, 3m)	87.5	56.3	83.3	50
Children Able To Write Their Names				
Camrin (4y, 8m)	12.5	18.8	16.7	16.7
Tricia (5y, 2m)	12.5	25	8.3	33.3
Kenton (5y,1m)	12.5	31.3	16.7	33.3
Annia (5y, 3m)	0	0	0	33.3
Number of Manipulations	8	16	12	12

*Results regarding letter order and word size have been collapsed in these two columns.

The manipulations performed on the words during Task 2 and 3 were initially observed by the children (Table 10). On a subsequent day the manipulations were not observed (Table 11). The children made an average of 9.6% more errors when the manipulations were not observed. The children made 4% more errors during the unobserved manipulations of their names then when the manipulations were observed. There were 12.5% more errors during the unobserved manipulations of the other two words.

While the tables presented in this chapter provide the quantitative details of the children's responses, they must be viewed in conjuction with the additional information the children divulged during the course of the manipulations. This contextual information is included in the discussion of results in the next chapter.

Chapter Five

Discussion of Responses

Introduction

This chapter will review and interpret the results obtained during the course of the data collection formally presented in Chapter Four, together with the information obtained during the course of interactions between the children and the researcher. The children will be introduced and their general knowledge of letters, numbers and words described and samples of their name writing given. Those children unable to write their own name in standard form will be described first.

Characteristics of Children Unable to Write Their Names In Standard Form

Aaron (3y, 2m) and Jamie (3y, 2m) were the two

youngest subjects involved in this study. Both had very firm ideas about various aspects of literacy, but Aaron was quick to share his ideas while Jamie was hesitant and shy. Displayed below are their names as they wrote them.

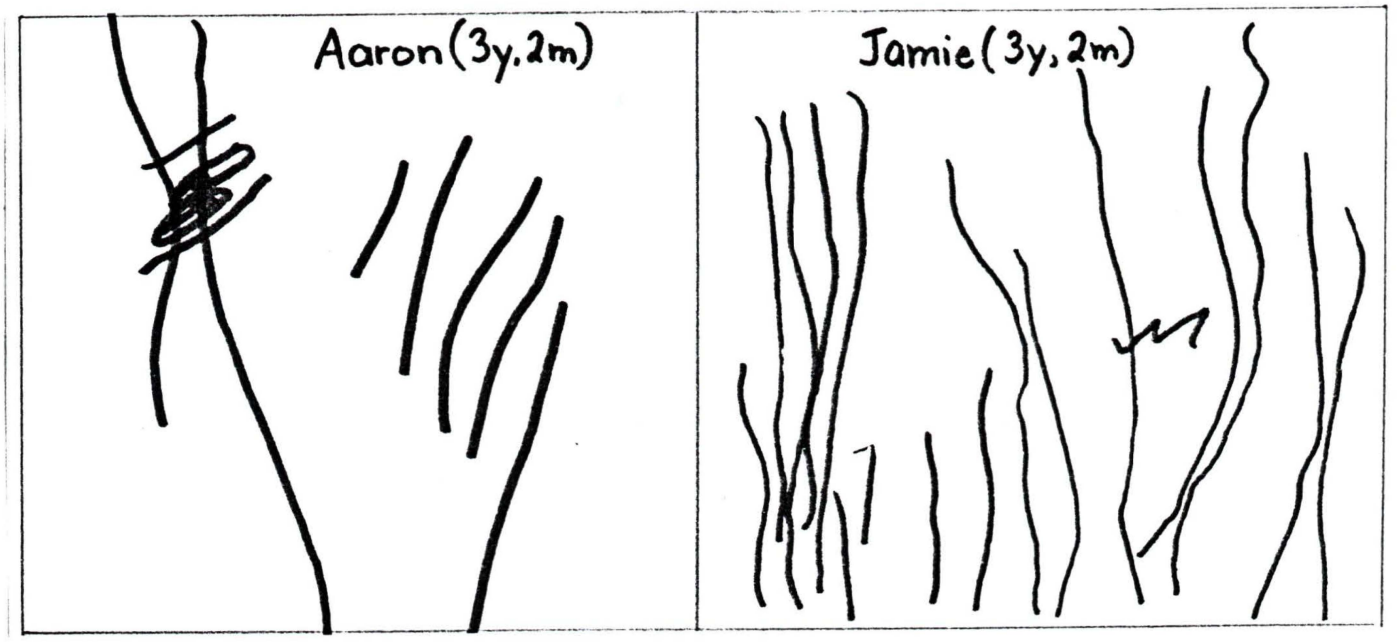
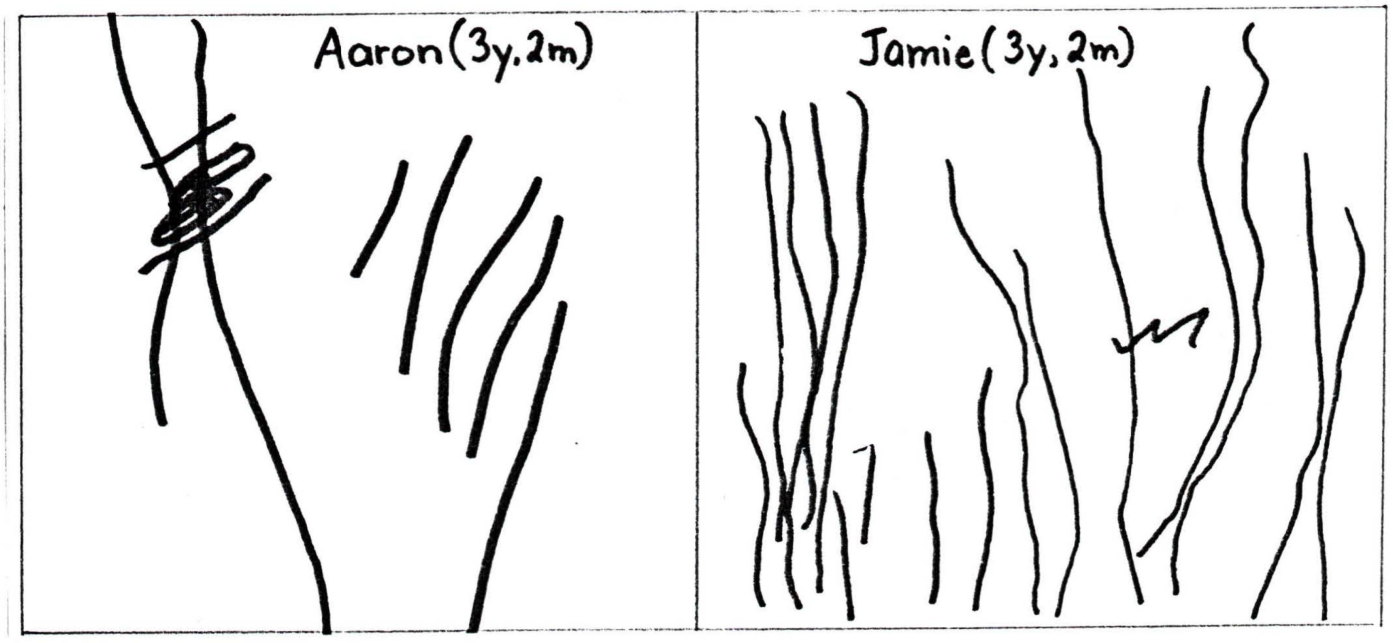


Figure 1

These samples of name writing vary substantially from drawing samples collected from the same children with no apparent confusion between the two processes. Ferreiro & Teberosky (1982) comment that two and a half to three year olds tend to begin writing using one of two forms: continuous wavy lines or series of small circles, or vertical lines. Ferreiro and Teberosky observe that the vertical lines correspond to the discontinuity of print versus the continuity of cursive

youngest subjects involved in this study. Both had very firm ideas about various aspects of literacy, but Aaron was quick to share his ideas while Jamie was hesitant and shy. Displayed below are their names as they wrote them.



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writing which is usually denoted by wavy lines. Aaron and Jamie appear to be using vertical lines to signify print. Aaron, through his comments, indicates his dissatisfaction with this representation.

* *

Researcher: Do you know how to make your name?

Aaron: "No."

Researcher: Can you make part of your name?

Aaron: "Yup!"

And Aaron proceeded to make part of his name. (The left shape in the drawing is his attempt to make the initial letter of his name ... A.)

* *

While Aaron was able to select his name when it was included in a list of four words, Jamie was not. Aaron's apparent expertise could perhaps be accounted for by the fact that the list did not contain a second word beginning with Aa, which may have given Aaron an advantage that Jamie did not have.

Neither Aaron or Jamie was able to divide a group of letter, numbers and symbols into their appropriate catagories. However, Aaron was able to name

the majority of symbols correctly. He did not appear to be aware of the convention of using 'letter' and 'number' as headings for a category of like symbols. Aaron demonstrates this confusion in the following examples:

* *

Researcher: Does that say house? <h>

Aaron: "Yes - no, it don't got lots of let... numbers - only one"

* *

Researcher: Does this say Aaron? <A>

Aaron: "It don't got lots of names!"

* *

Michael (3y, 7m) and Gabriel (3y, 10m) both consider themselves able to write their name. They do so with letter-like symbols. Having done that, Gabriel covers his name with pictures. Michael makes his name very carefully, saying the letter aloud while writing his name from right to left. He clearly says, "I...O...V...E...I" as if following some pre-established convention.

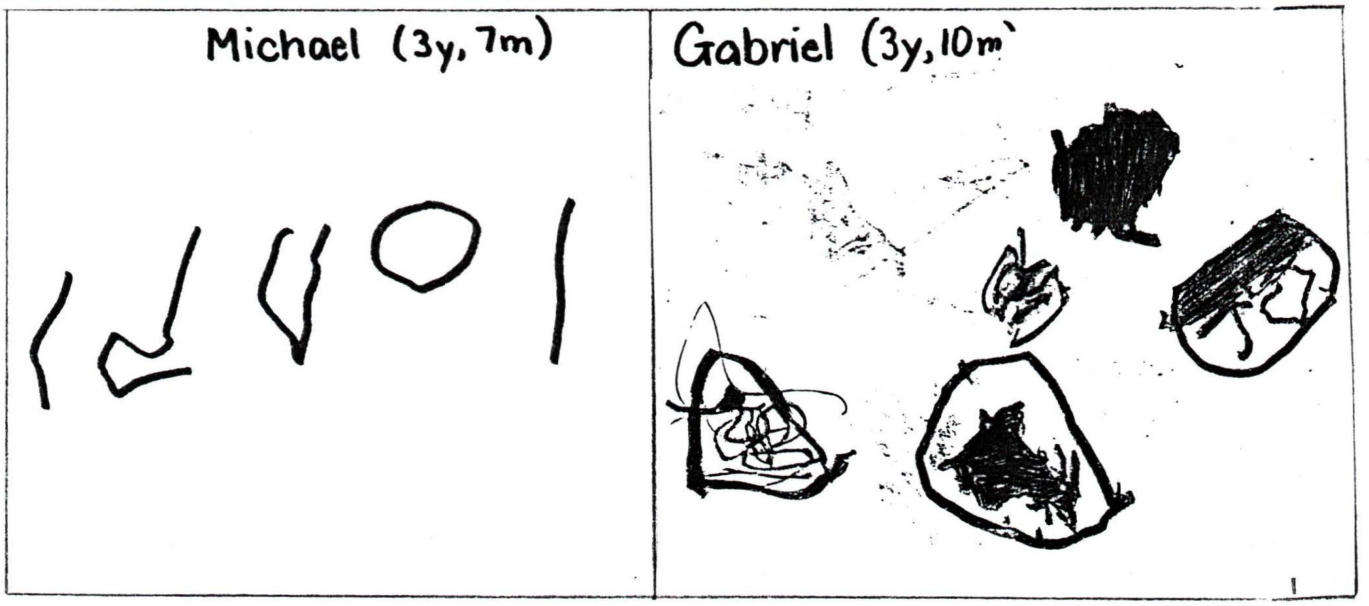


Figure 2

Neither Michael nor Gabriel is able to select his name from a list of four words. Michael chooses to identify separate letters as being his name. Gabriel becomes tangled up between the two words beginning with 'Ga' and finally chooses 'Gator'. While these responses might appear to suggest that these two children were confused and making decisions randomly, this impression was not confirmed during subsequent interactions.

For example, both of these children selected the uppercase form of their names as being the preferred mode. The following examples partially explain their decision while demonstrating the logical nature of their

reasoning.

* *

Researcher: Does this say house? <Ouse>

Michael: "Yes... but these are little letters ."

Researcher: What does it mean if these are little letters?

Michael: "mumble...nothing"

Researcher: It doesn't say anything if these are little letters?

Michael: "mm-mm (No)... Need big ones ."

* *

Researcher: If I put in these ones, does that still say Gabriel? <GABRIELVQ>

Gabriel: "No"

Researcher: Why not?

Gabriel: " Those are not my name . (pointing to the V and Q)

Researcher: Okay, if I take these out of the way then it's your name?

Gabriel: "Yeah"

* *

Melissa (3y, 8m) and Alexis (4y, 0m) use a combination of letters and letter-like forms to write their name.

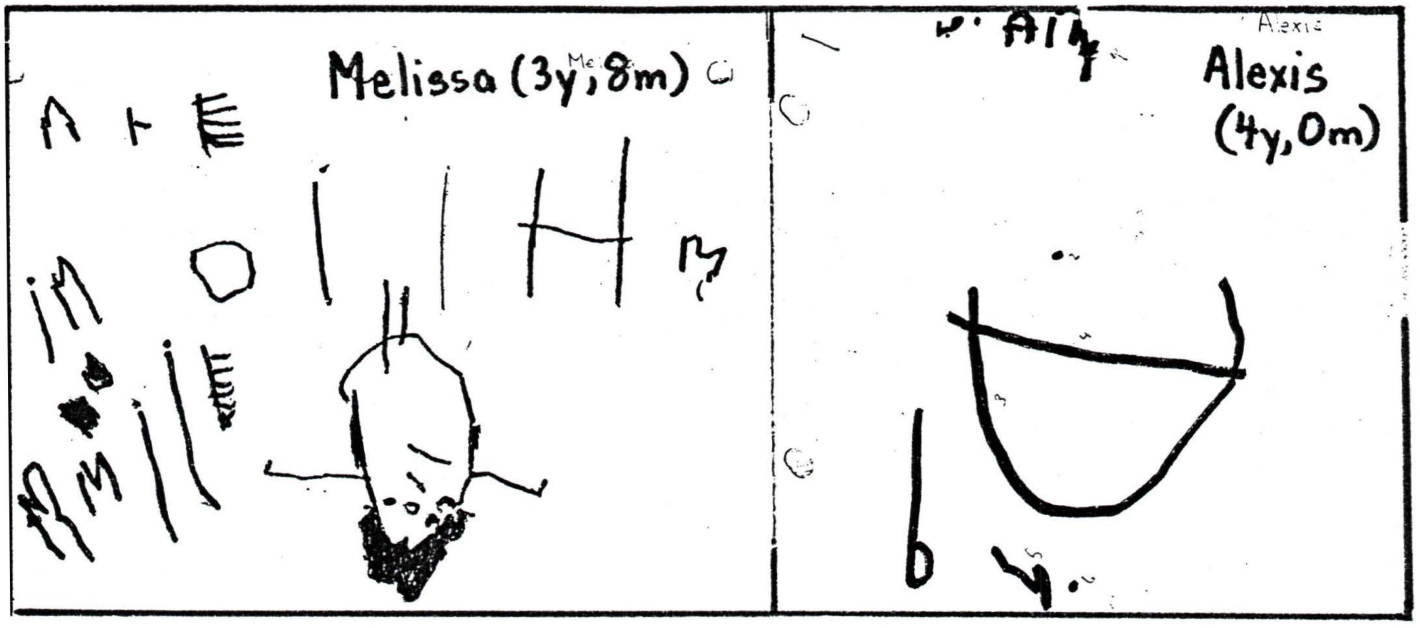


Figure 3

Alexis chooses to write her name twice, the first time near the top of the page, and, being displeased with that, again near the center of the page. The rendition in the center is interesting in that Alexis was very careful to have the correct number of characters (6). Melissa chose to draw a picture as well as her name.

Neither Melissa or Alexis was able to select her

name from a group of four words. They both chose a variety of single letters, scattered among the words, as being their name.

They were also unable to divide the group of letters, numbers, and other symbols into their respective categories.

Both Nikki (4y, 6m) and Michael (5y, 3m) say that they are able to make their names. Samples of their name writing show a marked difference from those of Melissa and Alexis although it still cannot be said that they are writing their names in standard form.

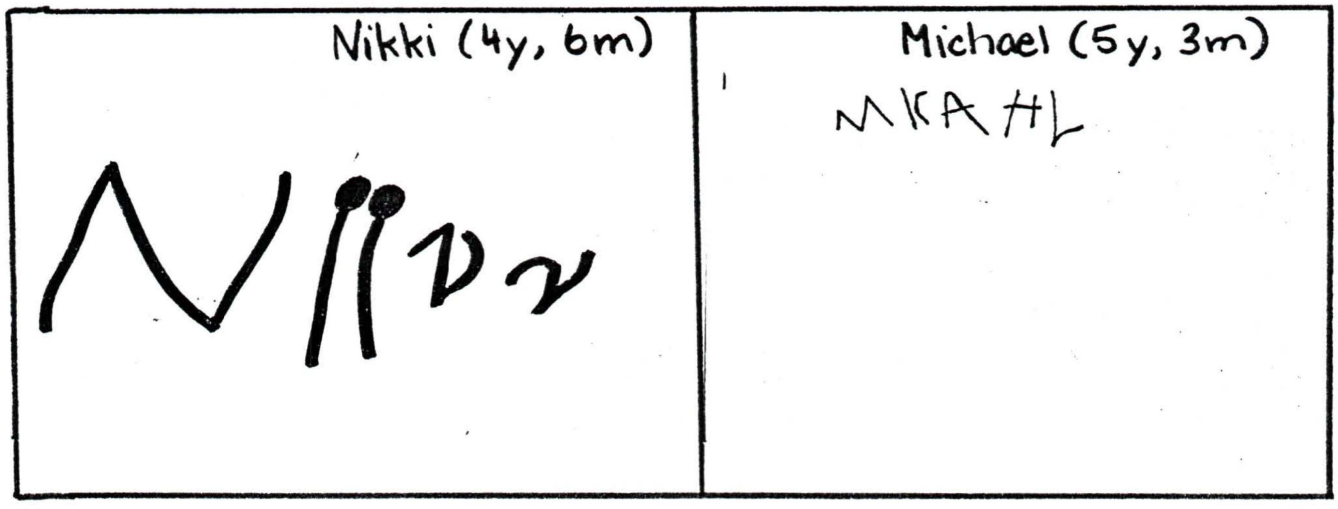


Figure 4

Nikki likes her name written in "this way" (see illustration above). During its production she tacitly

acknowledges that this is just the way she prefers to make it. She also, prior to making the "k's", explains that they are difficult letters for her to make. Michael, during the production of his name, becomes hesitant after making the 'C'. He is unsure whether he can produce it 'correctly'. Both children appear to be aware of a standard form. They are currently dealing with this knowledge in different ways: Nikki operating with many versions while Michael is trying to reproduce a standard form. It is interesting to note that Nikki and Michael have very different problems to solve by virtue of having very different names. Nikki has only three letters to shuffle and interpret while Michael has seven different letters.

Nikki and Michael were both able to divide the letters, numbers and symbols into their appropriate categories as well as choose their names from among a list of four words. During this latter task, Michael decided that he would read all the words for me. DOG was read as Camrin, MICHAEL was identified as his name, MINIMUM was read as Nikki, and SUMMER was read as Scott. Later I was to find that Camrin often wrote his own name using only the first three letters, so Michael may have read DOG as Camrin (Cam) because of its size. MINIMUM has letters repeated, similar to the way NIKKI does. Michael appears to be using a variety of clues in

addition to those provided by the location and general context of the situation.

Characteristics of Children Able To Write Names In Standard Form

The last four children to be introduced are those able to write their names in standard form. Their selection for this category may be questioned after observing the results of their name writing but the apparent discrepancies will be explained. The children are Camrin (4y, 8m), Tricia (5y, 2m), Kenton (5y, 1m), and Annia (5y, 3m). Following are instances of their name writing.

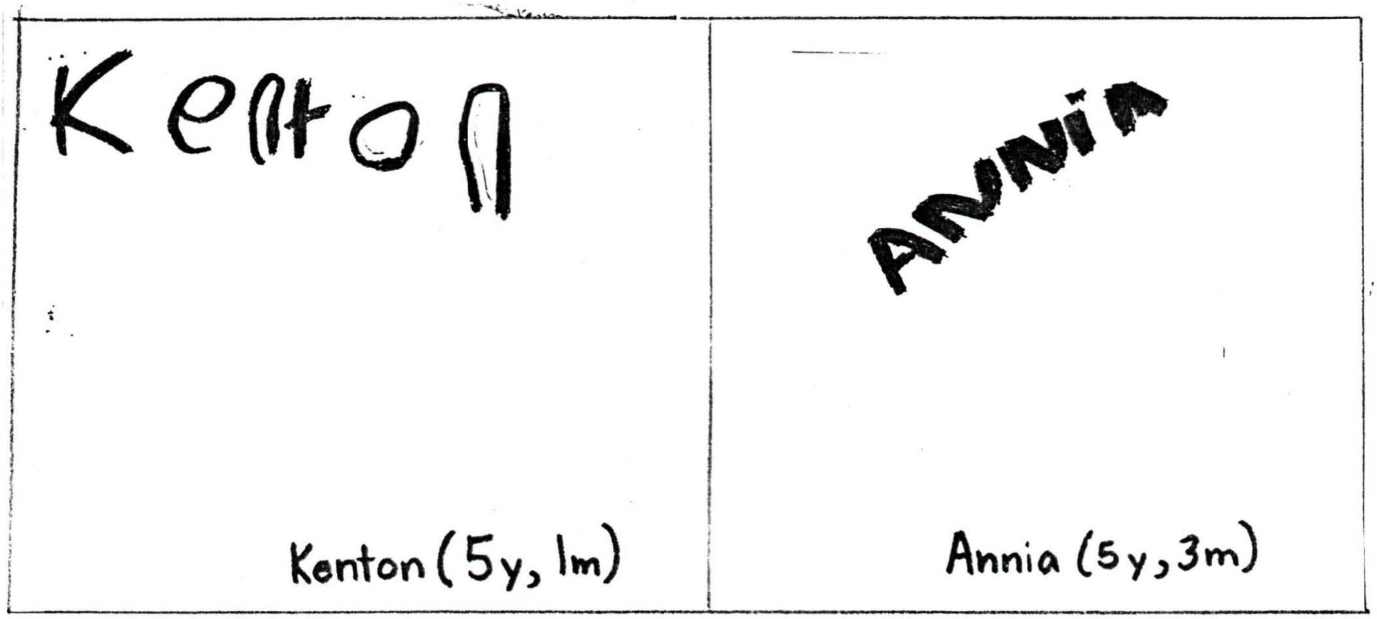


Figure 5

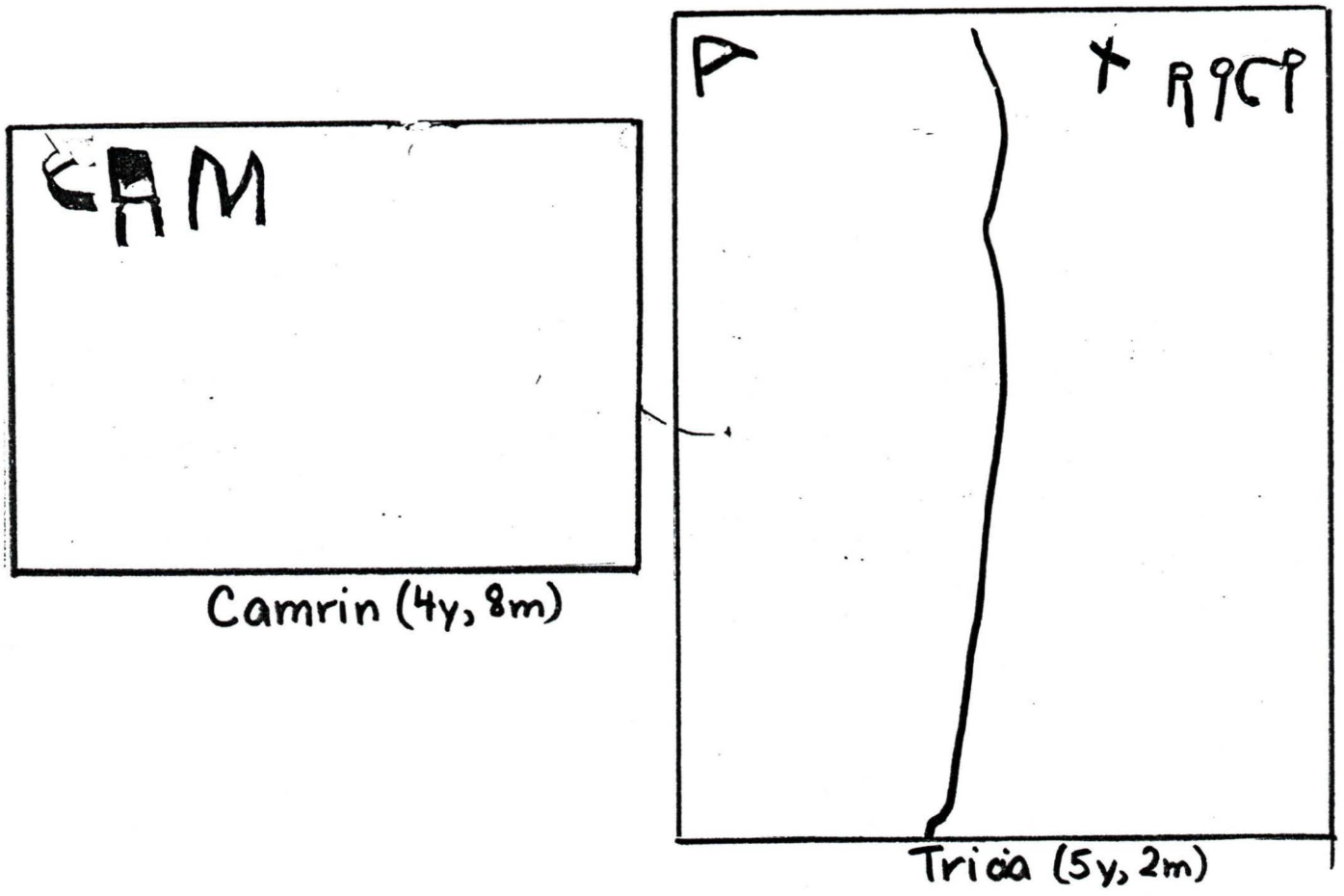


Figure 6

Tricia's rendition of her name was enlightening. The following description of the process underlines the reason for the product being labeled as written in standard form. The first time Tricia made her name it was to label a drawing and in the bottom right hand corner. She wrote, from right to left, Tricia. Upon

completion it looked like this: aicirT . When asked to just write her name on a piece of paper that the researcher could keep, the following interaction took place:

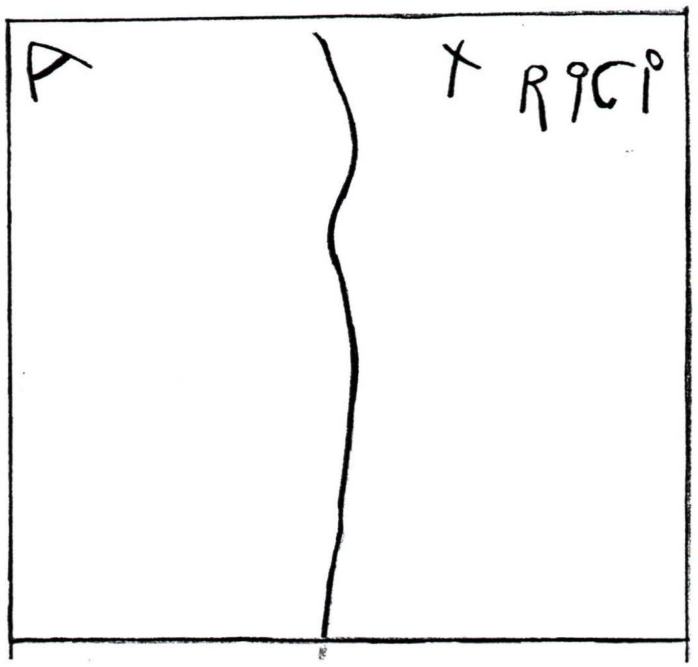


Figure 7

Tricia: <T r i c i> begin in the middle of the page and proceeding from left to right.
"Maybe I have to put the 'a' right here." (pointing to the upper left hand corner)

Researcher: Why do you have to put the 'a' right over there?

Tricia: "Because there's not enough room there!"

* *

Notice too, the position of the line drawn by Tricia during the writing of her name. It appears to be used to divide the page. It results in a 'new' left side on the paper and as such places the beginning of Tricia's name in an appropriate place on the page. In addition to demonstrating Tricia's sophisticated understandings, the previous example demonstrates the sort of general expertise these children have with regard to various print conventions.

All four children were able to select their names from a list of four words and to divide a group of letters, numbers and other symbols into their respective groups. Tricia, Kenton and Cam preferred their names written in lowercase letters (except for the initial letter) while Annia preferred uppercase letters.

This does not mean that these children are capable written language users and consumers. For example, Camrin, while evidently knowing a lot about written language and words is by no means an obvious expert.

* *

Researcher: Does this say house? <h>

Camrin: "No. It needs more letters"

* *

Researcher: Does this say rabbit? <r>

Camrin: "No!"

Researcher: Why doesn't it?

Camrin: "Because it doesn't have enough words ."

* *

Camrin is apparently confusing the labels of various parts of written language. As a written language user this lack of metalinguistic knowledge does not cause him difficulties although it may cause evaluators of written language users difficulties. Examples such as these indicate that young children know a lot about written language. However, much of this knowledge may be implicit rather than explicit and can not be assumed to be absent.

Results Of Task One

As set out in Tables 5 and 6, those children most able to recognize their names were also most likely to be able to write them. Aaron, Nikki and Michael(5y, 3m) were interesting exceptions. As mentioned earlier, Aaron appeared to use the first two a's in his name as a guide for identification. In his particular case, there was not a second word beginning with the first two letters of his name. Nikki and Michael were able to recognize their name, but unlike Aaron, used standard letters during name production. The use of appropriate standard letters indicates a lot of experience with written language yet the lack of a correct match with the standard form would tentatively place Nikki and Michael in transitional phase.

In general, the children appear to be confident about their ability to write their own names. Melissa, an exception in Table 7, was able to write her name a couple of days later. Her answer appeared to depend on whether she wanted to write her name rather than whether she could. When she felt more at ease she would write her name in the course of general play with paper and markers.

Results Of Task 2 and 3

Task 2 required the children to make a series of decisions with regard to the letter order and word size of their names. However, Task 3 required the children to make a series of decisions with regard to letter order and word size with reference to two other words in order to reveal whether the children treated their names as unique words. It was expected that the decisions made during the course of the task would permit insight into the children's current understandings about the significance of letter order and word size. A comparison of the results of Task 2 and Task 3 therefore permits judgement as to whether the children formed understandings unique to their names and formulate other, different, understandings about words in general.

Analysis of the data indicate that these children did not treattheir names as unique words in terms of letter order and word size. Most of the children consistently applied similar criteria to all the presented words. Tables 10, 11 and 12 show that the number of incorrect responses with regards to letter order and word size do not appear to differ

substantially between manipulations performed on the children's names and those performed on the other words. The name was not treated by these children as a unique word.

The four children who insisted on a specific letter order and word size for their names also insisted on a specific letter order and word size for the other words. Eight children who did not insist on a specific letter order and word size for their names and of these, seven did not insist on a specific letter order and word size for the other words. The exception was Nikki.

Nikki (4y,6m) consistently permitted all three words to be written from right to left without their undergoing a change in meaning. Her own name was permitted additional freedoms. For example, as long as the five letters were present, in any order, it was her name. However, if letters were added or taken away the new grouping was a different word. Changes of this sort to her name usually became "Nicole". This was the long form of her name.

The following examples are her comments as she reacts to three of the manipulations:

* *

Researcher: Does that say Nikki? <Nkiik>

Nikki: "Yes, sure it does! The i's have to be in the middle."

* *

Researcher: Does that say Nikki? <ikki>
Nikki: "Nicole"

* *

Researcher: Does that say Nikki? <Nikukiq>
Nikki: "No
Researcher: What does that say?
Nikki: "It says 'Nikki do'."

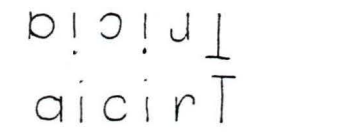
* *

The four children insisting upon a specific letter order and word size for their names and for the other words were able to write their name in standard form. It is interesting to note that these children would permit total word reversals. The words, when printed from right to left appeared to be read from right to left as the following examples will illustrate.

* *

Researcher: This one says Tricia. <Tricia>
Does this one say Tricia? <aicirT>

Tricia: "Ah hum" (yes)
"Both of them" She moves the two words together for comparison.
"You're supposed to put them this way." She moves Tricia 180 degrees until it is once again above the manipulated word. Now both T's are on the right side like this....



"Heh! That's upsidedown like a knife!? How did you do that?"

* *

Researcher: Does this say Annia? <AINNA>

Annia: "A..N..N..I..A..(pause)..A..I.(pause) Yes!"

Researcher: It is. Okay, why is it different? (She is shown the original for comparison.)

Annia: "Cause this one is backwards and this one is front."

* *

Researcher: Does that one say house? <esuoh>

Annia: "mmmm...almost. It's backwards, that's why!"

Researcher: Oh, just almost eh?

Annia: "This is the front way (pointing to the unmanipulated version) and this is the back way (pointing to the manipulated version).

* *

The children's comments during the collection of data revealed some intriguing and sophisticated understandings about words and written language in general. Since the tasks were limited in scope, the understandings held by these children, most of whom were unable to write their names in standard form, illustrate only a portion of their knowledge of written language.

For some of the children, a change in letter order appeared to signal a change in word meaning. For example:

* *

Researcher: What does that say? <leahciM>

Michael: "That says my Mom."

* *

After one manipulation, Alexis (4y, 0m) took over the letters. The following is a transcription of her comments:

Alexis: "If we put these ones like this, <oehse>, it says house."
"If we do this, <oehus>, it will say home."

Researcher: Can you make it say anything else?

Alexis: "Yeah. If we put it up to the top..." She moves the letters away from her on the tabletop and makes them into the following arrangement: <hoesu>

Researcher: What does that say?

Alexis: "E.T. Phone Home"

* *

If changes produced a word similiar to the original word then it was sometimes able to say part of the original word. For example, Alexis (4y, 0m), said that <sixelA> was only "a part of her name". Aaron (3y, 2m), when asked, "Does this say Aaron?" and shown <Aron> answered, "A little tiny bit...".

Nikki (4y, 6m) appeared to attribute meaning on the basis of both letter content and word shape. She made the following words and then read them:

*	*
e s h	n e
u o "house"	o "elephant"
	s h
*	*

All the children appeared to have definite ideas about what could and could not be done. Jamie (3y, 2m) preferred her name made with uppercase letters. Jamie was usually very quiet and reserved. The strength of her resolve was demonstrated during the following exchange when her voice became unusually loud and demanding.

* *

Researcher: Does that say Jamie? <Jamie>

Jamie: "No. Because it's not!"

Researcher: How would you make it say Jamie again?

Jamie: "PUT THEM BACK."

* *

Nikki also had very definite ideas, as the following exchange will indicate.

* *

Researcher: Does that say Nikki? <Nikukiq>

Nikki: "NO! Who does that say ?"

Researcher: What's the problem with it?

Nikki: "It has these and that and that ! It got two of these . I DON'T WANT THOSE!"

* *

The children did not, in general, require a minimum quantity of letters in order to 'read' a word.

Some were able to 'read' words of one letter. Others could not 'read' one letter as if it was a word. A couple of the children were consistent in the application of a "minimum number of letters" hypothesis as outlined by Ferreiro and Teberosky (1982). Michael (3y, 7m) was interesting in this regard as the following examples illustrate:

* *

Researcher: This says giraffe. <giraffe>
What does this say? <g>
Michael: "That's just one giraffe."

* *

Researcher: This one says house. <house>
Does this one say house? <h>
Michael: "Uh uh (shakes head)...doesn't got these ones." He points to the missing letters.
Researcher: It doesn't have all the rest of the letters?
Michael: "Yeah."

* *

For some children, the end of a word did not have to be either at the end of the print or at the point where a space was included. Gabriel (3y, 10m) and Michael (5y, 3m) provide some illustrations of this:

* *

Researcher: Does this say giraffe?
<giraffeuq>
Gabriel: "These not" (points to u and q)

* *

Researcher: Does this say house? <houuseq>
Michael: "This part says house." (Michael ran his finger along the word until he reached the 'e'.

* *

During the course of data collection some new summer staff began working with the children. One individual was male. He was the only male on staff at this point. His name was Michael. 'Little' Michael appeared to be as impressed as all the other children with this new and interesting individual. But unlike the other three year olds, he had the same name as this fellow. The day after 'Big' Michael appeared on the

scene, the following interaction took place with 'Little' Michael.

* *

Researcher: Does this say Michael? <M>

Michael: "This says Michael (pointing to the M) and this says Michael" (pointing to the letters which had been removed).

Researcher: Does it all say Michael? <Michael>

Michael: "Yeah"

Researcher: And does this say Michael? <Mich>

Michael: "Yeah"

Researcher: And does this say Michael? <eal>

Michael: "No, that's the other Michael."

Researcher: This part's yours (pointing to <Mich>) and this (pointing to <eal>) is the other Michael that is here, the big Michael?

Michael: "Yeah!"

* *

Michael was in the midst of a crisis. He was suddenly having to share his name with someone else. He shared his name in a way that must have seemed very reasonable. He 'gave' half of his letters to the new Michael.

Those children able to write their names in standard form consistently insisted upon a specific letter order and word size for their names and for other words although they would permit words to be written from right to left without a change in meaning. While previous examples illustrated that the children appeared to read the word from right to left to make sense of it, another possible reason for the easy exchange of left to right and right to left is a result of children attending to certain features. For example, Tricia, during one part of the data collection responded "Yes" to the following series of manipulations:

iaicrT

aicirT

iaicrT

During this particular exchange she focused only on the 'T'. Her limited focus was apparently the result of the movement of the 'T' during the immediately preceding manipulations.

These children, able to write their name in

standard form, appeared to view letters, their order and their number (word size) as important features of words. If letter order was changed then the word's meaning also changed. If the number of letters was changed then the word's meaning was also changed. While Tricia (5y, 2m) and Annia (5y, 3m) provide examples, all four children pointed to the correct order of the letters as a reason for rejecting the new form:

* *

Researcher: Does that say rabbit? <raitbb>
Tricia: "No, that says ice cube."

* *

Researcher: Does this say house? <hoausep>
Tricia: "No, that says frenchard."
Researcher: It says frenchard. And, what does frenchard mean?
Tricia: "When you are trying to walk away and you want their food you say frenchard."
Researcher: And what would they do?
Tricia: "They would give you their food."

* *

Researcher: Does this say Annia? <NNAIA>

Annia: (shakes head)

Researcher: Why not? Any reasons for it?

Annia: "N..N..A..I..A.. NO! My name is not like THAT!"

* *

During a break, Annia (5y, 3m) made some changes herself in order to make some words. She produced the following:

<ANNA> = "Anna"

<ANN> = "cow"

<AN> = "dog"

<AnAiNaINAn> = "choo choo train"

She also made:

<nNNn Ii AAAa> = "these say nothing"

* *

When additional letters were added or when letters were removed the words were viewed as having different meanings. The children did not appear to

focus on the size as a major reason. They appeared to be making their decision on the basis of the added or subtracted letters. Some examples are displayed below:

* *

Researcher: Does this say Tricia? <ricia>
Tricia: "Nooooo!" (laughs)
Researcher: What's the problem with it?
Tricia: "'cause it doesn"t have a T!"

* *

Researcher: This says rabbit. <rabbit>
Does this say rabbit? <r>
Kenton: "There's only an r! The other ones are missing!"

* *

However, when the children made their own words they often made big words for big things and little words for little things. An example of this occurred when Tricia (5y, 2m) decided to take over...

* *

Researcher: Are you making a word?

Tricia: "Yes, but this is going to be a long word. <QOuuVQAgouse I>
It says pleasethink "

* *

Although a part of a word could say one thing and another part of the same word say another thing to the children unable to write their own names, children able to write their own names were beginning to attend to the spaces that appear around words. Annia provided an example of this:

* *

Researcher: Does it say hippo even with the big spaces in between?
<h i p p o>

Annia: (shakes head) "'cause these not a word! It's only table here!" (She points to the table showing between the letters.)

Researcher: Oh. Okay...so does it say hippo?

Annia: "No."

Researcher: No because there is a table in between?

Annia: "Yeah!"

* *

In general, the children able to write their own names using a standard form demonstrated a smaller variety of understandings about letter order and number of letters (word size) of words. It may have been that the tasks were not as challenging as they were to the younger group or it may simply be that these children are operating on the basis of understandings very similiar to, if not the same as, many adults.

Chapter Six

Summary, Conclusions and Implications

Summary

Children as young as 3 years 2 months appeared to have very definite ideas about which manipulations could and could not be performed on words. Children able to write their names in standardized form refused almost all manipulations except those which involved total reversal of the letter order of the word.

The children able to write their names in standard form appeared to view letters, their order and their number (word size) as important features of words. If the letter order was changed then the word's meaning also changed. If the number of letters (word size) was changed then the word's meaning also changed. Children able to write their own names in the standard form have some very sophisticated understandings about words in our written language system. An obvious outcome of this

demonstrated expertise is that those children able to write their own names using a standard form demonstrate a smaller variety of understandings different from the adult norm than those children unable to write their names in standard form.

The writing progression apparent during the children's attempts to write their names ranged from letter-like to standard form. This progression appears to follow that outlined by other researchers in this area (Clay, 1975; Ferreiro & Teberosky, 1982). Table 8 displays the tendency for the older children to have more expertise with letters and numbers than than the younger children. This is also consistent with previous research (Ferreiro & Teberosky, 1982; Goodman and Altwerger, 1981; Mason, 1982).

The data further gave no evidence that children's personal names are treated by children as unique words in terms of letter order and word size. Rather children appear to view their names as words with characteristics similiar to other words. Ferreiro and Teberosky (1981, 1982) refer to the "long, constructive process" children engage in while discovering the properties of written language. It may be that a part of the constructive process involves children learning to write and read their own names. This process may be particularly significant since learning how to read and

write one's own name is a commonplace activity among young children. It may be that children learn the role of letter order and word size while learning a particular word (perhaps their own name) and generalize their understandings from one particular word to other words

Those children unable to write their names in standard form tended to be the younger subjects. The mean age of these children was 3 years and 9 months. They were less able to identify their own names from a list of words and less able to classify correctly a group of symbols into categories of letter, number or other symbol. They did not insist on a specific letter order for their names or for the other words. While it may appear that these children were not yet interested or engaged in learning about written language their conversation reveals definite understandings about words. While it was not possible to categorize their responses according to levels or stages such as those described by Ferreiro and Teberosky (1982) it was possible to observe small children applying their limited understandings of words to the problems presented to them during the tasks. The manipulated words required the children to make decisions. They did not shrink from making decisions. They did not consider themselves lacking in knowledge. They were confident in

their ability to make correct decisions. On the rare occasions when children said, " I don't know" it seemed to mean "I don't want to answer" rather than "I don't know the answer".

While the manipulations were evenly separated between manipulations of letter order and those of word size the children appeared to treat them all as manipulations of letter order. For example, when letters were removed the children focused on the particular letters that had been taken. They did not appear to be concerned about a change in number (word size) but rather were concerned about a change in content. When letters were added they did not make comments about the words being too long but instead commented on the letters that did not belong. While it may be that the children reacted to the size problem and solved it by discovering the missing or the added letters, this study does not provide evidence of this.

Conclusions

Children aged from three to five years can hold definite understandings about written words. Their

understandings appear to reflect sophisticated levels of knowledge about words. Further, they indicate general expertise regarding our written language system.

The following are the major findings of this study:

(1) Most children appeared to apply their understandings about letter order and word size for their own names to all the presented words. The number of incorrect responses with regards to letter order and word size did not differ substantially between manipulations performed on the children's names and those performed on the other words.

(2) All of the four children insisting upon a specific letter order and word size for their names and for the other words were able to write their names in standard form.

Implications

This study examined twelve children over a limited period of time to illustrate the understandings that some children hold with regard to the order and number of letters in words (word size), with particular attention being paid to their names in relationship to other words.

Since completion of the study was constrained by the level of cooperation the subjects granted the researcher and by their small number, implications for further research must be limited. However, as one of a number of studies investigating young children's awareness of written language, general implications for research can be indicated.

The results of this study call into question the view that children learn the written form of their own names as unique cases of written language learning. It would appear that when children are able to write their own names in standard form they can exhibit a sophisticated level of word knowledge. Further research into the manner in which children learn the written form of their own names is warranted by the results of this study.

Researchers should continue to investigate the knowledge young children hold regarding written language. The work of Ferreiro & Teberosky (1982), Goodman & Altwerger (1981) and Harste, Burke and Woodward (1981, 1983), requires replication and expansion. The results of such research could lead to a greater acceptance of the view of young pre-school children being experienced written language users.

One of the possible effects of pre-school children being viewed as experienced language learners could be

modifications to instructional methods used in most primary classrooms. Methods such as those advocated by Goodman (1981), Harste, Burke & Woodward (1983), Holdaway (1979), and Smith (1971, 1978) may then become more accepted in the educational system as a whole. Such methods build upon the strengths and knowledge young children bring to any instructional setting as well as the use of materials familiar and rich in meaning to the child. This could enrich children's primary classroom experiences.

While it may appear reasonable to assume that the children observed during this study developed their understandings about words during the process of learning to recognize and write their own names, it remains to be shown that children's first major written language encounters are usually with their names. While this has not been demonstrated during this study, it does appear evident that children are learning a great deal when they learn to read and write their own names.

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Appendix A

Appendix A contains a sample of the record sheet used to record subject's responses to Task 1 and to record their responses to manipulations of letter order and word size during Tasks 2 and 3.

Data Record Sheets

Name _____

Birthdate _____

Child's Name _____

RECORD SHEET #1

Question	Response		
What is your name?			
Do you know how to make your name?			
Would you please make it for me please?			
This is a pile of letters, numbers and other things. Please put the letters in this container, the numbers in this one and the other things in this container.	Letters	Numbers	Other
Is one of these your name? (Choice of four words).			
Which of these is your name? (If both, ask How would you like me to make it?)			

RECORD SHEET #2a

Word Presented _____ (Changes observed)		Word Presented _____ (Changes not observed)	
Manipulated Word	Yes/No	Manipulated Word	Yes/No

RECORD SHEET #2b

Word Presented _____ (Changes observed)		Word Presented _____ (Changes not observed)	
Manipulated Word	Yes/No	Manipulated Word	Yes/No

RECORD SHEET #2c

Word Presented _____ (Changes observed)		Word Presented _____ (Changes not observed)	
Manipulated Word	Yes/No	Manipulated Word	Yes/No

RECORD SHEET #2d

Word Presented _____ (Changes observed)		Word Presented _____ (Changes not observed)	
Manipulated Word	Yes/No	Manipulated Word	Yes/No

Appendix B

Appendix B contains the individual responses of those subjects unable to write their name in standard form to manipulations of letter order (Tables 12, 13, and 14) and word size (Tables 15, 16, and 17).

Table 12

Subject Responses to Manipulations of Letter Order
(Name Only)
Manipulations Observed

Name (age)	(1)	(2)	(3)	(4)
Aaron (3y, 2m)	No	No	No	Yes
Jamie (3y, 2m)	Yes	Yes	Yes	Yes
Michael (3y, 7m)	No	No	No	No
Melissa (3y, 8m)	Yes	Yes	Yes	Yes
Gabriel (3y, 10m)	Yes	Yes	Yes	Yes
Alexis (4y, 0m)	Yes	Yes	Yes	Yes
Nikki (4y, 6m)	Yes	Yes	Yes	Yes
Michael (5y, 3m)	No	No	No	Yes

* Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word.

**(1) medial/final switch (3) Initial/medial switch
(2) Initial/final switch (4) Complete letter order reversal

Table 13

Subject Responses to Manipulations of Letter Order
(Word The Same Length as Their Name)
Manipulations Observed

Names (ages)	(1)	(2)	(3)	(4)
Aaron (3y, 2m)	No	No	No	Yes
Jamie (3y, 2m)	Yes	Yes	Yes	Yes
Michael (3y, 7m)	No	Yes	No	Yes
Melissa (3y, 8m)	Yes	Yes	Yes	Yes
Gabriel (3y, 10m)	Yes	Yes	Yes	Yes
Alexis (4y, 0m)	Yes	Yes	Yes	Yes
Nikki (4y, 8m)	No	No	No	Yes
Michael (5y, 3m)	No	No	No	Yes

* Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word.

** (1) medial/final switch (3) Initial/medial switch
(2) Initial/final switch (4) Complete letter order reversal

Table 14

Subject Responses to Manipulations of Letter Order
(Word Common to All Children)
Manipulations Observed

Name (age)	(1)	(2)	(3)	(4)
Aaron (3y, 2m)	Yes	Yes	Yes	No
Jamie (3y, 2m)	Yes	Yes	Yes	Yes
Michael (3y, 7m)	Yes	Yes	Yes	Yes
Melissa (3y, 8m)	Yes	Yes	Yes	Yes
Gabriel (3y, 10m)	No	Yes	Yes	Yes
Alexis (4y, 0m)	No	Yes	No	Yes
Nikki (4y, 6m)	No	No	No	Yes
Michael (5y, 3m)	No	No	No	No

* Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word.

** (1) medial/final switch (3) Initial/medial switch
(2) Initial/final switch (4) Complete letter order reversal

Table 15

Subject Responses to Manipulation of Word Size
(Name only)
Manipulations Observed

Names (age)	(5)	(6)	(7)	(8a)	(8b)
Aaron (3y, 2m)	No	Yes	Yes	Yes	-
Jamie (3y, 2m)	Yes	Yes	Yes	-	No
Michael (3y, 7m)	No	Yes	No	-	Yes
Melissa (3y, 8m)	Yes	Yes	Yes	No	-
Gabriel (3y, 10m)	Yes	No	Yes	-	No
Alexis (4y, 0m)	Yes	Yes	Yes	Yes	-
Nikki (4y, 8m)	No	No	Yes	-	Yes
Michael (5y, 3m)	No	No	No	-	Yes

* Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word.

**(5) Removal of initial letter
(6) Addition of two letters
(7) Removal of all but initial letter
(8a) Removal of initial letter and capitalization of second letter
(8b) Change from uppercase mode to lowercase mode (name only)

Table 16

Subjects Responses to Manipulations of Word Size
(Word the Same Length As Their Name)
Manipulations Observed

Names (ages)	(5)	(6)	(7)	(8)
Aaron (3y, 2m)	Yes	Yes	No	Yes
Jamie (3y, 2m)	Yes	Yes	Yes	Yes
Michael (3y, 7m)	Yes	Yes	Yes	Yes
Melissa (3y, 8m)	Yes	Yes	No	Yes
Gabriel (3y, 10m)	Yes	Yes	Yes	No
Alexis (4y, 0m)	Yes	Yes	Yes	Yes
Nikki (4y, 8m)	No	No	No	No
Michael (5y, 3m)	No	No	No	No

* Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word.

**(5) Removal of initial letter
(6) Addition of two letters
(7) Removal of all but initial letter
(8a) Removal of initial letter and capitalization of second letter
(8b) Change from uppercase mode to lowercase mode (name only)

Table 17

Subject Responses to Manipulations of Word Size
(Word Common to All Children)
Manipulations Observed

Name (age)	(5)	(6)	(7)	(8)
Aaron (3y, 2m)	No	Yes	No	No
Jamie (3y, 2m)	Yes	Yes	Yes	Yes
Michael (3y, 7m)	No	No	Yes	Yes
Melissa (3y, 8m)	Yes	Yes	Yes	Yes
Gabriel (3y, 10m)	Yes	Yes	Yes	Yes
Alexis (4y, 0m)	No	Yes	Yes	No
Nikki (4y, 8m)	No	No	No	No
Michael (5y, 3m)	No	No	No	No

*Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word

**(5) Removal of initial letter
(6) Addition of two letters
(7) Removal of all but initial letter
(8a) Removal of initial letter and capitalization of second letter
(8b) Change from uppercase mode to lowercase mode (name only)

Appendix C

Appendix C contains the individual responses of those subjects unable to write their name in standard form to manipulations of letter order (Tables 18, 19, and 20) and word size (Tables 21, 22, and 23) when the manipulations were not observed by the children.

Table 18

Subject Responses to Manipulations of Letter Order
(Name Only)
Manipulations Not Observed

Name (age)	(1)	(2)	(3)	(4)
Aaron (3y, 2m)	Yes	Yes	Yes	Yes
Jamie (3y, 2m)	Yes	Yes	Yes	Yes
Michael (3y, 7m)	Yes	Yes	Yes	Yes
Melissa (3y, 8m)	Yes	Yes	Yes	Yes
Gabriel (3y, 10m)	Yes	Yes	Yes	Yes
Alexis (4y, 0m)	Yes	Yes	Yes	Yes
Nikki (4y, 6m)	Yes	No	No	Yes
Michael (5y, 3m)	Yes	Yes	Yes	Yes

* Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word.

**(1) medial/final switch (3) Initial/medial switch
(2) Initial/final switch (4) Complete letter order reversal

Table 19

Subject Responses to Manipulations of Letter Order
(Word The Same Length as Their Name)
Manipulations Not Observed

Names (ages)	(1)	(2)	(3)	(4)
Aaron (3y, 2m)	Yes	Yes	Yes	Yes
Jamie (3y, 2m)	Yes	No	No	Yes
Michael (3y, 7m)	Yes	No	Yes	Yes
Melissa (3y, 8m)	Yes	Yes	Yes	Yes
Gabriel (3y, 10m)	Yes	Yes	Yes	No
Alexis (4y, 0m)	Yes	Yes	No	Yes
Nikki (4y, 8m)	Yes	Yes	No	Yes
Michael (5y, 3m)	Yes	Yes	Yes	Yes

* Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word.

** (1) medial/final switch (3) Initial/medial switch
(2) Initial/final switch (4) Complete letter order reversal

Table 20

Subject Responses to Manipulations of Letter Order
(Word Common to All Children)
Manipulations Not Observed

Name (age)	(1)	(2)	(3)	(4)
Aaron (3y, 2m)	Yes	Yes	Yes	Yes
Jamie (3y, 2m)	Yes	Yes	Yes	Yes
Michael (3y, 7m)	Yes	Yes	Yes	Yes
Melissa (3y, 8m)	Yes	Yes	Yes	Yes
Gabriel (3y, 10m)	Yes	Yes	Yes	Yes
Alexis (4y, 0m)	Yes	Yes	Yes	Yes
Nikki (4y, 6m)	No	Yes	No	Yes
Michael (5y, 3m)	No	Yes	No	Yes

* Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word.

** (1) medial/final switch (3) Initial/medial switch
(2) Initial/final switch (4) Complete letter order reversal

Table 21

Subject Responses to Manipulation of Word Size
(Name only)
Manipulations Observed

Names (age)	(5)	(6)	(7)	(8a)	(8b)
Aaron (3y, 2m)	No	No	No	Yes	-
Jamie (3y, 2m)	Yes	Yes	Yes	-	Yes
Michael (3y, 7m)	Yes	Yes	Yes	-	Yes
Melissa (3y, 8m)	No	Yes	Yes	No	-
Gabriel (3y, 10m)	Yes	Yes	No	-	Yes
Alexis (4y, 0m)	No	Yes	Yes	No	-
Nikki (4y, 8m)	No	No	No	-	No
Michael (5y, 3m)	No	No	No	-	Yes

* Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word.

**(5) Removal of initial letter
(6) Addition of two letters
(7) Removal of all but initial letter
(8a) Removal of initial letter and capitalization of second letter
(8b) Change from uppercase mode to lowercase mode (name only)

Table 22

Subjects Responses to Manipulations of Word Size
(Word the Same Length As Their Name)
Manipulations Not Observed

Names (ages)	(5)	(6)	(7)	(8)
Aaron (3y, 2m)	Yes	Yes	No	Yes
Jamie (3y, 2m)	Yes	Yes	Yes	Yes
Michael (3y, 7m)	Yes	Yes	No	Yes
Melissa (3y, 8m)	Yes	Yes	Yes	Yes
Gabriel (3y, 10m)	Yes	Yes	Yes	Yes
Alexis (4y, 0m)	Yes	Yes	Yes	Yes
Nikki (4y, 8m)	No	No	Yes	Yes
Michael (5y, 3m)	Yes	No	No	Yes

* Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word.

**(5) Removal of initial letter
(6) Addition of two letters
(7) Removal of all but initial letter
(8a) Removal of initial letter and capitalization of second letter
(8b) Change from uppercase mode to lowercase mode (name only)

Table 23

Subject Responses to Manipulations of Word Size
(Word Common to All Children)
Manipulations Not Observed

Name (age)	(5)	(6)	(7)	(8)
Aaron (3y, 2m)	Yes	Yes	No	Yes
Jamie (3y, 2m)	Yes	Yes	Yes	Yes
Michael (3y, 7m)	Yes	Yes	No	Yes
Melissa (3y, 8m)	Yes	Yes	No	Yes
Gabriel (3y, 10m)	Yes	Yes	Yes	Yes
Alexis (4y, 0m)	Yes	Yes	Yes	Yes
Nikki (4y, 8m)	No	No	No	No
Michael (5y, 3m)	No	Yes	No	No

*Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word

**(5) Removal of initial letter
(6) Addition of two letters
(7) Removal of all but initial letter
(8a) Removal of initial letter and capitalization of second letter
(8b) Change from uppercase mode to lowercase mode (name only)

Appendix D

Appendix D contains the individual responses of those children able to write their names in standard form to manipulations of letter order and word size.

These tables reflect the responses to manipulations observed and unobserved. The tables were collapsed since the children able to write their own names in standard form did not vary their responses.

Table 24

Subject Responses to Manipulations of Letter Order

Name (age)	(1)	(2)	(3)	(4)
Name Only				
Camrin (4y, 8m)	No	No	No	Yes
Tricia (5y, 2m)	No	No	No	Yes
Kenton (5y, 1m)	No	No	No	Yes
Annia (5y, 3m)	No	No	No	No
Word the Same Length as Their Name				
Camrin (4y,8m)	No	No	No	No
Tricia (5y, 2m)	No	No	No	No
Kenton (5y, 1m)	No	No	No	Yes
Annia (5y,3m)	No	No	No	No
Word Common To All Children				
Camrin (4y, 8m)	No	No	No	Yes
Tricia (5y, 2m)	No	No	No	No
Kenton (5y, 1m)	No	No	No	No
Annia (5y, 3m)	No	No	No	No

* Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word.

**(1) medial/final switch (3) Initial/medial switch
(2) Initial/final switch (4) Complete letter order reversal

Table 25

Subject Responses to Manipulation of Word Size

Names (age)	(5)	(6)	(7)	(8a)	(8b)
Name Only					
Camrin (4y,8m)	No	No	No	No	-
Tricia (5y, 2m)	No	No	No	No	-
Kenton (5y, 1m)	No	No	No	No	-
Annia (5y,3m)	No	No	No	No	-
Word the Same Length As Their Name					
Camrin (4y,8m)	No	No	No	No	-
Tricia (5y, 2m)	No	No	No	No	-
Kenton (5y, 1m)	No	No	No	No	-
Annia (5y,3m)	No	No	No	No	-
Word Common to All Children					
Camrin (4y,8m)	No	No	No	No	-
Tricia (5y, 2m)	No	No	No	No	-
Kenton (5y, 1m)	No	No	No	No	-
Annia (5y, 3m)	No	No	No	No	-

*Yes indicates that the child accepted the manipulated word as 'saying' the same thing as the unmanipulated word

**(5) Removal of initial letter
(6) Addition of two letters
(7) Removal of all but initial letter
(8a) Removal of initial letter, capitalization of next
(8b) Change from uppercase to lowercase mode (name only)

Vita

Surname: Davies Given Names: Patricia Anne Louise

Place of Birth: Iserlohn, Germany Date of Birth: September 5, 1955

Educational Institutions Attended, with Dates of Entering and Leaving:

Douglas College, New Westminster, B.C.	1973 to 1974
Selkirk College, Castlegar, B.C.	1974 to 1975
Notre Dame University, Nelson, B.C.	1975 to 1976
Simon Fraser University, Burnaby, B.C.	1976
University of Alberta, Edmonton, Alberta	1978 to 1979
University of Victoria, Victoria, B.C.	1982 to 1983

Degrees Awarded:

B. Ed.	1979	Notre Dame University, Nelson, B.C.

Honors and Awards:

Notre Dame Scholarship, 1978

Hilroy Fellowship, 1983

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