

Utah State University

DigitalCommons@USU

All Graduate Theses and Dissertations

Graduate Studies

5-1997

Mean Length of Utterance in Relation to Gender and Preschool Activity Area

Angela Sisson Thompson
Utah State University

Follow this and additional works at: <https://digitalcommons.usu.edu/etd>



Part of the [Social and Behavioral Sciences Commons](#)

Recommended Citation

Thompson, Angela Sisson, "Mean Length of Utterance in Relation to Gender and Preschool Activity Area" (1997). *All Graduate Theses and Dissertations*. 2657.

<https://digitalcommons.usu.edu/etd/2657>

This Thesis is brought to you for free and open access by the Graduate Studies at DigitalCommons@USU. It has been accepted for inclusion in All Graduate Theses and Dissertations by an authorized administrator of DigitalCommons@USU. For more information, please contact digitalcommons@usu.edu.



MEAN LENGTH OF UTTERANCE IN RELATION TO GENDER
AND PRESCHOOL ACTIVITY AREA

by

Angela Sisson Thompson

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Family and Human Development

Approved:

UTAH STATE UNIVERSITY
Logan, Utah

1997

ABSTRACT

Mean Length of Utterance in Relation to Gender
and Preschool Activity Area

by

Angela Sisson Thompson, Master of Science
Utah State University, 1997

Major Professor: Shelley K. Lindauer
Department: Family and Human Development

Factors influencing language development and use are many. Teacher influences such as teacher:child ratio and teaching experience can affect the types of language children produce. Classroom influences including activities, size of the room, and length of the day also play a role in the development of language. All of these areas need to be considered in order to provide the best possible language environment for the preschool child.

In this study, the researchers examined the mean length of utterance (MLU) values of preschool children while participating at three areas in a preschool classroom: art, dramatic play, and snack. Gender differences in MLU were also studied. Sixteen children (8 females, 8 males), ranging in age from 50 to 66

months, participated in the study. The children were currently attending the Child Development Laboratory at Utah State University.

For the collection of data, the children wore a tape recorder with a microphone until a 5-minute sample from each of the areas was obtained. These audio recordings were then transcribed and calculated into MLU values.

Findings from the analysis of variance tests (3[activity: art, dramatic play, snack] X 2[gender: male, female]) demonstrated that the children had larger MLU values at snack than at art or dramatic play. Snack time has not always been recognized as an activity area for young children to display typical language use. Overall, and at the three individual areas, there were no gender differences found in MLU. Results of this study may be used in planning how to arrange and organize an environment in which the children are comfortable and have opportunities to converse with both adults and other children.

ACKNOWLEDGMENTS

This work could not have been completed without the help of the following individuals. I wish to thank Dr. Shelley Lindauer for her valuable insights and perseverance throughout the revision process and for chairing my committee; Drs. Brent Miller and Carol Strong for serving on my committee; and Dr. Don Sisson for his statistical advice and instruction.

Angela Sisson

CONTENTS

	Page
ABSTRACT.	ii
ACKNOWLEDGEMENTS.	v
LIST OF TABLES.	vii
CHAPTER	
I. INTRODUCTION.	1
II. LITERATURE REVIEW	3
Language Development	3
MLU Development.	8
Gender Differences	9
Factors Influencing Language Development in Preschool Settings.	11
Teacher Influences.	12
Curriculum Planning	14
Classroom Influences.	15
Activity Area Influences.	19
Hypotheses.	23
III. METHODOLOGY.	24
Population and Sample	24
Measurement and Procedures.	25
Ethical Considerations.	27
IV. RESULTS.	28
V. DISCUSSION	35
VI. CONCLUSIONS.	40
REFERENCES	42

APPENDICES.	45
A. Parent Letter.	46
B. Parent Consent Form	48
C. MLU Transcription Data.	50

LIST OF TABLES

Table	Page
1 Female Preschoolers' Mean Length of Utterance. . .	28
2 Male Preschoolers' Mean Length of Utterance . . .	29
3 Analysis of Variance for Mean Length of Utterance	33
4 Individual Group Means and Standard Deviations. .	34

CHAPTER I
INTRODUCTION

The preschool years are a critical time during which patterns of oral language use are developed (Heath, 1983; Snow, 1983). Therefore, it is important to enhance the development of language skills by creating language-rich environments for young children (Heath, 1983; Snow, 1983).

One measure, mean length of utterance (MLU), is frequently studied and used as a predictor of differences in language skills and abilities (Miller, Chapman, Branston, & Reichle, 1980). However, there have been few studies examining the relationship between MLU and activity areas within the preschool classroom setting. This study sought to examine whether there are differences in the mean lengths of utterance for children participating in different activity areas in a preschool classroom.

To study the areas in a preschool setting which facilitate optimal language use and length of utterance, this study focused on three areas common to preschools. Dramatic play, art, and snack time were the areas investigated because of the differing communication opportunities available at each. For

instance, dramatic play encourages utterances about roles and role playing as well as interactions with peers as they cooperate together. Art activities facilitate speech about the individual child and the type of art work being created. Children can talk about what they have created as well as the media being used to create the art work (Watson, Layton, Pierce, & Abraham, 1994). Snack time helps create a relaxed setting that allows children to talk about themselves and about one's likes and dislikes. Children can discuss what they have done during the day as well as what they are eating (Watson et al., 1994).

The results of this study may provide a better understanding of the relationship between different areas and activities in the preschool and children's mean length of utterance. This study also examines the ways in which children's mean lengths of utterance at various activities vary with respect to gender. Therefore, the results of this study may help pinpoint in what areas language use and language development could be increased, and what activities could be used in the treatment of children who are language impaired.

CHAPTER II
LITERATURE REVIEW

Language Development

Learning is a complicated process that comes about through interaction with the surrounding environment as children make connections between their experiences and the external world (NAEYC, 1991). The learning of language is no different. It requires the same process of all children (Crain, 1992).

Numerous theories of language development have been proposed over the past 30 years. One language development theorist, Brown (1973), wrote that the child had a "storage bin" into which all the sentences a child heard were placed. Later the child could reach in and pull out an appropriate sentence that he or she had heard previously. A child's introduction to language, Brown (1973) continued, comes from simplified, repeated, idealized dialect. However, this exposure to language is not enough. At some time the child needs to be able to understand the rules of grammar in order to converse on his own (Brown, 1973).

Chomsky (1986) disagreed with Brown's theory, asserting that we routinely create novel sentences each time we speak. We are able to do this because of an

innate understanding of grammatical rules. Chomsky (1986) termed these "universal grammars." Chomsky stated that each of us has this biological capacity, which differentiates us from other nonverbal life forms (Reiber & Voyat, 1983). This innate language ability has also been termed the language acquisition device or LAD.

Bandura (1977) posed another theory of language development. He stated that modeling and corrective feedback are vital aspects of language acquisition. However, he claimed that children do not exactly imitate language that is modeled for them, for they still produce novel utterances. They rely instead on something called "abstract modeling," using sentence forms they have heard adults using and new ideas of their own (Bandura, 1977).

Piaget (1959) claimed that language development is a direct result of interaction with the environment, or that through interacting with the environment children generate language use. He also stated that language development is integrally associated with cognitive development and that both capacities develop hand in hand as, for example, late in the sensori-motor stage when the child starts to develop object permanence (Piaget, 1959). The child may search for a favorite

toy that is no longer within the child's vision, a separation between self and the object. Thus, he starts using the cognition necessary to separate the self (subject), the action (verb), and the object (Crain, 1992). Consequently, as cognition develops and becomes more complex or adult-like, language development, too, becomes more advanced. Piaget (1959) asserted that when studying language development, cognitive development also needs to be examined. The two cannot be separated.

The semantic theory of language development, as proposed by Bloom (cited in Owens, 1996), includes the acquisition of meanings or semantics. Bloom, a linguist, agreed with Chomsky in that there is some acquisition device that aids in language learning. However, Bloom expanded on Chomsky's "universal grammar" by stating that children also have an innate ability to understand semantics (cited in Owens, 1996). This theory allows for the words of the speaker to attain their fuller meaning. For example, the sentence "Baby bed," may mean many different things in different situations. It could mean "This is the baby's bed," or "The baby is in bed," or even "I want the baby's bed," depending on the context in which it was said (Owens, 1996).

According to the semantic theory, as with Piaget, there is a close link between cognitive development and language development (Owens, 1996). A certain level of cognitive ability is needed before language is even uttered by the child. And, as the child's speech becomes more adult-like, greater and greater cognitive abilities are needed (Owens, 1996).

Sociolinguistic theorists state that these other theories tend to focus just on words and grammar or "bits" of language rather than focusing on the communicative unit needed to give information (Owens, 1996). From a sociolinguistic perspective, language is used to communicate and to express some meaning, the means to some end desired by the participants. This theory concentrates on the reasons for language (Owens, 1996). The speaker must choose what words and grammatical structures, within the child's capabilities, are needed to completely convey his or her intentions. The speaker not only chooses the words to say and the grammar rules needed, but also when to say it and why to say it (Owens, 1996). Through repeated communication experiences, including not only the speaker's intentions, but also the listener and context as well, the child becomes more and more skilled in language use. While fundamentally different

in some respects, all of these later theories have one feature in common: the importance of a language-rich environment for the development of language.

All children need exposure to language use. Conversations are the root of how we relate to one another and are one of the ways in which children develop language skills (NAEYC, 1986). Interaction with the environment and the people within the child's environment give the child opportunities to converse and practice conversations (Ostrosky & Kaiser, 1991). The natural back-and-forth flow of conversation gives the child practice in both receptive-language and expressive-language skills (NAEYC, 1991). Being a skillful user of language requires more than just words and the syntax for combining them into words. It requires the ability to interact with others (NAEYC, 1986). There also need to be reciprocal communications, which in turn increase the number of communicative opportunities, providing more practice and improving the child's language development (NAEYC, 1991).

As these processes take place and are expanded upon and modified, and with this practice in both receptive- and expressive-language use and social interactions, the child's language skills grow

increasingly more like the adult language form (Norris & Hoffman, 1990). As the child develops language skills and becomes more adept at conversing with others, skills a child needs to communicate are improved (NAEYC, 1991). These include attending to others, initiating and maintaining a topic, and keeping the conversation going (NAEYC, 1991). All of these skills are used by the child in a preschool setting as the child takes part in role playing in the dramatic play area, talks about an art project the child is creating, and discusses the food the child is having for snack.

MLU Development

Mean length of utterance (MLU) is frequently used as a measure and a predictor of children's language development. Before studying the length of utterance in children, it is important to understand the normal rate of development in length of utterances, commonly measured in morphemes, the smallest unit of meaning in a word. Miller et al. (1980) studied the relationship between age and MLU in 123 children ages ranging from 17 months to 59 months of age. For children in the preschool years (36 months to 59 months), the MLU should range from 3.2 to 6.0 morphemes.

Klee, Schaffer, May, Membrino, and Mougey (1989) summarized the results of three studies in which the authors examined the rate of MLU development based on age. Findings from all of the studies were relatively similar. Findings from the three different studies show that MLU increases linearly up through 36 months of age and continues upward through 48 months of age. Children 24 months of age generally have an MLU score of 2; for children 36 months of age, the MLU is approximately 3; and for children 48 months of age, the MLU is approximately 4.

Gender Differences

It is well known that males and females often react differently to language stimuli and speakers (Fagot & Kavanagh, 1993). In a study of parental perceptions of gender differences, Fagot and Kavanagh (1993) looked at interactions between parent and child in the home. Using data collected through interviews, observations, and questionnaires, they found that reactions of the mother to different parenting situations were different from the father's reactions, thus indirectly having an effect on the child's behavior, including language use and development. How adults perceive sex differences in children affects how

they react and respond to a child (Fagot & Kavanagh, 1993), therefore influencing development in general and creating some language development differences in boys and girls (Burroughs & Murray, 1992). Burroughs and Murray (1992) agreed that the degree of comfort the child feels affects the child's language production. As the child becomes more comfortable with the environment, the child will feel more comfortable in producing language.

Children who have no history of language disorders are likely to develop language at approximately the same rate (Klee et al., 1989). Only slight differences in MLU, vocabulary, or conversation style may appear as children pass the same developmental landmarks. However, the MLU values from males and females in different play areas may be different, as authors of some studies have suggested that there are differences in the activities boys and girls select in the preschool setting (Burroughs & Murray, 1992).

Burroughs and Murray (1992), in their study on discourse and differing play materials, examined the effect that different materials (playdough, farm set, and puppets) have on certain aspects of children's conversational behavior. Although they did not find

significant gender differences in the number of utterances produced during play with each of the materials, they did find that boys tended to introduce more topics during play than did girls. This does not, however, mean that they remained on the topic for a longer period of time than girls. Burroughs and Murray (1992) found that children of both sexes used about the same number of utterances with the different materials in their study. Moreover, the categories of utterances were relatively similar for boys and girls (Burroughs & Murray, 1992). Their findings reinforce the assertion that multiple-language sampling is necessary to obtain a valid language assessment.

Factors Influencing Language Development in Preschool Settings

Mean length of utterance variations by age can be influenced by many different factors (Klee et al., 1989). Socioeconomic status of the family, conversation-based play with parents, especially the mother, and the different environments in which the child interacts can influence MLU development (Klee et al., 1989). The environmental features surrounding children are particularly important, playing a role in their rate of language development (Klee et al., 1989).

Teacher influences, planning practices, as well as classroom and activity influences will be discussed in greater detail.

Teacher Influences

In a study looking at language opportunities in Head Start programs and other preschools, Smith and Dickinson (1994) stated that the teacher within a preschool setting can enhance the children's language development in many ways. For example, years of experience, pedagogical beliefs, specifically a desire to help the child develop literacy and language skills, and the nature of other educational experiences are some of the influencing variables (Smith & Dickinson, 1994). Smith and Dickinson (1994) elaborated that teachers' pedagogical orientations are likely to affect what kind of setting they create for the children. If teachers have a traditional academic orientation, they might devote more time to reciting the alphabet, thus affecting the environment around the children, providing stimuli that other teachers might not model. On the other hand, a teacher who values social development might allow for more free time, enabling the children to converse more with peers (Smith & Dickinson, 1994).

The amount of teacher experience, both in years of teaching and amount of teacher training, may help the teacher to better understand how children develop language and other skills (Smith & Dickinson, 1994). These factors combined may influence how a teacher interacts with the child, what activities a teacher plans, and how a teacher phrases a question so as to elicit more advanced utterances from the child. Findings from Sharpe's (1994) study demonstrated that adults are a key to language development. Opportunities to interact with competent adult models as listeners and motivators are critical. Teachers in a preschool are responsible for creating an environment conducive to language development as well as for choosing activities that will interest the child.

In a study that identifies features that impact language skills of bilingual preschool children, Sharpe (1994) stated that teachers, through their attitudes and the activities they provide, play an important role in the rate of language development. To maximize language development, teachers should provide language-enriched opportunities and listen and talk to children about topics they enjoy and which interest them (Sharpe, 1994). Sharpe (1994) explained that teachers also need to be good listeners, be able to motivate

children to speak, and extend the children's utterances, providing valuable models for the children. Teachers should be trained to provide activities that will provide such communication experiences.

Curriculum Planning

In planning and organizing preschool activities, the teacher needs to consider the developmental sequence in which non-language-impaired children learn language (Kaczmarek, 1985). Wesley (1992) provided one description of how to arrange the environment to better attract children to use play areas and activities:

Make sure the environment includes materials and activities that promote interaction...make sure play areas are large enough for two or more children to play... include dolls, tea sets, dress-up clothes, blocks, and other play materials. (p. 63)

Ostrosky and Kaiser (1991), in their work examining how preschool environments promote communication, agreed that children's environments greatly influence their language use and length of utterance. As they explained, creating an environment that is of interest to children alone is not enough. Teachers need to manipulate the materials or rearrange the materials as the children's play or use takes a different course. Physical environment is not the only component that needs to be arranged by the teacher to

enhance language development. The social environment must also encourage language use (Ostrosky & Kaiser, 1991). This includes the presence of other people, adults as well as children.

Focus on making language a part of children's routines. Provide access to interesting materials and activities. Provide adult and peer models who will encourage children to use language. Establish a contingent relationship between access to materials or assistance and use of language. (Ostrosky & Kaiser, 1991, p. 7)

Choice-making should be included in the child's day, again providing an opportunity for language use (Ostrosky & Kaiser, 1991). At dramatic play, the children can choose what dramatic play themes and the roles each will play. Art could include choices about the paper color, what crayons or markers to use, or what to glue onto the art work. Snack may provide choices about what from the snack to eat or not to eat or how much children want to eat (Kaczmarek, 1985).

Classroom Influences

The environment of the classroom can play a part in language use and should be considered when arranging the room and considering its features. "The function of language depends upon its effects upon its environment. . . .The basic goal of environmental arrangement is to increase interest for communication"

(Ostrosky & Kaiser, 1991, p. 6).

In their research on the effects of Head Start and other preschool programs, Smith and Dickinson (1994) agreed that the classroom, with its varying features and atmospheres, greatly influences the child's language development. For instance, larger class size and a longer class period tend to diminish the quality of interactions that the child experiences. There also appears to be less pretending overall and more general talk. Smith and Dickinson (1994) found that programs with a longer day often had a larger staff, and that staff was less educated. Thus, the quality of interactions decreased. The length of the day also plays a part in the child's development. As the length of day increases, the children become more tired. Being tired is not a condition that is ideal for learning or language use (Smith & Dickinson, 1994).

The effect of preschool attendance on a child's development, both in language areas and cognitive areas, also has been investigated. Becker and Gersten (1982) stated that children who attended preschool programs, particularly university-affiliated programs, had greater high school achievement. Enhanced discourse skills and better general social adjustments were also associated with preschool attendance (Lazar &

Darlington, 1982; Roberts et al., 1989).

More recently, Kutnick (1994) questioned the results of the Becker and Gersten (1982) study by stating that the relationship of preschool attendance to positive educational performance is "never direct and without controversy" (p. 28). There are many other factors, such as the range and background of the students, that can affect such results (Kutnick, 1994). Kutnick (1994) further elaborated that, instead of studying the effects of preschool attendance on academic factors, it may be more appropriate to look at school competence. The authors of one study investigated this and found that children in Head Start programs were less likely to be placed in special classes, less likely to be retained in a grade, and less likely to drop out than children with no preschool experience (Lazar & Darlington, 1982). However, the effects of preschool attendance can be beneficial to children in many ways as illustrated by Smith and Dickinson (1994), who showed that participation in preschools can result in higher levels of verbal achievement, school achievement, and IQ in the primary grades.

In their review of environmental features in a preschool classroom that may affect language, Smith and

Dickinson (1994) agreed that the type of class and teacher-specific variables can influence the development of language. The classroom has many variables that might also contribute to the language skills gained during the preschool years. Class size, ages of the children in the group, number of teachers working in the classroom, and languages spoken in the classroom can influence the child.

The size of the classroom can also have an influence (Wesley, 1992). In a training packet for child-care providers, Wesley (1992) stated that an activity area should be "large enough for two or more to play" (p. 69), thereby providing room for others to communicate with and practice their developing language skills. This area is functional for language learning and should be equipped with items of interest to the child (Ostrosky & Kaiser, 1991). Messages are sent through the materials selected and the arrangement of furnishings. The feelings of the child, how an area will affect the child, the comfort of the room, and what the child might want to communicate should all be considered in room arrangement (NAEYC, 1986).

If the classroom has a lower teacher:child ratio, then the teachers would be less able to sit down with the children at snack time, or have small group

discussions, which would limit the amount of adult language modeling (Smith & Dickinson, 1994). With higher teacher:child ratios, the teachers can spend more one-on-one time with the children and the children demonstrate greater cognitive gains (Ruopp, 1979).

Activity Area Influences

Of course classroom features alone do not influence a child's developing language skills. The activities within the classroom can play an important role in a child's development, specifically language and literacy skills (Smith & Dickinson, 1994). There are many facilities that are designed especially to help develop language skills. Watson et al. (1994) examined ways to create a more language-oriented preschool. They agreed with Snow (1979) in stating that child-initiated activities are often the most beneficial for language development and use. Activities that are developmentally appropriate will be more interesting to the children and may provide opportunities for extended language use (Watson et al., 1994). Kaczmarek (1985) provided a list of some appropriate areas and activities in a preschool: freeplay, snack time, gross and fine motor activities, cooking, and art. All provide rich opportunities for

communication and language use or expansion in length of utterance (Watson et al., 1994).

Smith and Dickinson (1994) also suggested that the room be divided into distinct areas: block area, dramatic play, manipulative, and a library area. Watson et al. (1994) studied how to enhance literacy and language in a preschool. They gave a list of areas and activities that would provide the best opportunities for language use: opening circle, story-related group time, literacy centers, snack, gross motor/outdoor play, and closing circle.

Activities and areas within the classroom can also be arranged and planned in such a way that will promote the most language use. Lundberg, Frost, and Peterson (1988), who examined the effects of formal instruction on phonological development and literacy skills, found that specific instruction in the form of different and novel games and activities (e.g., games that involve writing of the alphabet, learning new words, and rhyming games) can affect the rate of development for phonological awareness. Such instruction creates more awareness of words and syllables (Lundberg et al., 1988). This can help children become more aware of communication types and uses.

The notion that many different activities can influence language development is of key interest in this study. Watson et al. (1994) agreed and listed several areas that have been examined.

Literacy-rich areas include such things as art and writing activities. These activities encourage children to put their thoughts and ideas down on paper and allow them to discuss their creations if they so choose. The pictures can be hung on the walls or sent home so the children are given the opportunity to repeatedly tell about what they have made (Watson et al., 1994).

A role-playing center should be included in the classroom, providing a natural stimulus for oral communication as the children work together on a common goal of enacting their roles (Watson et al., 1994). The result of Watson et al.'s (1994) study showed that these areas and activities in a preschool are also helpful for children with language disorders, providing them with experiences and opportunities to communicate that otherwise might not be offered them (Watson et al., 1994).

Snack time is recognized as an excellent time for the facilitation of language (Kaczmarek, 1985). Many speech-language clinicians have recognized the value of

snack time in language production (Watson et al., 1994). Teachers can provide a good model to a small number of children, and the children are in a relaxed setting that promotes conversation, listening skills, and socialization (Watson et al., 1994). They can talk about the snack and food they are eating. Requesting food items and utensils, describing actions of self and others, identifying items, and describing other activities they have done during the day can all take place at snack time (Kaczmarek, 1985).

Warren and Rogers-Warren (1980) stated that to facilitate language use and good communication skills, language-enhancing practices need to be included in the natural environment or "in a variety of functional contexts in day-to-day environments" (cited in, Kaczmarek, 1980, p. 183). Opportunities in the preschool for the children to use these skills and learn new skills must be available. Dramatic play time, art, and snack time would be activities that represent day-to-day environments.

The research literature shows that there are many different factors that influence a child's language. Teachers, classrooms, activities, and gender differences all play a part in the development of language. As children interact with the surrounding

environment and adults in their world, language skills are used in many different contexts, thus affecting children's language development. However, no research to date has been located in which investigators specifically compared the differences in mean length of utterance in the various areas of the preschool. This study was designed to investigate this topic.

Hypotheses

Ho1: There will be no statistically significant difference between children's MLU values when communicating at three different preschool activity areas: snack, art, dramatic play.

Ho2: There will be no statistically significant differences between boys' and girls' mean MLU values.

Ho3: There will be no statistically significant interactions between children's mean MLU values for gender and individual activity area.

CHAPTER III
METHODOLOGY

Population and Sample

The convenience sample for this study was comprised of 8 male and 8 female children selected from the Child Development Laboratory at Utah State University. The target population was all children attending preschool programs. The accessible population consisted of the children attending the Child Development Laboratory at Utah State University. The children used in the study were between 48 and 60 months of age, with a mean age of 58 months for females and 55.5 for months for males. The overall mean age of the children was 56.8 months. A t test ($t = 1.27$, $p = .226$) showed no statistically significant difference in the ages of females and males. All of the children came from homes where English was the primary language. Demographic information, which was previously collected from the children's parents, indicated that all children were from middle-income homes. None of the children had a history of language disorders.

The program of the Child Development Laboratory is centered on allowing the children to select the

activities in which they wish to participate. This occurs for the first 2 hours of the 2- $\frac{1}{2}$ -hour program. To encourage the most interaction with other children and teachers, six activities are chosen and placed in the room at the beginning of the day. Of the six, three activities that are always included are an art or creative activity, a block activity, and a dramatic play activity.

At the time of data collection, the children had been in school for at least 3 weeks. Therefore, the children were well acquainted with the schedule and felt comfortable with their environment. The teacher:child ratio was 1:4 (5 teachers for 20 children), which allowed the teachers to spend more time communicating with the children. The teachers had all been trained in child development and developmentally appropriate teaching methods and were supervised by a head teacher who is a master's degree candidate in Child Development.

Measurement and Procedures

Samples of speech were gathered using a small tape recorder worn by the child on a belt with a microphone attached to his or her shirt. The child wore the recorder until a 5-minute period in each of the target

areas was recorded. The child was observed throughout the recording period and notes were made about where the child was and how long the child was in each area.

The recorded conversations, every word uttered by the child in the one 5-minute time period within each of the three areas, were transcribed (appendix C) and MLU values were calculated using the MLU calculation rules described by Miller (1991). These procedures required the counting of all of the morphemes in the child's utterances. A morpheme is the smallest unit of meaning in a word. For example, the word "dog" is one morpheme, but the word "dogs" is two, "dog" and "s". The "s" is a morpheme because it changes the meaning of the word. These procedures for segmenting utterances, counting morphemes, and calculating MLU are generally accepted as reliable and consistent procedures (Miller, 1991). All of the transcription and coding was done by one examiner. However, a randomly selected 25% of sample transcription and segmentation was duplicated by another coder in order to establish interrater reliability for the data collected. The correlation for interrater reliability was high ($r = .996$), showing that there was very little transcription error. Two coders also calculated all the MLU values. Where discrepancies were found, in about 5% of the

CHAPTER IV

RESULTS

From the data, a general understanding of the mean length of utterance (MLU) of the children who participated in this study is gained. The total MLU values of all children ranged from 1.91 to 6.10 across all three areas. The MLU value of 1.91 was recorded at the art area and the MLU of 6.10 was obtained during snack time. Table 1 and Table 2 show the individual MLU values of the female preschoolers and male preschoolers at the three areas.

Table 1

Female Preschoolers' Mean Length of Utterance

Age (months)	Art	Dramatic Play	Snack
56	2.47	3.91	4.81
56	5.82	5.12	4.67
55	1.91	2.81	3.70
61	5.41	4.19	4.91
55	3.16	2.56	3.94
57	3.93	3.91	6.10
58	3.00	2.65	3.27
66	3.41	3.22	4.34

Table 2

Male Preschoolers' Mean Length of Utterance

Age (months)	Art	Dramatic Play	Snack
54	2.75	4.48	4.43
57	3.94	3.41	4.33
53	3.88	3.44	5.06
54	3.10	2.48	2.81
64	8.50	3.82	4.58
50	4.07	4.46	3.90
57	3.68	4.37	4.33
55	3.22	3.40	4.59

The data in these tables are shown as they were first collected. However, as the analyses were undertaken, the MLU for the fifth male at the art activity was revealed to be an extreme outlier. This score of 8.5 was subsequently dropped and a missing value was substituted. This eliminated the possibility of the results being skewed by just one very large score. In order to substitute a score for the original outlying MLU, a weighted mean of the remaining boys at art and the fifth male's remaining two values (snack and dramatic play) was calculated to provide the most

representative value. The calculation of this missing value involved multiplying 3.55, the average of the seven other males at art, by 7, then multiplying 4.2, the average of the fifth male's remaining two values, by 2. These two values were then added together and divided by 9 (7 plus 2), resulting in a value of 3.69 (D. V. Sisson, personal communication, September, 1996).

An inspection of the data in Table 1 and Table 2 shows that 9 out of 16 children (56%) showed the lowest MLU values at the dramatic play area. At snack time, 10 (63%) of the children produced the largest MLU values. The data collected represented a relatively normal distribution.

One trend of note is that for 6 females (75%), scores were lowest at dramatic play. The opposite is true for snack time. Six out of the 8 (75%) females showed the largest scores at snack time.

The males' MLU values reveal that 4 out of the 8 (50%) had the largest MLU values at snack time. The males differ from the females in that 4 (50%) of the males' MLU values were lowest at art. Also, only 3 (38%) of the males had the lowest MLU values at dramatic play.

It is interesting to note the number of sentences spoken in each area. Of all of the children, half (50%) spoke the most sentences at dramatic play. Of the remaining children, 4 (25%) spoke the most sentences at art and the other 4 at snack time. When looking at the females alone, 4 (50%) had the most sentences recorded at dramatic play, while of the males, 3 (37.5%) spoke the most sentences at dramatic play.

In analyzing the content of the data, the topics introduced by both males and females were very similar. The children tended to relate what they were talking about to the activity where they were playing. For example, at an art activity, the children talked about what they were making. At dramatic play, the children discussed the scenario in which they were participating. However, at snack time, the females tended to talk about personal experiences that had happened recently. For example, one girl talked about a bird that had been trapped in the chimney of her home. Another girl discussed how her aunt made a similar snack to what they were having, but one that was prepared differently than they were having that day. Males tended to talk about what they had done that day or what they were eating at snack time. One

boy discussed how he had washed his hands before snack. Another boy talked about how he did not like the snack for that day, while still another discussed playing outside.

The data were analyzed using a split-plot analysis of variance where gender effect was the whole-plot factor (2[gender: male, female]) and activity area was the subplot factor (3[activity: art, dramatic play, snack]) (Cochran & Cox, 1957). The test for these two main effects (gender and activity area) addressed the first two hypotheses. The third test was for the interaction between gender and area.

Hypothesis one predicted that there would be no statistically significant difference between children's mean MLU values at three different areas: art, dramatic play, and snack. The results of this analysis of variance indicate that there were statistically significant differences between children's mean MLU values at the three different areas, $F(2,28) = 7.90$, $p = .00$.

In order to determine which areas showed the greatest difference in MLU, the test of least significant difference (LSD) was run to compare all possible differences among the area means (Cochran & Cox, 1957). The LSD test showed that at snack the mean

MLU values were significantly larger than between the means for the other two areas. There were no statistically significant differences between the mean MLU values for art and dramatic play. Table 3 shows the results of the analysis of variance. Table 4 shows the total mean MLU values and standard deviations for boys and girls in the three areas. The standard deviations range from 1.36 to .47. Bartlett's test for homogeneity of variance showed no statistically significant difference in the variability ($p = .11$) (Ostle & Malone, 1988).

Table 3

Analysis of Variance for Mean Length of Utterance

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>	<u>P</u>
Gender	1	.02	.02	.01	.92
Error (A)	14	21.39	1.52		
Activity	2	5.95	2.97	7.90	.00
Gender & Activity	2	.33	.16	.45	.64
Error (B)	28	10.55	.03		
Total	47	38.26			

Table 4

Individual Group Means and Standard Deviations

	Art	Dramatic	Snack	Gender
Female	3.64	3.54	4.47	3.88
SD	1.36	0.89	0.87	
Male	3.54	3.73	4.25	3.84
SD	0.47	0.69	0.67	
Area	3.59	3.64	4.36	

The second hypothesis stated that there would be no difference between females and males with regard to MLU values. As shown in Table 3, the MLU values obtained from boys and girls were not significantly different.

Finally, it was hypothesized that there would be no interaction between gender and area. The results of the analysis of variance did not indicate any statistically significant interaction between gender and activity area: art, snack, or dramatic play.

CHAPTER V
DISCUSSION

Research undertaken on factors that influence children's language development specifically notes the effects that preschool attendance can have on young children. However, no studies to date have been located in which investigators have focused on how preschool activity areas can influence a child's mean length of utterance. While many studies have focused on the positive effects of dramatic play on language production and development, no research was found that shows the relationship between other preschool activity area and language development (Smith & Dickinson, 1994).

Therefore, this study examined differences in children's mean MLU values while the children participated in three areas within the preschool setting: art, dramatic play, and snack. Gender differences in mean MLU production were also investigated in the study.

A 2(gender: male, female) X 3(activity: art, dramatic play, snack) analysis of variance showed that differences in MLU values were found among the three areas of interest. Statistically significant higher

snack-time mean MLU values were observed in comparison to the MLU values obtained at the other two activity areas.

In contrast, there were no mean MLU differences evident between boys and girls. At each of the three areas, the mean MLU values of girls and boys were not significantly different. The ages of subjects in this investigation ranged from 48 months to 56 months and the MLU values collected fall within the guidelines of normal language development (Miller et al., 1980).

Burroughs and Murray (1992) stated that it is important to collect speech samples at multiple areas to obtain a valid language assessment. Through this means of data collection, a more accurate sample of the child's language may be obtained. These MLU values were collected through multiple sampling (3 areas X 5 minutes for a 15-minute total) suggesting that representative samples of speech were collected.

Research has shown that teacher influences play an important role in language development (Smith & Dickinson, 1994). Teacher:child ratio is one factor in considering teachers' roles. The classrooms from which the data were collected had a teacher:child ratio of 1:4. This gave the children more opportunities to spend time talking with adults as well as children,

thus giving the children a variety of settings in which to practice language use. Teachers in these settings also may have more opportunity to model correct language.

Classroom features, including size, materials available, and length of day, have also been shown in previous studies to influence language production (Ostrosky & Kaiser, 1991; Smith & Dickinson, 1994). The Child Development Laboratory is set up so the children are at school for 2½ hours, 4 days per week. This provides the children with enough time to become involved with the activities they choose, but not enough time to become fatigued. The rooms are large enough to allow several children to play in each area without being crowded, but are not so large as to prevent the children from easily interacting. In this setting the children can converse in a comfortable atmosphere that encourages optimal language use. Burroughs and Murray (1992) agreed that the comfort a child feels in the school environment helps the child to feel comfortable in producing language.

As shown in the literature review, teacher training is also related to the development of MLU (Smith & Dickinson, 1994). The teachers in the Child Development Laboratory are all well trained and have

had experience with children of this preschool age range. The teachers are required to take courses in the development of children and methods used to provide children with an excellent preschool experience. In each classroom there is a head teacher who supervises the student teachers and who is knowledgeable about developmentally appropriate teaching methods and general child development. Smith and Dickinson (1994) stated that teacher knowledge is important in the development of children's language. In this manner the teachers are aware of child development and are able to plan activities and arrange the classroom in such a way to encourage language development.

Studies such as this one can help explain how developmentally appropriate activities, comfortable classrooms, and teacher:child ratios can enhance language production. These findings show that snack time was an area where most children displayed the largest MLU values. Snack time should be a comfortable time when the children can sit and talk to the teacher and the other children in the small group about topics they choose. These and other conditions can be used in the room to influence language and subsequent MLU production. The positive effects of dramatic play on language development have been previously researched.

However, this study also illuminates the effects that teacher, classroom, and activity-area influences can have on MLU production.

CHAPTER VI
CONCLUSIONS

The factors that influence language and MLU development are many. This study examined three areas in a preschool classroom. Art, dramatic play, and snack time were investigated to see if there was a difference in mean MLU values produced by males and females while participating at these activities.

Three hypotheses were tested. The first tested whether there were differences in children's mean MLU values at the three areas investigated. The findings showed that snack time produced mean MLU values that were statistically significantly larger than those at art or dramatic play.

Next, differences between the mean MLU values of boys and girls were studied. No gender differences were found. The mean MLU values produced by males and females were not statistically significantly different overall.

Lastly, the interaction between activity area and gender was examined. Again, there were no differences between males and females at art, dramatic play, and snack time.

There are some limitations of this study that may affect generalizability. These include a small sample size, a close range in ages of the children who participated, and homogeneity of the families with regard to socioeconomic status.

Future research could investigate other areas of a preschool such as block play, outside play, and small- and large-group time and the effect these variables have on MLU production. Studying children from all socioeconomic levels, as well as younger children, may provide more insight into factors that influence language development. Studies also could be conducted using program dimensions such as a larger class size with larger teacher:child ratios or classes that utilize small-group activities with higher teacher:child ratios.

It is hoped that the results of this study can help researchers and practitioners better understand factors that can influence MLU development. For instance, these findings suggest that even snack time can be arranged in such a manner that the children can feel comfortable in communicating with well-developed sentences for their age.

REFERENCES

- Bandura, A. (1977). Social learning theory. Englewood Cliffs, NJ: Prentice-Hall.
- Becker, W.C., & Gersten, R. (1982). A follow-up of follow children in the fifth and through: The later effects of the direct instruction model on sixth grades. American Educational Research Journal, 19, 75-92.
- Brown, R. (1973). A first language: The early stages. Cambridge, MA: Harvard University Press.
- Burroughs, E. I., & Murray, S. E. (1992). The influence of play material on discourse during play. Journal of Childhood Communication Disorders, 14, 119-128.
- Chomsky, N. (1986). Knowledge of language: Its nature, origin, and use. New York: Praeger.
- Cochran, W. G., & Cox, G. M. (1957). Experimental designs. New York: Wiley.
- Crain, W. (1992). Theories of development: Concepts and applications. Englewood Cliffs, NJ: Prentice-Hall.
- Fagot, B. I., & Kavanagh, K. (1993). Parenting during the second year: effects of children's age, sex, and attachment classification. Child Development, 64, 258-271.
- Heath, S. B. (1983). Ways with words. New York: Cambridge University Press.
- Kaczmarek, L. A. (1985, Spring). Integrating language communication objectives into the total preschool curriculum. Teaching Exceptional Children, 183-189.
- Klee, T., Schaffer, M., May, S., Membrino, I., & Mougey, K. (1989). A comparison of the age-MLU relation in normal and specifically language-impaired preschool children. Journal of Speech and Hearing Disorders, 54, 226-233.

- Kutnick, P. (1994). Does preschool curriculum make a difference in primary school performance: Insights into the variety of preschool activities and their effects on school achievement and behavior in the Caribbean Island of Trinidad; cross sectional and longitudinal evidence. Early Child Development and Care, 103, 27-42.
- Lazar, I., & Darlington, R. (1982). Lasting effects of early education: A report from the consortium for longitudinal studies. Monographs of the Society for the Research in Child Development, 47, (Serial No. 195).
- Lundberg, I., Frost, J., & Peterson, O. (1988). Effects of an extensive program for stimulating phonological awareness in preschool children. Reading Research Quarterly, 23, 263-284.
- Miller, J. F. (1991). Assessing communicative behavior. Baltimore, MD: University Park Press.
- Miller, J. F., Chapman, R. S., Branston, M. B., & Reichle, J. (1980). Language comprehension in sensorimotor stages V and VI. Journal of Speech and Hearing Research, 23, 284-311.
- National Association for the Education of Young Children. (1986). Position statement on developmentally appropriate practice in programs for 4- and 5-year-olds. Washington DC: Author.
- National Association for the Education of Young Children. (1991). Developmentally appropriate practice servicing children birth through age eight. (revised). Washington DC: Author.
- Norris, J. A., & Hoffman, P. R., (1990). Language intervention within naturalistic environments. Language, Speech, and Hearing Services in Schools, 21, 72-84.
- Ostle, B., & Malone, L. C., (1988) Statistics in research. Ames: Iowa State University Press.
- Ostrosky, M. M., & Kaiser, A. P. (1991). Preschool classroom environments that promote communication. Teaching Exceptional Children, Summer, 6-10.

- Owens, R. E. (1996). Language development. New York: State University of New York Press.
- Piaget, J. (1959). Language and thought. New York: Humanities Press.
- Reiber, R., & Voyat, G. (1983). Dialogues on the psychology of language and thought. New York: Plenum Press.
- Roberts, J. E., Rabinowitch, S., Bryant, D. M., Burchinal, M. R., Koch, M. A., & Ramey, C. T. (1989). Language skills of children with different preschool experiences. Journal of Speech and Hearing Research, 32, 773-786.
- Ruopp, R. R. (1979). Children at the center: Final report of the national day care study. Cambridge, MA: Abt Books.
- Sharpe, P. (1994). A study of some of the environmental features found to be conducive to the bilingual development of preschool children in Singapore. Early Child Development and Care, 98, 59-72.
- Smith, M. W., & Dickinson, D. K. (1994). Describing oral language opportunities and environments in Head Start and other preschool classrooms. Early Childhood Research, 9, 345-366.
- Snow, C. E. (1983). Literacy and language: Relationships during the preschool years. Harvard Educational Review, 53, 165-189.
- Warren, S., & Rogers-Warren, A. (1980). Current perspectives in language remediation. Education and Treatment of Children, 3, 133-152.
- Watson, L. R., Layton, T. L., Pierce, L. P., & Abraham, L. M. (1994). Enhancing emerging literacy in a language preschool. Language, Speech, and Hearing Services in Schools, 25, 136-145.
- Wesley, P. W. (1992). Mainstreaming young children: A training series for child care providers. Chapel Hill, NC: North Carolina University Press.

APPENDICES

APPENDIX A
Parent Letter

Parent Letter

Dear Parents:

I am currently a M.S. candidate in the Department of Family and Human Development at Utah State University. For my thesis, I am conducting a research project which looks at children's language in the preschool. Specifically, the study will examine the child's sentence length at three areas in the Child Development Laboratory: Art, Dramatic play, and Snack.

In this study, children who participate will wear a tape recorder around in the preschool. Five minute segments of their language at each of these three areas in your child's classroom will be gathered. The average length of all of the children's sentences will then be calculated from this tape recorded sample. In our experience the children enjoy the opportunity to wear the recorder pack, and the study is designed to be very fun and game-like for the children.

All information gathered in this research study will be kept confidential. Your child's data will be assigned a code number, no names will be used in reporting the data gathered. If at any time, you wish to withdraw your child or your child wishes to withdraw from the study, you are free to do so without any prejudice or penalty.

If you are willing to allow your child to participate in this study, please sign the permission slip attached and return it to the school. If I can provide you with any further information about this study, or answer any questions you might have, please call me at 797-1525 (days), or call my advisor Dr. Shelley Lindauer at 797-1532 (days).

Sincerely,

Angie Sisson
M.S. Student
Department of Family and Human Development

APPENDIX B
Parent Consent Form

Parent Consent Form

We give permission for our child, _____, to participate in the study involving speech samples in the three areas of art, dramatic play, and snack, being recorded. I understand that my child will wear a tape recorder throughout the day or until 5 minute samples in each of the three areas can be gathered. The recorded samples will then be assigned a code number. No names will be used in reporting the data to insure confidentiality. After the research is completed, all data will be destroyed. We also understand that we may withdraw our child or our child may withdraw from the study at any time without penalty. If you have any questions regarding this study please call me at 797-1525 (days), or call my advisor Dr. Shelley Lindauer at 797-1532 (days).

Signed: Mother: _____ Date: _____

Father: _____ Date: _____

Please send me the results of this study when completed:

Name: _____

Address: _____

APPENDIX C

MLU Transcription Data

1 Female

Art

/I think so/ uh huh/ I'm gonna wash my hands/ uh huh/ what/ yeah/ right here/ for um the beach/ okay/ blue/ a beach ball/ okay/ making a beach ball/ fabric/ no/ I don't/ I didn't/ oh/ oh/ I'm all done decorating my boat/

Dramatic Play

/uh huh/ yeah/ yep/ yep/ I do at my grandma's house/ um little fish and my dad caught me a big fish/ well my dad's gonna teach me how to fish/ uh huh/ yeah/ uh huh/ well cook and then eat them/ for dinner and and we can eat them for breakfast too/ uh huh/ yeah/ um/ uh huh/ I usually swim in the swimming po../ uh huh/ guess what/ um I know who a special guest is coming/ um a scuba diver/ what he saw in the um the the water/ um/ cause it only has one on it/ kay/ I'm cooking an apple cause it was cold under the water/ uh huh/ kay I think their done/ maybe its hot chocolate/ I think I'm gonna go back diving in the water/ okay/ uh huh/ uh huh/ just in the swimming pool/ no/

Snack

/uh huh/ uh huh/ I did/ a big long one/ yeah my Aunt Cathy made it made/ My Aunt Cathy just gets some um celery and peanut butter then raisons/ I'm gonna eat this one/ um/ food can't float in the water?/ My Aunt Cathy puts raisons on top of the peanut butter/ uh huh/ we were the last ones to have snack/ I did/ a canoe/ it was at the beach/ I want some water/

2 Male

Art

/Blue/ you're welcome/ fine/ I don't want to do this anymore/ I'll/ I always keep on/ bear/ I brought I brought this/ I brought my sandals/ yep/ and my shoes/ good/ yeah/ I have two shoes/ I am first/ can't/ last/ fish/ no/ can you put it right here?/ hmmm/ my my my sister's coming/ I'm wearing this again/ bunny/

Dramatic Play

/kay/ I wasn't even ticklish/ be e/ I can be with on/ putting these things in there/ cause/ they're food/ they're food/ they're food/ fine/ putting these things/ this wall/ but if you wanna get out/ Justin guess what/ when you wanna get out/ I'm not an animal I'm feeding these guys/ I'm not I'm not an animal I'm just I'm Pete/ I'm wishing some/ have to be analyze/ you just hit me you just hit me in the nose this thing/ what are you doing?/ yeah/ I made one/

Snack

/look I didn't wash my hands with soap/ I'm gonna sit by you/ you can pass you can pass the bread around/ yeah/ gotta glass/ I want/ yeah/ we we have to pass these things around/ Aarian want/ we both can/ yeah fish/ I know the word fish/ we're little fish/ I don't want any peanut butter/ I don't want any peanut butter/ I only want one/ yeah/ I don't want any/ I'll only have a little/ We almost passed everything around/ get all the plates/

3 Male

Dramatic

/no/ does it look like a bully/ does it look like a
 supio/ I don't know/ it's good that I got it/ man/
 crashed building/ somebody crashed into it/ the ski
 rack fell down/ yow bang/ no/ what/ what/
 tickling/ no/ I show you something/ look you go whoa
 bang ah!! yeah/ what's up/ you should have not done
 that/ those were scissors/ it was a snapple/ don't
 knock anything down/ what/ that man/ I'll show you
 how he goes down/ watch/ he bangs things down there/
 oh/ I go upside down and fall off/ I have to build
 it again I guess/ there/ that almost fell/ I think/
 like bump/ oh that hurts/ there/ policeman/ he fell
 on my pack/ on this/ yeah/ didn't break it/ I wanna
 saw/ here how about I/ out of/

Art

/Think its gonna have to be something I sew/ This is
 what I made/ OK now I know all this stuff/ yeah/
 that's why I put what I put/ you have to put that
 right there/ I don't have anything/ what/ I have
 gray/ blonde/ It's black/ brown/ its brown/ a
 brown/ green/ yeah/ around and/ my nickname is/ my
 nickname is no tadpole/

Snack

/I'm a machine/ I'm a machine/ picker upper machine/
 hey that's where the/ I already got a napkin/ ow/
 applesauce/ I am a/ why are the apples here/ why is
 the apples here/ now can we eat it/ I ain't see any
 keys but/ I did/ cause I had um I had an owwie on
 that right there/ watch this/ I drank I drank it all
 without stopping/ cause/ Cause I just did/ um um/

4 Female

Dramatic Play

/There's ice cream in your cup/ yeah/ or we could go to yer her house/ or you could or you could go over with your ice cream over to her house/ what/ no the ice cream's all ready/ let me see if I can find one oh here's he/ can't get them/ spoons spoons can get them/ not the knives/ no lef is there/ you have too/ don't touch this its very hot/ lets pretend you touched it OK?/ I'll get you I'll hurry/ I'm try I'm trying to find a rag/ you can only touch right here/ touch right here/ yes very good/ yes/ but you can't go without me/ no/ um/ these shoes/ but you got but she can't she she sh LeAnn can't go/ she can't have a party/ you can't have a party because you have a birthday party today/ you have a birthday party/ you have a birthday party/ so you can't go/ I'm gonna try my new clothes/ will you unbutton this/ I'm stuck/ will you unbutton this/ oh/ there/ ah where's the arm thing/ it's too big for me/ there it is/ I'm already/

Snack

/Can I start the juice/ I know this/ one piece/ hey Chris/ hello/ I want all colors/ I'm making a rainbow/ ah look green/ that makes purple/ me/ turns green/ ah I think we should get a rag and wipe the bottom/ yeah/ ah I keep on wiping it and make green/ ha/ hey I keep wiping it and make green/ I need another napkin cause I used it for that/ hey I can't reach it/

Art

/in the garbage/ but its O.K. if it falls onto you / on your pants or on your shirt/ why/ I haven't been outside/ me too/ red shirts are first and then its us/ hey did I miss snack/ and then its red pants and then its blue shoes and then its hats/ no/

5 Female

Dramatic Play

/I don't know/ this hat/ farmer farmer/ farmer/ no/
 a fire/ yeah/ yes/ what/ no/ I don't know/ no/
 why/ what is that/ how come you didn't bring the one
 things/ the cart out/ yeah/ the carts that goes to
 this up here that we can play with/ well/ how come/
 lets go an get an/ where's the baby/ I don't want
 that one/ I don't know/ I don't know/ no/ lets play
 house. You be the mom/ the big sister/ I don't know/
 we have real corn on the cob/ no/ yes/ what/
 macaroni and cheese/ um Ramón/ Ramón/ um/ yes/ I
 don't know/ huh uh/ no/

Snack

/those aren't grapes/ no they're not/ no/ no they're
 not/ carrots/ red/ no carrots/ carrots/ let me
 see/ let me see the ladybug/ let me let me see the
 ladybug/ no/ I wanna pass it/ how many do we get/ I
 want only one/ I don't want any/ we ran a we don't
 want any/ I don't know/ no/ I was playing with my
 babies/

Art

/no/ polka dots/ because they're round/ yeah/ I
 don't know/ no/ different pink/ no this is a life
 saver/ green/ uh huh/ I'm/ I'm last/ uh uh/ no
 orange/ no/ what/ pink/ uh uh/ no a 'k'/ for me/
 my name/ Angie/ no another 'I'/

6 Male

Snack

/well my teacher's wearing this now/ he wants to wear this now/ yeah/ ah gummy gummy / gummy worms/ gummy bears/ my my grandma buys these gummy bears/ no I like them too/ well my well my grandma likes it/ my grandma likes gummy bear I like gummy bears too/ what are those/ um thank you/ ah so sacks/ that they have to be in the talent I like those when theys in the talent show/ power milk/ I don't want those/ I don't want those too/ I don't want those/ teacher/ teacher/ I don't want those teacher/ I don't want it/ not a so/ I don't want that teacher/ I don't want it/ oh thank you/ I don't want it/ I don't want these two I want this eat it like that/ well I like the bear too they're bears/ they're called gummy bear bears/ my my my grandma likes those/ yeah/

Dramatic Play

/I can see very good/ where's that cave/ no I don't want too/ look at this/ uh huh/ what is it teacher/ what is this/ hey/ halloo/ we got big dinosaur/ ah I see the dinosaur/ oh hey/ ah I see your big eyes/ yeah/ well we're well I/ where are you/ do ya see my big eyes/ I see you/ ah I see dirt/ ha ha you ga tha/ what did/ yeah/ hi big eye/ I wanna put it now/ thanks Stephen/ so thank you sir/ you have your feet wore/

Art

/why/ I like this shell/ I me too/ ping/ I want/ I/ yeah/ no that's enough for da rocks I want/ a bean bean/ well ya know for lunch/ do ya know for lunch/ well do you know da surprise I got a cracker to eat/ uh huh/ yeah/ I'm so cute/ now I'm gonna put this here/ hey what is this shell/ well I'm not finish yet I'm not finish yet/ well well what are these/ I'm finish now/ yeah/ a shar n rock n bean n like that/ O.K./ shells/

7 Male

Dramatic Play

/yeah/ yes you need that/ ah/ yeah sure um/ we otta need the dinosaur/ yeah/ I wanna take it off/ yeah/ I wanna be that/ uh huh/ just say hello/ hello/ by you/ rena to why you/ yeah/ yeah who/ hi ho/ huh/ I can't talk/ I'm not gonna talk/ wow/ It isn't gonna talk back/ careful/

Snack

/not me/ what're we gonna have for snack/ look/ that's four/ that's four/ one two four/ look/ look kameryn/ I poke it for the her/ I poke it for/ yuck/ I don't like ham/ I like ham/ one two four/ one two four/ how four/ yum/ I like olives/ I like olives/ one two four/ hey/ hey look/ one two three/ half a glass/ that enough/ that enough/

Art

/oh or picks for me/ where the picks like that/ uh huh/ there/ I don't want sells/ I don't want sells/ I think I want holes like dinosaurs for sells/ I wanna have sells like holes for dinosaurs/ I need a/ da/ what/ what/ what/ what/ why/ I don't like it dry/ uh uh/ there/ oh ya ha/ where's a bag/ oh/ that/ I'm gonna put these back/ all right/ keep them/ hey keep them/ keep them/ I don't want to keep them/ nuh uh/ make holes for the dinosaurs/ like that/ I don't know/ at ah at verrin/ a a at verrin/ what is that you're doing/ uh huh/ the/ yup/ you have it/ you have it/

8 Female

Art

/hey I'm gonna put it in my bee/ hello logan/ hello Allison/ I'm done already/ I'm done already/ I want a little bit/ what's the rubber band for/ come here/ now I'm gonna put it in my locker/ I'm not gonna put it in the paint or anything I'm just gonna look I'm just gonna look through it through like a telescope/ bye bye ba bye/ um did I write my name/ I'm just gonna put my initials/ I'm gonna put my initials on/ I I wanna do some of that over there on the table/ I wanna do this/ I wanna do this/ yeah/ I know how to sweep this before/ I like doing this cuz I know how too/ ya just swing it on the table/ that's all you have to do/ logan/ no/ no logan/ what/ look what I'm doing / doing/

Snack

/I don't like celery that much/ I'm not a fan of celery/ I really like peanut butter not but not mixed in/ uh huh/ I only like peanut butter with apples/ I only like that kind of / I like scones/ phoooy/ but I do as I just suck it/ I just when I keep on doing this/ its a trick isn't it/ I like honey butter/ hello / I need help doing this/ I'm the only one I'm the only one that I know that knows how to spread around here/ little kid/ spread everything/ I mean spread everything that's nice and soft/ that's kind of food like/ yup/ that's foody/ I need I ate my scone already/ ate my scone already/ I ate my scone already/ I'm sure/ I tease / boy very runny runny/ but I don't care/ that's how its supposed to go on/ see how good I am/ I'm done/ oh juice/ that's all/ yeah/ yumzies/

Dramatic Play

/boy/ boy/ here's yours/ its my only/ boy/ you can keep that/ you can keep this and have it/ three dollars/ two dollars/ no/ Allison's apple store/ cuz I have a name tag of apples / a snore/ I need some money/ we're all out of money/ we need that money/ we have to have that money or else well or else no people can have the money an an they won't be able to have any food/ boy/ now ya have two moneys / two moneys/ yeah thank you/ you have a pink/ where's the money/ hey/ you have to have two/ you you can go

down here/ no goes in this one/ no it no because its
safer here/ cool/ no/

9 Female

Art

/I didn't eat eggs/ I I have two teachers/ you/ the other one/ right over there/ I don't know/ I need a rag/ thanks/ I'm gonna color something/ with mine/ uh huh/ yeah/ the markers/ markers for me/ thanks/ C. C. I have pink/ pink eggs/ me three me three/ I do too/ no/ huh uh/ no I have died eggs before/ yeah/ its after Saint Patrick's/

Dramatic Play

/kay/ they're playing/ we we're/ oh/ OK/ I found the eggs/ got this/ little/ smaller/ uh huh/ no/ no/ I wanna play with those/ I wanna play with these first/ can you find Alabama?/ I need Alabama/ Alabama/ where's Alabama/ where's Alabama/ Alabama, where's Alabama/ got a long shawl Alabama/ teacher/ teacher/

Snack

/Can we start eatin' / it's cool/ my mom needs a plate/ did the button/ uh huh/ the pusher thing/ uh huh/ uh huh/ we only ah iron at my way we only iron mommy's Temple Clothes/ uh huh/ there's a bird/ a bird in our chimney/ yeah but it was scared/ nope/ daddy caught it in a net/ yeah/ it flied around because it was so scared/ then daddy caught it an take it outside/ an he let it go an fly/ I don't know/ yeah but it was scared bird/ no it was scared he he was really scared at people/ uh huh/ I don't know/ uh huh/ that/ well well Rachel/ well well Rachel/ we we found a foot/ uh not me/ Rachel/ no no there wasn't/ some cars/ its really scary/ scare a bird/

10 Female

Art

/I don't know/ do you/ what/ black and white/ well I'm doing it to make gray on this/ gray bunny ears/ yeah/ I meant to do that/ that's fun/ I don't see any gray/ nope/ kay I got gray down here/ cut it into a bunny ear/ then I'll draw these on/ kay/ kay/ how do you cut it into a bunny ear/ kay/ kay now/ trace/ what/ oh/ yup/ yeah/ I couldn't see that/ oh just do it/ kind of/ kay I'll draw this black then you give me the white/ whole thing with black/ yeah its gray gray gray/ well I need some gray bunny ears/ they have gray and white on them/ well pink in it/ 'cept this is just/ well it has gray 'cept this is inside/ well huh?/ I didn't do the right way/ I need pink/ I forgot/ yeah huh/ pink right here/ oh I can draw it on top of this/ its not drawing/

Dramatic Play

/I'm rinsing it off/ clean it off by rinsing/ its not cold/ OK/ OK/ now put some on my arm/ soap/ this is soap/ shampoo/ yeah/ uh huh I like strawberry/ is there any/ kay/ what/ yeah/ what/ yup/ its gonna be until people want our house/ if no one wants it yeah/ when they want it huh/ nope no one wants it/ yeah even this is the soap/ soap is good/ we'll all taking the bath OK/ all three of us/ these are all the shampoo/ look how this was closed/ fill it up/ put some on me/ can you pull this all the way up for me?/ this is falling off me/ it's too big/ kay/ this is/ I'm putting the soap on you/ back where it was/ yeah/ I put this on this/ kay/ I love the soap/ I gotta get it/ hey the soap go too far/ all of the soap/ this is soap/ this is soap/ hey why did ya put the sponges in there/

Snack

/bananas I love bananas/ yeah/ wipe my mouth/ I want/ cavities/ and rotten teeth/ and your teeth will fall out/ I want to go there I want I don't get to go there anymore/ just long I wanna go there farm that's been a long long time/ I wanna go there now right now right now/ they give they give um to wait/ uh huh/ they already gave me a tooth brush/ then

they gave me a toy 'cept it broke/ a a fish who has no skin on it/ a bone fish/ I like it/ I do/ I got sprinkley yogurt at my house/ uh huh and I eat it/ I eat yogurt and sprinkles cause they're all mixed up/ your teeth will fall out too/ guess what/ my dad has cavities cause he didn't always brush his teeth like he's supposed to/ 'cept now he does/ some of his cavities are on some are off/ uh huh every night/ and every morning/ my dad didn't do it like he's supposed to/ and my grandpa didn't brush his teeth like he's supposed to sometimes so he got cavities/ um hmm/ uh huh/ I wish I don't have any cavities/ she never brushed her teeth/ I already got a toothpick /I meant I already got a toothbrush from them just one/ I'm done/ I'm finished/

11 Female

Snack

/yeah/ yeah/ yeah/ I don't know/ two inches/ yeah
 yeah yeah/ you have two inches too/ ah oh/ um/ I
 got a fish/ I got a fish/ me/ got it by its head
 this time/ me / one two three four four five/ I got
 them all lined up/ I don't have a fishing pole/ I
 don't have a fishing pole/ oh my/ you/ I can't/ it
 doesn't hurt/ I did that before/ I'm done/ yes/ I
 wanna have one more/

Art

/I want only in here/ only in here/ um kay/ one/
 two/ three/ four/ white and blue/ and orange and
 black/ yeah/ I am I'm just warming myself up/ those
 bug won't hurt / I don't wanna touch them anyway/ I
 don't know/ yeah/ and the black's done underneath
 too/ woah/ right there/ we need some tape/ it's
 not/ oh doggy/ wow wow/ you almost lost it/ break
 it/ you can touch it if you want/ you can touch it/
 yeah/ its wax/ I know/

Dramatic Play

/and they turned it off/ ruff/ r r r r r r r/
 ginger/ ginger/ ginger/ ruff yeah/ r r r r/ a are
 bearne/ maybe/ dog dog/ Jill when can I get this off/
 when can I get this off/ kay/ her name's Angie too/
 she taught/ she teaches in the afternoon/ my mom
 tells me that/ r r r r / yeah/

12 Male

Dramatic Play

/I'm ready/ two/ three/ what/ we have to have snack/ nah/ uh huh/ I needed one of these/ I can/ I can sit by you if I want/ and who's gonna drive my part/ who's gonna drive my part/ actually I'll drive my place/ I like my place/ now what need this/ um there/ thank you/ a fire truck/ tanner lets go and steal something/ we gotta steal something/ this/ supposed supposed to be a fireman/ someone just shot my the cap/ some one just shot the boss/ Derek I gotta go tell Derek/ Derek Derek/ someone just shot the boss/ tanner's got/ tanner's got to/ tanner's got to/ tanner/ tanner got shot/ now we gotta learn how to do CPR/

Art

/I getta have it again/ they always have to tell where I am/ they always have to say 'this is Colin playing in..' / wonder what my mom's doing/ mom aren't you being 'smoky' / aren't you being smoky instead of just coming here/ smoky/ I'm not last today/ look at that design I made out of the glue/ you could just make dry glue and make a design with it/ now what's this rubber band/ here/ she can't see/ yep/ what did he do/ that's a trick/ at a scout party last night with dinner and stuff this kid showed me a trick a trick how to make a penny a penny appear and how to make it come back/ yup/ but it it but did it he he blowed it and it went down into his watch/ and then and then you go and then it came up/ and then he and then he then he put it back here it came down and then he hurried and caught it/ and the bring it back up/ sure/ right here/ this time I'll try to do it cursive/ did I do it in cursive/ I almost did it/

Snack

/how come I have to wear it four times/ what's that stuff/ um that looks good/ next time next time are we third/ then we're second/ I'm smart/ I want that kind that you're holding in your hand/ you got this from MacDonald's/ how come no one has passed napkins to me yet/ yep/ yeah/ its hard to get it right on time/ some one push the button/ there its all done/ I'll explore and cut the/ half/ me too/ actually I'll start with the top one/ this a top one/ yeah/

how come you said 'which one of um..' / how come 'which
one is the wait for a little longer/ what does this
have to do about farms/ like haystacks/ whoa/ whoa/
whoa gee/ yeah/ whoa/ yeah/ yup/

13 Male

Dramatic Play

/no its not too tight/ get on the fire truck/ all right/ uh ya know/ yeah/ I'm fire chief/ yeah chief brody/ I'm the fire chief/ brody's the fire chief/ this is right there/ on the top cause/ that's not/ sit up here so I know when there's a fire/ so I / you're sittin' on something/ we're sitting on blocks/ fireman brody/ we're putting out fires/ what does this sign say/ that says/ uh huh/ whoa/ I put outs/ no ya put um here/ um can you get me one of those squares/ hey you know what/ I need some squares/ to put in here/ can you get some squares/ for me/ to put in here/ so they can mended/ yeah / cause I put um in there/ yeah I'm the chief/ yeah I'm the fire chief/ they sit on top of the truck/ uh huh/ do you know they the chief is holding the hose/ for the men of fire/ I need some fire man's potion/

Snack

/where's my chair/ and there's one chair for you/ there's a chair right here/ can I pa pa can I pass the plates/ a cups/ I'll pass the cups/ Vincent/ Vincent/ pass it pass it/ pass it this way/ pass it this way/ now pass it to me/ I need some/ hey/ it keeps sticking/ uh huh/ I want I want it/ I want mine can I put it on mine/ yeah/ I can't open it/ its hard/

Art

/I wanna make a necklace/ a key necklace/ yeah key necklace so I can unlock the/ huh/ what what these/ nope not too many/ but do we need a key now/ well this key/ can you can you help me tie it/ not yet/ three red ones/ no four reds ones/ Kay now tie/ yeah/ so I can open the door when its locked/ whenever its locked/ I might need to use this key/ yup/ its like yours/ uh huh/ yup/ and mine has a line/ well what's this tape/ I want you to come/ well are you gonna come to my house/ yeah/ got a necklace/ a key necklace/ huh uh/ I don't want snack/

14 Female

Art

/art/ making this/ putting this/ putting this on it/
 cotton/ I don't know/ oh I didn't ever/ he has a
 lot of eyes on that sheep/ everybody has two eyes/
 these people/ I wanna do another/ Kay/ ah oh/ its
 all dirty/ oh not feathers/ oh / look how many eyes
 it has/

Snack

/this is Brianna at snack/ wow/ hello/ is anybody
 home/ hello/ OK OK / I'll deal with you later/
 hello/ start working or I'll punch you in the nose bid
 you bum/ silly are you working/ he's not gonna go
 away please please/ ha ha I'm not gonna sit
 here the rest of my life/ ha tello/ fine/ hello /
 Allison talking please be kind enough to toot my face/
 hello / hello/ what a silly silly day we are having
 together/ well very/ hey not my fault Allison/
 turning into a sock/ here's your here's your plate/
 now here is my bread it'll speak to you/ hello/ that
 was my bread/ here I'll listen you can hear my bread
 at snack/ here listen/ hello/ here listen/ hello I
 love you bye/ sprinkle it/ what a day/ I woke up/
 hey that's enough bread/ OK spread bread spread my
 bread/ I love peanut butter don't you Allison/ oh I
 would to stay for the rest of my life/ said something
 not nice/ well that was good testing/ hello/ Kay
 I'll spread as much as I could/ Kay/

Dramatic Play

/room service/ room service/ as cab/ he got hurt/
 he got he got hurt/ where/ let me see/ let me see
 let me see/ hold on/ lets see the bottom/ I have two
 like that/ cause we have a seashell collection/ I
 gave one to my sister/ what/ cause we have a seashell
 collection/ why do you like seashells so much/ look
 what I found a piece/ hey look I got a seashell cup/
 what/ oh goody/ yeah/ whahoo/ to my house/ its
 white/ see how tiny around/ I found one / I found
 one I found one/ where/ look what I found/ what/ oh
 thanks/ oh thanks/ what you find you have/ oh
 thanks/ oh oh yeah/ oh thanks/ get out of here get
 out of here/ get out of here/ you'll throw sand on
 me/ yes/

15 Male

Dramatic Play

/hey I go to that sometime/ work here/ uh five dollars/ we ran out so/ don't come in here/ eat/ can I have your fry back/ oh/ just a dog bone/ gimme my fries back/ get our fries back/ well ya can't have all of um/ so we need to put these for Makoko back/ but what am I gonna do with this/ and zip it up/ open/ after I'm done/ hey hey don't steal any things/ no stealing any bones either/ you're welcome/ wanna drink/ we ran out of some/ well uh well uh well we'll give you sprite/ hey/ hey that's my work/ this is mine/ be/ well we ran out/ we ran out of the other kinds/ go back to your house OK/ go and get a coke before you get some sprite/ nope/ we ran out of salad/ did OK you want/ why/ it won't bug me/ hey/ just go home and eat/

Art

/yeah/ I wanna big rock/ I wanna big one/ go wash your hands/ I want one though/ no thank you/ I'm finished too/ well that's why I didn't want too/ yeah/ puzzle/ what does this say/ nothing/ hey/ have you seen a tyrannosaurus before/ yeah/ you don't have any wings/ you don't have any wings/ oh huh uh/ was it real/ she was teasing me/ read it / read it/ no this is a branesaurous/ oh/ no no no ya gotta read this/ yeah/ Jeremy is gonna make a guitar/ whoa/ no/ you can't make one/ cause this one's mine/ but I want it like that/ I am not gonna make you one/ no/ I don't want to make you a guitar/

Snack

/next time I'm gonna/ you know what/ next time I'm/ you know what/ today today/ next time a long time for a long time one tooth is gonna fall out/ pass it around too/ here Daniel/ I don't like popcorn like this/ what/ I want some water/ pop/ and/ popcorn popping on the apricot tree/ what/ were you talking to me though/ chugga chugga choo choo/ a gorilla/ looky/ oh/ hey gotcha/ I almost ate my napkin/ popcorn popping on the apricot tree/ what time is it/ uh huh/ I don't know/ no I didn't take a vacation/ I was just stayin home/ go to cody's house and play/ he's my friend/ he/ I don't know stay home/ and what is teacher doing out there/ oh after I'm done eatin my popcorn can I go outside an play/ I'm gonna go outside/ I gotta wipe my spot off/

16 Male

Art

/hello/ hello/ Kay/ I'm gonna draw a blue angel/ no/
 no/ this one works/ uh huh/ paper/ I'm gonna draw
 something/ I'm/ uh huh its a secret/ because you
 never see it yet/ no/ not yet/ tell I make it
 special/ uh huh/ yeah in fact this bon if I if I see
 bonny at my house/ bonny/ get to go to bonny place/
 uh huh/ didn't new do nothing/ uh huh/ he I didn't
 want to go to school/ huh uh/ cause/ no/ no/ I
 didn't/ yes if my mom says if if my mom says/ secret
 something/

Dramatic Play

/its balu/ I never bo I never movie I never seen/ its
 called secret um secret garden/ the movies' not ready
 yet/ not ready yet/ huh/ we're not ready/ no I we
 not yet/ how do you leave this open/ hello gum/ one
 little duck went out to play/ whoa/ gotta put this
 away/ I made balu/ uh huh/ in my locker/ mine
 popped outside/ I made balu so I can go outside/
 /hello/ hello/ hello/ I don't know/ hello/ the
 puppet show/ I already did/ hello/ hello/ the
 puppet show/ hello that's it/ too many people are in
 there/

Snack

/not me/ no/ I like fish/ uh huh/ I seen one/ I
 see/ yes/ guess what my dad he gots chickens chickens
 on in his mouth/ uh huh/ he he ate one before/ yeah
 and its not dry/ it came on his hair/ I am/ guess
 what my mom said a my mom said I'm gonna have a block
 party/ I'm gonna have it at my house/ we're gonna
 have it at our house/ uh huh/ well I'm gonna have
 lots of treats at my house/ my family gonna fix it
 one/ we're gonna have one/ I wanna half a glass cause
 I want some more/ I need some more/ thank you/ we
 can have much more/ what/ who/