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JAMES HAF

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Don E. Hamachek

Major professor

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A STUDY OF INTERACTION TECHNIQUES TO FACILITATE LANGUAGE DEVELOPMENT AMONG PRE-SCHOOL CHILDREN

By

James Joseph Haf

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ABSTRACT

A STUDY OF INTERACTION TECHNIQUES TO FACILITATE LANGUAGE DEVELOPMENT AMONG PRE-SCHOOL CHILDREN

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Language development and competence in language usage is a critical dimension of early childhood competence. Although many early childhood programs incorporate language development components, much of the research reports either the results of didactic, pattern drill forms of language development techniques, or the more casual, undocumented approach to language development of whole-child programs. None of the programs reviewed for this study seemed as effective as they might be.

The purpose of this investigation was to compare the effects of two specific adult-child interaction patterns in small group settings. For purposes of this research, a Language Interaction Model was developed, presented and tested.

Audio Tapes and Observational Data were collected over a five-week period. Subjects were 24 three to three and one half year old children attending a day care facility in a lower socio-economic neighborhood randomly selected to be in one of two grouping conditions: those exposed to language interaction techniques and those exposed to more traditional techniques. The program consisted of half hour sessions four days each week for five weeks.

There were three categories of dependent variables. Child Language Type consisting of the number of child initiated communications, the number of responses for the complexity of these communications.

Child Language Style consisting of the number of direct or interaction types of communications used by the subjects.

Child Affective Variables consisting of measures on variables defined as enthusiastic, happy, unhappy, and negative affective display.

Significant differences were expected on the following:

1. More unsolicited Initiations and Complex Initiations by treatment subjects than by control subjects.

2. More use of interaction types of language (i.e., reflections, interpretations, new ideas/uses, etc.) by treatment subjects than by control subjects.

3. More displays of positive affect by treatment subjects than by control subjects.

4. More Language Interaction techniques used by adults in the treatment groups than in the control groups.

A One-Way Analysis of Variance was used to test the Observational and Audio Tape data. Several significant findings surfaced in this investigation.

First, treatment subjects initiated more communications and these communications were more complex than communications by control subjects. This was a major finding in the study since it was considered important to create an environment where children were free to initiate communications with adults and other children in the group.

Second, control subjects used more responses and complex responses than treatment subjects.

Third, treatment subjects had significantly longer statements than control subjects and openly expressed themselves in the small groups.

Fourth, treatment subjects showed more enthusiasm than control subjects because of the more relaxed atmosphere created.

Fifth, treatment group subjects received higher ratings on the Group Interaction Schedule measuring the amount of interaction with the adult and other children.

The evidence here strongly suggests that adults can create an atmosphere in which communication can easily take place and that this communication can influence positive growth in language development. Although some variables were examined that did not show significance, enough evidence exists to warrant further investigation.

DEDICATION

To Lynne, who inspired and endured, and shares all that is and will be.

ACKNOWLEDGEMENTS

It is necessary to recognize the help and encouragement that allowed the successful accomplishment of this study. The writer is especially indebted to Doctor Helen Benedict who helped formulate and focus this project; to Doctor Don Hamachek who supported, encouraged, reviewed and defended my work throughout not only this research but my entire program; to Doctor Christopher Clark for his many pertinent and relevant suggestions; and to Gayle Prause for her endless hours of typing.

Special gratitude is extended to my wife, Lynne, for her inspiration, encouragement and persistence, as well as my daughter, Amber, who always tried hard to understand why her dad wrote and studied so much more than he talked and played.

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CHAPTER I

STATEMENT OF THE PROBLEM

Language development in young children has been found by many researchers to be profoundly influenced by what the adult says and does in the communication setting (Cazden, 1970, 1972; Bruner, 1975; Bloom, 1970; Bernstein, 1970; Bates, 1975). It is doubtful, however, in light of the evidence examined and reviewed during this investigation, that adults operating within preschool programs have used the results of the research to maximize their effect on the language development of the child. Furthermore, it seems apparent that teachers could more effectively stimulate the use of language for communication.

Preschool programs have incorporated some of these findings into language development programs. Bartlett (1972) reported formidable evidence that structured, didactic programs favorably impact language development. One such well-recognized program, however, reported side effects of passivity, dependence, withdrawal and fearfulness (Blank and Solomon's Tutorial Program). Cognitively oriented programs recognize the importance of language and comprehension but do not systematically provide language stimulation or training opportunities. Finally, whole-child oriented programs, being responsive to

the child's activity, do not specifically focus at all on language development. The general conclusion is that none of these programs is as effective as they might be.

Research reported by White (1973) adds an important insight to the problem. He reports that effective mothers respond to their child with shared enthusiasm in ten to thirty second interchanges during which give and take communication takes place. White's research identifies children who are especially competent in language usage and the ability to use others as resources. An interesting observation can be made at this point concerning whole-child preschool programs, White's research on early language competence, and research on effective language development programs. Whole-child programs seem to come closest to White's idea of the good home environment. However, Cazden (1972) reported that while interaction with the environment and short language exchanges are important, it is the more didactic programs which are more effective.

A solution to the problem might be to make whole-child programs more effective by increasing the focus on language development. How this might be accomplished is the major thrust of this research.

Rationale

Language development is a major concern addressed in many research efforts involving early childhood competence. Within this body of language research, there are two distinct research paradigms: research that is specifically focused on syntax and grammar, and research that is primarily concerned

with non-cognitive, social and situational variables (sometimes referred to as the "pragmatic dimension").

The study reported here is based on the need to develop techniques for stimulating language usage for communication while at the same time influencing language development. The basic paradigm is that of pragmatics. The study focuses on the use of language techniques which adults can employ to facilitate language development and stimulate language usage in early childhood education programs. It is believed that these techniques could be used systematically and informally to enhance children's language development within the framework of preschool programs emphasizing the whole-child approach. Since there is a lack of research to study attempts to directly influence children's language usage and development within whole-child programs, this study will attempt to contribute information concerning language stimulation and modeling techniques that can work within the philosophical framework of such programs.

Overview

Specifically, the study reported here examines the influence of adult language usage on preschool age children in a small group setting. Two different language styles were used by adults in half-hour communication sessions with each four member group. The amount of language produced, its length and complexity, and the affective nature of the interaction in which it took place, were systematically measured.

Purpose

This research will attempt to show that an adult can make a difference in such things as the amount of language used by the child, its length and complexity, the number of child initiated statements and other key variables. The specific purposes of the study are to:

1. Present and examine the implementation of a model of language interaction that can be used by adults with young children in preschool settings.

2. Identify important factors in language modeling by adults which stimulate children's use of language and influence language development.

3. Measure differences in language usage between groups exposed to language interaction techniques presented in the model and those groups exposed to traditional, direct teaching techniques.

4. Measure differences in children's affect, both nonverbal and verbal, between these same groups.

Assumptions

The framework of this study is grounded in several basic assumptions concerning language development. These assumptions are examined extensively and grow out of the literature review presented in Chapter II. The goals of this project and the results in relation to those goals presented in Chapter IV can only be understood in relation to these basic assumptions. They are as follows:

1. Language is a tool of communication and is intrinsically related to the attempt to convey a message--therefore, the opportunity to express this communication is extremely important.

2. Language development and competence in language usage is a critical dimension of early childhood competence--therefore, it should be a major component of any preschool program.

3. Situational variables and the context within which language is used influences both the development and usage of language by the child--therefore, careful attention must be paid to the setting and situational context of the teaching condition.

4. As models, adults have the potential to significantly influence children's language development through the way that they elicit, stimulate and react to children's language usage--therefore, techniques which enhance these factors need to be identified and used by adults.

5. Preschool and compensatory programs can significantly influence language development of young children--therefore, programs should use the research findings that grow from investigations like this which study variables associated with the preceding assumptions.

Language Techniques

The model proposed in this study flows from the assumptions stated above. This can be better understood by looking at the model's:

1. Function, an explanation of how the model was developed, the rationale behind its use, and basic goals, and;

2. Structure, an explanation of the basic steps used in the language interaction, the purpose of each step, and some examples.

Function

The model itself is an adaptation of Gary Stollak's (1975) system of communication, which is intended for use by parents with young children. His major concerns are to maintain in the child a feeling of psychological safety, love and belongingness, while still dealing with the many discipline and mediation duties of parenthood. The parents, he maintains, should also be models of controlled behavior and emotional expression. Most communication should involve:

1. Reflecting back the actions or expressions of the child.

2. Offering interpretations of what the child may be thinking or feeling.

3. Telling the child how the adult feels for the purpose of relating the action to other actions and to serve as a model of expression.

4. Setting limits on behavior by telling the child what action is expected in the immediate situation.

5. Offering alternative behaviors and guidelines for subsequent behavior.

The language interaction model proposed in this investigation follows the above steps, in general, but extends the

process for use with small groups. Its major purpose is to stimulate language usage first and second to provide an opportunity for the adult to teach by labeling, expanding, modeling language usage, explaining concepts, and mediating the environment. It also provides an opportunity for children to practice language they already know and to add to their repertoire by learning new language usage.

This language interaction model uses any stimulis situation, especially the child's own language or interests, as the beginning of a two-way language exchange. The adult first stimulates conversation by reacting to the child's actions or communications, and then uses the opportunity to model language usage.

Structure

The following section is a general description of each of the five different parts of the model. It is important to notice that although the interaction usually begins with reflection, following that, any of the other four parts of the model can be used. The more parts used in each interchange the better.

The Model

First: Reflection of Action. This involves simply stating what is going on or restating what one or more of the children have said. It usually begins by simply noticing what the child is interested in. The purpose is to show that you are interested in what the children are doing and offering them a chance to

react and become involved in a conversation. "You dropped that big block and it made a loud bang and knocked over those dolls. Oh, you're going to try it again." "You're handing me the ball and laughing." In group situations, actions of any member of the group can be reflected.

Second: Interpretation. These are explanations of the child's action. It involves saying what you think the reasons behind them are, what you think the child is feeling or thinking, etc. Interpretations can also be related to other group members. It can be simple like "You think that's pretty funny," or "You tried to hurt me," or "You're angry about that." It may be more complicated and involve explanations such as "You laughed and are surprised because it made a bang and it sort of scared you at first; but everybody started looking at you so you want to try it again. I think you like to have people look at you." The purpose of this step is to provide labels for what the child is feeling and experiencing and help make sense of what's going on. It models language usage for explaining feelings and emotions and conveys a message that you care and understand.

Third: Relating. This involves relating the action or feeling to the speaker, another adult, to other actions, or to the actions of other group members. This helps the child see that his action or interests are linked to other actions in the past, future and/or present, as well as to others in the group. It shows that they are legitimate because others have also done them and felt that way. The stimulus may be a problem

or crisis situation such as a child causing a disturbance to get attention. "It's really nice to get attention. I like people to notice me, too. I think everybody likes people to pay attention to them." Another example: "I saw you doing that yesterday, too. You threw the blocks down. I think you do that a lot to get attention." If the stimulus is not a problem situation, relating can be about climbing or building with the blocks. "You stacked the blocks up so you could climb on them. John's climbing on them, too." The point is to legitimize the action by relating it to something that is done or felt by other people and to other actions in time.

Fourth: Limits and Alternatives--Problem Situation. If the situation is a problem, a limit should be set. A limit is what the adult considers appropriate behavior or how far the child can go. For example, being angry is OK and understandable but hitting is not. A proper time and place for the action may be prescribed, or the action may not be allowed at all. The child should be told how the adult and/or others feel and an alternative behavior should be offered. The purpose is to handle problems, be firm and authoritative, while still maintaining the psychological safety and belongingness needs of the child. It also serves as a model for handling emotional events, and appropriate behavior and expression during these events. "I know you like to do that and you can get attention that way, but it might hurt the other kids (disrupt the room, etc.) and I don't want you to do that again. You can come to me and tug on my pants or make a sign and wave it at me instead,

but no more throwing blocks." A consequence of violating the limit may also be added such as not being able to play with that object or have free time, or some other punishment. However, ideally, punishment should be avoided if possible.

Fifth: New Uses/Ideas--Not a Problem. If the situation is not a problem, new ideas and alternate uses of the object, or any additional feature or activity related to the stimulus should be offered. Again, the adult should say how he feels. This is related to Cazden's "Extension" which adds a new idea to the child's comment. "I like how you figured out that if you drop blocks they make noises. You really discovered something; maybe you can do other things with blocks, too, like build bridges (climb on them, make houses, pretend they are cars)."

The examples and explanations presented were complicated monologues. Included was the problem situation component of the model. However, the general model can apply to more routine and simple stimulus situations. For example, a boy looking at and pushing on a tree:

> Reflection: "You're really pushing hard on that tree. You keep walking around it and pushing it. It doesn't move at all no matter how hard you push."
>
> Interpretation: "You wonder why it doesn't move. I think you're really surprised because other things move when you push them (chairs, toys, flowers). Trees have roots that go deep down and hold them in the ground, etc."

Relating: "I can't even push the tree over (can model same actions as child) and I'm bigger and stronger."

New Ideas: "I really like trees because they're pretty and they give shade if the sun's too hot. You can sit under them and climb in them. You know the wood in your house? That comes from trees. They cut them down and make boards out of them."

These monologues may appear long and complicated. However, very often the adult does not get a chance to carry one all the way through. Most of the time children interrupt early in the sequence to offer their own interpretation or correct the adult. These provide new stimulus situations and the sequence can begin over or continue. Often, group members add new ideas and the interaction changes direction.

Language variables in this study flow from attempts to operationally define the types of adult-child communication expected when this language model is being used by adult interactors. The review of related literature will consider pertinent research in the pragmatic dimension of language development, as well as research examining language development issues important to this study. The general theme of the chapter is to establish a rationale and a need for research examining situational variables, adult communication style and the communicative intent of language. It reviews literature related to environmental impact on language development, language development programs, the importance of language facility for

early competence as well as self-concept development and school success, and finally, methodological concerns in studies of this design. This review is presented in Chapter II.

Chapter III presents the methodology used in the study to investigate the variables of concern. Four main factors are accounted for:

1. Procedures used in observation, recording and measurement of child language variables.

2. Procedures used in observation and recording of adult language variables and determination of model implementation scores.

3. Procedures used in determining the reliability of observational and audio tape data.

4. Procedures used in the statistical analysis of the data.

The results of the analysis of this complex set of data is presented in Chapter IV. The key areas presented are:

1. Findings pertaining to child variables.

2. Adult implementation data.

3. Ratings of group interaction by observers and interactors.

CHAPTER II

REVIEW OF THEORY AND LITERATURE

The theory and literature review provided in this chapter allows a more thorough understanding of the complex nature of language research and theory. It also provides a rational for this research project.

The review is structured along these following dimensions:

1. Language development as a component of research on early childhood education.

2. The importance of the study of noncognitive components of language development in the perspective of pragmatics.

3. The impact of parents and others on language development.

4. Programs for language development.

5. The importance of language usage ability for school success, social relations, and self-esteem.

6. Methodological concerns in studies such as the one proposed here.

Two Distinct Research Paradigms: Psycholinguistics and Pragmatics

Research in the area of language development is complex and diverse. Much of the work done in the recent past has

involved the systematic study of syntax. The work of Chomsky in the field of psycholinguistics is representative of this type of research. Moerk (1974), however, speaks of a counter movement which developed stressing meaning as an important part of language development. This movement was based on the idea that the child wants to convey a message when he talks, and that these messages are meaningful. Thus, language is seen as a tool of communication and situational and environmental variables take on more importance.

Cazden (1972) used the word pragmatics to define the paradigm which is concerned with the study of situational variables and suggests that language develops best when motivated by powerful communication intent. At the same time, Bloom (1970) demonstrated that language behavior and verbal expression are highly dependent upon situational variables in the home. These two studies emphasize the importance of environmental variables to the content and form of language development. Furthermore, Francis (1969), referred to variables which facilitate or restrict communication. This work implies that situational variables and the intent of the communication are important concerns that may be partially under the control of those who interact with the child. Certain types of adult communication may actually inhibit language expression.

Schacter et al. (1974), in a study designed to provide data on developmental and sociolinguistic patterns of interpersonal speech usage, reported that research has yet to

address itself significantly to the more social aspects of speech even though it is generally assumed that young children have communication needs which can come under the control of the adult. Since children come to school with various levels of ability to use language, it seems more research efforts should attempt to determine variables which may impact language development in the social setting of the pre-school.

In view of these observations, it seems that the examination of situational, motivational, and interpersonal aspects of speech in the perspective of pragmatics is an important research area.

Research in Pragmatics

The research basis for the pragmatic view of language development is reviewed in an article by Katherine Nelson (1976a). It is described in her paper as the "perspective of pragmatics and sociolinguistics." Noted researchers in this "language as communication" mode are Hymes (1974), Halliday (1973, 1976), Ervin-Tripp (1973), Bernstein (1970), Bloom (1970), Cazden (1970, 1972), Nelson (1973), and Bruner (1975). Nelson states that what the child has to learn has gone far beyond the complexities of grammar as explicated by Chomsky (1968). There are performance rules, rules of address, concern for appropriateness, and conversational postulates as well. This view sees the child less as a language acquisition device and more as a partner in a two-way communication system with intentions to be expressed and received.

Furthermore, Bates (1975) reports research which lends support to the important role of the adult in this communication system. In a review of language research, the almost unanimous conclusion was reached that peer speech is less conducive to language learning and mature language use than is speech from an adult. Bates also noted that "first born" or "only children" are found to be faster in language development than twins or younger siblings. This is probably the result of more opportunities for interaction and communication with the parents as well as increased exposure to modeled language. Unfortunately, past research has concentrated on either the child or the adult. Much would be gained by research concerned with process variables--interactions within the dyadic or speaker-listener system as a whole. Shatz and Gelman (1973) have reported research which analyzed communication interactions and concluded that adults and even four-year olds adjusted their speech to the level of the younger child.

Research of this type should investigate two possible directions: the child's language in the interaction and the adult's language. Furthermore, the interaction can then involve what the child knows, is interested in and initiates, or what the partner chooses to talk about. Nelson (1976b) states that the child learns about the categories of the world through his own exploration, and should be allowed to do so. However, the adult can play an important role by responding to the initiations of the child, and by allowing the child to share his knowledge about those categories with a namer who will supply the needed label. (Also see Bruner 1975).

Important Dimensions of the Communication System

Nelson identifies four major factors that define the communicative context of early child speech and of language learning, which appear to be relevant to this study:

1. The situation--in which she concludes the dyadic interaction and the adult model are important.

2. The function--which should include functional analysis of both the adult and the child.

3. The content--what the child knows and understands, what the adult knows, what they share together and most importantly, what they derive together.

4. The code--involving the complexity and style of the adult's speech--e.g., length of utterance; sentence structure; and variety of language forms used.

Nelson concludes that few studies have been done which consider all of the above. Especially lacking is research examining both members of the communication dyad. This study represents an effort to close that research gap by investigating interactions between adults and children as a system and taking into account both the content and code of the interactions. Language within this system is seen as an interaction somewhat under the control of the adult. For purposes of this study a language interaction model has been developed and implemented based on much previous research investigating both environmental impact on language development such as mother-child communication and contrived language techniques and/or programs employing language stimulation techniques such as extension, expansion, and pattern drill exercises.

Environmental Impact on Language Development

The purpose of the following section is to review research that has concentrated on the impact of environmental factors on language development. There are some basic assumptions inherent in the research about to be reviewed. They are as follows:

1. That language develops as a result of interactions with the environment--the early environment includes the mother (and father) and child.

2. That this interaction results in language learning attributable in part to peer and adult models as well as situational variables, i.e., opportunity to interact, amount of stimulation, etc.

3. That the environment becomes increasingly more complex as the child's world and his movement in it expands and the child is exposed to "other" models who also impact language learning.

4. That certain language stimulation techniques have the potential to influence language development.

5. That programs incorporating language development techniques also have this potential and these programs can be implemented in educational settings with success.

These assumptions can be stated more clearly. To put it very simply, what the adult does and says make a difference.

Results of Language Deficits in the Child's Early Environment

Much of the thinking about the impact of the environment on language development was stimulated by research which showed that lower class children were deficient in language ability. (Hess and Shipman, 1965; Bernstein, 1964). This finding supported environmentalist notions of the influence of culture on development. Bernstein's (1964) research examining family interaction patterns, identified two types of interactions. The first he called the "Restricted Code," which was characterized by short, simple sentences lacking detail. Families using this form of language show little interaction with their children and neither allow nor expect input by the child. In typical adult-child communication there is no weighing of alternatives, mediating of verbal cues, or relating of events to other events. By contrast, some families were found to use an "Elaborated Code" which is more complex. Communication in this mode is related to the individual child, and language is in direct response to the child's input. These families allow verbal give and take and thus foster adult-child interaction. It was theorized that deficits in language ability were related to little language usage in the home as well as few opportunities for interaction. This reinforced the environmentalist view that experience is a most important determiner of development and stimulated the development of more structured language programs which make use of basic learning principles (see Engleman, et. al., 1972).

Other work examining the influence of adults on language development involved the analysis of mother's speech, called motherese by some researchers (Bates, 1976; Newport, 1976). Motherese is defined as the unique speech of the mother to the child. The focus in much of the research has been on how the mother adjusts--makes simpler, changes tone--speech to the child in comparison to speech used with an adult. It has been shown that this speech is typically different in pitch and intonation, and is modified to use restricted and concrete vocabulary as well as simpler, shorter sentences. As Nelson (1976) reports, the finding that the length of a mother's sentences tracks the complexity of the child's language production, is one of the most reliable of findings. These adjustments of the mother's speech to the level of the child only aid language development, however, when they actually interact with the processing strategies or biases of the child. Since much of adult speech consists of either imperatives with subjects deleted or of questions as reported in Bates (1975), this adjustment and the use of special speech to children may not actually aid language development. Hubbell (1977) reports that questions are a form of commands and as such are constraints on spontaneous talking. In addition, mother's questions do not appear to contribute to the child's acquisition of words. Another factor is that all mothers are not the same in the way they adjust their speech.

Ringler et. al. refers to research with two groups of mothers--one a traditional post natal group and the other an

extended contact group. There were differences between the groups on a variety of utterances, use of function words, questions, use of verbs and commands, and mean utterance length. The extended-contact group, it was concluded, had a verbal output distinctly greater in variety, elaboration and length . . . and that these represented more appropriate forms for imparting information, eliciting a response from the child, and for elaborating on simple concepts. As Shatz and Gelman (1973) report, much of adult speech to children involves a "talking down" phenomenon, and this is also found in speech of peers to younger peers. As defined, talking down involves adapting the sentence length and complexity to the level of the listener. In their conclusions they say that young children receive from adults and from older peers a <u>fairly narrow and simple subset</u> of the varieties of adult speech. They conclude by saying that for language adjustments to be beneficial, they must add new information from which to build linguistic knowledge, and not just be at the level of the child's production. The evidence as to the benefit of this restricted speech for language development is certainly inconclusive. Any language development model such as the one suggested in this project must consider the amount and complexity of the adult's language in view of both Bernstein's "Restricted" and "Elaborated" code research and Hess and Shipman's "Motherese" research.

Expansion and Extension as Techniques to Facilitate Language Development

Another possible factor in language development has been explored in research on language expansion techniques, first identified by Brown and Bellugi in 1964 (Nelson, 1976). Expansions are products of the interaction itself. Use of this technique involves filling in the missing parts of the child's speech, with the adult imitating the child's speech but expanding or altering it into a well-formed adult equivalent. Some examples of expansion:

Child: Daddy outside.
Adult: Yes, Daddy is working outside.

Child: I go.
Adult: Oh! You go outside.

Child: Ball, mine.
Adult: That's your ball.

Another form of imitation of the child's speech involves extension. This is more of a comment on what the child says, a response with new ideas, questions and evaluations. Extension, according to Cazden (1972), provides semantic information which extends the meaning of the utterance for the child. An example of extension:

Child: Doggie bark (when a dog is barking).
Adult: Yes, but he probably won't bite.

Cazden found that extension had much more impact than expansion in assisting young children in language development. It is useful in communicating information relating to concepts and the many relationships between them.

The importance of this cannot be overstated. Stenroos (1979) believes that there is an interaction between thought and language and that the manner in which the child presents his own representation of this interaction might be called "creativity" or creative expression. In school, oral language experiences too often become artificial and contrived . . . unrelated to the reality of the world or the inner essence of language. Creativity then becomes stilted and learning becomes an obstacle course. Children use language to both interact with other people and to understand the world. Language is used to classify objects and experiences, to relate these experiences to others encountered and to control or adapt to them. In short, language is a work of art which involves both affective and cognitive aspects of experience. It seems that children must encounter environments which allow this creative expression to occur as well as adult models who can provide information which helps to clarify and relate the experiences they encounter.

Language and Interaction

The research on expansion and extension demonstrates that language techniques which are both a product of the interaction and which are reactions to the child's initiated speech

do impact language development. Studies by Halliday (1973, 1975) went a step further and examined speech production from the view of the functions served by the child's speech and the developmental order in which they emerged. These studies strongly support the speech as interaction ideas which are important to this study. Language is used, according to Halliday, to express demands and desires, to regulate actions, to form a social bond, to state explanations, to express imagination and most importantly to impart information. These categories of functions show that language is a communication effort and that the ability to engage in dialogue is extremely important for language development. In fact, Halliday believes the ability to engage in dialogue is prerequisite to the attainment of the informative function.

Bruner (1975) also lends support to the idea that language develops in the context of an "action dialogue" in which joint action is being undertaken by the infant and adult. Bruner states that in an instance of language interaction the child is grasping initially the requirements of joint action

> . . . made possible by the presence of an interpreting adult who operates not so much as a corrector or reinforcer but rather as a provider, an expander and idealizer of utterances while interacting with the child.

In view of the research reported here which examines the impact of adult models on language development, it can be concluded that adults do have an impact and that impact depends to a great extend on the form and style of language used in interaction with the child.

Furthermore, it would be wrong to assume that only parents have an impact. As Bates (1976) pointed out, adult models (not just parents) seem to be superior over peers as language models. In addition, Cazden's research involving expansion and extension techniques was conducted with teachers in preschool settings and demonstrated conclusive proof that the language of non-parent adults can indeed impact language development. The movement towards early education, the nursery school experience, and day care assumes that "others" are (or can be) extensions of the parent. This gives the teacher and programs in general an important responsibility to provide experiences which make the best use of their potential influence.

Research and Compensatory Programs

If language development depends somewhat on situational variables, it seems that research within the pragmatic framework could focus on identifying and examining those variables which are under the control of the adult. This information could then be used to make preschool programs more effective.

In the past, a major concern has been the development of compensatory preschool programs of which there have been mainly three types (Schacter et al. 1974): (a) didactic programs where the focus is on intensive language training which concentrates on language structure and the cognitive functions involved in language development; (b) cognitively-oriented programs which encourage comprehension, understanding and transfer through understanding relations or interactions between the learner's

cognitive processes and aptitudes such as attribution, motivation, encoding, memory, cognitive styles and cognitive structures (Wittrock, 1979); (c) whole-child programs where the teacher is responsive to the child's activity, where the emphasis is on play and interactions in a free environment, and where language is assumed to be something the child will produce when he feels like doing so. None of these types of programs is as effective as they might be, especially for language development. White (1973), for e.g., reports research concerning effective mothers and the nature of their interactions.

He reports that the most effective mothers respond to their child with shared enthusiasm, help and an occasional interesting and naturally related idea during 10-30 second interchanges. It is the whole-child programs which come the closest to White's idea of the good home environment for stimulating natural development (Schacter et al.). However, Cazden (1972), has suggested that while interaction with the environment and language exchanges as suggested by White is important, it is the more didactic programs which are more effective. According to Cazden, a solution to this problem is to make whole-child programs more effective by increasing the focus on language development. An important question remains as to how this might be accomplished. It is this question which provides the major thrust of the research reported here.

As stated in Schacter et al. (1974), prior research does not speak directly to the problem because those who adopt a whole-child paradigm have not focused their attention speci-

fically on language development, while those who emphasize language development have not been enough concerned with non-cognitive factors.

Language Development Emphasis in Four Compensatory Educational Programs

Much of the research reviewed above also notes that variations exist in the language used by adults with children. As has been said, the working assumption of compensatory educational programs is that these variations are linked to individual differences in language ability and that some children enter the school situation with language deficits. A primary goal of these programs is to erase these deficits. Following are brief descriptions of four such programs.

In the Distar program, there is a marked departure from traditional development-socialization views involving direct instructional techniques, and coordinated, sequenced learning tasks in language. Basic academic skills, especially language skills considered primary to school success, and instruction are arranged in hierarchies of successive complexity and inclusiveness centered on mastery of essential objectives.

Given the basic assumption that the value of a program is based on the extent to which it reaches its stated goals--Distar's major strength is its implementation. Within this framework, several features are important contributions. It incorporates many concepts from learning psychology such as active involvement, immediate feedback, sequential learning

tasks, transfer techniques, highly specific objectives defined in behavioral terms, and emphasis on academics and content mastery.

Of course, depending on basic philosophies regarding early education, the strengths of didactic programs such as those listed may be considered weaknesses. Developmental and humanistic psychologists would probably question the learner's passive role and the teacher's didactic role and others would challenge the lack of emphasis on affective concerns.

Blank and Solomon used a tutorial approach to language development. This program is based on the assumption that children need consistent guidance to develop a firm basis for thinking. The purpose is to provide tasks that can be accomplished successfully, ample practice in order that new skills can be reinforced frequently, and adult instruction specific to the development of language tools pertinent to the classroom. Questioning and probing skills as well as use of language in structuring and guiding thought process is emphasized, to enable students to infer, estimate, deduce and classify information. However, some negative side effects were noted by observational methods such as resistance to the tightly organized approach, passivity, dependence, withdrawal, and fearfulness. Weikert's Cognitively Oriented Curriculum attempts to integrate language development into a developmental framework which allows for active participation by the learner and support and guidance by the teacher. It recognizes language as a key experience in development and communication as a

primary function of language. Conversing, describing, and expressing feelings are considered highly important to making corrective feedback possible, to reduce egocentrism and to facilitate social transmission of knowledge. Although this emphasis on language development recognizes the importance of language in cognitive development, no systematic method of using language techniques to both stimulate language for communication and relate personal experience to developing cognitive structures have been reported.

In programs such as that developed at the Bank Street College of Education, the most important factor is active interaction with the environment--both physical and social. There is an emphasis on interaction with the adult and trying out new experiences. This system stresses the educational value of play and playful experiences and is based on the child's spontaneous activity. Structure, drill, specific tasks and instruction is de-emphasized while exploration and interaction are highly encouraged. The child selects the experience, is the active learner, and the teacher is a guide. Achieving a positive self-image is central to classroom practices. The teacher's major role is to create a healthy climate for learning. This philosophy and these goals are in contrast to the two programs described previously, which strongly emphasize language development. The Bank Street approach to early education is typical of whole-child programs and drastically different from didactic approaches. Some language stimulation techniques are used in

this approach, however, systematic research efforts on language development or on the implementation of systematic use of these techniques has not been reported.

Evidence reported by Cazden (1972) suggests that programs such as Distar and the Tutorial Program reviewed above do have a substantial impact on language development.

In a final report to the Office of Education by Abt Associates, Inc., results of a study involving 20,000 third grade students concluded that structured educational approaches seem more beneficial. Kennedy, in a secondary analysis of the data which adjusts for design weaknesses, supported some of these findings. In this report some negative effects (in language) were reported for the Cognitive Curriculum and no sizeable effects were reported for the Bank Street Model. Positive effects (in language) were found in only the Direct Instruction programs (Distar, etc.). However, Kennedy qualified these findings by suggesting design weaknesses and alternative explanations for effects. Two points were made in this research which are pertinent to this study: (1) the direct instruction programs may have more systematic, aggressive approach to teacher-training and measurement of program goals and (2) program variations may be a result of differences in implementation of programs--structured programs are more easily packaged and implemented.

It was also suggested that direct programs may have their primary effect in the early years of school and may produce diminishing returns as the components of instruction move from factual knowledge to application of knowledge.

The goals of the Bank Street Model and the active learner approach in the Cognitive Curriculum are seemingly ambitious and appropriate for early education. However, the de-emphasis in language instruction by Bank Street and the non-systematic emphasis of language instruction in the Cognitive Curriculum seem to translate into no-effect at least on research examining Follow-Through data.

It seems reasonable, in light of this evidence, that ways of combining the goals for language development as established in these contrasting programs can be found. It should not have to be a choice between one approach or the other.

Implications of Interactions
Techniques for Social Success

A logical argument can be made for the hypothesis that higher levels of language usage ability aid a child in succeeding academically in the school environment. Schools place a premium on verbal ability and in the past several years many programs have been developed which attempt to influence language development. The need for these programs was generated by the belief of educators that marked social class deficits in language usage exist by age four or even earlier (Evans, 1971), which place some children at an academic disadvantage. Evans states that by the time they go to school, children have acquired basic knowledge of grammatical features and how to use them at varying levels, which indicates that the early years are most affected by variations in the language environ-

ment. Richness and variety of early language experiences may influence large individual differences in vocabulary size and modes of expression. Language programs for early childhood have been developed for the express purpose of erasing these early deficits.

Language is a means to communicate the knowledge a person has, to gain the attention and help of others, to express feelings, ideas, and emotions. It is perhaps the only socially acceptable and effective way to gain the attention of adults for the purpose of using them as resources. Adults are often used by some children to answer inquiries and direct their natural curiosity and exploratory behavior. These are factors which often spell success in the school by transmitting enthusiasm to the teacher. Many of these factors have been investigated by respected researchers (White and Watts, 1973; Clark-Stewart, 1973) in attempts to identify early competence.

Implications of Interaction
Techniques for Social Adaptation

Another aspect of success in the school environment involves the child's ability to adapt socially. Language usage ability also appears to be a major factor in this process. The social world of a person for a good portion of life is the school. The interactions within the school system form the foundations for later social interactions. Many researchers have included interpersonal skills as measures of competence. Stollak (Reif and Stollak, 1971) called them

"emotional skills" in research which identified four major categories as indicative of positive mental health and early competence, two of which deal expressly with skills which are basic to interaction with others. These are:

1. Awareness of the feelings, thoughts, desires, emotions and behavior of others and ability to express evaluations of these.

2. Interpersonal skills, which are capabilities that enable one to experience mutually satisfying and constructive relationships with peers and authority figures.

White and Watts (1973) listed the following social abilities:

1. To get and maintain the attention of adults in socially acceptable ways.

2. To use adults as resources.

3. To express affection and hostility to adults.

4. To express affection and hostility to peers.

5. To praise oneself and/or show pride in accomplishments.

If social adaptation can be defined as the ability to get along and interact with others in society in a way which brings about positive feelings, then language usage ability must be an important factor. If positive mental health and adjustment involves the ability to be involved in social interactions which allow people to meet their needs, then language usage and the "ability to express" must be key factors in social adaptation.

Implications of Interaction Techniques for Self-Esteem

There can be little doubt that social interaction is an important part of "school life." Most of the things that are done in school are done with others. There can be up to 1,000 interpersonal interchanges per day between teachers and children and many more peer interchanges (Jackson, 1968). These interchanges can be thought of as "opportunities" for success in interpersonal skills. They can help build up one's self-image or they can tear it down.

Kelly (1962) has defined the self as consisting of the accumulated experiential background, or backlog, of the individual . . . what has been building since his life began, through unique experience. Kelly continued: "This self is built almost entirely . . . in relationship to others . . . since the self is achieved through social contact, it has to be understood in terms of others." Much of the self is determined by the history of success in a person's background, which acts as feedback to the person about the adequacy of the self to perform the "task at hand" (Coopersmith, 1959). It is reasonable to believe, given this description of the self, that the numerous interchanges mentioned above do, in fact, have an influence on self-image development. Since interaction depends upon communication, it is also logical to conclude that high language usage ability may allow more opportunity for feelings of success within these interchanges as a result of positive feedback from others.

Language ability has been included in measures of the psychological construct of "locus of control" which attempts to measure the feelings of power one has over the environment. This seems important because power over the environment, a feeling of "I can do it" is essential to the "fully functioning self" (Kelly, 1962). Language can be considered a tool that helps a person gain success experiences and thus confidence in the self.

Enhancement of Self-Esteem Through Language Programs

There is another aspect of self-esteem that is important to this study. So far the concern has been for language's impact on self-image. Also important is the enhancement of self-esteem through language programs, or the importance of a concern for self-concept in language programs. Thus interchanges which are purposely structured to allow success experiences, to allow and even enhance self-concept development, may be a critical component of language usage programs.

In a report on the lasting effects of preschool programs with language emphasis, these programs were cited to positively impact low-income children. These children more often met the minimum standards of schooling--less special education required, less retention, and fewer dropouts. In addition, preschool was found to impact low-income children in non-cognitive ways. They were more likely to express pride in specific achievements and rated themselves as better students. Furthermore, mothers

held higher aspirations for their children. This has direct implications for the development of self image.

"The self," Kelly says, "looks out upon the surrounding scene largely in terms of its own enhancement or defense. It extends in the direction of that which promises to make it better off . . . and withdraws from that which seems likely to endanger it." Kelly speaks further about the development of a "psychological shell" or "selective screen" to hide behind in order to protect the self. This can be a barrier to communication and a protection that is really isolation and withdrawal. This inhibits, of course, self-growth because the self needs feedback to continue to develop. It also inhibits the opportunity for language usage and development in that the person will not become involved in the interaction. Those who are open to the experience will have an opportunity to practice using language already a part of their repertoire and to learn new language.

Conditions for Self Development

Theorists have identified several conditions for self development which seem to be of importance to language programs. Many of these are based on the conviction that the self seeks out enhancing experiences and withdraws from "perceived" endangering ones.

Carl Rogers (1951) has said that "trust" is the important ingredient which the interactor provides. Of major importance to communication is the ability to be open and free

to express. This results from trust that it is not harmful to expose oneself. Hamachek (1977) speaks of "empathic listening" as another important component for self development. This type of listening responds to the person's feelings as well as his words. It implies not evaluation, no judgment . . . and conveys an effort to communicate the notion that a person's feelings and ideas are valid for him if not for us.

It is important for interaction that adults convey a feeling of acceptance. This includes acceptance of personal feelings which may disturb the adult. It also seems important to convey empathic understanding which does not evaluate, rather is sensitive to the concerns of the other (Rogers, 1951).

The above discussion has strong implications for programs which involve interaction with others. Specifically, it is the responsibility of the adult to create a non-threatening, accepting atmosphere. Such an atmosphere should increase the amount of interaction and language usage, as well as maintain and promote healthy mental growth.

Methodological Problems Encountered in Language Development Research

There are several methodological problems that need to be dealt with in a study which occurs in a natural setting and is an attempt to measure the dimensions and effects of a treatment or program. It is becoming increasingly more evident that there must be a concern for both process and product. Evidence is needed not only on the impact and effectiveness of

the program or treatment but also on the dimensions, characteristics and essential components of the program. Miller and Dyer (1975) in a study of four preschool programs, contend that there are few research efforts which report on operational characteristics of programs and whether or not "they exist only in program prescriptions."

Of particular concern in their study was the verification of program implementation as well as the difference between the programs actually implemented. It was necessary to distinguish between the models or programs described and the actual programs which are implemented. There is no guarantee that the teacher or researcher will actually implement what they have been taught. The first step in verification involves careful definition of the essential components of the treatment programs, and analysis of them along several dimensions--philosophy, curriculum, methods, class atmosphere and teacher's role, and goals for children.

The next step in the Miller and Dyer study was to compare programs on more specific variables (e.g., feedback, modeling, and imitation) using observation and videotaping to assess teacher behavior. Discrimination analysis was then done on these and other variables to determine whether or not they differentiated the treatments. In view of the research, it seems important for determining program effects that both the actual degree of implementation and the differences between the programs be verified, so that measured effects can more meaningfully be attributed to the differences in programs.

The large variation in programs found in the reanalysis of the Follow Through data by Kennedy demonstrates the need to focus on program implementation. Kennedy concludes that lack of implementation is a strong competing hypothesis for negative findings.

This study will be concerned with a process view of research. One of its major concerns will be the verification of whether or not the interactor is actually applying essential components of the model. Data is reported on key variables which differentiate the treatments from each other.

A final series of methodological problems involves instrumentation and data collection. Several methods of observing and recoding behavioral and verbal behavior in naturalistic settings have been reported (Stallings, 1975; Miller and Dyer, 1975; Shatz and Gelman, 1973; Schacter et al., 1974). The techniques for collecting this type of data fall into two major types:

1. Time or event sampling methods with some form of observation system.

2. Video and/or audio-tape analysis with some system of categorizing behavior and verbalization per unit of time.

An example of the first kind is that reported by Stallings (1975). An observation schedule was devised called the Classroom Observation Schedule (COI) to record classroom arrangements and elements of events considered educationally significant by Follow Through sponsors. This schedule included 602 categories describing behaviors of teachers and children

in classroom situations, interactions between two or more people are also included. Of particular interest were the FMO or Five-Minute Observation variables that were recorded. A series of four-celled frames were used to record in a shorthand system each interaction that occurred in a five-minute period. The method identified the speaker, the person spoken to, and the message being delivered, as well as the emotional affect displayed. It allowed for recording of two-way interaction sequences. Variables of interest were then formed from the complex codings. This procedure was of great help in devising the observation schedules for this study.

An example of extensive audio-tape analysis was presented in a study by Shatz and Gelman (1973). This study focused on the length and complexity of utterances produced in interaction sequences with different-aged listeners. Of interest is their use of audio-tapes in obtaining data on utterance lengths and complexity. Mean utterance length was examined. Utterances classified as long--over four words in length--were further examined for syntactic complexity.

Schacter et al. (1974) also used audio-tapes to obtain verbatim language samples for subjects. This was obtained by having the observer crouch or sit as closely as possible to the subject, avoiding eye to eye contact, and adopting a benign facial expression. The observer was, they reported, almost invariably ignored. (See also Cherry, 1974, for an example of preschool teacher's usage of audio-taping in free play situations.) Many of the audio-tape procedures suggested

in these studies were adapted to data collection in this research.

The purpose of the preceding review of literature pertinent to methodological concerns in naturalistic studies, was to give background information on some of the problems encountered in this type of research and some possible solutions to them. These studies were helpful in the planning of this research.

Summary

The purpose of this review has been to identify important factors concerning language development which are relevant to this project. Research has shown that situational variables add an important dimension to language study. Furthermore, Cazden's expansion and extension techniques, Halliday's developmental categories of functional language research and Bruner's ideas about "action dialogues" contributed valuable information about variables of concern in this study. Several programs with language development components were reviewed as examples of attempts to impact language development. However, it is the feeling of this writer that careful examination of language stimulation techniques in non-didactic programs has not been done adequately to date. In addition, language usage programs have not considered all of the essential variables.

Some of these essential variables have already been expounded. First, it is believed that a concern for the self-esteem of the child is of utmost importance and that it is

necessary to create a non-threatening, open atmosphere so the child can feel free to communicate. (Rogers, 1951; Moustakas, 1959; Axline, 1969; Kelly, 1962). Cazden's use of extensions that react to the child's own utterances is a beginning step in creating this atmosphere because it involves the second essential element; i.e., what the child is thinking or saying is of utmost importance. Recognition of this validates the idea or feeling for the child. It transmits the message, "I'm OK."

The third essential component growing from this review is that communication models are extremely important. Language develops as a result of interaction between adult and child (Bruner, 1975; Bernstein, 1964; Halliday, 1973; Wood, 1976). These models provide input to the communication system. There are two important considerations, however, concerning the quality of this input. First, adult models are better than peer models (Bates, 1975). Second, there are variations in the language usage of adult models (Bruner, 1975; Bernstein, 1964; Ringler, 1975). Many adults use communication techniques consisting primarily of questions and imperatives (Bates, 1975). Much speech to children is adjusted down to the child's level while what is more important is the addition of new information (Shatz and Gelman, 1973). In addition, some adults are better than others at interaction, and increating action dialogues which convey clear, unambiguous information (Bruner, 1975). While questioning and probing techniques, major components of programs such as Blank and Solomon's tutorial

approach, are important to language, they can result in uneasiness and even fearfulness in a tightly organized and structured atmosphere (Blank, Koltuz and Wood, 1972).

In view of these comments on the quality of language usage by adult models, it seems important to train models to interact with children in a way which fosters actual conversation and dialogue, not ways which require responses from the child and lead to uneasiness in the situation.

A fourth essential component is the problem of language modeling. The issue has been partly answered by Cazden (1972), who suggested that we should emphasize meaning by adding (extending) new ideas and evaluations about what the child is talking about. Furthermore, the richness of extensions, the more of them used, and the complexity of their form, may actually facilitate a child's language development. As Wood (1976) points out, using simple forms of language such as motherese (Nelson, 1975) and talking down (Shatz and Gelman, 1975) may actually slow down language development. This suggests that the semantic richness of the communication model's language with the child helps to advance the child's knowledge about language use and structure.

The actual content of the language should be in a form that describes objects, events and actions as well as the relationships between them, and which connect these in time and space. They should emphasize meaning, relations and distinctions in these meanings (Wood, 1976).

The fifth and final essential component concerns the basic assumptions and philosophies that should be inherent in language programs. Children enter language programs with a certain language usage ability and already have acquired a vast array of language. Part of the purpose of any language program should be to allow the child the opportunity to practice their repertoire of forms. Therefore, it is important to allow them to talk, and not structure the experience so tightly as to restrict talking. However, it should be foremost in the mind of the interactor to use every opportunity to model new forms. Language should be seen as a tool of communication and the intent of the program should be to increase the repertoire of communication strategies available to the child. Underlying the above is the assumption that this communication power gives the child confidence in talking and a felt power over the external environment as well as an expressive power that allows success in day to day communication situations (Wood, 1976, pg. 271).

CHAPTER III

METHODOLOGY

Purpose

The primary purpose of this research effort was to collect observational and audio tape data of planned small group interactions between adults and children in order to study the effects of certain kinds of adult-child interactions on children's language usage. This was done by systematically observing and recording group sessions of two different styles of adult-child interaction over a five-week period. Adult implementation data and group interaction ratings by trained observers were also examined.

Special Definitions

The following terms are referred to throughout the study. These definitions are provided to give a clearer understanding of their meaning as used in this investigation.

Child language variables--defined as those variables which were determined to be evidence of child language usage and emotional displays by subjects. These are listed in Table 1. Certain of these were expected to occur more often in either the treatment or the control groups. Both the variables and the groups in which they were expected to occur are listed in Table 3.

Adult language variables--defined as those variables which were determined to be evidence of adult language usage and emotional display by adults. These are listed in Table 2. Certain of these were expected to occur more or less in the treatment groups while others were expected to occur more or less in the control groups. Both the variables and the groups in which they were expected to occur most often are listed in Table 4.

Language interaction--defined as that type of language used by adults trained in the use of the model described in Chapter I.

Language interaction variables--defined as those variables which were considered to be the kinds of communications which reflected either the use of the model by adults or instances of use by subjects in the study. Both child and adult interaction variables are specifically listed in Tables 3 and 4.

Traditional interaction--defined as that type of language used by adults employing the use of questioning and didactic teaching techniques.

Traditional interaction variables--defined as those variables which reflect either the use of traditional techniques by adults or instances of use by subjects in the study. Both child and adult traditional variables are specifically listed in Tables 3 and 4.

Treatment groups--defined as those adults and subjects in groups using language interaction.

Control groups--defined as those adults and subjects in groups using traditional interaction.

TABLE 1

CHILD LANGUAGE VARIABLES

Language Type	Language Usage	Affective	Utterance Length
Initiation Response Complex Initiation Complex Response	Questions Statements Explanations Reflection Interpretation Relating New Uses/Ideas Story Telling Emotional Expression	Enthusiastic Happy Unhappy Role Playing Some Interest Disinterest Positive Affect Positive Verbalization to Others	Mean Length of Total Utterances

TABLE 2

ADULT LANGUAGE VARIABLES

Language Type	Language Style	Problem Situations	Affective	Utterance Length

Initiation
Response
Complex Initiation
Complex Response
	Direct Questions
	Commands
	Structuring
	  Statement
	Explanations
	Informational
	  Statements
	
	Reflection
	Interpretation
	Relating
	New Uses/Ideas
	Complex Statements
	Complex Explanations
	Emotional Expression
	Positive Affect
		Active Handling
		  Reflection
		  Interpretation
		  Adult Relating
		  Expectations Now
		  Alternatives for
		  Future
		Ignoring
		Smooth
		Troublesome
		Negative Affective
			Enthusiasm
			Role Playing
			Neutral
			Negative Affect
				Mean Length
				of Total
				Utterances

TABLE 3

DIFFERENTIATING CHILD VARIABLES: LANGUAGE INTERACTION (TREATMENT) STYLE AND TRADITIONAL INTERACTION (CONTROL) STYLE

Language Interaction (Treatment)	Traditional Interaction (Control)
Child Language Type	Child Language Type
Initiation	Response
Complex Initiation	
Complex Response	Child Language Usage
Child Language Usage	Questions
Reflection	Statements
Interpretation	Explanations
Relating	Child Affective
New Uses/Ideas	Unhappy
Story Telling	Negative Affect
Emotional Expression	Disinterest
Child Affective	Utterance Length
Enthusiastic	Shorter Utterances
Happy	
Role Playing	
Some Interest	
Positive Affect	
Positive Verbalization to Others	
Utterance Length	
Longer Utterances	

TABLE 4

DIFFERENTIATING ADULT VARIABLES: LANGUAGE INTERACTION (TREATMENT) AND TRADITIONAL INTERACTION (CONTROL)

Language Interaction (Treatment)	Traditional Interaction (Control)
Adult Language Type	Adult Language Type
Initiations	Responses
Complex Initiations	
Complex Responses	Adult Language Style
Adult Language Style	Direct Questions
Reflection	Commands
Interpretation	Structuring Statements
Relating	Explanations (simple)
New Uses/Ideas	Informational Statements (simple)
Complex Statements	
Complex Explanations	Adult Affective
Emotional Expressions	Neutral
Positive Affective	Negative Affective Display
Adult Affective	Adult Problem Situation
Enthusiasm	Ignoring
Role Playing	Troublesome
	Negative Affective Display
Adult Problem Situation	
Active Handling	Utterance Length
Smooth	Shorter Utterances
Utterance Length	
Longer Utterances	

Design

Overview

As an experimental study, this investigation involved random assignment of subjects into two treatment groups and two control groups. Each group consisted of four subjects and one adult interactor. Each adult interactor was trained over a three-week period in either the language interaction techniques associated with the model proposed in this study or in more traditional questioning and didactic teaching techniques.

In addition, four adults were trained to be observers of the group interaction sessions. Specifically, their task was to record instances of adult and child affective display (refer to Tables 1 and 2, pages 47 and 48 for examples), and the adult's style of handling the problem. In addition, observers were to record key words in each exchange between adult and subjects to aid in linking the observational data with audio tape data also collected for each session.

The eight adults in the study were undergraduate students. They underwent approximately twelve hours of training as either interactors or observers. In addition, three half hour warm-up sessions were done in the day care center with children not involved in the study. These warm-up sessions allowed interactors to practice their language techniques with children. It also allowed further refinement of the observation techniques. The training manual for both interactors and observers can be found in Appendices D and E.

Subjects in this investigation were exposed to either language interaction techniques or to traditional interaction techniques over a five-week period. The dependent variables were language interaction variables, traditional interaction variables, and affective variables. Adult implementation data was also examined. The dependent variables in that analysis were the same as above. The data matrix is shown in Figure 1.

Sample

The sample used in this study was composed of twenty-four subjects at a day care facility in Lansing, Michigan. Of the nineteen subjects for whom complete data is recorded, ten were boys and nine were girls. There were eleven blacks and eight whites. They were all between three and three and one-half years old. Four of the twenty-four subjects were involved only in the warm-up sessions before actual data was collected. There were two boys and two girls of the same age as study participants in this group.

The youngsters in the study came from lower-class working homes in a racially mixed neighborhood in Lansing. Ninety percent of the children attending the day care had working mothers on Aid to Dependent Children or some form of government assistance. The director of the day care center judged that all of those children in the study were from home situations as described.

The day care facility had both afternoon and morning classes with 40-45 children usually in attendance at any

FIGURE 1

VARIABLE MATRIX OF NESTED DESIGN

Variables	Treatment		Control	
	Language Interaction		Traditional Interaction	
	Group 1	Group 3	Group 2	Group 4
Language Interaction Variables Traditional Interaction Variables Affective Variables				

(Refer to Table 4, pages 47-50 for specific lists of variables examined in this study.)

given time. It was the judgment of this investigator that the normal routine of the day care was somewhat disorganized and that the amount of meaningful adult-child communication, other than during the planned interaction sessions, was minimum.

From a group of 40 subjects available in the morning session, 24 were randomly selected as possible study participants. This group of 24 children were then randomly assigned to four groups. The other children participated in the warm-up sessions.

Measures

Observational Data

An observational instrument was developed for the purposes of this study to collect two specific types of information.

1. Relevant affective data as specified in Tables 3 and 4, pages 47 and 48. This included measures of general affect, involvement in the group, number of problem situations, and affect displayed during problem situations.

2. Key words of communication segments between adult and child and between other children. The purpose of this procedure was to record enough of the segment (along with affective data for that segment) to allow a linkage between the audio tape transcriptions and the affective data observed.

The instrument developed was a modification of scoring systems devised by Stallings (1975) which were used to monitor two-way interaction sequences. The Stallings' method attempted to measure affective data taking place during three-minute

intervals. For several different variables (e.g., general mood, involvement, negative affect, etc.), several levels of the variable were recorded by observers. The major extension of the instrument used in this study was the attempt to form mutually exclusive categories and to train observers to record key words to be used with audio-tape transcriptions. An example of the observation instrument can be found in Appendix A.

The procedure for collecting observational data involved the following:

1. For each communication segment, record a few key words in the middle of the instrument.

2. For adult variables on language style, usage, and problem situation, use the check list format to indicate an occurrence of the variable. Categories were mutually exclusive (e.g., in a problem situation, the adults handling was either troublesome or smooth).

3. For child variables, follow the same procedure as above.

Observers became quite proficient by the end of the study at recording major communications (key words) and the affective data. Each group was observed a minimum of six times. The presence of the observers seemed to make no appreciable difference in the group interaction. Adults and subjects alike became quite comfortable with being observed and in most cases ignored the observers entirely.

Audio Tape Data

Each half hour session was audio taped during the five-

week study period. A minimum of 13-15 sessions were taped in each of four interaction groups. The use of tape recorders in the interaction sessions had been piloted prior to this study with a group of head start children. After a brief introductory period (10 minutes), during which time all children could record their voices, hear them played back and push the buttons, very little attention was given to the tape recorder thereafter. As with the case with the observers, the tape recorders were virtually ignored by children and adults during the majority of the study.

Each verbalization by each child and adult was recorded and transcribed. Approximately 20 percent of these transcriptions were randomly checked for accuracy by an independent listener and judged to be accurate. In addition, a thorough examination of the observational data, the tape transcriptions and a sample of the audio tapes themselves was undertaken by the author and judged to be accurate.

Unclear or unrecognizable transcriptions were deleted from the analysis. However, very few were unrecognizable and the transcriptions represent a substantial majority of all dialogue. Approximately 2,093 utterances were collected and analyzed in this study. Table 5 on the following page provides a breakdown of the number of statements associated with those involved in the study.

TABLE 5

Interactor	Dialogue			Number of Sessions
	Total Lines	Adult	Child	
1	507	334	152	3
2	538	278	220	6
3	547	340	157	5
4	501	220	195	7

Some sample transcriptions can be seen in Appendix B. These include examples of dialogues between adult and chil as well as among children in the groups.

Observer and Interactor Ratings

Independent of the observational and audio tape data analyzed in this study, a series of ratings were collected for each session. Both the observers of the group for tha day and the interactor for that group completed a rating i strument immediately after each session. This instrument called the Group Interaction Schedule and can be found in Appendix C. The purpose of this procedure was to help cha terize the nature of the interaction on a day-to-day basis It also served as immediate feedback to the interactor fro the observer. This helped the interactors to compare thei own perceptions to those of an objective observer.

The instrument was designed to include ratings from l to high on a five-point rating scale concerning the follow critical aspects of the session: (1) degree of interactio

with children in the group, (2) use of structure (e.g., direct teaching, questioning, explanatory statements, etc., which are indicative of traditional interaction), (3) positive displays of affect by the adult, (4) negative displays of affect by the adult, (5) problems during the session (e.g., a child leaving the group, hitting another child, etc.), (6) success in problem resolution, (7) interaction of children with adults, (8) interaction of children with other children, (9) positive displays of affect by the subjects, and (10) negative displays of affect by the subjects.

Reliability Estimates

Reliability reported here includes an estimate of the reliability of observational data, and of audio tape transcription coding.

The reliability of the observational data is reported as the percentage agreement between two raters who have observed the same two subjects during a session. Each group was observed at least two times and reliability estimates are reported for these across most variables. Due to problems with the standardization of the observational instrument which are discussed in Chapter V, some low estimates were obtained. However, audio tape data was collected in conjunction with the observational data which duplicated the language variables. Verification of problem and situation variables was possible so that the final coding of the observational data was more highly reliable.

Reliability for audio tape transcription codings are reported as percentage agreement between two independent raters

familiar with and trained in identification of the variables of interest in this study. Both raters were familiar with child language structure and use. Both were certified early elementary teachers as well as reading and language consultants for compensatory educational programs.

Child variable estimates are based on the codings of these interaction sessions, while estimates for adult variables are based on four interaction sessions. The percentage agreement figures were based on separate codings by each of the two coders. Random checks were made on the coded variables and determined to be generally accurate.

Table 6 shows the average percentage agreement across major adult and child variables in the study. These are based on either three or four observer ratings of the same adult or child. The average percentage agreement on the child variables was 68.1 across three sessions. The highest agreement (77.6) was recorded on the last day of the project. The raters showed progress in agreement from the beginning to the end of the project on these child variables.

The average percentage agreement on the adult variables was 68.0 across four sessions. The highest agreement (75.2) was recorded early in the study. The next highest agreement (69.5) was recorded on the final day of the project.

Table 7 shows the average percentage agreement between two coders for the audio tape transcriptions. The variables of interest were both Adult and Child Language Style variables.

The average agreement between coders on the Adult Language Style variables was 74.75%. The highest agreement (82%) was

TABLE 6

AVERAGE PERCENTAGE AGREEMENT ACROSS
MAJOR CHILD VARIABLES AND ADULT VARIABLES

Variables	Session 1 May 3	Session 2 May 11	Session 3 May 25	Session 4 June 1	Average
Child Variables					
Initiations	73.0%	56.0%		93.0%	
Statements	38.0%	87.0%		95.0%	
Responses	94.0%	-----		72.0%	
Questions	-----	100.0%		68.0%	
Questions	-----	56.0%		-----	
Comments	-----	77.0%		50.0%	
Situations	39.0%	80.0%		-----	
Total	51.3%	75.4%		77.6%	68.1%
Adult Variables					
Initiations	95.0%	83.0%	100.0%	78.2%	
Responses	-----	85.0%	40.0%	75.0%	
Structuring	10.0%	58.0%	80.0%	-----	
Questions	-----	50.0%	60.0%	85.0%	
Commands	-----	100.0%	-----	-----	
Language Interaction	89.0%	-----	28.0%	40.0%	
Problems	67.0%	None	-----	-----	
Situations	None	None	-----	-----	
Total	65.3%	75.2%	62.0%	69.5%	68.0%

TABLE 7

AVERAGE PERCENTAGE AGREEMENT BETWEEN
TWO CODERS FOR AUDIO TAPE TRANSCRIPTIONS

Category	Session 1 5-3	Session 2 5-4	Session 3 5-5	Session 4 5-10	Averages
<u>Adult</u>					
Language Style (Direct vs. Interaction): Percent of Agreement	75.00%	70.00%	82.00%	72.00%	75.75%
<u>Child</u>					
Language Style: Percent of Agreement	76.00%	83.00%	94.00%	87.00%	85.00%
Average Percent Agreement	75.00%	72.00%	86.00%	79.00%	78.00%
Others (Situation Variables)	None	None	None	None	50.00%--65.00%

Note: These averages are based on 500 lines per rater (approximately); ratings are percent of agreement by two raters.

recorded for the third session. The average percentage agreement on the Child Language Style variables was much higher. The final three sessions recorded agreements over 85%. The average agreement was 85%. When considering adult and child variables together, the average percentage agreement is 78%.

Data Analysis

Analysis of the data collected in this study is presented in two major catagories:

1. Statistical significance testing of major hypotheses.
2. Implementation analysis of adult measures relative to the degree each adult actually employed the interaction techniques they were trained to implement.

The basic design employed for statistical analysis of major hypotheses is a fixed-effect model with two sets of experimental and control groups; subjects are nested within groups for the treatment and control conditions. Differences between groups are measured at the end of the project time for differences between groups.

As mentioned in the overview, there are four groups in this study--two of which were treatment groups and two of which were control groups. Each group had four subjects and an adult interactor. After the random formation of the groups, each adult was randomly assigned to a group. The adults had been trained in either language interaction or traditional interaction. The group was then designated either treatment or control depending on the adult assigned to it. The adult

remained with the same group for the duration of the project. Each subject was randomly selected to be in either the treatment or control condition. Because of the random selection process, all groups were assumed to be essentially comparable at the outset of the project. The One-Way fixed-effects model was used to test the hypothesis because it allows a detailed contrast between groups of interest. Since both the observational and audio tape independent variables were mutually exclusive, they are examined separately. Variables of interest are as follows:

1. Language Type--Initiation, Response, Complex Initiation, Complex Response: An initiation was considered any unsolicited child verbalization, while a response was a solicited answer to an adult question or statement.

2. Language Usage: Interaction--defined as a reflection, interpretation, relating statement, new use or idea suggestion, complex explanation or emotional expression, or direct--defined as a structuring statement, question, command, or explanation.

3. Utterance Length and Complexity: Complexity is defined as any utterance over five words long.

4. Affective and Situational: Includes ratings of enthusiastic, happy, unhappy, negative affect, disinterest, role playing, and some interest.

Hypotheses

As was previously mentioned, the unit of analysis in this study is the frequency of occurrence of instances of each

variable delineated in the study. Certain of these variables were expected to occur more often in the treatment or control group. Therefore, it is hypothesized that:

1. There will be no difference between treatment and control groups on Child Language Type variables. (Variables include Initiation, Response, Complex Initiation, and Complex Response.)

2. There will be no difference between treatment and control groups on Child Language Usage variables. (Variables include Reflection, Interpretation, Relating, New Use/Idea, Complex Explanation, Emotional Expression, Structuring Statements, Questions, Commands, Explanations.)

3. There will be no difference between treatment and control groups on Child Affective variables. (Variables include Enthusiastic, Happy, Unhappy, Negative Affect, Disinterest, Role Playing, Some Interest.)

4. There will be no difference between treatment and control groups on the Child Utterance Length variable. (Includes any verbalization over five words in length.)

5. There will be no difference between Traditional and Interaction groups on Adult Implementation Scores. (Scores derived from an examination of actual occurrences of language variables for either the treatment or control groups. Refer to Table 4 which explains which variables are associated with treatment and control.)

Analysis

A One-Way Analysis of Variance is employed across all major variables using a prior contrast to examine the differences between all combinations of groups. This results in an overall F ratio and t-tests for significance on all prescribed group combinations. The contrast procedure allows secondary analysis contrasting the treatment and control groups, each treatment group and each control group. The One-Way procedure allows a more powerful test of group differences since it does not capitalize on chance.

Adult Implementation data is presented in summary form and analyzed by simple inspection. In addition, Implementation scores have been formed and presented.

Ratings of interaction by observers and self ratings by interactors are presented in summary form and analyzed by simple inspection.

Summary

This study investigates the effects of different styles of adult interactions with three to three and one half year old children of lower-class background in a day care center. Data was gathered over a five-week period in two ways:

1. Observations of half hour sessions by undergraduate students trained as observers using an instrument designed for purposes of this study.

2. Audio taping of each half hour session over the five-week project period. Audio tapes were transcribed and coded by trained adults.

All child dialogue and observations of the sessions were coded and tested for significance by a One-Way Analysis of Variance procedure employing a priori contrast to test major hypotheses. All subjects were randomly selected to be in one of two treatment groups and control groups. Differences are measured across all major variables for the entire time period.

Adult Implementation analysis provides information concerning the actual use of language techniques that adult interactors were trained to employ. It adds a valuable component to this research effort both in terms of the significance of the data collected and the future training of adults for similar projects.

CHAPTER IV

PRESENTATION OF DATA

Category 1 Variables: Major Hypothesis Tested for Significance

There are several variables which have been tested for significance and are presented in this section. These are all child variables and are measured as frequencies of occurrence and as proportions. Proportions are based on the percentage of response by each group member within each of the four groups. There are four major variables presented:

1. Language Type variables: These are child initiations, complex initiations, responses and complex responses.

2. Language Usage variables: These are questions, informational statements, explanations, reflections, interpretations, relating statements, new uses/new ideas, story telling, and emotional expressions.

3. Affective variables: These are ratings on enthusiastic, happy, unhappy, negative affect, disinterest, role playing, some interest, and positive affect.

4. Utterance Length: This is the average length of a child's utterance.

These four sets of variables are examined for overall end-of-program effects.

For each variable, two separate analyses are presented. The first involves a frequency of the number of occurrences of that variable across the sessions. This gives an unadjusted measure of differences between groups. The second of these involves the proportion of occurrences of each variable for each child in the group. This procedure gives a measure which reflects the occurrence of the variable proportionate to the number of verbalizations actually produced by the child in comparison to others in the group. In most cases, the proportion dimension is of most importance.

Also presented are the results of planned comparisons. Where results of contrasts between treatment/treatment or control/control influence the interpretation of the overall findings, the comparisons of interest are displayed in the appropriate table.

Overall F ratios and probabilities are reported. However, the T probabilities which are reported for the three sets of planned comparisons are the statistics of most interest in this study.

Planned comparisons are presented according to the following legend:

1. Planned Comparison 1: Overall treatment effects which contrasts the two language interaction groups (treatment) with the two traditional interaction groups (control).

2. Planned Comparison 2: Contrasts between the two language interaction groups (treatment).

3. Planned Comparison 3: Contrasts between the two traditional interaction groups (control).

End of Program Analysis

1. Null Hypotheses: There will be no difference between Traditional interaction (control) and Language interaction (treatment) groups on child Language Type variables as measured by the number and proportion of non-solicited initiations, complex non-solicited initiations, direct responses to an adult initiation and complex direct responses to an adult initiation.

The data relevant to these variables is presented in Table 1.

The Initiation Variable, which is simply a measure of the number of unsolicited verbalizations by the child, is significant to the .05 level on the overall F ratio for the proportion dimensions and on both the frequency and the proportion dimension for planned comparison 1 which contrasts the treatment and control groups. The null hypothesis is, therefore, rejected.

The Response Variable, which is simply a measure of the number of direct responses by a child to an adult question or statement, is significant to the .05 level on the overall F ratio for both the frequency and proportion dimensions. For planned comparison 1 it is significant for the .05 level on the frequency dimension and to the .01 level on the proportion dimension. The null hypothesis is therefore rejected.

The Complex Initiation Variable, which is a measure of all initiations five or more words in length, is significant on the overall F ratio for the proportion dimension. It is

TABLE 1

RESULTS OF PLANNED COMPARISONS ANALYSIS FOR CHILD LANGUAGE TYPE VARIABLES

Variable	F Ratio	F Probability	Planned Comparisons	T Probability
Initiation				
Frequency	2.5544	.0943	1	.023*
Proportion	3.9029	.0304*	1	.011*
Response				
Frequency	3.3905	.0439*	1	.015*
Proportion	5.1292	.0112*	1	.002*
Complex Initiation				
Frequency	.5158	.6772	1	.223
Proportion	8.9847	.0010*	1	.000***
			2	.04
Complex Response				
Frequency	3.4971	.0402*	1	.015*
Proportion	8.9587	.0010*	1	.000***

* = .05
** = .01
*** = .001

significant to the .001 level on the proportion dimension for planned comparison 1. The null hypothesis is therefore rejected. However, planned comparison 2, which contrasts the treatment groups, was also significant to the .05 level. The null hypothesis which states that there will be no difference between treatment groups is also rejected. This will be examined further in the discussion section.

The Complex Response Variable is significant on the overall F ratio. It is significant to the .05 level on the frequency dimension and to the .001 level on the proportion dimension for planned comparison 1. The null hypothesis is rejected.

2. Null Hypotheses: There will be no difference between traditional interaction (control) and language interaction (treatment) groups on child Language Usage variables as measured by the number and proportion of questions, informational statements, explanations, relating statements, new uses/new ideas statements, story telling, emotional expressions and reflections made by the child. Data relevant to these variables can be found in Table 2.

There were no significant findings on any of the Language Usage variables for planned comparison 1 which contrasts treatment and control groups.

There were, however, three variables which were significant for planned comparison 2 which contrasts the treatment groups. The Explanation and the Relating Statements Variable were significant to the .05 level on the frequency dimension while the Relating Statements variable was significant to the

TABLE 2

RESULTS OF PLANNED COMPARISONS ANALYSIS
FOR CHILD LANGUAGE USAGE VARIABLES

Variable	F Ratio	F Probability	Planned Comparisons	T Probability
Questions				
Frequency	.5551	.6532	1	.976
Proportion	.1174	.9484	1	.841
Statements				
Frequency	.3395	.7971	1	.677
Proportion	3.0599	.0584	1	.179
			2	.034*
Explanations				
Frequency	.3333	.6667	1	.212
Proportion	3.0000	.3333	1	---
Relating				
Frequency	3.0579	.0585	1	.201
			2	.027*
Proportion	8.0886	.0019*	1	.178
			2	.000***
New Uses/Ideas				
Frequency	4.0000	.2064	1	---
Proportion	.5043	.7174	-	---
Story Telling				
Frequency	----	----	-	---
Proportion	----	----	-	---
Emotional Expression				
Frequency	1.1615	.3826	1	.156
Proportion	.7099	.5728	1	.187
Reflection				
Frequency	.6667	.6151	-	---
Proportion	7.3810	.0416*	1	.132
			3	.030*

.001 level on the proportion dimension. The null hypothesis which states that there is no difference between treatment groups is rejected.

The Reflection Variable was significant to the .05 level on planned comparison 3 which contrasts control groups. The null hypothesis that there is no difference between control groups is rejected.

3. Null Hypotheses: There will be no differences between traditional interaction (control) and interaction (treatment) groups on Child Affective Variables as measured by the number and proportion of responses rated as Enthusiastic, Happy, Unhappy, Negative Affect, Disinterest, Role Playing and Some Interest. Data relevant to these variables can be found in Table 3.

The overall F ratio for the Enthusiastic Variable was significant to the .01 level. For planned comparison 1 it was significant to the .001 level. The null hypothesis for this variable is rejected. This variable was also significant to the .05 level on planned comparison 3 which contrasts the control groups. The null hypothesis which states that there is no difference between control groups is rejected. None of the other Child Affective variables were significant.

4. Null Hypotheses: There will be no differences between traditional interaction (control) and language interaction (treatment) groups on the child's average utterance length.

The Utterance Length Variable, which is a measure of the average length of child verbalizations over the total sessions

TABLE 3

RESULTS OF PLANNED COMPARISONS ANALYSIS
FOR CHILD AFFECTIVE VARIABLES

Variable	F Ratio	F Probability	Planned Comparisons	T Probability
Enthusiastic				
Frequency	2.0746	.1531	1	.131
Proportion	8.3195	.0024**	1	.001***
			3	.025*
Happy				
Frequency	.5000	.7022	-	---
Proportion	.4867	.7098	-	---
Unhappy				
Frequency	----	----	-	---
Proportion	----	----	-	---
Negative Affect				
Frequency	1.3067	.3880	No Data	---
Proportion	5.2897	.0707	No Data	---
Disinterest				
Frequency	.7857	.5155	1	T = .091 (empty cells)
Proportion	.5155	.8445	1	T = .097
Role Playing				
Frequency	2.0222	.1995	1	.214
Proportion	1.0836	.3250	1	.477
Some Interest				
Frequency	1.3252	.3250	-	---
Proportion	1.8072	.2329	-	---
Positive Affect				
Frequency	----	----	-	---
Proportion	----	----	-	---
Verbalization to Others				
Frequency	----	----	-	---
Proportion	----	----	-	---

evaluated, had a significant F ratio to the .05 level. This variable was significant to the .01 level on planned comparison 1 which contrasts the treatment and control groups. There were no differences on planned comparison 2 or 3. The null hypothesis is rejected.

TABLE 4

RESULTS OF PLANNED COMPARISONS ANALYSIS FOR CHILD UTTERANCE LENGTH VARIABLE

Variable	F Ratio	F Probability	Planned Comparisons	T Probability
Utterance Length	3.2891	.0479*	1 2 3	.008** .814 .625

Discussion of the Child Language Type Variables

Four Child Language Type variables were examined: Initiation, Complex Initiation, Response and Complex Response.

One of the goals of this study was to provide an atmosphere in the treatment groups that would encourage subjects to initiate a communication with the adult. Language interaction techniques such as reflection and interpretation were expected to demonstrate to subjects that the adults cared for what they were saying and doing. This was expected to make the child feel relaxed and free to begin communicating with the adult and with other children in the group.

A related goal was to reduce the number of responses made to direct adult questions/statements in the treatment group. Of course, this implies that few direct questions would be

asked by adults in the treatment groups. Avoiding direct questions was believed to be important in the treatment condition. Questioning limits the length of child communications to the specific answer required by the question. Often, one or two word answers to questions are given. The language interaction model presented in this study attempts to stimulate more complex and lengthy communications between child and adult. Therefore, any communication which restricted this from occurring was avoided.

Furthermore, it was believed that traditional interaction techniques (especially questioning, informational statements and direct commands) would severely limit the amount of communication and its length/complexity.

It was expected that Initiations, Complex Initiations, and Complex Responses would be characteristic of the treatment group and that Responses would be characteristic of the control group. Complex Responses were expected to be more characteristic of the treatment groups because of the belief that more complex communications of all types would be found in the treatment groups.

An examination of Table 1, page 70, shows significant F ratios on the proportion dimension for each of these variables. In each case, planned comparison 1, which contrasts the treatment and control groups, was significant.

This was a very important finding in this investigation. The language techniques used in the treatment groups were expected to, at a minimum, create an atmosphere conducive to

communication. Significant findings on the Initiation and Complex Initiation variables for the treatment groups suggest that this did occur. Significant findings on the Response variable for the control groups suggests that subjects in the control groups were encountering and responding to more direct questions than subjects in the treatment groups. However, the finding that Complex Responses was significant for the control groups was unexpected. Apparently, traditional interaction can, in some cases, also elicit more complex communications.

Child Language Usage Variables

For the treatment groups, significant differences were expected on the Relating Statements, New Uses/New Ideas, Story Telling, Emotional Expressions and Reflections variables. Only the F ratio for the Relating and Reflection variables on the proportion dimension was significant. There were no significant differences on contrasts between the treatment and control groups. However, significant differences did occur between the two treatment groups in the case of the Relating variable. Significant differences also are present between the control groups for the Relating variable. (Please refer to Table 2, page 72.)

For the control groups, significant differences were expected on the Questions, Statements and Explanations variables. There were no significant F ratios. Only the statements variable was significant on planned contrasts. This showed a difference between the two treatment groups.

In view of these findings, it is concluded that statistical differences do not exist on Language Usage variables except as reflected in differences between either the treatment or the control groups. It appears that one of the major goals of this study--to significantly influence language development through modeling by adults of different types of language usage--was not accomplished.

Child Affective Variable

This investigation examined two distinctly different styles of interaction by adults with young children. An attempt was made to determine differences in the treatment and control group subjects on such things as the atmosphere created, the general mood, and the displays of affect by the subjects. (Table 3, page 74)

Only one variable was significant, that being the Enthusiastic variable. However, a significant difference between the control groups on this variable somewhat limits this finding.

In general, it is concluded that the goal of influencing the subjects on the wide range of affective variables of interest in this study was not accomplished. Some influence has been demonstrated on the Enthusiastic variable, however. Subjects in the treatment group were significantly different from control subjects on this variable.

Child Utterance Length

The Child Utterance Length variable was considered to be a very important measure of the influence in the treatment

of language interaction techniques group. It was expected that subjects exposed to language interaction would have a longer average utterance length. There was a significant difference in the direction of the treatment group for Utterance Length. (Table 4, page 75)

Subjects in the treatment groups had significantly longer statements than those in the control groups. This was an important finding because it lends evidence to the belief that adults can create communication environments which encourage children to use longer communication statements. This promotes practice of language already in the child's repertoire and offers more information to the adult. One of the techniques of language interaction is to use this information as a basis for expanding and offering new ideas, etc., that can add new language forms to the child's repertoire.

Category 2 Variables: Adult Language Implementation

There were several variables associated with the Adult Interactor examined in this study. The purpose was to verify by observational and audio tape data the actual implementation of the language interaction model presented in this study as well as the traditional interaction techniques used in the control groups.

A summary of the frequencies of occurrence of each variable is presented in Table 5. (A more detailed examination of the Adult Language Style variable, including both direct

and interaction techniques, can be found in Table 7.) The extent of model implementation was actually determined by the formation of a model implementation score. This model implementation score is presented for each interactor and contrasted interaction and traditional techniques were based on the following considerations:

1. Interactors implementing language interaction techniques were expected to have more initiations, complex initiations and complex versions of the response variable; conversely, there was expected to be a low occurrence of simple responses.

2. Interactors employing language interaction techniques were expected to have more occurrences of the following: reflections, interpretations, relating statements, complex statements, new uses/ideas, complex explanations, emotional expressions and positive affect.

3. Interactors employing language interaction techniques were expected to have less occurrences of problems rated as troublesome as well as less instances of negative displays of affect during problem situations. They were expected to also have a higher number of problems rated as "active handling." Active handling was defined as using interaction techniques during problem situations.

4. Interactors employing language interaction techniques were expected to have a higher occurrence of situations rated as enthusiastic, role playing and positive display of affect.

5. Interactors employing language interaction techniques were expected to have a longer mean utterance length.

6. Interactors employing language interaction techniques were expected to have more Total Dialogue lines.

The actual model implementation score was based on items one through four. Items five and six were also examined as part of the implementation analysis. In summary, the variables which were examined are shown in Figure 1.

FIGURE 1

ADULT VARIABLES

Adult Language Type Variables
Adult Language Style Variables
Adult Problem Situation Variables
Adult General Situation Variables
Adult Utterance Length
Adult Total Dialogue

Adult Language Type Variables

Interactors implementing language interaction techniques were expected to have more initiations, complex initiations and complex responses; there should be less occurrence of simple responses.

The two treatment group adult interactors had a total of 640 initiations as compared to a total of 463 initiations for the control groups. Interactor 1 and Interactor 3 were

the adults using language interaction techniques (please refer to Table 5, page 89). As can be seen, Interactor 1 had 253 simple initiations and 75 complex initiations. Interactor 3 had 253 simple initiations and 59 complex initiations.

Interactor 2 and Interactor 4 were the adults using direct questioning techniques. Interactor 2 had 253 simple initiations and 7 complex initiations while Interactor 4 had 196 simple initiations and 7 complex initiations.

By inspection it can be seen that the two groups differ on both the Total Number of initiations and the number of complex initiations observed. Looking at complex initiations by themselves, the difference is even more apparent.

The two treatment group interactors had a total of 28 responses as compared to 35 responses for the control groups. Interactor 1 had 6 simple responses and Interactor 3 had 24 simple responses and 4 complex responses. Interactor 2 had 17 simple responses and 1 complex response while Interactor 4 had 17 simple responses. By inspection, it can be seen that the treatment and control groups do not differ in any appreciable way on the response variable.

Adult Language Style Variables

Interactors employing language interaction techniques were expected to have more occurrences of the following: reflections, interpretations, relating statements, complex explanations, emotional expressions and positive affect display. Data relevant to these variables can be found in Table 5 page 83.

TABLE 5

FREQUENCIES OF ADULT LANGUAGE TYPE AND LANGUAGE STYLE VARIABLES FOR THE FOUR ADULT INTERACTORS

Interactor	Language Type		Language Style	
	Number Initiation	Number of Response	Traditional	Interaction
1*	253 Simple 75 Complex 328 Total	6 Simple	84	272
2	253 Simple 7 Complex 260 Total	17 Simple 1 Complex 18 Total	219	68
3	253 Simple 59 Complex 312 Total	24 Simple 4 Complex 28 Total	168	201
4	196 Simple 7 Complex 203 Total	17 Simple	189	34

*Interactors 1 and 3 employed Interaction techniques while Interactors 2 and 4 employed Direct Questioning techniques.

Interactor 1 and Interactor 3 were the adults using language interaction techniques. The two treatment group interactors together had a total of 473 verbalizations which were rated as one of the above language interaction techniques. In addition, they had 252 verbalizations which were rated as traditional interaction techniques. These were the techniques that the control groups were supposed to be implementing. Lower numbers of these were expected for the treatment group. A closer inspection shows that Interactor 1 had 272 interaction verbalizations and 84 traditional verbalizations. Interactor 3 had 201 interaction verbalizations and 168 traditional verbalizations.

An examination of the control group adults (Interactor 2 and Interactor 4 were adults using traditional interaction techniques) shows a total of 102 verbalizations which were rated as interaction techniques and 408 verbalizations rated as traditional techniques. Interactor 2 had 68 interaction verbalizations and 219 traditional verbalizations. Interactor 4 had 34 interaction verbalizations and 189 traditional verbalizations.

A detailed breakdown of the actual techniques used by each interactor in presented in Table 6, page 85. This table identifies the interactors associated with the treatment and control condition, the variables associated with each, and frequencies for all variables. An examination of Table 7 shows that the Traditional group had more verbalizations rated as Questions and Commands than the Interaction groups.

TABLE 6

FREQUENCIES OF ADULT LANGUAGE STYLE VARIABLES FOR
LANGUAGE INTERACTION AND TRADITIONAL INTERACTION ADULTS

Language Style	Interaction			Traditional		
	Adult 1	Adult 3	Totals	Adult 2	Adult 4	Totals
Direct						
Questions	21	60	81	159	125	284
Commands	5	2	7	12	15	27
Structuring	15	4	19	0	2	2
Explanations	1	2	3	0	1	1
Informational	42	100	142	48	46	94
Interaction						
Reflection	83	73	156	12	5	17
Interpretation	33	34	67	2	6	8
Relating	140	71	211	34	9	43
Complex Statements	3	2	5	1	0	1
New Uses/Ideas	6	9	15	2	13	15
Complex Explanations	3	9	12	17	0	17
Emotional Expression	2	2	4	0	0	0
Positive Affect	5	1	7	0	1	1

However, the Interaction group had more verbalizations rated as Structuring, Informational Statements and Explanations.

The Interaction groups had more verbalizations rated as Reflections, Interpretations, Relating Statements, Complex Statements, Emotional Expressions and Positive Affective Display than the Traditional groups. However, the Interaction group had less verbalizations rated as Complex Explanations and New Uses/Ideas than the Traditional group.

Based on an inspection of the data presented here, there are observed differences between the Interaction and Traditional groups on both the traditional techniques and the interaction techniques. This is especially true when looking at total verbalizations rated as traditional or interaction. These differences are also observable when examining each individual interaction technique variable. However, when looking at traditional techniques, only the Questions and Commands variable clearly differentiate the two groups. For example, treatment group adults were expected to have less verbalizations rated as Structuring, Informational and Explanations. They actually had more of these than control group adults. In addition, treatment group adults were expected to have more Complex Explanations and New Uses/Ideas verbalizations, but actually control group adults used these forms slightly more.

Adult Problem Situations Variables

Interactors employing language interaction techniques were expected to have less occurrences of problems rated as troublesome and less instances of negative displays of affect

during problem situations. They were expected to also have a higher number of problems rated as Active Handling.

Data relevant to the Problem Situation variable is presented in Table 7, page 89. Simple inspection of these frequencies shows that the Interaction group adults had a <u>total</u> of 61 situations that were rated as problems. Of these, four were rated troublesome and 44 were rated Active Handling. There were 11 instances rated as Negative Displays of Affect. Looking at each treatment group adult separately, it can be seen that Interactor 1 had 27 problems, 1 rating of Troublesome, 16 ratings of Active Handling and 8 Negative Display of Affect ratings. Interactor 3 had 34 problems, 3 ratings of Troublesome, 28 Active Handling ratings and 3 Negative Display of Affect ratings.

The two Traditional group adults had a total of 67 problems (slightly more than the Interaction adults). Of these, 35 were rated as Troublesome, 8 were rated Active Handling and there were 25 instances of Negative Displays of Affect. Examining each control group adult separately, Interactor 2 had 12 problems, 6 ratings of Troublesome, 1 rating of Active Handling and 5 Negative Display of Affect ratings. Interactor 4 had 55 problems, 29 ratings of Troublesome, 7 ratings of Active Handling and 19 Negative Display of Affect ratings.

In summary, the number of problem situations experienced in both the Interaction and Traditional groups were about the same. However, there were observable differences between groups on the Active Handling dimension and the Negative Display

of Affect dimensions. The Interaction group adults employed interaction techniques to problem situations as evidenced by the high number of Active Handling ratings. Traditional group adults received only eight ratings of Active Handling as compared to 44 Active Handling ratings for Interaction group adults. Similarly, Traditional group adults received 19 Negative Display of Affect ratings while Interaction group adults received only eight.

General Situation Adult Variables

Interactors employing language interaction techniques were expected to have higher occurrences of situations rated as Enthusiastic, Role Playing and Positive Affective Display. Data relevant to the General Situation variables is presented in Table 7, page 89. The two Interaction group adults had a total of 38 situations rated as Enthusiastic, Role Playing or Positive Affective Display.

The two Traditional group adults had a total of 34 situations rated as Enthusiastic, Role Playing or Positive Affective Display. As simple inspection of these ratings shows, there are no observable differences between Interaction and Traditional groups on this dimension.

Utterance Length and Total Dialogue

Data relevant to the Utterance Length variables is presented in Table 8, page 90.

The total lines of dialogue for the Interaction and Traditional groups are almost equal. The Interaction group had

TABLE 7

FREQUENCIES OF PROBLEM SITUATION AND GENERAL SITUATION VARIABLES FOR THE FOUR ADULT INTERACTORS

Interactor	Problem Situations				General Situations			Implementation
	Number	Active Handling	Trouble	Negative Affect	Enthusiasm	Role Playing	Other	Model Score
1*	27	16	1	8	11	4 (Total 18)	2	34.33
2	12	1	6	5	17	0 (Total 21)	4	21.86
3	34	28	3	3	8	0 (Total 20)	12	24.62
4	55	7	29	19	4	2 (Total 13)	7	14.06

*Interactors 1 and 3 employed Interaction techniques while Interactors 2 and 4 employed Direct Questioning techniques.

TABLE 8

TOTAL NUMBERS OF ADULT AND CHILD DIALOGUES, MEAN UTTERANCE LENGTH AND NUMBER OF SESSIONS FOR EACH ADULT INTERACTOR

Interactor	Dialogue			Utterance Length (Mean)	Number of Sessions
	Total Lines	Adult	Child		
1*	507	334	152	8.04	3
2	538	278	220	5.39	6
3	547	340	157	7.194	5
4	501	220	195	6.23	7

*Interactors 1 and 3 are those adults who employed language interaction techniques.

Note: Total dialogues examined equal 2,093.

a total of 1,054 lines of dialogue while the Traditional group had a total of 1,039 lines of dialogue.

There was a total of 674 lines of adult dialogue and 309 lines of child dialogue in the Interaction groups. In the Traditional groups, there was a total of 498 lines of adult dialogue and 415 lines of child dialogue. The actual number of child dialogue lines (as measured by any verbalization in the transcription regardless of length) was more for the Traditional group.

The average Utterance Length was higher for the Interaction group adults. Interactor 1 had an average utterance length of 8.04 while Interactor 3 had an average utterance length of 7.19.

Traditional group adult averages were lower. Interactor 2 had an average utterance length of 5.39 while Interactor 4 had an average length of 6.23.

There are observable differences between the Interaction and Traditional group adults in the amount of adult dialogue and the average utterance length of verbalizations of the adult interactor. The Interaction group adults had more language production and longer utterances than the Traditional group adults.

Model Implementation Score

An implementation score was considered necessary to aid in combining the findings presented above. This model implementation score was based on the expected occurrences of specified language techniques for each of the different groups

involved in the study, i.e., the two treatment (interaction) groups and the two control (traditional) groups. Frequencies of the variables for each adult interactor are summarized in Table 6, page 85. The score is computed by adding the value of the ratio of interaction techniques and traditional techniques actually observed during the study. For example, the first interactor has 75 complex initiations and 6 simple responses. The ratio of these variables is 75:6 for a score of 12.5 on the Language Type variable. This value was added to the value of the Language Style, Problem Situation and General Situation variable scores for that interactor. The result is a number which reflects the degree of implementation of language interaction techniques contrasted to the degree of implementation of Traditional techniques. The model score resulting from this process is presented in the last column of Table 7, page 89.

The two interactors for the Interaction group were Interactor 1 and Interactor 3. Interactor 1 had an implementation score of 34.33 which reflects a high use of language interaction techniques. Interactor 3 had an implementation score of 24.62 which also reflects a high use of interaction techniques.

The two interactors for the Traditional groups were Interactor 2 and Interactor 4. Both of these adults had lower implementation scores than those reported for the Interaction group adults. Interactor 2 had an implementation score of 21.86 and Interactor 4 had an implementation score of 14.06.

This reflects a lesser use of interaction techniques by these interactors.

Discussion of the Implementation of Language Model

The data reported in the previous section was intended to verify the implementation of the two very different language models employed in this study. To do this a thorough examination was made of all dialogue, observer ratings and audio tape ratings. Adults were measured on Language Type, Language Style, Problem Situations, General Situations, Utterance Length, and Total Dialogue variables. In addition, an Implementation Score was formed and presented. Following are some general conclusions concerning the implementation of the appropriate language model, based on a general inspection of the findings reported: (Tables 5-8, pages 89-92.)

1. There are observable differences between treatment and control groups on the number of initiations and complex initiations; language interaction group adults produced more initiations and complex initiations, which was a major goal of the treatment groups.

2. The groups were not observably different on the response variable. A higher number of responses had been expected in the traditional group. This did not occur.

3. Language interaction group adults used substantially more language interaction techniques and much fewer traditional techniques than the adults in the traditional groups. However, the first three techniques--reflection, interpretation, and relating--were used to a greater extent than other parts of

the model. Treatment and control groups show some differences on this measure, but it must be concluded that full scale implementation of the language interaction model was not accomplished. However, it can be said that interaction group and traditional group adults were quite different in their styles of interaction with the subjects in their groups. Treatment group adults consistently used three major parts of the language model--reflection, interpretation, relating--while control adults seldom used any parts of the model.

4. The number of problems observed in both groups was about the same. However, treatment and control group adults differed in their handling of the problems. Simple inspection shows that interactors in the language interaction group solved more of the problems smoothly and without a disruption to the group and also displayed less negative affect than the traditional group adults. It seems that the major objective of effectively handling problems with techniques presented in the language interaction model, e.g. active and smooth handling of problems, was accomplished.

5. There were no observable differences between groups on the General Situational variables. It was a major objective of the language model for adults to both encourage and show more enthusiasm, engage in more role playing and show more positive displays of affect than adults in the traditional groups. No substantial differences were found by observers on these variables.

6. A simple inspection of the numerical differences between groups shows that the groups were different on the Utterance Length variable. Adults in the language interaction group had a longer utterance length than adults in the traditional groups. The major goal of providing longer, more complex examples of language by adults in the language interaction groups was accomplished.

7. An examination of Model Implementation scores suggests that language interaction group adults actually implemented the major parts of the language interaction techniques they were trained to use. Traditional interaction group adults used these techniques to a much lesser degree.

Discussion of Rating Schedule for Group Interactions

One of the major goals of this research was to train adults to interact with children in two very different ways. It was suspected that the actions of the adults would influence the nature and the characteristics of the group interaction in predictable ways. The Group Interaction Rating Schedule provides information about the interactions on a day-to-day basis. This information was also used to help determine the extent of implementation of the two types of interaction that took place during this project.

In general, the ratings of group interaction by observers and the interactors themselves show that:

1. Interaction group adults were rated higher than traditional group adults on interaction questions. This suggests that language interaction techniques facilitated inter-

action with the adult and other children in the group.

2. Interaction group adults were rated higher than traditional group adults on positive affective display.

3. Interaction group adults were rated as having less incidence of problem situations and more successful resolution of those problems encountered than direct questioning group adults.

In summary, a simple inspection of the data collected from the Group Interaction Rating Schedule seems to indicate that three important goals of the language interaction group adults were accomplished. First, more adult-child and child-child interaction occurred in the treatment group than in the control group. Second, treatment group adults showed more positive affect. Third, less problems and more successful problem resolution occurred in the treatment group than in the control group.

Ratings of Group Interaction

An examination of the numerical differences in the frequency of occurrence of variables considered important in determining implementation of the techniques used in both treatment and control groups has been made. Furthermore, a model implementation score was formed for each adult interactor and presented for inspection. One further piece of information is added here to aid in determining the extent of implementation accomplished. Both the adult interactor for each group and the observers rating each group were asked to rate on a separate rating schedule the quality of interaction that occurred in

in the group each day. The rating instrument used (Group Interaction Rating Schedule) was designed to include important aspects of the study concerning: (1) group interaction, (2) positive affective display, and (3) problem situations. A copy of the instrument used can be found in Appendix C. Tables 9, 10, and 11, pages 98, 99, and 100 show data relevant to observer and self ratings on three dimensions: Interactions, Positive Displays of Affect and Problems. The purpose of these ratings was to characterize on a daily basis the interaction that was occurring. In each case, both observer and interactor ratings are reported for each interactor. This data provides a general impression of the perceptions of both the interactors and the observers. The ratings are meant to help the reader determine actual program implementation.

Four questions on the rating schedule concerned the type of interaction occurring during the group sessions. In most cases, observer ratings are higher than the interactor's rating of his own performance.

Interactions Ratings

The adults employing interaction techniques were Interactor 1 and Interactor 3.

The average rating by observers on the four interaction questions for Interactor 1 was 4.23. Interactor 3 received an average rating of 4.15. Self ratings for both interactors were slightly lower except on question #8 which measured the interaction of children with other group members. Interactor 1 gave an average rating of 3.7. On question #8, the self

TABLE 9

GROUP INTERACTION RATING SCHEDULE:
INTERACTION QUESTIONS

Rating Question	Interactor 1		Interactor 2		Interactor 3		Interactor 4	
	Observer	Self	Observer	Self	Observer	Self	Observer	Self
1. Interaction of adult with children in the group	5.0	4.3	4.6	3.4	5.0	3.3	4.4	4.3
2. Structure in the group	4.3	2.1	3.7	3.6	2.8	2.0	2.3	2.8
7. Interaction of children with adult	4.3	4.6	4.3	2.9	4.2	3.3	4.1	3.3
8. Interaction of children with other group members	3.3	3.8	2.8	1.5	4.6	3.0	3.6	4.2

TABLE 10

GROUP INTERACTION RATING SCHEDULE:
POSITIVE AFFECT QUESTIONS

Rating Question	Interactor 1		Interactor 2		Interactor 3		Interactor 4	
	Observer	Self	Observer	Self	Observer	Self	Observer	Self
3. Positive affective display by adult	2.6	4.0	3.3	3.1	5.0	3.3	4.1	3.5
9. Positive affective display by children	4.3	4.1	3.8	2.7	4.8	3.9	3.9	3.0

TABLE 11

GROUP INTERACTION RATING SCHEDULE:
NEGATIVE AFFECT QUESTIONS

Rating Question	Interactor 1		Interactor 2		Interactor 3		Interactor 4	
	Observer	Self	Observer	Self	Observer	Self	Observer	Self
4. Negative affective display by adult	1.0*	2.0	2.0	1.8	1.2	2.8	1.6	2.5
5. Disruption due to problems in the group	2.0	2.7	1.7	2.5	1.8	3.2	4.1	4.0
6. Success in problem resolution	4.7	3.7	4.2	3.2	4.6	3.3	3.0	2.3
10. Negative affective display by children	1.0	1.3	1.6	2.1	1.2	3.1	2.3	3.0
	N=3	N=10	N=6	N=10	N=5	N=12	N=7	N=6

*Mean scores on 5 point rating scale with 5.0 = high incidence and 1.0 = low incidence.

rating was 3.8 and the observer rating was 3.3. The adults employing traditional techniques were Interactor 2 and Interactor 4. Observers gave an average rating of 3.85 for Interactor 2 and 3.6 for Interactor 4. Self ratings were lower for Interactor 1 and slightly higher for Interactor 2. The self rating for Interactor 2 was 2.85 and for Interactor 4 was 3.65.

Positive Affect Ratings

There were two questions on the rating schedule concerning positive displays of affect by the adult. Treatment group adults were Interactor 1 and Interactor 3. Interactor 1 received an average rating of 3.5 on these questions while Interactor 3 received a rating of 4.9. The self rating of 4.0 by Interactor 1 was much higher than the observer rating. Interactor 3 gave a lower self rating of 3.6. Control group adults were Interactor 2 and Interactor 4. Interactor 2 received an observer rating of 3.2 while Interactor 4 received an average rating of 4.0. Self ratings were slightly lower. Interactor 2 gave a self rating of 2.9 and Interactor 4 gave a self rating of 3.2.

Problem Ratings

There were four questions on the rating schedule concerning problem situations which occurred during the interaction sessions. Three questions involved the incidence of problems which were disruptive and during which there were instances of negative displays of affect involving both the adult and the children in the group. One question involved success in problem resolutions.

Treatment group adults were Interactor 1 and Interactor 3. Interactor 1 received an average observer rating on the three problem incidence questions of 1.3 while Interactor 3 received a 1.4. Self ratings were slightly higher with both Interactor 1 and 2 giving a self rating of 3.0. (These reflected low ratings of incidence on the rating scale.) Control group adults were Interactor 2 and Interactor 4. Interactor 2 received an average observer rating of 1.7 while Interactor 4 received a fairly high rating of 2.7. Self ratings were higher with Interactor 2 giving a self rating of 3.1 and Interactor 4 giving a rating of 3.2.

On the question concerning problem resolution, Interactor 1 received a high rating of 4.7 and Interactor 3 also received a high rating 4.6. Self ratings were lower with Interactor 1 giving a self rating of 3.7 and Interactor 3 giving a rating of 3.3.

Interactors 2 and 4 did not receive as high a rating on this question. Interactor 2 received an average observer rating of 4.2 while Interactor 4 received a lower rating of 3.0. Self ratings were even lower with Interactor 2 giving a self rating of 3.2 and Interactor 4 giving a rating of 2.3.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Language development and the adult's role in modeling, stimulating and influencing language development has been presented in this study as a major concern for research and early education preschool programs. Language develops not only as a cognitive process but in the context of social and situational variables which influence the way in which language will be used for communication.

Much evidence is presented which supports the contention that the adult's role is extremely important in the language development process and that techniques such as Cazden's (1972) language extension and expansion techniques have proved valuable in influencing language development. These studies have shown that children learn to use language in the context of action dialogues with adults. While interaction with peers is also important for language development, interaction with adults provides more cognitively complex models of language, which children can assimilate into their own structure. If these new structures are then practiced and used with other children while adults are there to expand and clarify the language expressed, language development is more apt to be influenced.

Programs that include language development as a curricular component have taken two polar positions. Didactic programs employing a structured, pattern-drill technique to influence language development have been used with some success in influencing cognitive aspects of language such as vocabulary and grammar. However, little evidence is available concerning attempts to influence language usage and development in more informal, less rigid programs. For example, whole-child programs typically downplay systematic attempts to influence language development. In addition, evidence of the effect of language components of such programs on language development and usage has not been available.

There seems to be a lack of research on the use of language techniques in a systematic, structured way within settings that allow open expression, freedom of movement, and self-initiated language usage by the child. In other words, there seems to be a lack of evidence concerning attempts to combine the best aspects of these two very different approaches to stimulating language development, i.e. structured, systematic language components within an open expression, free moving environment.

A language interaction model was developed for this study that allows for and stimulates open expression by the child, which is then reenforced, interpreted, related, extended, and expanded by the adult interactor.

It was hypothesized that this language interaction model would influence the amount of language expression by the child,

the type of language used, the length of the child's utterance, and the type of affect that the child displayed.

The specific purpose of the study was to:

1. Identify factors in language modeling by an adult which stimulate child language usage.

2. Present and examine the implementation of a language interaction model.

3. Measure the differences in language usage between subjects in groups using interaction techniques and groups using traditional interaction techniques.

4. Measure differences in displayed affect, i.e. enthusiasm, interest, involvement, etc., between these same groups.

5. Examine observational, audio tape, and observer ratings data to determine how well adults in the study actually implemented the language interaction and traditional interaction techniques they were trained to use.

In general, the study was an attempt to gain information that would be helpful in providing effective programs in language development for preschool children.

The study was done with three to three and one half year old lower socioeconomic status children in a day care facility. Groups of four children each were exposed to either language interaction techniques or traditional interaction techniques for one half hour per day, four days each week. Observational, audio tape and observer ratings data were collected on each group during a five-week period.

It was hypothesized that exposure to language interaction techniques would influence the child in the following ways:

1. More unsolicited initiations and complex initiations by treatment subjects.

2. More use of language interaction types of language, i.e. reflections, interpretations, relatings, statements, new uses/ideas by treatment subjects.

3. Longer communication statements by treatment subjects.

4. More positive displays of affect by treatment subjects.

A One-way Analysis of Variance was used to test the Observational and Audio Tape Child Language Variables. Separate contrasts were done on each variable to examine both treatment and control group differences as well as differences between treatment groups and differences between control groups.

To determine the extent of implementation of the language interaction and traditional interaction techniques used by the adult interactors, Adult Language Variables were examined. In addition, an implementation score was formed from the ratio of the interaction variable and traditional variable frequencies for each adult. Finally, observer and self ratings of various factors of the group interaction were examined. Following is a general summary of the findings for Child Language Variables, Adult Language Variables, and Implementation data.

Child Language Variables

Language Type

One of the major findings of this investigation involved the significant differences observed on Child Language Type Variables. These included the Initiation, Complex Initiation,

Response and Complex Response Variables. Subjects in the language interaction groups (treatment) had significantly more initiated verbalizations than those subjects in the traditional interaction (control) groups. These treatment subjects also had significantly less responses to adult direct questions than subjects in the traditional interaction (control) groups.

However, contrary to expectations, subjects in the traditional interaction (control) groups had significantly more Complex Responses.

Two factors make the above findings important to this study. First, it was believed that an atmosphere could be created in the treatment group in which subjects felt free to initiate and communicate with the adult. Secondly, it was thought that direct questions by the adult would limit give-and-take communication resulting in short, simple verbalizations.

The evidence showing that treatment subjects initiated more verbalizations and complex verbalizations while having fewer responses to direct questions than the control group subjects, supports the accomplishment of this goal.

The finding of significantly more complex initiations was also considered a major finding. A basic assumption in this study was that more actual language production and longer average utterances enhances language development. This is consistent with Wood's (1976) belief that language must be practiced and Cazden's (1972) attempts to expand and extend language utterances of young children. It was, however,

believed that more influence on language development and usage would occur in the treatment condition. The finding that control subjects had significantly more Complex Responses is contrary to this expectation. It is possible that consistent contact with an adult may influence the length of child utterances regardless of the communication style of the adult.

Language Usage

Expected differences on Child Language Usage Variables did not occur. It was hoped that exposure to language interaction techniques such as reflection, relating statements, interpretations, new uses or new ideas, emotional expression, etc., would result in a modeling effect. This effect was also expected for control group subjects who were exposed to traditional interaction techniques such as questions, structured statements, commands, short explanations, etc. However, none of these expectations occurred. Neither treatment nor control group subjects were observed to use these types of language to any great extent. No significant differences between treatment and control groups occurred on any of these variables examined separately.

There were a few non-statistical differences observed between the treatment groups as well as between the control groups. These were considered irrelevant to the major hypotheses of the study. They do indicate, however, a differential effect on subjects in the different groups. This may be related to the extent that each adult actually used these techniques and is why implementation data was examined.

Affect Variables

Of the Child Affect Variables measured in this study, only the Enthusiastic Variable was significant in the direction of the treatment group. No other differences were noted on these variables. It had been expected that the language interaction group adults would create an atmosphere in the groups which would significantly influence general interest, happiness, role playing, etc. More displays of negative affect and disinterest were expected in the traditional interaction groups. Statistical analysis of this data did not verify these expected differences. Another rating procedure was used to attempt to measure the Affect Variables. This will be discussed in a later section. (Please refer to Tables 9-11, pages 98-100.)

Utterance Length

The attempt to influence the length of child utterances was another major goal of this study. It has already been reported that language interaction group subjects had significantly more Complex Initiations than traditional interaction subjects. In addition, language interaction subjects had significantly longer average verbalizations (mean utterance length) than traditional interaction subjects. These two findings in conjunction are important to this study. Both the length of the verbalization and the source (child initiated) seem to have been influenced by exposure to language interaction techniques. Two important goals were accomplished. First, subjects began communication with the adult, allowing adult reaction to the child's initiation. Second, the adult's

more complex, expanded forms of language usage seem to have influenced the length of the child's verbalizations. This, in its most conservative interpretation, suggests that the subjects are using and practicing language forms more in the treatment group. However, statistical evidence does not support the belief that treatment subjects would use more language interaction forms of language.

Implementation Data

Adult interactors were trained to implement two very different styles of interacting with young children. Language interaction group adults were trained in the language model presented in this study and were used in the treatment condition. Traditional interaction group adults were trained in the use of questioning and direct teaching techniques and were used in the control condition. Although these adults spent approximately ten hours' time in training sessions and experienced two or three actual sessions with children before beginning the study, it was decided to monitor Adult Language and Affective Variables to determine the extent of program implementation. A similar approach was taken by Stallings (1975). The rationale for such a procedure involves the obvious necessity to know whether or not the program, as designed, has actually been implemented. This study provides implementation data on three different levels. First, an inspection of the frequencies and numerical differences on adult variables similar to the child variables. Second, an inspection of the

model implementation score formed directly from frequencies of language interaction and traditional interaction variables. Third, an examination of ratings from the Group Interaction Ratings Schedule.

Based on an examination of this information, the following general conclusions can be made.

Adult Language Data

First, the treatment and control groups differ on the number of Initiations and Complex Initiations; language interaction group adults produced more initiations and complex initiations than traditional interaction group adults.

Second, there were no observable differences between language interaction group adults and traditional interaction group adults on the Response Variable.

Third, language interaction group adults used more language interaction techniques and much fewer traditional techniques than the adults in the traditional interaction groups.

Fourth, the number of problems in both the language interaction and traditional interaction groups was about the same. However, these groups differed in their handling of these problems. For example, adults in the language interaction groups solved more of the problems smoothly, without disruption to the group, and with less displays of negative affect (as rated by observers) than adults in the traditional interaction groups.

Fifth, there were no observable differences between language interaction and traditional interaction groups on Situa-

tional and Affective Variables. It was expected that language interaction group adults would be substantially different than traditional interaction groups on enthusiasm, role playing, and positive display of affect. Actually, all groups were observed to be fairly high on these variables.

Sixth, adults in the language interaction groups had substantially longer verbalizations than adults in the traditional interaction groups. This finding confirmed that language interaction adults were modeling and using more language than traditional interaction groups, as was expected.

Seventh, an examination of Model Implementation Scores (formed from ratios of interaction to traditional variables as discussed on page 88) shows that language interaction adults actually implemented the major parts of the language interaction model as trained. Adults in the traditional interaction groups used a great amount of questions and direct statements while using very few verbalizations that could be rated as language interaction techniques (as defined in this study).

Group Interaction Ratings

Some general information was collected on a day-to-day basis to help characterize the nature of several important aspects of the study. This information was intended for use as feedback to adult interactors. It was collected using the Group Interaction Rating Schedule (Appendix C). Both the trained observers and the interactors themselves filled these forms out immediately after each interaction session.

General inspection of these ratings reveals several interesting findings pertinent to this study. As has been reported, statistical analysis of the observational and audio tape data does not conclusively support the hypothesis that more instances of positive affective displays would occur in the language interaction (treatment) groups. The Enthusiastic Variable was, however, significant in the direction of the treatment groups. Although this evidence is not conclusive, viewed along with the Group Interaction Rating Schedule data, there is some support for the idea that language interaction group subjects did indeed display more positive affect than did traditional interaction subjects.

The Group Interaction Rating Schedule also provides some information regarding adult implementation of the language interaction and traditional techniques used in the treatment and control groups. For example, adults in the language interaction groups were rated higher on interaction questions and on positive displays of affect, had less incidence of problems (with more of those problems rated successfully resolved) than traditional interaction adults. These findings were expected given that treatment adults actually were using techniques they were trained to implement.

In general, an examination of the rating schedule data shows that language interaction group children interacted more with the adult and other children than traditional interaction children. Second, language interaction group children showed more positive affect (i.e. enthusiasm, interest, happiness)

than traditional interaction children. Third, language interaction group children showed less negative affective display than traditional group children. Fourth, there was much less disruption due to problems and more successful problem resolution (i.e. less anger, crying, withdrawal behavior by children) in the language interaction groups than in the traditional interaction groups.

Discussion and Conclusions

It was the main hypothesis of this study that subjects exposed to daily group sessions with adults modeling two extremely different types of language usage would show significant differences across a wide range of language variables. These variables were classified as Child Language Type Variables, Child Language Style Variables, and Child Affective Variables. Language Type Variables included child initiations, child complex initiations, child responses, and child complex responses. Language Style Variables included use of questions, direct statements, simple explanations (traditional interaction variables) and use of reflections, relating statements, interpretations, new ideas/uses, story telling and emotional expression (language interaction variables). Affective Variables were defined as enthusiastic, happy, unhappy, negative displays of affect, disinterest, role playing, some interest, positive display of affect and verbalizations to others.

There were actually three major goals which this research sought to accomplish:

First, the presentation of statistical evidence and major findings regarding the hypotheses in this investigation.

Second, the implementation, verification of implementation, and refinement of a language interaction model which could be used to enhance language development in young children as well as facilitate language usage.

Third, the development of instrumentation and methodology to gather information concerning the actual implementation of the language interaction model in a day care setting.

This discussion examines each of the three goals given the evidence gathered in the investigation.

Major Findings

The following statistically significant findings were evidenced in this study:

1. Treatment subjects used significantly more initiations and complex initiations and less responses than Control subjects.

2. Control subjects used significantly more responses and complex responses than Treatment subjects.

3. Treatment subjects had significantly more complex initiations than Control subjects.

4. Treatment subjects had significantly longer utterances than Control subjects.

These four findings, viewed together, suggest that interaction in the Treatment group was characterized by many more topics initiated by the child and responded to by the adult. This is one of the functions of language interaction techniques--to stimulate and react to child language. In addition,

not only were these verbalizations child initiated, but they were longer and more complex. Many of them contained two or three related ideas. Treatment group subjects, furthermore, made mostly response statements which were much shorter, less complicated verbalizations. However, contrary to expectations, there were significantly more complex responses in the Control condition than in the Treatment condition. Apparently, exposure to adult traditional language models over a period of time influenced the subjects to verbalize with more complex responses. The almost total lack of questions by adults in the Treatment group accounts for the lack of complex responses by Treatment subjects (i.e. very few responses of any kind were made by Treatment subjects).

These four statistically significant findings were critical to this study. Language interaction techniques are based on the adult's reaction to the child. This reaction is in the form of statements intended to continue and expand the interaction while adding new language content to the child's repertoire of language forms. So it is quite evident that an atmosphere must be created by the adult which encourages the child to begin a conversation. It appears that this atmosphere was created in the Treatment group as evidenced by significantly more child initiations, complex initiations and longer verbalizations with correspondingly few responses to adult initiated statements. Conversely, it appears that interaction in the Control group was limited to significantly more responses and shorter utterance lengths except for the finding of more complex responses in the Control group.

5. Treatment subjects had significantly more enthusiastic ratings than Control subjects.

The importance of this finding is accentuated by the fact that observers used this designation most often to represent positive affect in general, even though there were other positive affect variables (i.e. happy, some interest, positive affective display). Early in the study, it was determined that making discriminations on this dimension was difficult. Consequently, the Enthusiastic Variable became the major indicator of positive affect.

It was expected that Treatment subjects would be more inclined to make positive displays of affect because of the atmosphere created by adults using interaction techniques. A specific purpose of these techniques is to simply react to the child and thus validate the action, feeling or statement for the child. Under these conditions, more positive feelings were expected to occur. This hypothesis was supported by the significant findings on the Enthusiastic Variable.

These five significant findings, however, represent only a small number of the variables tested. None of the Child Language Style Variables were significant. Exposure to modeling by adults of language interaction techniques over a period of time were expected to produce a modeling effect and result in use by subjects of these forms of language. This did not occur.

Although the Enthusiastic Variable was significant, other Child Affective Variables, including measures of negative

affective display and disinterest that were expected to be associated with the Control subjects, were not significant.

In summary, there were five significant findings which reflected expected differences between Treatment and Control groups. These findings were very important in establishing that an atmosphere can be created that allows more child initiated, complex language to occur. However, only partial success at showing the influence of language interaction techniques can be claimed. Across many of the variables measured in this study, the results were inconclusive. Enough evidence has been gathered, however, to suggest that the language interaction model does influence language usage and warrants further study.

Model Development and Implementation

The second major goal of this study was to present a model of adult language usage that would be useful in preschool language development programs. A four-week try-out of language interaction techniques was conducted with Head Start children prior to the major study. The purpose of this try-out was to refine the interaction techniques for use with small groups. As was mentioned earlier, the model itself was based on a communication system for parents to be used in interactions with one child at a time. The model presented for this study was adapted for use with groups of four children. Furthermore, the original communication system was meant to deal specifically with behavior problems. The adapted model combined techniques useful for handling problems with techniques useful for expanding and extending the language usage of the children.

The Language Interaction model used in this study was presented in Chapter I. Further information is found in Appendix D which shows the manuals used for training the adult interactors and observers.

Since it was considered important to obtain data which both verified program implementation and offered feedback for further refinement of the model, audio-tape and observational data were collected on the four adult interactors.

Adult Language Variables are similar to the Child Language Variables already presented. Adult Language Type Variables included Initiation, Response, Complex Initiation, and Complex Response Variables. Adult Language Style Variables included both traditional techniques (i.e. questions) and interaction techniques (i.e. reflection, interpretation). Adult Affective Variables included both positive and negative affective display variables.

An examination of the Adult Implementation data shows that Treatment adult interactors easily implemented the initiation techniques (Language Type) and also used longer, more complex verbalizations. Treatment group adult verbalizations were substantially longer and more complex than Control group adults. Treatment group adults also used many more language interaction techniques (Language Style) than Control group adults. Especially used were the Reflection, Interpretation and Relating techniques. The New Uses/Ideas technique was used less often.

Some observational data related to problem situations shows that Treatment group adults also used model techniques

more often than Control group adults in resolving problems. This resulted in more ratings of "active handling" and "smooth handling." Active handling refers to adults using the language interaction techniques to resolve problems. Adults using interaction techniques received more "smooth" ratings by observers while those adults not using active handling techniques received more ratings of troublesome handling. As was expected, adults trained in the model techniques handled problems more effectively. This was an important goal for Treatment adults since disruption by problems affects the atmosphere in the groups, disrupts communication, and inhibits language development and usage. Adult Affective Variables were also examined. It was expected that adults using interaction techniques would have more emotional expressions and positive displays of affect. This was considered necessary for the creation of an atmosphere that would enhance open communication by the children. However, an examination of these variables was inconclusive. An examination of the Group Interaction Schedule does indicate, however, that Treatment group adults showed more enthusiasm and more displays of positive affect.

One further measure of program implementation involved the formation of Implementation Scores. As discussed in Chapter IV, page 88, these scores took into account the number of times adults used language interaction techniques in relation to the number of times they used traditional language techniques. Simple inspection of these scores show differences between Treatment group and Control group adults on this dimension.

In summary, it seems clear that major portions of the model were implemented as planned. Language interaction techniques were used by Treatment group adults while Control group adults used traditional interaction techniques. Implementation Scores also verify this conclusion. There is also evidence that the use of language interaction techniques and the enthusiasm displayed by Treatment adults resulted in the creation of an atmosphere which enhanced open communication and lead to a low incidence of disruptive problems. This is supported by significant findings on the Initiation, Complex Initiation and Enthusiastic Variables in favor of the Treatment group subjects.

In addition to the general conclusion that the model was satisfactorily implemented, valuable information was gathered which will help in the refinement of language interaction techniques and the model for further use.

Methodology and Instrumentation

One of the major problems conducting this type of field research was devising a way to observe and record relevant adult and child interaction data. Since a major focus of the study involved a close examination of language used by both adult and child, it was decided to audio tape all interaction sessions. These audio tapes were then transcribed and coded by adults familiar with child language. This process proved to be very effective. After the first session, subjects rarely paid any attention to the tape recorders. The vast majority of taped data collected was intelligible and usable. Coding the tape transcripts allowed careful examination of the dialogue

and facilitated reliable coding of the adult and child verbalizations. The frequencies of similarly coded verbalizations then became the variables of interest in this study.

Another major focus of the study was to observe positive and affective displays during interaction sessions. Observers were trained to code the adult and child verbalizations, affective variables and key words linking the communication with the situation variables. After examining several types of observation schedules, an observation instrument was developed specifically for this study. This instrument is found in Appendix A. Discriminations between the various affective variables were found by observers to be difficult to make because of the great amount of interaction taking place at any given time. After the first session, only the enthusiastic, negative displays of affect, and problem situation ratings were made.

If this study is any indication, observational research of this type is fraught with problems. Although much time was spent developing the observational instrument, observers found it difficult to record every occurrence of the language or affect type they were observing. Even though categories on the instrument were mutually exclusive, there was not enough time to record data consistently.

Observational data, especially information on the Enthusiastic and Problem Situation Variables, was, however, helpful in providing a general characterization of the interaction taking place between the child and the adult and between children in the group. This data suggests that an atmosphere

conducive to open communication can be created and that problems can be handled effectively. Observational data on other variables of interest were inconclusive. Several issues concerning observation warrant further discussion in the recommendations section.

Recommendations

Modifications of the Present Study

Several factors should be considered in attempting to overcome the problems encountered in this research. Specifically, these involve the training of interactors, the observational instrument and observational procedures, use of audio tapes as the primary means of recording language sequences, the length of the study, and the restrictions on the group interaction.

Training of Interactors

At first it was thought that training of interactors could be accomplished in a fairly short period of time. It appears that adults have a strong tendency to use traditional language techniques such as direct questions, commands and didactic informational statements even after they have been trained in language interaction techniques. Future training should be of a longer duration (12-15 hours of instruction). Several hours of observed interaction with children during which feedback is given by the trainer is also suggested.

Although several language interaction techniques were used by Treatment group adults, more consistent use of the

expansion and extension parts of the model could have been accomplished with more intensive training. Furthermore, more complicated language content could have been modeled by more highly trained interactors. For example, dialogues should have included more concept expansion, as well as relating and connecting concepts, as described in Chapter I and Appendices D and E. Part of the reason for inconsistent implementation of these techniques also results from restrictions put on group movement and will be discussed in a later section.

It is possible that more intense use of all the language interaction techniques over time would show conclusive results. More thorough training and more experience interacting with children before actual program implementation is a strong recommendation of this investigator.

Instrumentation and Procedures

Problems with instrumentation have troubled field study research in the past and this study proved to be no exception. Interaction in a group setting necessitates such intense observation and involves so many factors that are hard to control for that it is difficult to gather highly reliable observational data. The instrument developed for this study was designed to circumvent some of these pitfalls. Mutually exclusive categories were established, several variations of the form were developed and refined before the final form was adopted, practice sessions using video taped interactions were conducted. Still, modifications of the instrument needed to be made after the first session of the project based on what observers be-

lieved were more realistic expectations of them. This resulted in the recording of fewer variables than originally intended and limited the ability to draw conclusions about different degrees of affective display by adults and children. Furthermore, reliability estimates were only moderately high resulting in some of the data being inconclusive.

As with the training of adult interactors, more thorough, intense training, coupled with actual observation of group interaction prior to the onset of the project, would help with data collection. A rigid time sampling observational process and a large number of trained observers may also be a reasonable solution to these problems.

However, it is the recommendation of this investigator that more modern techniques of data collection be developed for field research. Audio tapes of each interaction proved quite useful but were limited and dependent on being able to link communication sequences with corresponding observational data. Video taping the interaction groups would have solved this problem. However, video tape equipment can be cumbersome, hard to transport and inconvenient to use. It seems reasonable that video tape portable cameras and home taping systems for use with television are a revolutionary answer to field research. Battery operated portable television cameras are now available and could be used to systematically record group interaction. Data could then be coded accurately and reliably at leisure. Interaction impossible to record using observation instruments and audio recorders could be easily and unobtrusively gathered in this way.

Length of Study

This study was conducted over a five-week period of time. Half hour interaction sessions were conducted four days a week during this period. It was originally believed that this length of time would be adequate to show the influence of language interaction techniques on child language usage. Although several statistically significant findings were recorded, the expectation that subjects in the Treatment groups would show a modeling effect were not realized. Observations in the day care facility, made by this investigator at times other than the interaction sessions, showed that subjects in this study were exposed primarily to rigid, structured, traditional language interaction with adults during the course of the day.

In short, the day care experience duplicated for the entire day the Control group situation. It seems plausible that one half hour a day for twenty days is not enough exposure to significantly impact language development. Systematic use of language interaction techniques over a much longer period of time is recommended.

In light of this observation, the findings that adults can create an atmosphere more conducive to open communication, as was found in this study, takes on more significance. The fact that Treatment subjects showed more positive affect, as evidenced by the significant Enthusiastic Variable, is encouraging given the conditions explained above. However, there can be no doubt that more intense and longer exposure to language interaction techniques are necessary for more conclusive results.

Restrictions on Interaction

Another factor influencing the outcomes of this study involved the atmosphere and restrictions in which the interaction sessions took place. Study groups took place in the day care setting while activities were going on with other children. In addition, groups were expected to remain together in a certain section of the room. This situation most certainly restricted interaction. Language interaction techniques depend on child initiated topics and conversations which are then reacted to by the adult. Only a limited amount of stimulis can be interjected into small group settings.

Future use of the model should probably be employed in less restricted settings where groups have freedom to move and explore. The adult's role would be the same, but the freedom to explore would put subjects into contact with more experience and thus offer more occasions for the adult to employ language interaction techniques.

This type of situation would more closely resemble the original intention of the use of language interaction techniques. The ideal situation would be several trained adults using these techniques whenever the opportunity arose. The enthusiasm of the adult and the non-threatening atmosphere created by the adult would simultaneously attract groups of children and allow extended use of language interaction techniques.

Implications for Future Research

Much of the research conducted in this study provided a solid base of information, methodology, and feedback for

refinement of the language model. Hopefully, this research will be helpful for those pursuing study in this area.

1. The initial belief that wholistic programs should and can impact language development is still a major subject of concern in light of this research. In a short period of project time, even with data collection problems, significant findings suggest that adults can impact language usage. Treatment subjects talked a great deal. They were not simply answering questions. During over eight one-half hour sessions measured, there were 1,054 lines of dialogue spoken between adult and child in the interaction group. Much of this interaction was child initiated with the adult merely reacting to and interpreting the verbalizations to the child.

Much more needs to be studied. With more intense training and infusion into ongoing wholistic programs, a tremendous impact on child language usage and development may be attained.

Future research should address itself to systematic measurement of both the adult and the child in the context of these programs.

2. Much of the incidental evidence, the observer ratings, some isolated child dialogues, spontaneous outbursts of enthusiasm, low incidence of problem situations, etc., suggest that child subjects simply enjoyed the experience and the opportunity to interact with an adult. Future research might address the impact of adult language techniques on the self-concept, feelings about self and the school situation, etc., in programs where systematic language interaction techniques are employed.

3. Future research may address itself to various adaptations of language interaction techniques, for instance in parenting endeavors where concern is for impacting language and cognitive development; for use in play therapy sessions; for use in any group situation focusing on either cognitive or affective concerns.

4. One final implication is an exciting one because it is in the process of being employed and studied at the present time. An adaptation of the language interaction techniques has been made for use in early elementary problem solving sessions. In the recent past, much effort has been expended in talented and gifted programs to teach and employ higher-level thinking skills. Many problem solving models use brainstorming techniques to enhance creativity and then teach systhesis and evaluation skills to aid in the problem solving process.

The language interaction techniques employed in this study have been found useful with early elementary students at every stage of the problem solving process. Several staff members in three school systems are now being trained in the use of these techniques to stimulate language usage in the problem solving process taught in conjunction with the districts' Talented and Gifted programs.

Future research endeavors should investigate the relationship between language usage facility in communication and its impact on creativity and creative problem solving.

There can be no doubt that competent language usage is a very important part of early development which has implications for every level of development. There can also be no doubt that programs need to emphasize the role of the adult in a child's language development and usage. This study has offered some interesting ideas regarding the nature of the techniques that should be incorporated into such programs. It has also offered some limited evidence that language usage by a child can be stimulated by an adult, somewhat shaped and expanded by an adult, and that an atmosphere can be created which allows an action dialogue to occur, language to be practiced and used, and learning of new language for use in communication can be accomplished. Future research should lead to the refinement of language interaction techniques and their adaptation to uses not only in preschool language programs, but in any early educational program which requires communication for its success.

APPENDIX A

APPENDIX A

OBSERVATION SCHEDULE

ADULT																		CHILD													
To Whom		What					Situation											What						Situation							Comments
							Problem					General								Response		Initiate									
General/Specific	Child	Structuring	Question	Command	Language interaction	Other	Negative affect	Troublesome	Smooth	Ignoring	Active handling	Enthusiastic	Role playing or dramatic play	Neutral	Other	Key Words		Child	Response or initiation	Response to question	Response to comment	Asks question	Statement	Role playing or dramatic play	Enthusiastic	Happy	Unhappy	Negative affect	Disinterested		

APPENDIX B

APPENDIX B

ADULT/CHILD TRANSCRIPTIONS

We going home. (1)

Goodbye. (1)

Goodbye. (2)

Goodbye. (3)

Everyone is pretending they're going home and leave me all alone.

Let's go, Jim. (2)

Everyone is marching.

Matt is leading everyone away.

Everyone is in a line going really slow.

Make a turn and come back so we don't bother the others.

That was really something.

Matt said we were going to go home and you got up and went slow and followed him.

Now we go home fast. (2)

Now you pretend you're going fast.

Chris stay here.

I have shorts on. (2)

I have shorts on. (3)

All day long you've been telling me that.

I was at another house. (1)

Oh, you were at a different house.

I have two dogs. (2)

I was telling Jenna that she was upset but you were telling me about the dogs . . .

. . . and two kittys . . .

. . . and two kittys . . . you're thinking about animals because you're going to Potter's Park today.

Take her to the doctor. (2)

Oh, you think I should take Jenna to the doctor because she hurts so bad.

I don't think she hurts that bad.

Sometimes you just feel bad about something.

When you're sick you go to the hospital. (1)

When you're sick you go to the hospital.

If you're <u>real</u> sick you go to the hospital.

If a <u>little</u> sick you go to the Doctor.

You throw up in the toilet . . . (2)

You throw up in the toilet.

That's when you're sick at home.

I done that when I was a little baby. (1)

APPENDIX C

APPENDIX C

RATINGS

1. Interaction of adult with children in the group.	Low	1	2	3	4	5	High
2. Structure in the group.	Low	1	2	3	4	5	High
3. Positive affective display by adult.	Low	1	2	3	4	5	High
4. Negative affective display by adult.	Low	1	2	3	4	5	High
5. Disruption due to problems in the group.	Low	1	2	3	4	5	High
6. Success in problem resolution.	Low	1	2	3	4	5	High
7. Interaction of children with adult.	Low	1	2	3	4	5	High
8. Interaction of children with other group members.	Low	1	2	3	4	5	High
9. Positive affective display by children.	Low	1	2	3	4	5	High
10. Negative affective display by children.	Low	1	2	3	4	5	High

APPENDIX D

APPENDIX D

INTERACTION TRAINING MANUAL OUTLINE

Session 1

1. Overview of project
2. Introduction to training manual
3. Five dimensions of the model

Session 2

1. Structure and content of model
2. Examples of dialogues
3. Practice tapes of dialogue
4. Role playing dialogues

Sessions 3-5

1. Interaction in the preschool
    a. Observation of interaction
    b. Demonstration of model
2. Practice
3. Feedback

As you know, this project involves an attempt to influence the language usage of young children. Interactors will be trained to use several simple techniques which I believe meet three basic conditions necessary in any attempt by an adult to influence a child's language development:

1. Create a non-threatening, trusting environment so that the child feels free to communicate.

2. Allow the child to initiate or freely respond to the adult or another in the group with the adult as responder.

3. Use the opportunity to provide new input, use new structures, suggest new ideas, etc. for the child.

The goals and expected effects of meeting these conditions are as follows:

1. The atmosphere created should allow more open communication, thus the child has a chance to practice language already in the repertoire.

2. Allowing the child to initiate a verbalization makes the subject of the communication something that matters to the child; the adult as responder helps to validate this idea, feeling, etc., for the child; the result should be more involvement, interest, enthusiasm etc., by the child.

3. Modeling new forms of language usage at every opportunity gives the child new input to help language development; this should result in more complex and diverse communication and language usage over the course of the program.

This project takes the perspective that "others" have an important role in language development. It will attempt to

show that an adult can create an atmosphere that allows communication to take place. It will attempt to show that situational variables under the control of the adult make a difference in such things as the amount of language used, its length and complexity, the number of child initiated verbalizations, and other key variables.

Although research has shown that adult language to children in general has more impact on the child's language development than a peer's language, it has also been shown that the form of adult-child communication is quite diverse. It is my opinion that an adult does not automatically know how to talk to a child. Certain techniques have more influence than others and these can be quite easily learned and applied.

The basic design of this project is to have "trained interactors" go to a day care center three days a week and interact with four children at a time for approximately one half hour per day. The program will continue for six weeks, part of which time will be a training session. The major purpose of this interaction will be to use different language techniques with the children.

Part of the time interactors will be using what I call language interaction methods, part of the time they will concentrate on using many more questions and a more structured approach. The groups will be observed at least three times during the course of the project. The purpose of these observations is to examine the nature of the interaction in each group and some behavioral characteristics that are occurring.

You are being provided with a training manual which thoroughly explains the goals, structure and function of the language interaction model. The manual also gives an explanation and examples of questioning procedures to be used on alternate days. For those of you doing the observations, there is also provided a manual explaining the categories used in the observation schedule.

It is important that you read and become very familiar with these procedures. During the remainder of this session and during session two, this model will be explained, further examples will be given, some role-playing will be done, and some taped examples will be listened to. The following three sessions (3-5) will be in a day care center where you will have the opportunity to observe the children you'll be interacting with, to observe a demonstration of the type of interaction expected and to practice the techniques yourself. Feedback sessions will be held after these visits to the day care center.

Following is an explanation of the five dimensions of the model.

Function

The model itself is based on an adaptation of Dr. Stollak's system of communication which is intended for use by parents. His major concerns are to maintain in the child a feeling of psychological safety and love and belongingness while still dealing with the many discipline and crisis intervention duties of parenthood. The parent should also be a model of controlled behavior and emotional expression. His system involves:

1. Reflecting back the actions of the child.

2. Offering surface interpretations of what the child may be feeling and thinking.

3. Telling the child how the adult feels for the purpose of relating the action to other actions and as a model of expression.

4. Setting limits on behavior if necessary by telling what is expected of the child in the immediate situation.

5. Offering alternative behaviors and guidelines for behavior in the next situation.

Instead of regarding the system as a way parents can deal with their children, the language interaction model proposed here is intended to stimulate language usage, and provide an opportunity to teach, i.e. label, expand, model language, explain concepts, and mediate the environment. It also provides an opportunity for the child to practice language he already knows and to learn new usage.

Major Goals

1. To maintain psychological safety needs--that is to make the child feel what he does is acceptable and worthy of the adult's attention.

2. To meet love and belongingness needs--that is to make the child feel that what he does is worthwhile.

3. To develop an awareness of the self and of others--by providing labels for emotions and feelings, the child's own feelings, and those of others.

4. To develop competence in interpersonal skills--that is to acquire the ability to express and to communicate with others.

5. To increase self-confidence, self-worth, and feelings of power over the environment.

6. To increase language usage ability through the opportunity to hear and practice language for communication.

This language interaction model uses any stimulus situation, especially the child's own language or interests, as the beginning of a two-way language exchange. The adult first stimulates conversation by reacting to the child, and then uses the opportunity to model language usage.

Structure

Following is a description of each of five different parts of the model. However, this is only a general description of the steps the interaction can go through. The actual content of what can be said is described in much more detail in the content section. It is also important to notice that although the interaction usually begins with reflection, following that, any other part of the model can be used. The more parts used in each interchange the better, but at least part of the model should be used in every adult-child interchange.

A. Reflection of Action: This involves simply stating what is going on or restating what the child has said. It usually involves simply noticing what the child is interested in. The purpose is to show that you are interested in what the child is doing and offer him a chance to react and become

involved in a conversation. "You dropped that big block and it made a loud bang and knocked over those dolls. Oh, you're going to try it again." "You're handing me the ball and laughing." In group situations, actions of any member of the group can be reflected.

B. Interpretation: These are explanations of the child's action. It involves saying what you think the reasons behind them are, what you think the child is feeling or thinking, etc. Interpretations can also be related to other group members. It can be simple like "You think that's pretty funny" or "You tried to hurt me" or "You're angry about that." It may be more complicated and involve explanations such as "You laughed and are surprised because it made a bang and it sort of scared you at first; but everybody started looking at you so you want to try it again. I think you like to have people look at you." The purpose of this step is to provide labels for what the child is feeling and experiencing and help make sense of what's going on. It models language usage for explaining feelings and emotions and conveys a message that you care and understand.

C. Relating: This involves relating the action to the speaker, another adult, to other actions, or to the actions of other group members. This helps the child see that his action or interests are linked to other actions in the past, future and/or present, as well as to others in the group. It shows that they are legitimate because others have also done them and felt that way. The stimulus may be a problem or crisis situation such as a child causing a disturbance to get

attention. "It's really nice to get attention. I like people to notice me, too. I think everybody likes people to pay attention to them." Another example, "I saw you doing that yesterday, too. You threw the blocks down. I think you do that a lot to get attention." If the stimulus is not a problem situation, relating can be about climbing or building with the blocks. "You stacked the blocks up so you could climb on them. John's climbing on them, too." The point is to legitimize the action by relating it to something that is done by other people and to other actions in time.

D. Limits and Alternatives--Problem Situation: If the situation is a problem, a limit should be set. A limit is what the adult considers appropriate behavior or how far the child can go. For example, being angry is OK and understandable but hitting is not. A proper time and place for the action may be prescribed, or the action may not be allowed at all. The child should be told how the adult and/or others feel and an alternative behavior should be offered. The purpose is to handle problems, be firm and authoritative, while still maintaining the psychological safety and belongingness needs of the child. It also serves as a model for handling emotional events, and appropriate behavior and expression during these events. "I know you like to do that and you can get attention that way, but it might hurt the other kids (disrupt the room, etc.) and I don't want you to do that again. You can come to me and tug on my pants or make a sign and wave it at me instead, but no more throwing blocks."

A consequence of violating the limit may also be added such as not being able to play with that object or have free time, or some other punishment. However, ideally, punishment should be avoided if possible.

E. New Ideas--Not a Problem: If the situation is not a problem, new ideas and alternate uses of the object, or any additional feature or activity related to the stimulus should be offered. Again, the adult should say how he feels. This is related to Cazden's "Extension" which adds a new idea to the child's comment. "I like how you figured out that if you drop blocks they make noises. You really discovered something, maybe you can do other things with blocks, too, like build bridges (climb on them, make houses, pretend they are cars)."

The example presented was a complicated monologue involving a possible problem situation. The general model can apply to more routine and simple stimulus situations. For example, a boy looking at and pushing on a tree.

> A. Reflection: "You're really pushing hard on that tree. You keep walking around it and pushing it. It doesn't move at all no matter how hard you push."
>
> B. Interpretation: "You wonder why it doesn't move. I think you're really surprised because other things move when you push them (chairs, toys, flowers). Trees have roots to go deep down and hold them in the ground, etc."

C. Relating: "I can't even push the tree over (can model same actions as child) and I'm bigger and stronger. Sometimes people cut them down instead. I wonder if you could move a smaller tree?"

D. Not a problem--doesn't apply.

E. New Ideas: "I really like trees because they're pretty and they give shade if the sun's too hot. You can sit under them and climb in them. You know the wood in your house? That comes from trees. They cut them down and make boards out of them."

These monologues may appear long and complicated. However, you don't often get a chance to carry one all the way through. Most of the time the child interrupts early in the sequence to offer his own interpretation or correct yours. These provide <u>new</u> stimulus situations and the sequence can begin over or continue. Often group members offer new ideas and the interaction changes direction.

<u>Content</u>

Each of the five steps described above can be as simple or complex as the situation warrants. However, whenever possible they should be used as an opportunity to model language usage. This usage can be based on the following:

1. <u>Concepts</u>--either concrete or abstract; e.g., sun, trees, wind, nature as well as big/little; tall/short; right/left/middle; fast/slow.

2. Relationships--any part of an object or concept that is linked together in some way; e.g. trees have roots in the ground that absorb moisture and leaves that catch the sun's rays; tree is the concept and a tree has roots and leaves which are related and linked to the concept.

3. Connections--defined as related,but separate concepts; e.g. trees and rain are separate concepts but related in that a tree uses rain; others are sun and leaves, food and growth, etc.; connections also have a second definition, i.e. any idea, concept, etc. related in time; e.g. yesterday . . . today . . . .

4. Conditional statements--these give reasons or conditions for occurrences; e.g. If it rains then the roots of the tree soak it up; When the wind blows, the leaves move.

5. Expressions involving emotions and feelings--this involves interpreting and labeling feelings, e.g. "You spilled your pop and you feel bad because you don't have any more."

6. Information--this can be stating facts or explanations, e.g. "You use the ruler to make a straight line by placing it on the paper and using a pencil like this _____."

There is another dimension to the content of the interaction. The main idea is to provide cognitivity complex models of language. Whenever possible, more complex sentences can be used. Instead of "You dropped the ball," use "You dropped the pretty green ball and it bounced." When using rational concepts, say "The pretty, giant ball on the right is smaller than the one on the left."

Although you rarely get to use every part of the model in any one interaction, knowledge of all the possibilities allows the adult to be flexible and adapt it to the situation. When more than one child is present many interests and comments can be reflected and interpreted and many connections and relationships can be made among and between group members. Often a whole group will respond to an adult over a long enough period of time to enable use of many parts of the model. Interactions which allow the child to communicate and learn new language for usage are better than interactions which limit and restrict communication. This interaction model is flexible enough to be employed in many situations which actually occur--problems, action events, and emotional displays--while still allowing the child to communicate. It also provides language usage models for use within those situations. It seems that this form of interaction should have a measurably different impact on the quality of the interaction than forms of communication that are more limiting and restricting.

Session 2

The goals of this session are:

1. Answer questions about the language interaction methods and continue discussion of the model.

2. Give out examples of dialogues and discuss them; role-play additional dialogues.

3. Listen to and discuss audio-taped examples of adult-child language.

4. Inform the interactors about the practice sessions and review the purpose and goals of these sessions.

Session 3

The goals of this session are:

1. Observe the children during their normal group sessions.

2. Discuss the interaction that took place and contrast it to language interaction techniques.

Session 4

The goals of this session are:

1. Demonstrate the use of language interaction in a group setting.

2. Discuss the interaction that took place and any anticipated problems.

Session 5

The goals of this session are:

1. Practice session with day care children for each interactor employing language interaction techniques.

2. Discuss the practice session and any problems.

3. Review the purpose of the project and give out group assignments for the following week.

Conclusion

There will be a total of two weeks training for interactors--approximately eight hours. Although this is a short period of time, part of the purpose of the study is to determine if interactors can be trained. Furthermore, the study is employing a

repeated measures design and data is being collected on the interactor as well as the child. This will allow for improvement by the interactors. Feedback will be given to the interactors throughout the project.

APPENDIX E

APPENDIX E

ASSESSMENT TRAINING MANUAL OUTLINE

Session 1

1. Overview of project
2. Introduction to assessment manual
    a. Scoring categories--observation schedule

Session 2

1. Discussion of scoring categories rules of thumb
2. Audio-tapes--practice
3. Use of examples--practice scoring

Session 3

Day 1: 1. In day care--observation of interaction
    a. Rate interaction
    b. Feedback session afterwards

Day 2: 2. Demonstration of model, rate interactor, feedback session, also audio tapes

Day 3: 3. Observe interactors, rate and audio tapes, feedback session

Day 4: 4. Rate and reliability check

Observation Schedule

You will be observing interactions involving two of the children in the group and the adult. It will be necessary for you to identify several categories of behavior very quickly. You also need to record a short segment of the interaction in words (called key-words) so that the section can be identified on audio tapes of the interaction.

There will be a two-week training period that will include observations in a day care center. After this period, ratings will be collected a total of three times per each group. The first rating will occur during the first week of the project. Ratings will also be collected the third week and the fifth week. Raters will work in groups of two and will record all verbalizations of two of the children in the group as well as the adult's. Child and group assignments will be rotated so you don't rate the same child or group any two times in succession.

Recording of the interaction begins with either the adult or the child and includes the appropriate response. All observers will rate the adult, record a segment of the interaction, and indicate a general response by the group, i.e. any response which cannot be identified as a response by one specific child. Observers will also rate any verbalization from their designated child.

Explanation of Categories

What Categories

1. Direct teaching--this involves attempts by the adult to structure a lesson concerning something the adult wants to talk about; for purposes of this study direct teaching is any explanation (of actions, events, things, etc.) which are not child initiated.

    a. This verbalization can be simple or complex; simple is a one or two sentence verbalization while complex is several sentences in length.

2. Question--this is a direct question asked of the group or one child in particular for the purposes of gaining information.

    a. This can be either open or closed; open being a question with no specific correct answer, and closed having a definite answer.

    b. Questions may also be embedded in direct teaching; it is the judgment of the observer whether or not the question is separate from the teaching instance; if it follows an explanation and is asking about that explanation, it is part of the teaching instance, etc.

3. Order/Command/Direct Request--these are more or less evident; e.g., "give me the crayon," "come back to the table," "sit down."

4. Expansion reactions--for the purposes of this study, these are any response by the adult to child initiated verbal-

izations or reactions to any child actions. They include any of the following:

a. Explanation of actions or occurrences

b. Explanation of feelings

c. Reflection

d. Interpretation

e. Relating

f. New ideas

g. Expression of emotion or feelings

These categories (a-g) correspond closely to the five dimensions of the language interaction model.

Note: Remember, these are verbalizations in response to the child's initiated verbalizations or actions; they are mutually exclusive with direct teaching, questions, and orders. Furthermore, these will be analyzed in detail from the audio tapes--make sure you take down part of the interaction.

5. Other--any unidentifiable adult verbalization should be coded other and part of the interaction recorded to allow audio-tape analysis.

*For detailed explanations of a-g, see Audio Tape Schedule and Interaction Model.

There are two levels to expansion reactions: (1) simple--one or two short sentences, and (2) expanded--three or more sentences or a long series of phrases or expressions.

Situation Categories--Problem

6. Negative affect--the adult can show this in problem situations, includes scolding, admonishing, shaming, statements of anger accompanied with yelling, etc.

7. Troublesome--this is a judgment by the rater as to how well the adult handles a problem situation based on the amount of time spent, the disturbance to others in the group, resolution of the problem, etc.

8. Smooth--also a judgment based on the same evidence as in number 7.

9. Ignore--interactor does not deal with the problem.

10. Active handling--this includes recognizing the feelings of the child, setting limits, offering alternatives, etc., and will be analyzed further using audio tapes. See also interaction model.

Situation Categories--General

1. Enthusiastic, excited--this is intended to be more of a display of positive affect than in the H category--evidence should be loud laughter, body movement, quick response.

2. Dramatic play--includes pretend play, role-playing, fantasy or even exaggerated displays of emotion that seem to indicate the person is momentarily assuming a role (but not actually role playing).

3. Happy--this is a judgment of the observer based on evidence of positive affect such as smiling, laughing, bouyant mood; it is, however, not to include extreme excitement because there is a separate category for this.

4. Unhappy--this is a judgment of the observer based on evidence such as frowning, listlessness, non-buoyant mood, frustration; it does not, however, include anger or more extreme displays of negative affect.

5. Negative affect--this includes two levels, child and adult: for the child it includes crying, yelling, anger, tantrums, withdrawal and pouting; for the adult it includes scolding, admonishing, shaming, statements of anger, etc.

Who Categories

1. R/I Designations--R = response; I = child initiated verbalization.

2. Response to direct question--this is a response to an adult-asked question directed at the responding child.

3. Response to general question--child answers an adult-asked question not directed to that child.

4. Initiation--this is a child initiated verbalization and can be on two levels: (a) simple--includes one or two short sentences, and (b) expanded--includes three or more sentences in a unit of verbalization.

How Categories

1. Enthusiastic--refer to definitions above.

2. Dramatic play--refer to definitions above.

3. Happy--refer to definitions above.

4. Unhappy--refer to definitions above.

5. Negative affect--refer to definitions above.

The front cover of your observation package has a series of ratings on a five-point scale. Number 1 on the scale means low occurrence of the indicated variable. Number 5 is a high occurrence. Immediately after the group session, please rate the adult and each assigned child on each item. Also fill in the identification information on the cover sheet.

1. Interaction refers to the amount of actual "give and take" communication that occurs between members of the group. Base your rating on instances of verbalization which respond to a statement by another group member. Also consider the amount of communication going on in the group.

2. Positive affect refers to instances of smiling, laughing, and buoyant mood observed.

3. Negative affect--see negative affect in explanation of Situation Categories.

4. Problems refers to the number and extent of problem situations that occurred during the session.

Session 2

The goals of this session are:

1. Discuss scoring categories and decision rules for determining simple or expanded initiations or responses, etc.

2. Practice with example dialogues using many examples from that model training manual and the supplement examples.

3. Practice with audio tapes of actual adult-child dialogue, especially in recording key words of the dialogue.

Note: Practice with dialogues is intended to give the rater some experience rating. Simple and expanded verbalizations and other WHAT category designations before actually observing in the center.

Sessions 3-5

Sessions 3-5 will involve observation in the day care center and feedback sessions immediately afterwards.

The goals of Session 3 are:

1. To observe regular teachers in the day care center and rate their interaction.

2. To get feedback as to the accuracy of the observations made--concentration will be on key-word recordings and basic WHAT designation recordings.

The goals of Session 4 are:

1. To observe language interaction techniques and to rate the interactor on WHAT, SITUATION and HOW designations as well as key-word recording.

2. To get feedback on the observations and recordings.

The goals of Session 5 are:

1. To observe, record and rate trained interactors and children in groups of four.

2. To get feedback.

Session 6

This session will serve as the first rating session of the project and the data collected will be analyzed for reliability.

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