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TOWARD A METHODOLOGY FOR IMPROVING VOCABULARY DEVELOPMENT
OF LOW-INCOME CHILDREN

DISSERTATION
Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
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1970

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CHAPTER I

INTRODUCTION

Theoretically, American democracy is built on the foundation of opportunity for all people. Realistically, however, conditions which tend to preclude equal opportunity for many citizens are forces of such magnitude in our country as to render the term "disadvantaged" legally definable and legislatible. "Disadvantaged" was legally defined in 1964 in Public Law 88-665, section 1101, in which such terms as "culturally, economically, socially, and educationally handicapped" were interpreted to mean children from families outside the mainstream of American culture; or whose circumstances of poverty precluded their taking advantage of educational opportunities; or who have been discriminated against by American society; or who for external reasons have not been able to develop their potential (Kropf and Bowman, 1966).

Within the context of this definition, it has been estimated that one-fifth of the population of the United States may be classified as economically, socially, educationally, or culturally disadvantaged. Seventeen million of these estimated thirty-five million disadvantaged people are children.
In 1950, one in every fourteen children in the fourteen largest cities of the United States was classified as culturally disadvantaged; by 1960, the ratio of disadvantaged to advantaged children had become one in every three. By 1970, it is estimated that one out of every two children living within the large cities of the country will be categorically identified as disadvantaged (Riessman, 1962).

Clearly, large proportions of children, the hope of America's future, are growing up in situations characterized by deficiencies in education and experience. These are the pervasive results of discrimination and socio-economic deprivation. The Department of Health, Education and Welfare has made legislative efforts toward ameliorating these deficiencies in the educational opportunities of slum children. The Job Corps and Head Start programs are notable examples.

Job Corps and Head Start represent efforts at both ends of the school experience. Job Corps training centers established under the Anti-Poverty Training Bill represent salvaging-type efforts for out-of-school, out-of-work underprivileged young men and women who have dropped out of school and aren't able to find or hold an adequate job. Since these young people have not been able to benefit from a regular school situation, the goal of the Job Corps is to
prepare them for jobs in which they can earn a decent living (Office of Economic Opportunity, 1966a).

At the other end of the school experience, Project Head Start, another Office of Economic Opportunity program, begun in the summer of 1965, is designed to benefit children who have not yet confronted the school situation. Since a number of research findings have indicated that disadvantaged children are often noticeably behind in language development, Project Head Start programs are based on providing language-development experiences (Office of Economic Opportunity, 1966b). Research has shown that in Head Start programs the basic need is for language development.

Considerable research relating to social class and verbal development has been conducted by Bernstein (1961), Hurlock (1956), and Dale (1964). These independent efforts appear to substantiate the notion that environmental rather than genetic factors account for differences found in vocabulary development of children. Furthermore, the child from the slum home is at a serious disadvantage in school where learning is based almost entirely upon verbal facility.

For a long time we have been aware of differences in intellectual achievement which exist among children of different social classes. The problem of lower intellectual achievement of the slum child is one of increasing
concern. As the search for the explanation of the cumulative deficit in intelligence during early childhood gained momentum, Milner (as reported by Parker [1968]) lent support to the notion that verbal interaction was the key to this early decline.

Bernstein's (1961) explanation for these differences was that the verbal styles of disadvantaged children are different from those verbal styles of middle-class children. The middle classes use a more "elaborated" or "divergent" language than the "restrictive" or "convergent" language of the disadvantaged. That is, the middle-class child is predisposed to the ordering of symbolic relationships and imposing order and is able to manipulate words in a personal qualifying or modifying way. These combine to reduce the problem of teaching language skills. The lower-class child, on the other hand, tends to have a verbal style, the characteristics of which are:

- Short, grammatically simple, often unfinished sentences with poor syntactical form.
- Simple and repetitive use of conjunctions.
- Little use of subordinate clauses used to break down the initial categories of the dominant subject.
- Inability to hold a formal subject through a speech sequence.
- Rigid and limited use of adjectives and adverbs.
- Infrequent use of impersonal pronouns as subjects of conditional clauses or sentences.
Frequent use of statements where the reason and conclusion are confounded to produce a categoric utterance.

An individual selection from a group of idiomatic sequences will also frequently occur.

This "restricted" or "convergent" or "public" language does not facilitate the communication of ideas in relationships requiring a precise formulation as does the "elaborated" or "divergent" or "formal" language which is generally the verbal style in which the middle-class child communicates (Bernstein, 1961).

Bloom (1964) lent further support for the work of Bernstein in his theory of the "Press for Language." He says that the middle-class child, by and large, enjoys what he calls the "Press for Language Development," that is:

- Emphasis on use of language in a variety of situations;
- Opportunities provided for enlarging vocabulary;
- Emphasis on correctness of usage;
- Quality of language models available.

Slum children generally do not have the benefit of the "Press for Language Development" in their out-of-school contacts. For this reason some educators tend to classify most slum children as non-verbal. These children are, in fact, quite verbal out of school and, as reported by Torrance (1965), disadvantaged children are often surprisingly articulate in role-playing situations.

The studies by Bloom and Bernstein seem to indicate that general intelligence tests and other measures of
school achievement represent, in great part, a measure of verbal ability. The child whose environment does not encourage language development and whose models of language usage are poor will likely be retarded or blocked in the development of measured IQ and school achievement.

Bernstein suggests that teachers have to recognize disadvantaged children not as non-verbal but as verbally different from middle-class children, based on the "restricted" language usage of their environment. He says that situations will have to be constructed that will enable these children to develop the use and understanding of the "elaborated" system of the middle-class child, situations which must be motivational and which must have an early beginning.

It seems obvious that much more research is needed to establish the differences between abundant and deprived environments of children for the development of general intelligence. The point has been made that the disadvantaged child does indeed experience discontinuity between his early sub-culture and school expectations as applied to his verbal style. This discontinuity does, in turn, affect his general intellectual development and, thus, his school achievement (Getzels, 1965). To be effective then, the attack on language development of the disadvantaged child must not only begin early, but the content of learning must
be relevant to the child in order to produce maximum benefit for him and for society.

Statement of the Problem

The purpose of this study was to explore the feasibility of a method for improving the vocabulary development of low-income children, a methodology involving the use of toys as a medium of teacher-student communication. The intention was that through specially devised toy situations it would be possible to encourage the making of different verbal responses by children to similar stimulus configurations (Toy-Talk Contexts) in order to provide a relevant and contemporary basis for adult-child communication. Thus a structured situation could be developed in which the child's speech may be freely expressed in order that:

1. New vocabulary concepts could be introduced to the child.

2. Misconceptions of words and concepts which the child has could be discovered.

3. Misconceptions of words and concepts which the child has could be replaced.

If feasible, these Toy-Talk Contexts, devised for the teaching of verbal facility, would have a place in the formal classroom setting. That is, the technique would have implications for the diffusion of the teaching role among teachers, teacher aides, student teachers, and participating teachers. The technique would assure these
instructional personnel effective and worthwhile educational experiences with children. It was further expected that such a technique would be one which parents can employ, regardless of their level of education, to teach language concepts to their children.

This Toy-Talk Context communication basis would have the advantage of providing a learning situation which would rely upon a child's natural strength, his imagination. Such reliance would have the potential of minimizing failure and the embarrassment of correction while maximizing and appropriately rewarding success in the learning situation. It should be emphasized, however, that the study does not attempt to provide a panacea for the problem of language development in the disadvantaged child but suggests a feasible alternative to other solutions. This study represents an attempt to test some of the hypotheses set forth by Robert Strom (1969c) of Arizona State University.

Contiguous with the central concern of the study are a set of corresponding assumptions.

1. It is assumed that in developing a program based on playing with children and toys in other than a therapeutic fashion, legitimate avenues for the release of feelings of aggression, negativism and resentment may be provided.

2. It is assumed that to develop such a program, a learning situation may be furnished which will aid in the development of positive self-concepts by respecting creativity and providing for immediate and positive feedback.
3. It is assumed that to develop such a program may suggest that perhaps there is less need for control problems where interest exists and that the natural interest which children have in toys is a means of alleviating control problems in a manner other than the reduction of class size.

The purposes of the study were accomplished through three major steps. The first step was to develop two representative Toy-Talk Contexts, each of which was accompanied by (1) a Vocabulary Pre-Test which was developed by the investigator and consisted of a list of words generated from the content of the Toy-Talk Contexts, (2) Toy-Talk input, procedures, and materials which were the interaction between the child and the adult in the play situation as well as the methods employed by the adult to teach verbal concepts and the toys used in the Toy-Talk Contexts, and (3) a Vocabulary Post-Test which was developed by the investigator and consisted of those words selected from the Vocabulary Pre-Test and used as instructional material during the Toy-Talk play situations.

The second step was to demonstrate the feasibility of such a technique in a pilot study conducted in a school setting and involving children of differing verbal fluency. This sample group of children was selected from kindergarten classes in an elementary school in the Hough area of Cleveland, Ohio.

The third step was to draw conclusions and implications from the pilot study for the use of Toy-Talk Contexts
as a technique for vocabulary development. Tape analysis of the Toy-Talk situations and observers' comments were examined and data analyzed from which conclusions were drawn.

Limitations of the Study

The limitations of the study can be identified in three areas: the setting and the subjects chosen for the preliminary investigation, the instruments used to collect data and conduct the study, and the techniques and procedures followed.

The pilot study sample consisted of twenty-four kindergarten children enrolled in an inner-city school of a large city in northern Ohio. The community which the school serves is a poverty belt well known in the city, in Ohio, and throughout the nation. Thus, by conditions of the community and the school, the subjects for the study were primarily at the extreme lower socio-economic levels.

Of the three instruments used to collect the data, two were devised by the investigator, the Vocabulary Pre-Test and the Vocabulary Post-Test. These were designed to identify words not known to the children prior to the Toy-Talk and to reveal the extent to which the words were learned. Essentially, these instruments consisted simply of a word list comprised of words not known by the children and a standard statement for asking for meaning. The
primary importance of these tools was to conduct a pilot study testing the feasibility of Toy-Talk Contexts. They are referred to here as instruments in order to reflect the effort for control in the pilot study. The third instrument was the Verbal Form A of the Torrance Test of Creative Thinking. From data provided by this tool, children of differing verbal facility were identified and the potential of Toy-Talk Contexts for varied vocabulary development was examined. A more complete description of this standardized instrument is found in the procedures for the study.

The third limitation involved the techniques and procedures used in developing and researching the Toy-Talk Contexts. As Rosenthal (1963) has pointed out, expectation and motivation of the experimenter are partial determinants of the results of behavioral research. Since the experimenters in this study were also the developers of the techniques, it was extremely important that experimenter bias be controlled. A detailed description of the randomizing procedures is presented in the section on methodology.

Definition of Terms

The following represent definitions of terms used throughout the study:

1. **Toy-Talk Context.**—The materials (toys) included in the structured play situation and the environment which the play situation represents. Examples of toys used in the toy-talk context are small plastic replicas of farm animals, buildings, and machinery.
2. **Toy-Talk play activity.**—The interaction between the child and the adult in the manipulation of the Toy-Talk Contexts. In these contexts adults attempted to interject the words into the play activity and from this usage to attempt to get the child to respond to and verbalize the word. Both behavioral response and verbalization constitute the child's learning of the word.

3. **Verbal fluency.**—The ability to produce a number of ideas with words. Verbal fluency will be operationally defined as the score on the Verbal Form A of the Torrance Test of Creative Thinking.

4. **Verbal flexibility.**—The ability to produce a variety of ideas with words. As defined on the Torrance Test of Creative Thinking, verbal flexibility represents a person's ability to produce a variety of kinds of ideas, to shift from one approach to another, or to use a variety of strategies. This variable was not used in the study.

5. **Vocabulary Pre-Test.**—A list of words corresponding to the Toy-Talk Contexts, the purpose of which was to select subject matter input for the Toy-Talk Contexts. Such words as abandon, captive, and creeping were included in the pre-test. The original list of words was randomly selected.

6. **Vocabulary Post-Test.**—The twenty words selected from the Vocabulary Pre-Test as subject matter input upon which the child was examined after the Toy-Talk play activity experience.

7. **Toy-Talk procedures.**—Those activities involved in the teaching of vocabulary concepts during the play with toys.

   a) **Entering.**—That method by which a word from the selected list is first introduced into the Toy-Talk situation.
b) **Defining.**—That method by which the player attempts to clarify words as concepts to the child during the Toy-Talk play activity. Defining refers also to that method by which the child attempts to clarify words or concepts to the adult during the Toy-Talk play activity.

c) **Repeating.**—That method by which the player mentions an entered word in the same Toy-Talk sequence in which the word was first entered. This represents an attempt to encourage the child in the remembering of a word or concept.

d) **Reinforcing.**—That method by which the player mentions a word later on in the Toy-Talk situation, which was entered earlier. This represents an attempt to encourage the child in the continued use of a word or concept.

e) **Clarifying.**—That method by which the player attempts to resolve the child's uncertainty concerning an entered word.

f) **Replacing.**—That method by which the player attempts to substitute a word or phrase which the child uses for another word or phrase. This replacing is attempted without admonishment.

g) **Correcting.**—That method by which the player discourages a verbal response made by the child, by admonishment.

h) **Questioning.**—That method by which the player tests the child's knowledge of a word or concept by asking a question.

i) **Question - No Response.**—That situation in which a question posed by the player elicits no response to the question from the child.

j) **Question - Response.**—That situation in which a question posed by the player elicits either a verbal (v) or behavioral (b) response from the child.
8. **Recognition**.—That situation in which the child indicates an understanding of a word or concept used in the Toy-Talk situation. This recognition may be manifested either verbally or behaviorally.

9. **Accepting**.—That indication by the child, either verbally or behaviorally, of his positive regard for the total Toy-Talk situation.

10. **Rejecting**.—That indication by the child, either verbally or behaviorally, of his negative regard for the total Toy-Talk situation.

**Importance of the Study**

The significance of the problem can be identified in three areas: speech patterns and verbal development of inner-city children, methods of expanding opportunities for school achievement, and toys as an instructional technique.

**Speech patterns and verbal development of inner-city children**.—The results of a number of reported studies have indicated that the manner in which children are reared accounts for speech habits and verbal understanding. Those children from homes where parents interact with the child or speak with a limited, phonetically and grammatically incorrect vocabulary will not be as advanced in a formal learning situation as those children reared in an atmosphere of articulate, phonetically and grammatically correct speech.

Among those children who come to school with language deficiencies are proportionally as many slow,
average, superior and gifted students as for the total population. Standardized tests, however, do not disclose those who are potentially "good" students. The standardized curriculum to which these children are exposed tends to decay and reduce their strengths and concepts of their abilities rather than encourage them. Indeed, their measured intelligence tends to decline rather than grow as they advance through school though it has been established that, in general, growth in human intellect is the normal pattern. Thus, in part, the need for this study is defined.

Methods of expanding opportunities for school achievement.—The major issue, then, in attempting to expand the opportunities for school achievement for the slum child appears to be one of overcoming the verbal deficit of this difficult thirty per cent. The response to this problem has been through programs such as Head Start and other pre-school programs which focus on the development of language arts skills, employing such activities as "Show and Tell" and "Experience Charts." The value of such experience is believed to rest upon the assumption that because of the absence of passive listening and the intrinsic stimulation of the activities, high student interest will be maintained.

Though these types of learning activities have been included in the elementary school curriculum for some time,
they were further recommended by the Zacharias Committee (Panel on Educational Research and Development of the President's Science Advisory Committee, 1964) as especially vital in the education of the deprived and segregated. Specifically, these recommendations included:

1. Special programs are needed for helping deprived children learn to read. One approach may be to concentrate first on spoken English, encouraging children to talk in school rather than constantly admonishing them to listen and then encourage them in reading when they take it up.

2. The culturally deprived child may become frustrated when he reads about middle-class privileges (such as a boy's having his own room in the house). The answer may be to let the child develop his own story materials, thus giving children the freedom to shape the manner of his [sic] learning.

3. . . . Curriculum units can be designed which are self-contained and self-demonstrative; that is, units should be structured in a way which enables deprived children to discover things for themselves. (Strodtbeck, 1965)

The problem inherent in these recommendations and the emphasis upon the type of activities which grew out of them is that these activities will probably elicit better responses from the middle-class child than the lower-class child. The relatively "undesirable" position of the lower-class child to that relatively "desirable" position of the middle-class is not affected by these activities though his school adjustment may be somewhat increased (Strodtbeck, 1965).

"Show and Tell" does provide an opportunity for
physical motion of the child as opposed to academic inertia. It also provides opportunity for verbal expression. However, this verbal expression is most often relegated to the position of the public expression of verbal deficiencies and thus may serve as a means of expression only for those children who need this type of opportunity least. It is well to point out also that the concept of "Show and Tell" is significantly lacking in the code of the inner-city. "Telling" is the first thing an inner-city child learns not to do.

"Experience Charts" do indeed deal with the experiences of children and are a way of organizing shared experiences. "Experience Charts" are, however, a slow, cumbersome process. They are a process which may well determine the opportunities for certain kinds of experiences based upon desired end results of the "Experience Chart" rather than emphasis upon the child and his experience. In addition, the very real possibility exists that this type of activity may become a project for the children who are verbally mature and/or "good" readers, to the exclusion of others less well endowed. Thus, "Show and Tell" and "Experience Charts" share at least one major weakness in that neither activity makes provision for the expression of child spontaneity.

Other approaches to teaching and learning strategies to overcome the verbal deficiencies of young children
have been based upon the findings of Piaget and Hunt, which have tended

... to show that learning depends upon a hierarchial system of prerequisite learning, and the lack of this learning during the early developmental stages causes a deficit which the teachers of disadvantaged children must develop strategies to overcome. (Kropf and Bowman, 1966)

Based, then, upon this research, approaches such as the use of Montessori techniques and materials and the kinesthetic approach of Deutsch have been suggested to teachers of young children as aids in overcoming deficits. These deficits are caused by a lack or complete absence of those prerequisite verbal-facility skills in the base of the hierarchial system of learning of many disadvantaged children.

There is some evidence that Head Start programs do, indeed, make some difference in the academic achievement of disadvantaged children by increasing verbal facility. In accordance with the fundamental assumption underlying Project Head Start, that economically deprived children live with an inadequate experiential background for associating words and concrete events and thus the learning process is retarded for these children (Lam, Ziller, and Malong, 1965), their programmatic efforts have been successful. However, there appear to be programmatic implications for the more successful amelioration of language deficiencies of the young child.
Toys as an instructional technique.--In the quest for approaches to ameliorate language deficiencies, it may be quite likely that teachers have overlooked toys as very obvious tools for instruction. Toys are big business; though they are often undervalued, they are hardly underpurchased since two billion dollars are spent on toys each year and there are reportedly better than 2,000 manufacturers of toys.

Ever since the first of the orphaned twin studies showed a clear environmental contribution to intelligence, people have bought toys to enrich the environments of their children—as well as for the traditional reasons. (Speeth, 1967)

Children have always learned from toys in self-teaching ways. This is obviously an important use of toys. However, the suggestion here is that adults can teach children with toys. Verbal understanding can be taught to children through the use of toys.

Toys have been called the "tools of a child's trade"; they are a tool of teaching which does not require that motivation be aroused as it must be with the use of uniform learning materials and conditions generally found in the conventional schoolroom.

Since such uniformity would tend to make all learning tasks more similar, and since similarity between tasks governs the extent to which one task interferes with the learning and retention of another, it follows that uniform conditions of learning would produce very low information acquisition rates. (Speeth, 1967)

Speeth goes on to say that experimental support exists for
the theory that this "interference problem can be partially solved for verbal learning" by supplying the learner with experiences which lend the discriminability of events to the verbal descriptions of which they are the referent. The words acquire distinctiveness because of relevant experience, and the retention of both is thereby increased. He suggests further that

... since the skills to be acquired and the information to be learned are as varied as the parts of the world in which they are used, teaching would be more effective if simulation of the world were used before texts. Such a simulation, if inherently interesting, would be a toy.

Simulation and the use of toys in simulated activities imply the use of imagination. The slum child, as well as the middle-class child, resides in the realm of imagination as a natural habitat. In fact, the child of the slum may be more dependent upon the strength of his imagination for, though usually powerless in other aspects of his life, he can find imagination the source of his strength. Conversely, then, to encourage his imagination is to strengthen his source of strength (Strom, 1969b).

The notion that toys have educational value is not a current innovation. G. Stanley Hall was one of the first investigators to call attention to the educational value of dolls and doll substitutes for children in his "Study of Dolls" in 1896 (Kessen, 1965). Bruner (1965), in an address before the American Psychological Association in
1965, also advanced the theory that there is a "need for a rational technology of toys."

Play, too, is old. Excavations in the ruins of ancient Egypt and Babylonia reveal toys such as dolls, tops, rattles, and various other trinkets of pottery and metal, showing that boys and girls of these remote civilizations were wont to play . . . . (Mitchell, 1935)

Organization of the Remainder of the Study

This chapter has presented a statement of the problem, limitations of the study, definition of terms, and importance of the study. Chapter II reviews the literature on vocabulary development through play. Chapter III describes the methodology of the study and Chapter IV presents the findings. In Chapter V are a summary, conclusions, and recommendations.
CHAPTER II

REVIEW OF LITERATURE

This chapter will present a review of literature related to the study. This review will be presented in three sections. The first is the general area of language development in children. Considered in this section are early language development, language development and intelligence, language development and environmental interaction, and language of the culturally deprived child.

The second section considers instructional experiences aimed at the amelioration of language development difficulties. This includes environmental and school practices, Project Head Start, classroom teacher practices, methodology, and parent involvement.

The third section considers the issue of play and, more particularly, the value of play in the area of language development of culturally deprived children. Included are a definition of play, play as a natural process, and play as instruction.
Language Development in Children

Language is man's most uniquely human function; language is the chief agent of intellectual development; language is the basic tool for social intercourse; language is a vehicle of emotional expression. (Hatfield, 1967)

Early language development

Hurlock (1956), in studying the stages of normal child development, reports that from birth to the age of two years, vocabulary growth begins slowly. After the child enters school, vocabulary growth is accelerated due to a number of factors, including (1) direct teaching, (2) association with objects and other children, (3) experiences, (4) reading activities, and (5) listening and watching activities.

In his earlier investigations, Gesell (1940) studied the stages of language development in children. He describes the age of four as "the flowering period of language." He says that although the three-year-old is talkative, he hasn't yet discovered the power and excitement of words. By the time the child is five years old he can efficiently use language with some sense of the social standards in relationship to its use.

Gesell (1940) suggests further that the notions of language development which he sets forth are general. That, as in the case of other developmental sequences, wide individual differences may be found among normal children.
Such differences may be the result of personality differences, environmental influences, or inhibitions as the result of severe emotional experiences.

In discussing the development of verbal fluency in children, Garai and Scheinfeld (1968) point out that verbal fluency among females is reportedly greater from infancy on than among males; that girls have greater scholastic achievement than boys due to this superior verbal fluency; and that the scholastic areas in which girls excel are those based upon language and verbal fluency such as literature, spelling, foreign language, grammar, and essay writing.

Many investigators, according to Hurlock (1956), concur with the notion that females appear to be more verbally fluent than boys. They say these differences begin to appear by age two. Differences in verbal fluency between girls and boys become more evident each passing year and appear to be greater among poor children than among more affluent children.

Bobladelis and Adams (1967) comment on the role that verbal behavior plays in the development of self-concept. The implication here appears to be that a child is aware of the power of verbalization in influencing the behavior of others, long before he is able to influence others in this manner himself. They further suggest that
the child's self-concept is developed in proportion to the kinds of influencing he is able to verbally direct.

Language development and intelligence

Much attention is being directed toward providing meaningful educational experiences for disadvantaged children. The hypothesis that there is a relationship between extreme environments, language development, and intellectual status in children is the object of increasing investigation.

Several studies have been concerned with investigation of the nature of the differences which result from children being reared in extreme environments. Some specific studies have concerned themselves with the relationship between language development and intelligence.

Most investigators, including Bloom (1964), Zubek and Salberg (1954), and Ausubel (1958), agree that general intelligence is developmental in nature. In discussing the question of intelligence, these investigators point out that intelligence may be considered a developmental concept just as height and weight are developmental. Also, they state that intelligence measurements become increasingly stable with time. Bloom (1964) states that at about the age of four years a child has attained fifty per cent of the variation in intelligence which we may expect to be accounted for by the age of seventeen. He goes on to
emphasize that it would be expected that variations in environment would have a marked effect on intelligence before the age of eight and probably between the age of about one year to five years.

Zubek and Salberg (1954) say that mental growth is rapid in early childhood, but begins to progressively slow down around twelve to thirteen years of age until such growth ceases. This hypothesis of very rapid growth of intelligence in the early years suggests the possibility of the great influence of a child's early environment on intellectual development.

Bloom (1964) and Ausubel (1958) both estimate that extreme environments may account for an approximate range of about twenty IQ points between children of the highest and lowest socio-economic groups. These investigators agree that social class differences are greatest in the area of verbal abilities.

Pines (1969) reported that researchers working with Bruner in the Harvard Project also have been focusing on intellectual differences between the children of the poor and of the affluent. It has been discovered that intellectual differences between these children are very obvious by kindergarten age. The middle-class children have testable IQ's ranging from five to fifteen points above those of the poor children. Coupled with this IQ lag, it was discovered that verbal ability of the poor children trailed consider-
ably behind that of the middle-class children. The above mentioned studies seem to emphasize Bloom's (1964) theory that language-enriched environments in which language development is encouraged will promote the development of general intelligence; whereas, surroundings where language usage is poor will retard the development of general intelligence.

Language development and environmental interaction

In a cognitively "rich" environment a child is exposed to frequent dialogue and language of the type which constitutes linguistic performance basic to educational success. A child who is reared in a severely depressed environment is not likely to be exposed to this kind of verbal stimulation. Thus, according to Dale (1964), "environmental rather than genetic factors account for general differences found in vocabulary development." Therefore, when the child from a depressed environment is confronted in school with a traditional middle-class curriculum, he is often unable to successfully complete his education.

Deutsch (1967) cites the results of data gathered in the area of auditory discrimination of children. She reports that children with retarded reading abilities have poorer auditory discrimination than children who read at an average or better level for their grade in school. For example, children from the slums have a much higher
incidence of reading retardation than children from middle-class families. She further suggests that most children with discrimination problems miss the last phoneme of words when examined on the Wepman Test of Auditory Discrimination. This missing of the end of the word may have implications for correct understanding and grammar since the tense of the verb and the number, in English, are carried in the ending of the word.

Deutsch feels that this discrimination problem and verbal skills can be closely related. She poses the question as to whether the typically noisy urban slum environment may have something to do with the lack of proper auditory discrimination development and, therefore, verbal fluency development in slum children. Not only are noisy urban slum environments cited as a possible cause of verbal development deficit, but the fact that the disadvantaged home is not a very verbal home is also cited as a possible cause of lack of verbal development in poor children.

The hypothesis of the verbally disadvantaged home is supported by the work of Rees (1968) and Strom (1965). Rees writes that social discrimination restricts intercommunication in the vocabulary of the deprived child. In the home of such a child there is usually little to be said. Most communication is short and reflects the discouragement of the atmosphere.

Further support was offered in a recent study
completed by Kagan and reported by Pines (1969). According to this study, babies in middle-class families are recipients of more face-to-face communication than babies from lower-class families. It was not implied in the study that because of this the lower-class mother does not love her child. She simply does not have as much time for long periods of reciprocal play. This leads to obvious differences in the quality of language among the poor and the affluent. The poor child, then, is at a disadvantage in all these things: learning schemata, forming the kinds of attachments which lead him to accept the mother's values, and speaking. He is also less persistent at difficult tasks and worse at non-verbal problems such as perceptual puzzles. In addition, he has learned a sort of impotence.

Strom (1965) suggests that in culturally deprived homes language may be a threat, but very rarely is it a tool. Often a culturally handicapped child receives most of his exposure to language from the television set, and even then he does not participate in a two-way communication process; he merely observes. The slum child's home does not then offer much in the way of the kinds of verbal interaction which will provide a substantial background on which the school can build verbal skills.

Edward (1964) suggests that this child may also have been fairly well confined to his immediate neighborhood, and that this neighborhood is not likely to have
offered much more in the way of experiences on which to build "acceptable" verbal skills. He further suggests that indeed this immediate neighborhood is probably as restricted, in this sense, as the home of the child. He states that

... no one has guided his perception of the things which he has experienced, and he has not had the opportunity to manipulate verbally his ideas about his experience.

Bernstein (1961) and Rees (1968) advance the notion that in a socio-cultural environment, diverse influences are synthesized and reinforced through language use. That is, one's culture is identified by one's language. Indeed, language is one's culture and the child learns his culture or social structure through its language.

The spoken language which the child acquires as a part of his environmental interaction is a powerful conditioner upon what is learned and how. Research has shown an almost direct ratio in the quantity and quality of language as one moves from middle class to lower class.

Finally, Deutsch (1967) emphasizes the disadvantage of the environmental conditions surrounding the child of the slums, when she writes that a background of poverty retards in a child the development of skills essential for his success in school. Therefore, the child does not learn and becomes alienated from a place that, next to home, should play a major role in his socialization.
The patterns of language development of the culturally deprived child have been the focus of a number of investigators. The work of Bernstein (1961) suggests that the culturally deprived child attaches significance to a different aspect of language from that required by the school, and this is the reason he resists attempts by the school to extend his vocabulary. Bernstein's theory is predicated on his findings that the lower classes use a different speech system than the middle classes. He labels the speech system of the lower classes a "public" or restricted language. The speech system of the middle classes is referred to as a "private" or elaborated language. An elaboration of the "public" versus the "private" language is found in Chapter I. These differences in speech are seen as contingent upon the social structure within which the child is raised and are indexes of a particular form of communication. As Bernstein states,

The working-class groups' speech is characterized by a reduction in qualifiers, adjectives, adverbs, particularly those which qualify feelings, the organization [sic] of speech is comparatively simple, there is a restriction on the use of the self-referent pronoun "I" and an increase in personal pronouns.

Bernstein states further that these same characterizations were found in the written work of his sample group. These differences, he says, indicate the use of a linguistic
code. The code neither helps a person to receive communications nor to verbalize his own personal feelings or beliefs. The user of the code is sensitized to unambiguous social relationships, where authority is central and evokes the expression of feeling through action.

The middle-class child, on the other hand, because of his environment can respond to and understand a "public" language as well as his "private" language. Thus, the lower-class child and the middle-class child are oriented to different orders of learning. The order of learning in schools is geared to the middle-class child. There is little conflict of values and time orientation between the middle-class child and the teacher. The lower-class child, on the other hand, finds it difficult to accept the middle-class future orientation and values. More importantly, he finds it difficult to accept and respond to the language structure of communication.

Success in school is based not on the language of the culturally deprived, but rather on facility with a middle-class vocabulary. Eells and others (1951) suggest that the implication for teachers seems to be that they will have to understand this "public" or restricted language of disadvantaged children and provide learning situations in which these children can learn to use the "private" or elaborated system. Further, Havighurst (1951) points out that though deprived children use many words and
thus may not be considered non-verbal, these are not the words used in school.

A series of investigations concerning the language development of deprived children was conducted by Deutsch (1966) at the Institute for Developmental Studies. These investigations suggest that deprived children verbalize much more fully when talking about some action they have seen or in reacting to things they can see and do, rather than in response to words alone. Other findings reported in the study by Deutsch are:

1. Deprived children appear to be poor in the use of verbs, but much better with descriptive adjectives.
2. Deprived children seem to understand more language than they speak (their "receptive" linguistic ability is much better than their "expressive" language).
3. Deprived children demonstrate a surprising ability for phantasy.

Hurst (1967) reports that upon entering school, disadvantaged children evidence poor language development because they have not had adequate verbal interaction and, therefore, do not have verbal control of their social environment. Hurst concludes that,

These children learn through hearing words and receiving their effects (other than through correction by adults of their speech patterns).

Similarly, Corbin and Crosby (1965) state that the disadvantaged child, rather than expressing himself in words, relies on physical expression of his emotions. This
kind of behavior has caused the disadvantaged child to be stereotyped as "non-verbal." Frazier (1966) suggests that these children are not as "verbally destitute" as we may once have thought. He says that though there may be differences in complexity of language between disadvantaged children and middle-class children, and there may be other deficiencies, they are not as "languageless" as we once believed.

Riessman (1966) and Torrance (1965) support the notion that the disadvantaged child is not languageless. Riessman, who attempts to focus on the strengths of the disadvantaged child, suggests that this child has a different, more physical and action-centered language style. Torrance says that disadvantaged children "are often surprisingly articulate in role playing situations."

Almy (1967) summarizes succinctly the language development of poor children when she reports the following:

The child of the poor learns his language in his home and on the street. All language is functional, and the language of the poor child has tasks to perform that are, in part, common to all children and, in part, unique to his condition.

Bernstein (1961) notes that the implications for such disadvantaged language development are clear. He suggests that if environmental deprivation has contributed to lower intelligence, then such environmental conditions should be ameliorated as soon as possible through educational and social forces.
Instructional Experiences

The focus of instructional experiences aimed at ameliorating those verbal difficulties which poor children possess must take several factors into account. Some consideration of environmental experiences, school experiences, impact of teachers and classrooms, methods, Project Head Start, and parent involvement are reviewed.

Environmental experiences

To formulate a curriculum which will aid poor children, their background must be accounted for. Deutsch (1967) and associates used as their starting point for pre-school programs, research into what skills the children lacked in the first grade as a result of their environmental experiences. Here an attempt was made to educate the lower-class child in school-related skills before he entered the first grade. The purpose was to give the disadvantaged child equal opportunity to attain skills (such as the alphabet) that the middle-class child learned at home in a "hidden curriculum."

Earlier studies of Deutsch (1964) form the basis for these later studies when the point is made that tasks given to middle-class pre-school children are more likely to involve language and conceptual processes than those tasks given to pre-school disadvantaged children. The point is made that the disadvantaged child's home might not
offer positive motivation and/or correct interpretation of the school experience, though rarely, if ever, does it offer negative predispositions. Rather than either of these attitudes, a neutral and nebulous kind of attitude is fostered.

Dave's (1963) work suggests that the environmental influences of the home have the "greatest influence on the language development of the child and the least influence on skills primarily taught in the school." He analyzed the relations between certain variables of the home and scores on different parts of an achievement battery. He found that generally correlations were highest with the tests of word knowledge and reading and lowest with spelling and arithmetic computation.

The variables of the home used in this study included:

1. Achievement press
2. Language models in the home
3. Academic guidance provided in the home
4. The stimulation provided in the home to explore various aspects of the larger environment
5. The intellectual interests and activity in the home
6. The work habits emphasized in the home.

This research has important implications for techniques of analyzing environmental conditions of the home. From this type of analyzation the school may then work in conjunction with the home in developing optimum learning conditions for children.
As Smilansky (1969) has pointed out, the child is in a certain system; he comes from the system of the family. The child has needs and is striving to fulfill his needs. Clearly, the ways that children learn to fulfill their needs, to react to the learning situations, are based upon their environmental influences. They bring to school the attitudes, values, and skills they have learned at home.

**School experiences**

Studies by Rees (1968) indicate that:

Approximately a quarter of a million of our youth fail to complete their elementary education, and of those who go on, another million leave school before completing their high school education. Twice as many Negro youths drop out of the high school as white; and almost fifty per cent are school dropouts, as are two-thirds of the unemployed group.

The figures indicate that something is happening (or not happening) in the school which makes it intolerable for certain children continually to cope. Getzels (1965) has posited that the expectations of the school are unrelated to the values of the subculture. Explicitly or implicitly, the prized activities of the school are based on a middle-class achievement ethic with consequent high valuation on symbolic commitment to future success. In contrast, the disadvantaged child has experienced only a subsistence ethic with consequent high valuation on concrete commitment to present gratification. Getzels further suggests that the school's appeal to symbolic success may
have little or no meaning to a child who has grown up measuring success only by subsistence.

Smilansky (1969) substantiates this notion when he talks of the system of the elementary school. This system of the school has, he says, norms. The child is obligated to prove himself according to these norms. If his family system has not prepared him to cope with the norms of the school, he may not be able to prove himself. Thus, he is going to start schooling with failure, which results in poor self-image, low achievement motivation, and inferior social status.

Rees (1968) lends further support to the notion that some children may experience feelings of inadequacy early in their lives due to certain aspects of the school. These feelings of inadequacy tend to block learning. She states that some children fail because both competition and standards are too high. This constantly singles out the child who is not doing well.

The area of verbal fluency has been shown to be one of the most important areas of concern. It has been pointed out in a number of studies that this entire area of language development is a crucial one in teaching disadvantaged children.

"What to do" about the "restricted" speech of disadvantaged children is a very real problem in the school. Some writers, such as Lloyd (1965), advocate not changing,
but adding to children's language. Lloyd says that a
child's learned speech is his comfort and should not be
disturbed. Schooling should add to previously learned
speech behaviors.

Writing on the Urban League Study of 1966, Monsees
and Berman (1968) report the following:

The non-standard Negro-English is a lawful
linguistic system with its own phonology, mor-
phology and syntax.
Thus, the disadvantaged Negro child must
master his own language and be prepared to use
unfamiliar standard English in reading and prob-
lem solving. He must then master two languages
simultaneously.

The works of Lloyd and the Urban League Study
indicate the necessity for the school to accept and under-
stand the language of the disadvantaged child as it is.
It is this basis of understanding and acceptance which must
precede any learning programs which are offered.

Smilansky (1969) has stated:

If I want the disadvantaged child to feel that
the school is for him, he must be successful in
the cognitive area. If you want me to feel that
the other child belongs and is like me, and that
I should be for integration--social integration,
you should prove to me that he can be successful
in school.

Rees (1968) lists factors which she considers to be essentials if school is to become important to the
learner. These factors include:

1. Teacher-pupil ratios must permit the teacher's
knowing the individual child.
2. Grouping should be based on developmental differences or similarities rather than upon chronological age.

3. Evaluation of learning should contribute to a positive picture of the progress of the individual's total development, thus aiming to build self-confidence rather than encouraging a negative analysis.

4. There should be close cooperation between the school and the parents.

Deutsch (1964) has made the point that to imply that the school has all the appropriate methods at its disposal which would make the schooling experience for the disadvantaged child relevant, and has elected not to apply them, is unfair. He says that what is called for is:

1. Flexible experimentation in the development of new methods.
2. Clear delineation of the problem.
3. Training and retraining of administrative and teaching personnel in the educational philosophy and the learning procedures that this problem requires.

**Teachers and classroom**

Becker (1952) investigated the values of teachers. In this interview study, teachers in the Chicago Public Schools were used. The results of the study showed that teachers considered their relations with children of the lowest social class to be the most difficult problem encountered in their work. Further, it was found that these problems centered mainly around discipline and the "moral acceptability" of these children. He stated that the teacher has preconceived ideas that "slum" children are difficult to discipline and morally unacceptable.
Smilansky and Smilansky (1967), in their efforts to develop programs that will reverse the non-learning syndrome of disadvantaged children in Israel, believe that "there must be a change in the means of supplying information to teachers, and re-orientation in their perceptions, attitudes and behavior." They state further that if teachers who are working with disadvantaged children are organized into a group which feels responsible for achieving declared goals, then changes in teacher behavior can be achieved. They further believe that a new approach would be used by teachers in whom attitudes have been changed toward the culturally disadvantaged child.

Shaw (1969) states that teachers are realizing the need to establish working relationships with pupils by learning their language, which is different from standard speech. She further proposes that teachers of disadvantaged children be charged with creating a secure classroom climate: a climate which will encourage children to communicate easily. These teachers must also plan classroom strategies that will reinforce social interchange between children and between teacher and children.

Dale (1964) states that the role of the teacher in the vocabulary development of underprivileged children is to aid the child in self-discovery. He also advances the notion that we may be overvaluing formal language and undervaluing informal and/or non-verbal language. As a
means of aiding children in self-discovery, this placement of values must be considered.

Shaw (1969), in writing about the talk of children, quoted McLuhan who said:

The medium is the message. In this era of superabundant communication, the teacher is both the medium and the message. No matter what instructional approach is used, the teacher's ability to communicate with pupils is his primary tool.

Wilson (1965) points out that an increasing number of teachers are indeed becoming sensitive to the language difficulties of disadvantaged children. These teachers are making it possible for children to "hear" their own language and to acquire growing facility in the use of more acceptable speech forms in varying social situations. These teachers are making it possible for children to learn to speak with ease in a standard English. They are also learning to respond correctly to requests which are expressed in language forms and which are different from those language forms used in their home environments. Teachers must make an effort to develop good human relations with the child whose culture is different. To accomplish this, teachers must establish programs in language arts that show perception of the psychological, social, and language needs of such children.
Methodology

In his work with disadvantaged children, Smilansky (1966) reports that one of the fundamental findings of these studies was that culturally deprived children require modified teaching techniques and a specially constructed curriculum if they are to achieve success in school. Though these children are not mentally retarded, they are not equipped to benefit from the curriculum and methodology of the ordinary school program. Smilansky also mentions such methods as slowing the tempo and reducing the range of content, such as have been tried by educators to meet the learning problems of the disadvantaged. He states that such methods are not adequate. To meet the needs of a disadvantaged child, a special curriculum, accompanied by revised teaching methods, must be established to reverse the negative and mitigate the deficiencies.

Ecroyd (1968) points out that educational systems have tried many methods aimed at closing the learning gap between lower- and middle-class children. Such tactics as integrated classes, integrated teachers, urban stories with multi-racial storybook characters have been tried. But Negro children are still far behind their counterparts in reading. He suggests that "oral language seems to be the core of the problem. Most teachers see it as the child speaking English incorrectly, rather than speaking their own language."
Strom (1966) supports this notion of the discrepancy in language expectation. He says that many children come to school with their own special language system. If a child is to transfer such an auditory system to visual symbols, a teacher should begin work with elements within the child's system. Strom suggests some methods which teachers could use, including perceptual experiences such as (1) experience charts, (2) labeling objects and areas of the room, (3) personal stories for each child, (4) using the child's name, and (5) allowing children to make their own books.

Frazier (1964) advances the notion that language use can be impeded by expecting children to speak without error. For example, one should not always insist that a child respond in complete sentences. Frazier suggests that an effort be exerted

... to use to the fullest every opportunity that could help children learn to conceptualize and thus "add vocabulary" to their present fund, i.e., comparing, contrasting, defining, describing, differentiating, extending, generalizing, guessing (hypothesizing), imagining, modifying, relating, symbolizing, and testing.

Jensen's (1968) research points out that it is likely that many of the skills the school tries to teach can best be learned in a one-to-one tutorial situation rather than through ordinary classroom teaching. He says that learning is extremely slow and inefficient, or even impossible, when it depends upon detailed observation of a
child's performance with differential reinforcement of every step. Jensen suggests that automated teaching, or a one-to-one tutorial relationship between older and younger pupils, may be possible answers. At this point, it may be well to mention that over fifty years ago, O'Shea (1907) noted the importance of interaction with others as the arena for language development.

Rees (1968) advances the notion that if a child has been deprived, he should have the opportunity to participate in basic life experiences without the threat of pressure or competition. He should be permitted to have these simple experiences accompanied by success and encouragement. Rees warns, however, that new experiences for children must contain meaning for the child and be built upon his past experiences. She says that no child will benefit from an experience, no matter how elaborate, unless it contains meaning for him. She suggests that

... all experiences should begin with a purpose, should relate to the past and should hold possibilities for direct meaning and related meanings to be used as determinants of his own thinking and action and as a base for further experiencing.

**Project Head Start**

To help children develop their full potential so that they may become increasingly more effective members of our American society and enjoy the personal satisfaction of a full life.

This statement refers to what Willis (1964) interprets as the fundamental purpose of education in America. In order
to accomplish this fundamental purpose, compensatory educa-
tion has come into being. Willis proffers a definition of
compensatory education which suggests that educational
programs and projects should be designed to overcome the
deficiencies of a culturally deprived child.

Bloom, Davis and Hess (1965) contribute the follow-
ing clarification concerning the use of the term "compensa-
tory education."

Compensatory education as we understand it is not
the reduction of all education to a least common
denominator. It is a type of education which
should help socially disadvantaged students without
reducing the quality of education for those who are
progressing satisfactorily under existing educa-
tional conditions.

Researchers, such as Bloom (1964), have indicated
the critical nature of the early years in a child's
development. Research of this nature has made it clear
that early intervention is necessary in the attack on
cultural deprivation. This is the rationale for programs
of early compensatory education, including the Head Start
Program.

In discussing the objectives of a pre-school
program for the disadvantaged, such as Head Start, Corbin
and Crosby (1965) state that such objectives must have a
basis. They suggest that these objectives be based upon
"those needs resulting from linguistic impoverishment which
lies central to the children's educational handicap and to
their later failure in school."
A fundamental assumption underlying Project Head Start, as reported by Lam, Ziller and Malong (1965) is that economically deprived children live with an inadequate experiential background for associating words and concrete events and thus the learning process, as it is now programmed, is retarded for these children. Further, they suggest that this inadequate experiential background is due to a reduced number of connections between the child and other people, and between the child and objects.

Project Head Start has also considered the special problems of disadvantaged boys in the "femalized" elementary classroom atmosphere. It is reported by Garia and Scheinfeld (1968) that this type of atmosphere is especially detrimental to the development of masculine pride and achievement motivation, particularly among lower-class boys from minority groups. They also stress that it could even be necessary to help these boys through special classes which would not only provide creative outlets for hostilities and frustrations, but reinforcement of positive accomplishments. Project Head Start and similar programs, which involve boys from minority groups in early play experiences, could aid in the transition of these boys to a school setting.

Several studies have been conducted concerning the value of Head Start and other pre-school programs for culturally deprived children. Rees (1968) cites the Progress
Report from 1964-65 on the Experimental Nursery School Program in Philadelphia. It was concluded here that:

"... the good pre-schools of today come more closely to the stated ideal type of program planning than do the schools beyond--the elementary, the junior high, senior high and college. The pre-school has been interested in the child.

In a study conducted by Zigler and Butterfield (1968), children participating in a pre-school program for culturally disadvantaged children show a significant increase in their functional intelligence as measured in a standard testing situation. This suggests that one cannot equate general competence with cognitive ability in the deprived child; therefore, it is questionable that the deprived child's basic problem is intellectual deficit.

The findings of this study also indicate that the emotional and motivational deficit from which the deprived child suffers decreases his usual intellectual potential from what we would expect based on measurement in an optimizing test situation. Based on the results of this study, Zigler and Butterfield suggest that correcting the disadvantaged child's motivational inadequacies should be an important consideration for pre-school programs. That this aspect would be as important as teaching cognitive skills and factual knowledge is apparent. Finally, Zigler and Butterfield, in considering the question of assessment of such pre-school programs as Head Start, advance the notion that perhaps the value of such programs does not lie
in successful attempts to create general competence among deprived children; rather, the true value lies with success in developing cognitive abilities.

A recent study of Head Start was conducted by Westinghouse and The Ohio State University and reported in \textit{Phi Delta Kappan} (1969). The study posed the question:

Had Head Start classes made an intellectual and psychological difference to poor children who are now in first, second, and third grades?

An attempt to measure difference was made by using three kinds of tests: a test of language development, a test of learning readiness, and a battery of psychological tests. The results of the study show that on the test of language development, the Head Start children did not score significantly higher than the control group. In learning readiness, the Head Start children scored better than the control group. On the Stanford Achievement Tests, there was no difference in performance between the two groups. Scores appeared to be about the same for both groups on the battery of psychological tests administered.

In spite of these general results, it appeared that there were greatest differences, in favor of Head Start children, in the Southeast, in the core of large cities, and in mainly black areas. This suggests that perhaps Head Start did the most for those who were most destitute. Further results of the study indicated that year-round Head Start Programs showed more effect than summer programs,
though no effort was made to ascertain differences between specific Head Start centers for either summer or year-long programs. It was suggested that to be effective, programs should last longer and extend downward to infancy and upward into primary grades. One of the most striking results of the study was found to be the degree of parent participation in many of the Head Start centers. The authors of the study say,

... that Head Start teachers should pay more attention to developing children's language and to helping parents teach children. It asked that some Head Start centers be experimental.

Parent involvement

Smilansky (1966) has demonstrated, in his work with culturally deprived children, the need to elicit support from parents. He warns against assuming that because the culturally deprived home and the school are two very different systems, the child cannot function successfully in these systems. It is true that differences do exist in terms of structure, expectations, requirements, rewards and behavioral demands. However, if the home gives its support to the school, the school must:

1. Accept the home as a home
2. Try to understand it and support its particular functions
3. Not try to change the home or to undermine it, and
4. Seek a union with the home at the point of common concern—the successful progress of the child in school.
Smilansky says that it has been his experience that under the conditions outlined above, parents will give their support to the school. Further, he says that in programs for young children, this support would involve teaching parents to teach their children certain things required at school. The Smilanskys (1967) posit that the general pattern of higher "mean" educational achievement for children from higher educational backgrounds still holds. Further, they say that the influence of cultural patterns is much stronger than the influence of family size, level of education, or financial consideration. In spite of these, the Smilanskys found that a stimulating environment for educational achievement can come from parents with low educational status. The contributory factor is what parents do, not how much education they have had.

Sochet (1965) contends that the assumption that lower-class parents are unconcerned with the education of their children is a false assumption. She says further that the building of such skills as language competence in disadvantaged children is a primary educational concern. In order to accomplish this task, she sees the formulation of new techniques and school practices as necessary first steps. Sochet goes on to state that where parents have been given the opportunity and encouragement to participate
in the affairs of the schools, they have demonstrated usefulness and willingness.

Pines (1969) reports independent studies conducted by Hunt and Karnes which substantiate the notion that parents of disadvantaged children will, indeed, participate in a helping way if afforded the opportunity. Hunt's study involved infants from a Durham, North Carolina ghetto. He found that:

... after two years of tests at Duke University, once a month, these toddlers scored close to 110 on the Binet IQ test, while other two and a half year olds from their neighborhoods scored only seventy to eighty.

The reason for this, according to Hunt, is that the mothers of the babies in the test situation were present throughout the tests. When these mothers noticed which items their babies did well on and which ones they failed, they must have given them practice when they needed it. According to Hunt, these mothers appear to have been exceedingly effective as teachers. He says, "This suggests that poor children's decline can be prevented."

Karnes made a similar discovery in her study of fifteen disadvantaged three-year-olds. She employed the mothers of these children as assistants in her experimental nursery school and taught them to make inexpensive educational toys and games to use at home. "Within less than three months after they began, their own children, who had stayed home, suddenly gained 7.5 points of IQ." Based on
the results of this study, Karnes concluded that teachers should assume a role of parent training as well as child teaching in pre-school education.

These research studies, as well as the study of Dave (1963) reported earlier, seem to indicate that stimulating home environments for educational achievement can be provided by parents who themselves have relatively low levels of education or occupational status. The results of these research studies seem further to demonstrate that it is what parents do in the home, rather than their status characteristics, which is the determiner in the home environment.

There is general agreement that parent involvement is essential to the success of school programs for culturally disadvantaged children. Riessman (1966) advocates the employment of nonprofessional staff members drawn from the ghetto neighborhood. He suggests that such persons may be able to establish lines of communication across class lines and thus these persons may act as liaisons between school and parents.

Strom (1965) concurs and suggests that a program of establishing conjunctive educational efforts with the home has high priority for slum neighborhoods. Where home and school feel vulnerable to each other, hostility is apt to ensue. Initiation for action in resolving this conflict lies with the school and the teacher.
The Role of Play in Language Development of Culturally Deprived Children

Play is a learning experience about people and the world, involving the mind, imagination and emotions of the child. Play, being the child's natural medium of self-expression, is his way of life; the real and meaningful world to him.

As was mentioned in Chapter I, traces of ancient civilizations indicate that play and toys were common to the children of those times also. Some researchers have posited that since play and toys are natural and comfortable mediums of verbal expression for children, it is well to begin at this point in organizing programs of language development.

Definitions of play

Researchers, for many years, have been attempting to unravel the mysteries of play. Groos (1898) in 1898 saw in play a phenomenon of growth, growth of thought and activity. He was the first to ask why the various forms of play exist. Play, according to Groos, was "pre-exercise" because it contributed to the development of functions whose maturity is reached only at the end of childhood.

Many early researchers engaged in the study of play. The compensating function of play was stressed by Carr, Reaney, and Robinson, as reported by Piaget (1951).
That is, play was seen as a catharsis which not only eliminated dangerous tendencies, but made these tendencies acceptable through canalization and sublimation. To complete the ego was seen as the main aim of play by Lange in 1901. For Taylor and Curti, play was seen as "free satisfaction."

Hadfield (1962) views play as "the spontaneous expression of innate patterns of behavior." He supports the earlier views of Groos to the extent that he views play as "nature's way of giving a child practice in those activities which he will later require in earnest." He discusses two kinds of play: imitative play which is seen as expressions of the urge to imitate the activities of adults, and imaginative play in which children are imagining the kind of situation they will encounter later as adults. Hadfield views imaginative play as widening the scope of children's experiences more than imitative play.

Lee (1942) examined the phenomena of play from an instinctual base. He cites seven principal play instincts as those governing play: creation, curiosity, fighting, hunting, nurture, rhythm, and team play.

Piaget (1951) considers the issue of spontaneity in play as opposed to the compulsion of work and real adaptation in his definition of play. Play, he says, is an activity "for pleasure," while serious activity is
directed toward a useful result irrespective of its pleasurable characteristic.

Piaget (1951) and Schorsch (1942) concur that freedom is a property of play. This freedom is seen as a tendency toward independence of the constraints of conflict and ethical conditions. It is a feeling also of mastery over the process.

Millar (1968) reports Piaget's view of the significance of play as providing the child with a way of obtaining information feedback. He says that play is a major means of interacting with the physical and social environment, and a way of adapting the reality of this environment.

Millichamp (1953), in his investigation of play, considers play to be therapeutic. He says that in everyday life, the child needs some release from the tensions that the restrictions imposed on him by his environment give rise to.

Bowler (1968) advances the notion that ideas and goals in work and play are qualitatively different for each, and one does not work with the same conceptions he has for play. Play involves oneself in the skill of creating an illusionary world for temporary release from the real world.
Play as a natural process

Millar (1968) suggests that adults often view play as inappropriate action because children's perceptions are less differentiated than those of adults. Children do not "animate" their world and see no contradiction in not distinguishing what is alive from what is not. Children, thus, have no problem engaging in imaginative play. Play is often viewed by adults as wasteful action.

Prank (1968), in his discussion of play, deplores the interpretation of play as idle and unproductive. This interpretation is, as Prank says, an unfortunate one for play embraces a wide range of spontaneous and productive experiences.

Suchman (1967) discusses play as the earliest learning scheme for developing humans. He says that play has great value throughout an individual's learning life because it is a vital preconditioner for more formal learning. Moreover, as Suchman suggests, play permits a person to try out his ideas and himself without fear, and play "feels good."

Hadfield (1962) states that play gives expression to those natural activities which are of value in the pursuit of life. This quality of play, he says, is necessary for the development and maintenance of mental health.

Piaget (1951) views play as a natural sequence in the human growth pattern. He says that play begins with
the first dissociation between assimilation and accommodation. Once a child has learned to grasp, swing or throw, he repeats this behavior. The repetition of this behavior is not for the purpose of further efforts to learn, but for the mere joy of the activity.

Hartley and Goldenson (1963) support Piaget's natural view of play when they say that "play is the way the child learns what no one can teach him." Play, they state further, is the child's way of learning to live in a symbolic adult world. It is his means of exploring and orienting himself to this world. They also state that verbal skills of self-expression are developed through play.

Frank (1964) supports such conceptions of play as the foregoing because he says children need such opportunities for wholesome development. He adds that such opportunities which recognize the significance of self-directed learning, active exploration, and manipulation are vital to permit children to meet the many demands, restrictions, pressures and tensions which they will encounter in their growth and development.

Play as instruction

Ginott (1961) has noted that children can more adequately show how they feel about themselves and others through the manipulation of toys rather than through words.
He has suggested that "to a considerable extent, the child's play is his talk and the toys are his words." Elementary counselors have long realized the value of toys and play as a means for facilitating communication so that various learnings can take place. As Van Hoose (1968) notes, children, especially primary grade children, are "still at the stage where play is an important activity in their lives."

Nelson (1968) concurs with this thinking when he posits that play is more than a child's fun and games. It is the child's learning, testing, communicating, and expressing media and as such provides most appropriate material for counseling.

Darfman (1951) advances the notion that:

Like client-centered counseling, play therapy is based upon the central hypotheses of the individual's capacity for growth and self-direction.

Classroom instruction subscribes to the notion of growth and self-direction to a degree, and as Almy (1968) has noted, "the possibilities for intervention in the child's play in order to give it particular meaning have also been given impetus in revised curricula for elementary schools," as this curricula attempts to pattern the child's play toward the eventual development of specific and basic concepts similar to that method advocated by Montessori.

Particularly, the notion of play as instruction may have merit in teaching disadvantaged children when one
considers the strengths of these children as set forth by such writers as Cheyney (1967). He suggests that disadvantaged children's strengths lie in the area of physical orientation and phantasy proneness, inductive reasoning and expressiveness. Based on these strengths, Cheyney offers the notion that programmed materials may be of instructional benefit in teaching disadvantaged children. He further suggests that

... when spontaneous expression is allowed, encouraged through role-playing and other experiences which are partially structured, expression is liable to be free and easy.

Language is best learned through a multi-sensory approach, utilizing both the child's own experiences and those experiences which can be provided for him. All of the senses—visual, auditory, kinesthetic, tactile, and even taste and smell—are the means by which children learn; a theory of play as a legitimate avenue for instruction may, then, have merit in the teaching of verbal fluency to children (Columbus Public Schools, 1966).

In summary, this chapter has provided an overview of some of the literature related to a general pattern of early language development in children. More specifically, it reviewed the general pattern of language development of the culturally deprived child. Several kinds of instructional experiences have been developed which are geared to the language development difficulties of culturally
deprived children, and these experiences have been reviewed in the second part of this chapter. The issue of play and toys and their relationship to instruction, especially in the area of language development, is considered in the last portion of this chapter.

Chapter III will discuss the methodology utilized in this study.
CHAPTER III

METHODOLOGY

Chapter III presents a description of the procedures used in the study. A discussion of the setting, study sample, instruments, procedures, and analysis of data is offered.

The purpose of this study was to test a methodology for improving the vocabulary development of low-income children. The use of programmatic toy situations (Toy-Talk Contexts) as the medium for adult-child conversations was employed. So that determinations could be made regarding the best use of this technique should it be found that vocabulary development can be taught in this manner, a further purpose was to investigate the efficacy of the technique among children of both high and low verbal fluency. The study evolved as an extension of a project undertaken by Strom (1969a) at The Ohio State University.

Setting

The study was conducted in Cleveland, Ohio. Cleveland was selected for the study because it has qualities which will permit generalizing to other large cities. The Encyclopedia Americana (1969) reports that Cleveland is the
eighth largest city in the United States and the largest city in Ohio, having a population in its metropolitan area of two million people, with more than 800,000 residing in the city proper.

Reported further in the Encyclopedia Americana is that:

... From its early days, Cleveland has attracted immigrants from many foreign lands and Americans from all over the nation. The result is a population of many ethnic, racial, religious, and socio-economic strands. ... 

Some of Greater Cleveland's wealthy families live in baronial mansions on large suburban estates that compare in taste and splendor with any in the nation. Some areas in the old parts of the city are dismal slums, inhabited in many cases by persons who have difficulty in coping with modern urban life. Elsewhere are all shades of owner-occupied dwellings and rented apartments.

For these reasons, it may be postulated that the educational problems in Cleveland may be similar to those of other large urban centers with respect to those problems relating to culturally disadvantaged children. This is assumed because the population patterns of larger cities of the country with varying areas of development reflect different levels of social and economic deprivation.

The school in which the study was conducted was an inner-city elementary school which is situated in the Hough area of Cleveland. The school serves approximately 5,000 people who reside in the one-by-five-block geographical school district. The residents of the area have an average level of education of high school and below. Public
assistance and menial jobs constitute the occupational structure. Ten per cent of the residents own their homes, at an average valuation of $2,000. The remaining ninety per cent pay an average of $110 per month rent. Local organizational activity is evidenced in the community by the existence of the Hough Community Council, Street Clubs, and H.O.P.E. Civil rights group activity is represented locally by C.O.R.E., S.N.Y.C., Afro-Set, S.A.C.A.P., and N.A.A.C.P.

A description of the school itself was prepared by the principal of the school and was made available to the investigator. The following, therefore, is a copy of that document, included by permission of the author.

1. Plant

A. Location
The school is located in an area commonly referred to as "Hough." It is a relatively new building (8 years old) situated in a heavily impacted area on a three acre site adjacent to the Thurgood Marshall Playfield. The area contains a large number of single family homes, which have been converted to multiple dwellings, and several apartment houses. The district is one block wide and five blocks long.

B. Structure
The building is a two story "L" shaped structure containing thirty-two classrooms, gymnasium, library, teacher's lunchroom, clinic, two half-size rooms and the administrative suite. The classrooms are modern, spacious, and attractive, but designed in the traditional character.
II. People

A. Staff
At the present time the staff consists of:

- 28 Classroom teachers
- 5 Full time special subject teachers
- 5 Part time special subject teachers
- 2 Administrators
- 2 Office Secretaries
- 3 Custodial personnel
- 5 Full time aides
- 7 Part time aides
- Some Sixty plus Volunteers

The Staff is organized into "Grade" units with a Grade Chairman for each unit. They are given a semi-administrative and supervisory status and are responsible for duties related to that position.

B. Students
There are presently 940 students enrolled. They are children with a variety of backgrounds and experiences running from one extreme to the other. A large percentage of them (50-60%) are from families on public assistance and exhibit all the problems related to that economic situation. Many of our children come from sound, stable homes with complete family units. However, many, many, do not and are considered to be the "so-called" "Disadvantaged." Because of this large number of "Disadvantaged" children, the school has been designated as a "Target" school and shares the advantages of several selected federal programs.

Intellectually our children have the same potential as found in children from other areas. Their achievement, I regret to say, has not yet matched their potential.

III. Programs

A. Organization
The building is so organized to provide twenty regular classrooms, two kindergartens, two classes for slow learners, two classes for the intellectually gifted, a Listening Post, and a Behavior Modification class. The upper grades are on a modified departmental program—Art, Phy. Ed., Science, and Music.
The staff is organized, as I've stated previously, into grade units. They are also involved in the traditional committees with the addition of the "Conference Committee" (Union) and the Staff Council, composed of teachers elected annually by their colleagues. Both groups meet with me on a monthly basis.

B. Programs
All the traditional academic programs are to be found in the school as they are found in every school. However, in addition, there are others designed to meet specific needs, to foster involvement on many levels, provide necessary experiences and to help create an educationally oriented attitude in the community. They are:

1. Teacher
   a. Weekly Pot Luck Luncheons
   b. Annual Weekend Workshop
   c. Reverse Open House (Monthly "Coffee-Klatch" in homes)
   d. Pre-Service Teacher Training Programs
   e. Urban Education Center

2. Parents
   a. Weekly Grade Meetings
   b. PTA
   c. Fathers Club
   d. Parents Advisory Council
   e. Weekly Evening Parent Information Program
   f. Buyers Club

3. Students
   a. Breakfast and Hot Lunches
   b. Kindergarten Enrichment
   c. Operant Conditioning
   d. Behavior Modification Class
   e. After School Recreation
   f. Scout Program - Boy Scouts, Cub Scouts, Brownies, and Girl Scouts
   g. Student Council
   h. Safety Security Squad (Experience in employment skills and economic education)
   i. Buddy Program (Inter-cultural experiences)
   j. Cultural Heritage Classes
   k. Extensive Volunteer Program
IV. Personality

Involvement with children, colleagues and community; a commitment to assist in the education of prospective teachers; a willingness to experiment and an appreciation and respect for children as individuals and as human beings, describe the school's philosophy, its attitude and, to a great extent, its practices. The degree to which each teacher succeeds on a practical basis determines the school's personality. The academic disciplines are utilized as a vehicle to provide opportunities to share in the "better life" and not as an end in itself. I think that any visitor to the building cannot help but feel that, at our school, children are important people.

Study Sample

The population used in the study was composed of children whose qualifications were consistent with the following criteria.

Age.---Children who at the time of the study were between the ages of five years, seven months, and seven years, two months, were selected. More than one-third of the children were five years, ten months.

Grade placement.---Children who were enrolled in kindergarten within the designated environment composed the study sample.

School attendance.---Children who attended the selected school and resided in the geographical area served by that school were selected.

Environment.---Children who lived within the geographical confines of the Hough area in Cleveland, Ohio,
participated. The Hough area represents an intact area of the city in which there is a high concentration of low-income families.

**Sample.**—A total of twenty-four kindergarten children were selected from the kindergarten classes in the school. The selection was made on the basis of randomization from the population. The final sample consisted of eleven boys and thirteen girls. The children were all Negro. According to information elicited from their teachers, it was learned that two of the children were only children. One child lived with grandparents. One child was the only boy and the youngest in the family. One child lived with parents of religious beliefs which demanded that he be "good." One child was an identical twin. At least one child was felt to have severe emotional problems. Several children were frequently absent from school and at least one of these children suffered from an acute awareness of improper clothing. One child was reported "fearful and timid." Several children were seen as "not working up to potential." Most of the children were reported "eager to learn, relates well with adults, and relates well with peers."
Instruments

**Torrance Tests of Creative Thinking**

The Verbal Test, Form A, of the Torrance Tests of Creative Thinking, tasks 1, 2, 3, 4, and 5, was administered to groups of kindergarten children in the selected environment to determine degrees of verbal fluency, flexibility, and originality.

In both his verbal and figural tests, Torrance has devised activities that make use of what is known about the nature of the creative process, the qualities of creative products and creative personalities. An attempt is made, however, to assess the products that result from the administration of these two tests in terms of Guilford's divergent thinking factors: fluency, flexibility, originality, and elaboration.

For example, one straightforward model of important elements for creative thinking is the "Ask and Guess" subtest, included in the verbal battery to allow subjects a chance to express their curiosity, show an ability to develop hypotheses, and think in terms of possibles. The number of relevant responses one produces gives a measure of ideational fluency, while the number of shifts in thinking or categories of questions, causes or consequences, yields an index of flexibility. The statistical infrequency of these questions, causes or consequences, or the
extent to which the response represents a mental leap or departure from the obvious and commonplace gives the measure of originality. The detail of specificity incorporated into the questions and hypotheses is a measure of the ability to elaborate. Additional verbal tasks entail product improvement, unusual uses, unusual questions, and responses to improbable situations (Strom, 1967).

Recent findings (Strom, 1969a) indicate that not only has high verbal fluency been shown to be a prime indicator for student success in school, but also that inner-city teachers who have high verbal fluency are more successful in teaching in the inner-city.

**Vocabulary Pre-Test**

An alphabetical word list accompanying the Toy-Talk Contexts served as a Vocabulary Pre-Test. The words for this test were acquired in the following manner:

1. Groups of undergraduate students engaged in "brainstorming" sessions with the experimenter. Toy Contexts identical to the ones used in the study were devised. As the adults manipulated the toys, records were made of possible words growing out of this manipulation.

2. The experimenter and students "played" with children in the Toy-Talk Contexts and words evolving from these situations were noted.

A Pre-Test list was devised which contained some fifty to seventy-five words for each Toy Context, with appropriate spaces for recording children's responses to
these words. A standard procedure was devised for eliciting responses for the Pre-Test, as follows:

"I would like for you to help me with one more game. I like to find out what kinds of words kindergarten people know the meanings of. Will you tell me what some words mean if you can?

"Help . . . what do you think help means?

"Surround . . . what does surround mean?

"Surrender . . . what do you think surrender means?

"Beg . . .

"Charge . . . etc.

"Thank you very much."

Three response categories were established as incorrect response, no response, correct response. Incorrect response was recorded when a child incorrectly identified a word or concept to the tester. No response was recorded when a child refused to attempt to identify a word or concept or said, "I don't know," or otherwise made no attempt to identify a word or concept posed by the tester. Correct response was recorded when the child displayed that he correctly knew the meaning of a word or concept which the tester asked. Most often the children responded verbally when indicating such knowledge. Sometimes, however, they responded behaviorally. Both types of responses were accepted by the tester.

The Pre-Tests were administered to forty randomly selected children immediately upon their completion of the
Torrance Test. One Pre-Test for each of the two Toy Contexts was given. The Pre-Tests were for the purpose of not only discovering the extent of a child's vocabulary, but also for discovering how much meaning he was able to attach to this vocabulary. A further purpose of the Pre-Test was to discover misconceptions of concepts which needed replacing.

The examiner asked the child if he knew the meanings of words selected randomly from prepared lists of words corresponding to the Toy Contexts. As soon as a list of twenty words for each Toy Context was recorded for which the child displayed no knowledge or a misconception, the pre-testing ceased. Samples of the Pre-Tests appear as Appendixes A and B.

**Vocabulary Post-Test**

Following the completion of the play activity, the sample children were administered a Post-Test which was devised by the investigator and included ten words selected from those identified from the results of each Pre-Test. These ten words were interjected into each play situation. The purpose of the Post-Test was to determine if gain in vocabulary meaning had been achieved after involvement in the play activity; that is, had the no response or incorrect response been eradicated and could the child verbalize
the word and its meaning? A standard procedure for administering the Post-Test was devised as follows:

"Yesterday you told me the meanings of some words. Today I would like for you to tell me what some more words mean if you can.

"Help . . . what do you think help means?
"Surround . . . what do you think surround means?
"Surrender . . . what does surrender mean?
"Beg . . .
"Charge . . . etc.
"Thank you very much."

Responses were judged correct if the child displayed that he correctly knew the meaning of a word or concept when asked. Though a verbal response was encouraged, if a child responded behaviorally and verbally combined, the response was accepted by the tester as correct. A sample of the Post-Test form appears as Appendix C.

Procedures

Toy-Talk Contexts

Two Toy-Talk Contexts were devised. These situations made use of manipulative toys which are inexpensive, easily obtained, and portable in nature. The contexts met the following criteria.

1. One context was developed which was advantageous to the sample group of children; that is, the toys and situations were of such global familiarity that it was expected that the children
would be sufficiently familiar with the context to increase the incident of verbalization.

A Toy Context involving cowboys, Indians, horses, and a toy fort comprised this play situation. It was felt that cowboys and Indians are of such familiarity to urban children due to movies, television, books, and advertising as to present no problem of strangeness. Furthermore, a number of children, both boys and girls, of kindergarten age appear to engage in this type of play activity with regularity.

2. A second context was developed which was of disadvantage to the sample group of children due to environmental circumstances so that their verbal strength was reduced. To this end, a Toy Context involving the Farm was devised, including such toys as a barn, farm animals, farm machinery, etc.

It was felt that a farm situation, for urban children, may lend a degree of unfamiliarity to contrast with the familiarity of the cowboys and Indians context. Though most urban children, including those in the inner-city, have probably visited a farm, their contact has probably not been of sufficient quantity to completely familiarize them with a farm situation.

Following the Pre-Test situation, the children engaged in the Toy-Talk play activity. Each child was permitted to play with each of the two devised Toy Contexts for a maximum of ten minutes for each context. The play interaction involved one adult and one child. During
the play situations, the child and the adult with whom the child played were viewed by two observers who entered their observations on two forms devised by the investigator. The purpose of the observation was to note the dynamics of the play situation which could not be recorded by tape recorders. The focus of such observation was primarily that which may be exhibited by the adult interacting with the child in the play situation. Attention centered on what means the adult employed as he:

1. entered and defined words and concepts,
2. reinforced or corrected words and concepts,
3. demonstrated or explained words and concepts,
4. replaced or repeated words and concepts.

Attention was centered also upon the adult's reactions to the child in the play situation as the child:

1. entered and defined words and concepts,
2. repeated and reinforced words and concepts,
3. clarified, replaced or corrected words and concepts,
4. elicited questions,
5. accepted or rejected the total situation or any part of the situation.

**Toy-Talk procedures**

There were four kindergarten classes, two sessions in the morning and two sessions in the afternoon. From this group of 121 children, ten children were randomly selected from each class, using a table of random numbers. Two tests were administered to this group of forty children.

1. The Torrance Test of Creative Thinking, Verbal Form A, Tasks 1, 2, 3, 4, and 5.
2. Two Vocabulary Pre-Tests which were devised by the investigator.

The group of ten examiners were each assigned random numbers. Each examinee was randomly assigned to two examiners. One examiner was assigned for the Torrance Tests and another for the Vocabulary Pre-Tests. Thus, each child had contact with two adults during the testing process and each adult examined eight children, four during the Torrance Tests and four during the Pre-Tests. Thus, an attempt was made to reduce the bias which may exist if the child were tested by the same examiner for both sets of tests. The tests were scored and six children from each class were selected to comprise the sample group. The selection was made on the basis of the verbal fluency scores of the Torrance Tests. The three highest and the three lowest scores from each classroom were selected.

After the selection of these twenty-four children was made, ten words were selected from each Pre-Test for which the child had shown either no response or an incorrect response to the word. As far as possible, like words were selected to be the constant variable in each play context. One player per two contexts was used. The two contexts were duplicated three times. Each player was randomly assigned four children in the morning and four children in the afternoon with whom to play. The children were randomly assigned to the players on the basis of two
high verbal score children and two low verbal score children in the morning and two high verbal score children and two low verbal score children in the afternoon.

Six observers were used to record overt behavior that would complement the verbal behavior which was recorded on tape recorders. The observers were assigned random numbers and were assigned to play situations on a random rotating basis in mixed pairs.

The twenty words selected from the Vocabulary Pre-Tests were introduced into the play contexts, ten words per play context. Following the play interaction, the adult player administered a Vocabulary Post-Test consisting, as stated previously, of words selected from the Vocabulary Pre-Test and used during the play contexts.

Analysis of Data

Descriptive analysis

The Torrance Test of Creative Thinking, Verbal Form A, was administered to determine those children who score low on tests of verbal facility and those children who score high on tests of verbal facility. Using these two groups of children as control groups, a Vocabulary Pre-Test was administered. The purpose of the Vocabulary Pre-Test was to determine ten words or concepts related to each Toy-Talk Context for which the child displayed either an incorrect response or no response. Using these twenty
words as teaching material, involvement in the Toy-Talk Contexts followed.

During the play situation, the adult attempted to teach the meaning of the unfamiliar words and concepts to the child. Two observers viewed each play situation, noting the behavioral dynamics of the play situation on forms devised for that purpose. A sample of this form and instructions for observers appear as Appendixes D and E.

The play situations were also taped so that verbal dynamics could be noted. The tapes and observational reports were then combined into a running commentary of the adult-child interaction in the Toy-Talk play situations. These commentaries were then analyzed by the investigator and two other readers who had not viewed the activity at the time of occurrence. A coding procedure for judging the Toy-Talk process was developed. The following are categories from which it was felt some conclusions and descriptions of the operation could be drawn.

1. Adult player variables such as
   a) Adult player as a person, including sex and characteristics;
   b) Adult player style—there appeared to be three different basic Toy-Talk styles among the three players;
   c) Adult player word entering techniques—each player seemed to enter words in a different way, including behavior mode, questioning mode, and verbal mode.

2. Child player variables such as
   a) Verbal fluency of child displayed during play situation;
   b) Acceptance or rejection of the process.
3. Process variables such as
   a) Completeness of Toy-Talk, including the manner in which entering, defining, repeating, reinforcing, clarifying, replacing, and correcting of words was accomplished;
   b) Behavioral or verbal participation on the part of the child which indicates that he understood the meaning of the word being used;
   c) That response or non-response on the part of the child to questions posed by the adult player.

Immediately following the play situation, a Vocabulary Post-Test was administered to determine if any gain in verbal understanding had occurred. The children who attained high verbal fluency scores on the Torrance Tests and the Vocabulary Post-Test and the children whose verbal fluency scores were low on the Torrance Tests and the Vocabulary Post-Test were compared to determine the extent to which children of different verbal fluency responded to the Toy-Talk Contexts.

Statistical analysis

The statistical procedures used to determine differences in vocabulary gain scores on the Vocabulary Post-Test between high and low verbally fluent children consisted of (1) the computation of coefficients of correlation using the following Pearson Product-Moment formula:

\[ r_{xy} = \frac{\sum xy - \frac{\sum x \sum y}{n}}{\sqrt{\left( \frac{\sum x^2 - \frac{\left( \sum x \right)^2}{n} \right) \left( \frac{\sum y^2}{n} - \frac{\left( \sum y \right)^2}{n} \right)}} \]
and (2) the application of the "t" test to determine significance of differences of means, using the following formula:

\[ t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \]

The relationship of the two dependent measures, correct number of responses on the Farm Toy-Talk Vocabulary Post-Test and correct number of responses on the Cowboy Toy-Talk Vocabulary Post-Test, to verbal fluency were analyzed using these two formulas.

In this chapter, the methodology of the study was described. Chapter IV will present the Toy-Talk process and the findings of the study.
CHAPTER IV

FINDINGS

This chapter presents the findings of the study. The primary purpose of the study was to design and test a method for improving the verbal facility of low-income children, using programmatic toy situations. A description of the Toy-Talk process and development of verbal facility is reported as they apply to the problem.

In the descriptive analysis there are six recorded case studies describing the Toy-Talk process. The six case presentations were selected for representation of significant aspects of Toy-Talk verbal development process. These were the verbal fluency of the child, the gain scores on vocabulary tests, and the degree of acceptance of the Toy-Talk process by the child.

The complete descriptive analysis section includes background information on setting, toys and procedures for all of the cases; a verbatim transcript of six Toy-Talk sessions; and a summary following each case.

The vocabulary development data are reported as a survey of the effectiveness of the Toy-Talk process rather than as experimental research. Although the design used is
heuristic, the intent was to determine in a more gross manner the potential for the process in vocabulary development. The data are reported in table form and discussed following each table. These two sections comprise the findings of the study.

Descriptive Analysis

In this analysis three aspects are described. The first is the setting in which the Toy-Talk process was implemented and includes a listing of the toys and the administrative and structuring processes used. The second contains six case descriptions to illustrate the dynamics of the process. The cases were selected as examples of differences in verbal fluency, vocabulary gain, and acceptance of the process by the child. Following each transcript a third aspect is presented as a summary.

Setting

The physical setting for the study was a classroom on the second floor of the selected school. The room was large and bounded on one side by a wall of windows which provided ample natural daylight.

Three areas in the room were set up as nearly identical as possible in terms of materials. Each area contained two toy contexts (Cowboy and Farm), a tape recorder, an adult player, and two adult observers. The toys used in each context were small, inexpensive plastic
replicas. Each Cowboy context included: a fort, a cannon, six horses, eleven cowboys, sixteen Indians, a canoe, a totem pole, a teepee, a well and bucket, a flag pole and flag. Each Farm context included: a barn, combine, hay trailer, tractor, discer, hayloft, water trough, hen houses, silo, well and bucket, trees, chickens and chicks, ducks and ducklings, cows and calves, horses and colts, pigs and piglets, sheep, two men, a woman, and two children.

A tape recorder was situated in close proximity to each playing area so that the verbal interaction between child and adult could be recorded. The adult players and observers for each play context were juniors in the College of Education at The Ohio State University. These represented students who were enrolled in a child development course taught by the investigator. Eight of these volunteers were white females, one was a white male.

The player who was to interact with the child in the Toy-Talk Contexts went to the classroom to get him. This provided an opportunity for the child and adult to communicate briefly before engaging in the Toy-Talk. Upon their arrival at the room in which the project was conducted, the child found two toy contexts set up in close proximity, Cowboy and Farm. There was also a tape recorder, as well as two observers, nearby the area in which the play activity was to take place. The observers and tape recorder were pointed out to the child and their purposes
explained. The player then indicated that she would like for the child to play with her with the toys. The child was given the option to select that toy context with which he would like to play first. This procedure was followed with each of the children.

In the transcripts which follow, the words which the teacher is attempting to introduce are underlined. These are words which were not known by the child, as indicated on the Vocabulary Pre-Tests. The behavior which accompanied the dialogue is in parentheses. This was recorded by two observers of the process.

**Selected case descriptions**

Case #1 is a black male child who at the time of the study was five years ten months of age. This child attained a high verbal fluency score on the Torrance Test of Creative Thinking and low gain scores on the Vocabulary Post-Tests. His verbal fluency score on the Torrance Test of Creative Thinking was a "t" score of 57. This represents the highest score achieved by any of the children who participated in the project. The child's teacher reported, however, that she considered him to be of low verbal fluency.

The child was very neat in appearance and according to his classroom teacher's report was very conscientious of his appearance as well. He appeared to be rather shy but
quite pleasant upon first meeting. His teacher reported
that he "relates to school quite well"; that is, he appears
to enter into and enjoy the classroom activities and his
peers. He is considered a "good thinker" and performs
"average work" in the classroom. A sample of the form used
for this reporting appears as Appendix F.

(Child #12)

Player: We're going to have to get all the cows.
We're going to have to get all the animals together
here in the fence. Now we've got them all in the
fence, none of them will get out. Oh, that horse
has his horse collar around him. See that horse
collar around him. See that horse collar around
his neck? So he can pull the wagon. We're going
to take something to market. OK. There's that
special cow. He can bring the money back. Let's
deliver the cream to market. We'll have to get
the money and come back. Here's the market over
here. Let's pretend it's the market. OK? He'll
help unload it. There we go. Get it all off.
Take the money. Then we can come back. The
farmer has to get back, because he has to go out
and cultivate his field and get it ready for
planting. Here's the discer and that's what he
can cultivate it with. He's going to cultivate
it. (The child pretends to go out and cultivate
the field.) You going to take one of the cows to
market? (laughs). Boy, he's really a big one.
Boy, that's a big cow. You going to take him over
here to market?

Child: Uh-hm. (The child was playing along with
the farm animals but was looking at cowboys and
Indians which were off to the side.)

Player: The farmer'll help you move once you get
there. Can you get that door down? OK. Put it
right in here. The farmer's going to come back
and herd some of the cows into the pasture. First,
he's going to let them have a drink of water from
the water trough. I bet they're awfully thirsty.
(The child took the horse and cart as though he was
going to market.)
Child: The cows drink from here. (The child was handling and asking about the chicken coop.)

Player: That's the chickens. That's the chicken house. Is that the chicken swinging on the door?

Child: I've ate some. I've ate chicken.

Player: Look, eggs. Sometimes they hatch. Then there are little chickens. We'll put this right by the barn door.

Child: Where'd the chicken go?

Player: They can go into the barn too, if they want to. You want to put them in there?

Child: He's going to pick up the cow.

Player: Where'd the tractor go? Oh, here it is. This is the combine. (The child picked the combine and used it for a wagon.) You going to bring the cow back? Let's deliver the cow back to the barn. He's going to look for it. OK, let's play cowboy. You want to be an Indian?

Child: I want to be a cowboy. (The child begins to manipulate and play with the cowboys immediately. He becomes very verbal for a while.)

Player: OK.

Child: I want to be the cowboys. Cowboys win.

Player: Oh, do the cowboys always win?

Child: Indians lost. They're in the fort.

Player: Your cowboys are going to have to defend the fort. They're going to have to protect the fort from the Indians. The Indians are going to advance on the fort. They're going to come right up to the door. Are your cowboys ready? I've got all kinds of sneaky maneuvers. (The player enters the play and the child does not appear as responsive as he had been previously.)

Child: He's coming up here.

Player: My Indians are going to advance right . . .
Child:  Pow.

Player:  Oh, you got me through the door.

Child:  Pow.

Player:  One of my Indians is hurt. You wounded him.

Child:  Pow, pow, pow, pow.

Player:  I think you got my Indian.

Child:  I told you the Indians lost. You got four left.

Player:  Four? That's enough. I might run up there and stab you. Stab one of your cowboys and make a nice wound and maim him. (The child looks up at the player puzzled, then looks down and continues playing alone.)

Child:  Pow, pow, pow. I got your Indians. Pow, pow! Pow, pow, pow! (The child moves the toys and surrounds the fort with men and animals.)

Player:  He's got a bow and arrow.

Child:  Pow, pow, pow.

Player:  Oh, he got me. Another Indian. You're killing all my Indians.

Child:  I'm going to set your tent on fire.

Player:  You're going to set my tent on fire? I'll have to run. I put some water on it so it won't burn. Pow, pow. Oh, you got him. Oh, wait a minute. There's two more.

Child:  I killed them.

Player:  Oh, did you?

Child:  He got shot in the leg.

Player:  Oh, that's right. I guess I'll have to surrender.

Child:  All but that one. Pow, pow!
Player: You're just too good. I can't even sneak in your fort.

Child: But that was just a good cowboy. Play like these are bones. These are bones right here. And he, he yeah . . . .

In the Farm Vocabulary Post-Test, the child appeared to gain a correct concept of none of the ten words deliberately interjected into the Toy-Talk situation by the teacher. The child was not able to verbalize the meanings of any of the following words: agree, churn, enter, grain, horse-collar, occupy, enclose, cultivate, deliver, and picking. However, during the play situation, he appeared to behaviorally know what cultivate meant. All of the words deliberately interjected into the Toy-Talk situation by the teacher represented words which the child had indicated that he did not know when he was confronted with them on the Vocabulary Pre-Tests.

In the Cowboy Vocabulary Post-Test, the child appeared to gain a correct concept of two of the ten words deliberately interjected into the Toy-Talk situation by the player. He was able to verbalize the meaning of investigate and stab. Words which he appeared not to know in the Vocabulary Post-Test situation included: abandon, advance, add, defend, injured, maneuver, pretend, and maim.

An investigation of Tables 1 and 2 indicates that the gain scores evidenced in Case #1 are typical of those children who participated in the experiment. That is,
those children who obtained high verbal fluency scores on the Torrance Test of Creative Thinking tended to obtain low gain scores on the Vocabulary Post-Tests. (See pages 137 and 138 under "Data Analysis" for Tables 1 and 2.)

Responses by the child to the following questions posed by his classroom teacher after his Toy-Talk experience indicate that he enjoyed the experience. When asked, "Did you like what you did with the toys?" he responded, "Yes." When asked why, he responded, "Because it was fun." He said he would like to do it again. There was nothing he didn't like about the play. When he was asked if he learned something, he said, "Yes, I learned to play with toys." A sample of the form used for these investigations appears in Appendix G.

Case #2 is a black male child who at the time of the study was six years, two months of age. This child attained a low verbal fluency score on the Torrance Test of Creative Thinking and high gain scores on the Vocabulary Post-Tests. His verbal fluency "t" score on the Torrance Test of Creative Thinking was 11, which represents the lowest score achieved by all but one other child. The child's teacher reported, however, that she considered him to be of high verbal fluency.

This little boy was very friendly and out-going. Relating to the strangers who were the adult participants in the project did not seem to concern him. He appeared to
thoroughly enjoy playing with the toys, laughing loud and heartily from time to time. He was interested in all of the activity in the vicinity of the area in which he was playing. From time to time he called across the room to other children who were involved with the other players.

The child's teacher reports that he is "a very rough little boy," indicating that he is mischievous but not malicious in that he "relates well to the adults in the school." She said that he was a good student but is always in trouble. He is seen as a likable little fellow who apparently expends much of his energy in school. He comes from a home which demands that he be a "good" little boy because of the religious belief of the parents.

After the acquainting procedure was completed, this child elected to play with the farm setting first.

(Child #18)

**Player:** OK, now we're going to . . . Oh, what's the matter?

**Child:** Nothing.

**Player:** Let's look in the barn. (The player encouraged the child to look in the barn. The child responded correctly. He appeared to know exactly what the teacher meant.) Is there anything there? See anything in the barn? (The child followed the player's direction to get things out of the barn.)

**Child:** Pigs in here.

**Player:** The farmer's wife?

**Child:** Uh-hm.
Player: Anything else in the barn? OK, here's some horses. We'll put them there. How many horses are abreast here? How many are abreast? Let's see, one, two, three, four . . .

Child: One, two, three, four, five, six! (The player put seven horses abreast. The child counted them and left them in a straight line.)

Player: Six horses abreast! I thought I had another horse. (The player appeared to be asking the child for a response. The child understood what the player was saying. The player demonstrated by looking for another horse.)

Child: Here it is. Seven!

Player: Seven, seven horses abreast. Good, now, where are the cattle? Here, let's bring the cows out. Here's the momma cow right here. Here are the baby calves. How many baby calves do we have here? Baby calves.

Child: Two. (The child counted the calves. He responded to the player's question. He seemed to realize what the word "calves" was.)

Player: Two calves.

Child: Why can't we put their legs back on?

Player: We can put their legs back on. See, they just broke off. Oh no, they really broke off. Let's put them over here and let them lay some eggs. These two baby chickens must have just hatched from their eggs. (The child nodded yes. The child seemed intrigued. He acted as if he understood.) OK, now, why don't we take this over here for the boy? And why don't you take the horses into the barn? Take the largest horse. You got the largest? That's the largest? (The child followed the player's direction to put the largest horse in the barn. The player reproached the child on his selection of the largest—"that's the largest?" The child upon being asked to pick the largest horse, doesn't. The player gives him the largest horse and defines. The child responds correctly and follows what the player asks, putting the large horse in the barn.) Bring the farmer's wife. Take her out in the pasture. Why don't you bring the farmer's wife out here in the pasture? She's going
to help pick some crops, OK? There's the farmer and his helper. They're going to go out here. They're going to go plant some food. These two guys are going to go plant some corn, OK? (The child seems bored with planting word. He picks up the tractor. The player uses the tractor in the situation to bring the child back into attention.) They're out here planting the corn. They have the tractor here to help them. We'll pretend that there's seeds in here so they can plant them. OK? We'll go over here and pick them up.

Child: What's this?

Player: I don't know. It must be some kind of something that came loose from over here.

Child: That was sticking me.

Player: Oh, OK. Are there any horses here that have saddles? (The child appears to know the word after the player asks for the horse with the saddle.)

Child: There's one?

Player: Yeah.

Child: Two saddles. (The child uses the word "saddle" correctly.)

Player: Two saddles. I'll put this on the horse. We have to have a saddle to ride the horse.

Child: I've got some horses that have silver saddles. I got about sixteen. (The child pointed out horses with saddles and says, "I have six horses with saddles.")

Player: Oh.

Child: And a lot of cowboys and Indians. That belongs to my friend down the street.

Player: OK, now, let's bring these out here. She's picking the crops, remember? And she's going to collect it and bring it back to the barn so she's going to collect and bring it back to here. (The player enters the word "collect." The child makes no response at all. It appears to completely pass over him.) She's going to bring it back here to the
barn where she lives now. In a few more minutes, we can play with this. Why don't you bring the two men back to the barn and bring the tractor back, OK?

Child:  Here's the tractor.

Player:  OK. Let's let these men talk together and see if they agree if they should go back. See if it's time to go back. It's getting toward the end of the day. They have to agree if they want to go back.

Child:  This one, this one doesn't agree.

Player:  Yeah, OK. Let's pretend that the sun's coming down and these two men agree that they're going to go back now so we'll put them back and put the tractor back. They've just come back from a hard day of planting the corn.

Child:  The lady too? (The child misunderstands "agree." The player seems unaware of this. He uses the word again and the child ignores it.)

Player:  The farmer's wife collected the cotton there, and she had a hard day too. Oops, they're so tired that they agreed to lie down, OK? You want to take the tractor back to the barn? (The child returns the men and equipment to the barn.) Hey, why don't we set these animals back up so the next person who comes to play this will see what you did. Then, we'll start playing with the cowboys and Indians.

Child:  There are two mens here.

Player:  Two? OK, they agreed to go in, huh, OK? Let's go play with the cowboys. Do you want to be a cowboy or an Indian?

Child:  Cowboy.

Player:  Cowboy. OK, all right. I'm going to set my men up here. You want to set your men up? Let's put two men up here to cover the fort, so that they can make sure nobody comes in. OK, I'm going to set my men up here so we can make an advance on the fort. (The player enters the word "advance" and defines it. The child does not seem to hear advance.)
You'd better have your men set up, cause we're going to advance on the fort. We're going to take it over.

Child: Will they whup them?

Player: I don't know. I don't know. I guess he swung it too hard. Better watch out. My men are going to advance on you. (The player shows the child what he means by advance. The child reacts by advancing his own men.) They're advancing here. They're coming closer to the fort.

Child: Watch out!

Player: You'd better do something about it. Here they come. They're advancing.

Child: Pow, pow.

Player: Oh, you must have injured one of my men here. (The player enters the word "injured." The child seems to understand.)

Child: Kaboom, pow!

Player: Oh! You killed him. We'll have to bury this man.

Child: I'll bury him here. (The player enters the word "bury." The child responds and uses the word.)

Player: OK. This man is only injured. (The player enters the word "injured." The child seems to understand.) So I'll bring him back. I'll bring him back here. I'll put all the wounded men back here. OK?

Player: Oh, got two of them there. They're only injured. They're not dead yet, so don't bury them. Just bring them back here to the wall. Ok, better put a couple of guards on the fort here so I won't take over. You going to put a horse in there? (The child's response is overt. He puts the guards on the fort.) When it's time you're going to have to abandon the fort and take all the men out. My men are going to advance and you're going to need all the men you can get, OK?

Child: He's got two men outside.
Player: OK. I'm going to try and capture you.
(The child appears very aware and alert. He seems to understand exactly what is meant by capture.)

Child: Boom.

Player: Oh, you got him. I think he's dead. You'd better bury him too. Oops, one of your guards fell down. While you weren't looking, I captured one of your men here. He's alive, but I captured him. I'm going to bring him back to my secret hiding place, OK? I captured him there. One of my Indians is going to try to get through this narrow opening here. Do you think he can get in this narrow opening? Oh, it's too narrow to get in, I guess. (The player enters the word "narrow." He demonstrates by trying to fit an Indian through the opening. The child reacts but not to the word, to the player's action.) I knocked one of your men down. Sorry. My Indians are going to try and invade your fort now. All the Indians that I have are going to try to invade this fort.

Child: Hey, he's going to shoot me! Pow, pow.

Player: You'd better abandon the fort. Put all your Indians . . . (The player tries to get the child to abandon the fort. The child responds to his prompting to abandon the fort. The child doesn't seem to understand the words unless they are defined each time.)

Child: He shot him.

Player: Oh, he got him. Better abandon the fort. Get all your men out.

Child: All mens get out quick.

Player: Cause you need all the men. Looks like I got more Indians here.

Child: Whoops, looks like I'd better get 'em out.

Player: Looks like my Indians are scared now cause you're abandoning the fort.

Child: You'd better be scared.

Player: OK, here we are.
Child:  Pow, pow, pow!

Player:  You're killing them all. Oh, no!

Child:  Pow, pow.

Player:  Pow, pow, pow, pow.

Child:  OK, men, get those Indians. Oh, he shot him.

Player:  Here he comes, over here.

Child:  Pow, pow.

Player:  Oh, oh, you got him. Three of them down.

Child:  Pow, pow. Look out! Pow!

Player:  Pow! OK, I only have one man left. He's going to try and make peace. Where's your head cowboy? Where's the cowboy who's the head man? That's the head man? OK, let's get them to talk peace.

Child:  Why did you kill my men?

Player:  I'm sorry, but I surrender. I surrender and you win. (The child doesn't seem to understand. He then says "yes" to the player's request for a surrender since the player only has one man left.)

Child:  Why did you want to kill all of my men?

Player:  I wanted to capture your fort and I didn't. You won, and I surrender. OK? OK, you win. Let's put these cowboys and Indians up and you set the cowboys up. What happened to my buried cowboys and your Indians? Did you get them? You buried a couple, didn't you?

Child:  (Laughs.) Here they are.

Player:  Oh, here. Put my wounded cowboys back up. This one doesn't look like he's too injured. He's all right.

Child:  I got two Indians at home. One has a gun.

Player:  Hmm, I guess my advance didn't work here, did it? Better put them in here. Since you
abandoned it, we'll put a couple men back in the fort. Well, we tried to capture it, but it didn't work.

**Child:** My mens won.

**Player:** Your cowboys must be too strong. OK, oops.

**Child:** Where do these go?

In the Farm Vocabulary Post-Test, the child appeared to gain a correct concept of eight of the ten words deliberately interjected into the Toy-Talk situation by the teacher. These words included barn, calf, agree, hatch, picking, saddle, planted, and large. The child was not able to verbalize the meanings of abreast or collect. However, the child appeared to understand the meaning of abreast during the play process.

On the Cowboy Post-Test for this child, it was reported that he appeared to gain a correct concept of five of the ten words deliberately interjected into the Toy-Talk situation by the teacher. He was able to verbalize the meanings of capture, bury, guarding, injured, and narrow. He did not appear to know the meanings of abandon, advance, surrender, wounded, and invade. However, the child appeared to understand the meaning of abandon and advance during the play process. He responded behaviorally to these words.

An investigation of Tables 1 and 2 will indicate that the gain scores evidenced in Case #2 are typical of those children who participated in the experiment. That
is, those children who obtained low verbal fluency scores on the Torrance Test of Creative Thinking tended to obtain high gain scores on the Vocabulary Post-Tests.

Responses by this child to the following questions posed by his classroom teacher after his Toy-Talk experience indicate that he enjoyed the experience and was cognizant of learning some new concepts. When asked, "Did you like what you did with the toys?" he responded, "Yes." When asked why, he responded, "They were fun to play with." He said he would like to do it again. There was nothing he didn't like about the play and he said he liked all the toys. When he was asked if he learned something, he said, "I learned about strangers and the farm and about cowboys and Indians."

Case #3 is a black male child who at the time of the study was five years, eleven months old. Case #3 is a child who was considered to be highly accepting of the Toy-Talk interaction. The child's verbal fluency score on the Torrance Test of Creative Thinking was high and his gain scores on the Vocabulary Post-Tests were high. His verbal fluency "t" score on the Torrance Test of Creative Thinking was 51. There were only two children participating in the study who scored higher than he. The child's teacher reported, however, that she considered him to be of low verbal fluency.

He appeared eager to participate in the project,
asking questions, talking freely to the player, and, in
general, was a pleasant and interesting little boy. His
teacher reports that his general orientation to school is
of this same manner. She indicated that he relates to
school very well though he appears to be a "little slow in
catching on." Following the prescribed acquainting pro­
cedure, this child elected to play with the farm situation
first.

(Child #05)

Player: Here's some sheep. Can you find more
sheep to join with them? Any more sheep to join
with them? (The child appears responsive and
seems to know what the word "join" means.) OK,
we've got all the sheep joined together. Here's
that tractor over here. OK, our cow'll be over
here eating, cause they're hungry. What's this?
What is this?

Child: Chickens.

Player: Chickens? What do chickens have?

Child: Eggs.

Player: Yes, do you know what happens to eggs
sometimes?

Child: Uh-hm.

Player: What happens?

Child: Chickens pop out.

Player: Yes, chickens hatch out. Little baby
chickens hatch right out of the eggs. Have you
ever seen any chickens hatch? You have? What
happened when they hatched? (The child appears to
fully realize this concept and responds to hatch.)

Child: They popped right out.
Player: OK, our cattle are over here. You want to play with the cattle? You want to play with the cattle? OK, here's all the cattle. (The child responds and is interested.) I'll let you have them, and I'll put my chickens over here by the barn. Do we have a water trough? We need a water trough. Our horses might be thirsty. Let's pretend this is a water trough. OK? (The player shows the child a wagon and says, "Pretend it's a water trough." The player points to the water trough and defines it. The child acknowledges.) We'll pretend that this is a thing that holds water so anybody gets thirsty, they can come over here and drink water. OK, you got any thirsty animals that want to come over and drink water from our water trough? (The child completely ignores the player. He picks up other toys. The player persists but finally gives in to the child.) Let's have the horse come over. He looks like a tired work horse. He's got a harness on. You know what that's for? (The player shows the child what a harness looks like.) That harness is so you can attach him to the wagon. (The child appears not to fully understand what the player is saying.)

Child: What happened to this horse?

Player: What happened? Somebody tied him. Why don't you have that tired horse go over to the water so he can have something to drink. You want to have that tired horse get some water?

Child: What's this?

Player: That thing can churn up the earth so that we can plant something. (The child seems to be interested in the combine used for churning.) So the farmer can plant his wheat, his crops. Do you want to churn up some of the earth and I'll come along and plant things? Yes, here's a plow. This farmer's going to plant things behind you. He's going to sow the field and plant them. (The player enters the word "sow," letting the child manipulate the toy. The child doesn't seem to understand sowing but enjoys the tractor. The child makes no response.) You churn up the earth and I'll sow the crops behind you. Oh, he's got a wagon, huh? You want to put some of the cattle in the wagon?

Child: Hm?
Player: You want to put some of the cattle in the wagon? Do you have any cattle with you to put in the wagon? You see any cows? (The player asks for cattle. The child can't find them and doesn't seem to understand what is meant. The child won't respond for the second time to the question on finding the cattle. He appears afraid to move. He gazes toward us [the observers] and the door when he doesn't know how to respond. The player enters the word "cattle" and shows cattle to get the child's attention. The child doesn't know.)

Child: Uh-hm.

Player: Hey, if we had a harness, we could put this horse to work. He could pull that wagon if we had a harness. Like this one, couldn't he? Too bad we don't have a harness on him. We could pull that wagon if we had a harness. He doesn't have a harness. I guess he can't work today. He can just trot around today. Want to put all the horses together? Do you think all the horses might like to work together? You want to join all the horses together? (The player demonstrates by putting horses in a straight line. The child watches.) Let's join all the horses together. (The child has the horses join. He doesn't use the word but does act.) This horse is going to join over here with this one, and this horse is going to join over here with them, and this horse.

Child: This horse too?

Player: That horse is going to join them, too? OK, gosh, only one horse has got a harness. (The player shows the harness again. The child watches as the player plays.) These horses don't want to work today. Oh, oh, the farmer's wife agrees that it's time to go collect the eggs. (There is little response from the child. He is more interested in his own actions. The player brings the child back to the setting by introducing more toys. The player enters the word "agrees." The child makes no response.) Do you agree that it's time to go and collect the eggs? Where are some pigs?

Child: In the barn.

Player: Oh, you think Farmer Brown should slaughter the pigs. (The child appears completely aware and attentive, responds, and enjoys the situation.) You
think he should kill the pigs, so he'll have something to eat? You think he should slaughter that pig so he could have something to . . .

Child: He's going to kill that pig.

Player: Now he slaughtered that pig. (The player demonstrates by killing a pig. The child watches closely.) Now he's going to take him home and chop him up so he can make some food out of him. That pig's slaughtered. Now, he's going to carry him home. Poor dead pig. He killed him and slaughtered him for their meal. Would you like to slaughter the pigs? Do you think that would be fun to have to kill the pigs?

Child: Yeah.

Player: You do? Here's some baby pigs, but we won't slaughter them because there's not enough meat on them. Boy, you've got lots of baby pigs over there, don't you? What happened to our farmer? Have you seen our cattle? Where's the cattle? You see a cow? I don't see it. Oh, here it is. Here's all our cattle. I got it all over here. Let's join all our cattle together. Think we'll have enough to eat today? You think we should slaughter any more pigs?

Child: No.

Player: We don't need to slaughter any more pigs? Did this horse ever get to the water trough to get something to drink? Did he?

Child: Yes.

Player: The farmer's over here sowing the field. He's still planting. Boy, he's sowing a whole bunch of grain today so we'll have lots of crops that are going to grow. Would you like to sow the grain and plant it? If you were a farmer, do you think that would be hard work?

Child: Yes.

Player: Kinda hard to plant all those things. What you got over there? You going to join all your tractors together?

Child: Yes.
Player: OK, now you want to go play with the cowboys and Indians? OK, which ones do you want to be? The cowboys or the Indians? The cowboys? OK, you get the cowboys and the fort, and I'll take the Indians. Better get ready cause my Indians are going to advance and are going to sneak up on you and capture that fort. (The child acknowledges the player's comment but is more intrigued with setting up the toys. The player is continuously advancing. The child seems unsure of what the word means.) Do you think we can make your cowboys surrender?

Child: No.

Player: You don't think your cowboys are going to give in and surrender to my Indians? Oh, are they going to wound them? Are they going to shoot them? Do you think they'll be able to escape without getting hurt? (The child appears to fully realize what is being said through both his actions and those of the player. The child is distracted by a "moo" from the other toy setting across the room.)

Child: Pow, pow!

Player: Oh, he's going to run away. I'm going to maneuver all of my men around your fort. (The child doesn't acknowledge the player.) They'd better be ready. They'd better be ready to make war or surrender.

Child: My cowboy wants out.

Player: OK, we'll put him back here. We're going to invade your fort. (The child becomes aggressive. He is more involved in objects but again seems to respond. He is more involved in his own actions and ignores the player.) We're going to go in and capture your fort. Are you going to wound my men?

Child: Yes.

Player: They are? What are they going to do?

Child: They've got a gun.

Player: Oh, they've got a gun to wound them. They're going to get hurt? Oh, my goodness. My Indians are getting ready to attack two soldiers. You'd better be ready. We're going to advance. They won't be much longer advancing.
Child: Pow, pow!

Player: OK, cowboys, you want to give in?

Child: Pow, pow!

Player: Oh, he got hurt. He got wounded. (The child is distracted.) We're getting ready to invade the fort.

Child: Pow! Got that Indian!

Player: Oh, that cowboy's shot another one and wounded him. This Indian got away. Didn't get him. Are you going to chase him? (The player and the child are involved in overt demonstration. The child responds fully then switches to another toy. The player and the child have a chase with the cowboys and Indians.)

Child: I can chase him on a horse and get him. Pow!

Player: Oh, you wounded him. (The child appears to recognize the word and acknowledges.)

Child: He's wounded.

Player: Yes, you wounded him, but we still have time to invade that fort, to take over. We're going to invade that fort. We're advancing.

Child: Pow, pow, pow, pow.

Player: Pow, pow. This Indian's going to get back out of the way and scalp that cowboy. (The child appears almost obsessed with looking back at the observers every once in a while.)

Child: Scalp him.

Player: Do you know what happened just before that cowboy died? That Indian scalped him. He took the cowboy and went ... just like this. Did you ever see an Indian scalp a cowboy?

Child: This cowboy got this Indian.

Player: Oh, did he injure him? (The player shows what happens when a man is injured. The child watches.) He got hurt. These Indians are surrounding that cowboy. Can he escape? (The player shows
a man escaping.) Hey, one of your cowboys is over here and we're surrounding him. Can he escape? Can he get away? Here's your cowboy. My Indians are surrounding him. Can he escape? Can he get away? Here's still another one and he's surrounded by all the Indians. (The child is forced to react. An enthusiastic response is aroused from him. The player surrounds the fort with men.)

Child: Where?

Player: Right here. He's surrounded by all the Indians.

Child: He can get away.

Player: He can get away?

Child: OK.

Player: My Indian didn't like that wound. Oh, my goodness, do you think he'd better surrender and give in? Oh, he captured that cowboy. He surrounded him. (The child moves the fort to keep the player from surrounding it.)

Child: Where? He surrounded him, but, oh, he escaped.

Player: I'm going to maneuver my Indians around here.

Child: Why are you going to do that?

Player: So that cowboy won't escape.

Child: Pow!

Player: Oh, you wounded him. Are you going to invade the Indians now? OK, but my men have just decided to advance and your fort's surrounded by Indians. They advanced forward and they surrounded, and no matter how you get out, there're Indians. I'm going to maneuver my men all around, all around so they can surround that fort.

Child: Pow.

Player: Oh, would you invade my territory with your men? (The child doesn't acknowledge the use of "invade.")
Child:  Yep.

Player:  Invade the fort. Invade the fort. This cowboy's not going to escape.

Child:  Pow!

Player:  This cowboy's not going to escape. The Indians are going to surround him. He won't get away.

Child:  He escaped and they can't find him.

Player:  You going to try and capture him? You going to hurt him?

Child:  Pow.

Player:  You wounded him. Well, this means that we're going to advance. We're going to surround your canoe and get even with you. You wounded your own man. This Indian's going to scalp you. He's going to cut your hair right off if you don't look out. Cut his hair right off, scalp him! (The player shows what happens when one is scalped. The child ignores the player.) This Indian wants to surrender. What are we going to do? This Indian says, "I'm scared. I want to surrender." (The child doesn't respond. He seems to know and wants to continue playing.)

Child:  The Indian.

Player:  The Indian wants to surrender. (The player keeps using the word "surrender." The child ignores the player's wanting to surrender and keeps killing men.) What are you going to do? (The player shows a man who wants to surrender. The child does not appear to understand.) You're going to shoot us if we surrender? But we want to give in. We don't want to fight any more. We want to surrender. We surrender. I'll advance to the fort and they'll say, "We don't want to invade your fort any more. We don't want to fight. We surrender. We want to surrender. We won't chase you any more. We won't scalp you any more. We won't wound any more of your men. We want to surrender." What do the cowboys say? The Indians advanced up to your fort and said, "We don't want to fight any more. We don't want to scalp any more. We want to surrender."
What do the cowboys say? What? What's he going to do? What's the cowboy going to do when the Indians want to give in?

Child: They say OK.

In the Farm Vocabulary Post-Test the child appeared to gain a correct concept of three of the ten words deliberately interjected into the Toy-Talk situation by the teacher. He was able to verbalize the meanings of hatch, slaughter, and water trough. Words which he appeared not to know in this Vocabulary Post-Test situation included enter, cattle, churn, harness, join, sowing, and agree. Enter was a word which was not included in the dialogue of the Toy-Talk. For some reason, the player neglected to include this word.

In the Cowboy Vocabulary Post-Test the child appeared to gain a correct concept of five of the ten words deliberately interjected into the Toy-Talk situation by the player. He was able to verbalize the meaning of surrender, surround, escape, chase, and wound. Words which he appeared not to know in the Vocabulary Post-Test situation included advance, injure, maneuver, invade, and scalp.

Responses by this child to the following questions posed by his classroom teacher after his Toy-Talk experience indicate that he enjoyed the experience. When he was asked, "Did you like what you did with the toys?" he responded, "I knocked the Indians down." He said he would like to do it again. There was nothing he didn't like
about the play. When he was asked if he learned something, he said, "No."

Case #4 is a black female child who at the time of the study was five years, ten months old. She was considered to be rejecting of the Toy-Talk interaction. The child attained a high verbal fluency score on the Torrance Test of Creative Thinking and low gain scores on the Vocabulary Post-Tests. Her teacher reported that she considers this little girl to be of low verbal fluency. Her "t" score on the Torrance Test of Creative Thinking, however, was 51. There were only two other children in the project who scored higher than she.

This child was very tiny and neat in appearance. She was a quiet and very aloof little girl. Her teacher reported that she "relates to school very well"; that is, she is cooperative and participates in the activities of the classroom. The teacher further reported that this child is quiet and slightly withdrawn. This child refused to involve herself in the Toy-Talk process. She sat, listened, and permitted the player to dominate the session. After the acquainting procedure was completed, this child elected to play with the cowboys first.

(Child #03)

**Player:** Here are your cowboys and here are my Indians. I'll get all my Indians together. We'll have a war. You'd better get ready. My Indians are going to come up. They're going to come up
and they're going to attack your fort. (The child puts all the cowboys in the fort. She stays involved with the fort for a while. She is not paying much attention to the player. The player enters the word "advance" and demonstrates it.) They're going to advance on it right now. They're advancing and going to invade the fort. They're going to walk right in to that fort. (The player enters "advance," "invade," and "fort," and defines and demonstrates them. The child doesn't respond in any way. The player is not talking. She manipulates the toys.) Think your cowboys are ready to defend that fort? They'd better defend that fort cause that's where they live. They wouldn't have any place else to live if they didn't live in the fort. There they come. They're advancing on the fort. (The player enters "fort." There is no response from the child. The child is not talking. The player is manipulating the toys. The child appears content to watch.) Here they come. Here they come. Are your cowboys ready? They're all around. They're going to try to capture your cowboys. (The player enters the word "capture." The child is not paying attention.) They're going to try and capture them. Here come the Indians. You have anyone guarding the fort? (The player enters the word "guarding." The child doesn't acknowledge. The child is content to let the player take over the situation. She sits and observes.) You going to let them capture them. Why, you got a bunch of cowboys in there. Here come my Indians. Here they come. They're going to knock down the door and walk right in. Look at that one. He's got himself all in. That one too. All right, there, that's one of the Indians and he's going to get hurt. They're going to have to knock the door down. Oh, they knocked down the door. (The player enters the fact. There is no response from the child. She is content to let the player take over the situation. She sits and observes. There is no response even to questions, only an occasional nod.) Are your cowboys going to surrender this early? Are they going to give up? Here they come. They're coming through the door. (The player enters the fact and gets some physical response but nothing verbal from the child. The child lets the player do all the talking. The player is not able to involve the child in the situation at all.)

Child: Pow, pow, pow, pow! (The child uses a
cowboy to attack the invading Indians any time they come into the fort.)

Player: Oh, you got him. He'd better watch out. He'd better get that Indian.

Child: Pow, pow.

Player: Oh, there, yes, you'd better get him. Oh, I think you wounded him good. He's hurt, oh, yes, he's hurt. Here comes another one. Oh, you know, the Indians might have to leave and go back some place else. You really did a good job of protecting the fort. You captured some of my Indians. (The child captures the Indian but is not sure if she knows what it means.) Well, these Indians are just going to abandon it. (The player introduces the word "abandon." The child makes no response to the word. The child appears to be bored. She is watching the other children.) They're going to go back to their town. Here they come, back to their own camp. They're not through yet. They're going to advance again as soon as they get their strength back. They're going to charge again. See this warrior here? (The child watches this time as the player takes a warrior around the fort and picks up the toy.) He's going to get over there and charge again. Watch, he's going to creep up. He's going to get in the back way. He's invading from the back. Creeping all the way around. Here he comes. Oh, oh, I think you're going to capture him. You're going to capture him. (The child takes some cowboys and captures the Indian.) You got him too. Very good. Captured him. You've got so many of my Indians. Oh, look, I've got one of your cowboys because he was out in the open without any protection.

Child: Boom, boom, boom, boom!

Player: Oh.

Child: Boom, boom, boom.

Player: My Indians are all wounded so I don't think they're going to be able to fight much. Do you want to play with the farm now?

Child: Uh huh.

Player: Look at all these things we have here.
Oh, look at all those things. I think I'll set up a field right here. I'll set up a field, huh? What's that for?

**Child:** That's to dig.

**Player:** Oh, here's the farmer and his helper. Do you want to be the farmer? You know what happened? They got up late this morning and they forgot to go and collect the eggs. So they're going to have to go to the chicken coop. (The player enters the word "chicken coop." The child ignores this action and looks at the silo.) I think they're going to go to the chicken coop so they can collect the eggs. Here's where the chickens are. They're going to collect the eggs out of the chicken coop where the chickens are. They're going to collect the eggs out of the chicken coop where the chickens live. (The child watches the player and then takes a cow, takes the water trough and gets away from the coop situation.) I don't see a cow. Oh, here's a calf. (The player is talking about a calf but the child goes to get the combine.) This is a baby cow. It's a tiny little calf. He wants to be with his mother. There. Are you going to let that cow eat now? I think we forgot to put hay in it. (The child looks bored and disgusted. She is more intrigued with the objects she wants, not what the player wanted.) We'd better put hay in the hayloft in the barn, don't you think? Do you want the helper to go up and put in the hay? Oh, you'd better bring the wagon around. He can't carry all that hay by himself. OK, back it up and we'll get some hay in place. The cow's got to eat some hay. Oh, that nice hay. (The player takes the farmer to get it and demonstrates bailing the hay.) OK, is that enough? Hey, better go feed the cow. Cows can get awful hungry. You know what I forgot? I think I took all the eggs out. And I want to leave some of the eggs to hatch. (The child ignores the player. She shakes her head yes to the question but seems unaware of the player and doesn't seem to care if the player is there or not. The child looks at the observers.) We're going to leave some of those eggs in there and they'll hatch and we'll have baby chickens. You think that's a good idea? You know what? We forgot to put the hay in the food trough. You know that?

**Child:** Uh huh.
Player: Here's the wagon. Do you want me to back it up for you? Here you go. Hey, you know some of those cows? You know those cows? Oh, the pig. They're going to have to go to market. We're going to have to have them slaughtered (the child does not seem aware) so we'll have something to eat. Is that OK? Can you load them in the wagon? (The child seems responsive. She does what the player says to do. She watches the observers when on her own. When the player takes over, the child goes to new situations and animals.)

Child: Uh huh.

Player: OK, better drive them in the wagon because they're going to have to get slaughtered. They're going to have to be killed. The farmer'll help you to unload them when you get to the market. All right, here we go! Better hurry up, farmer, cause when you get back, we're going to have to go out and cultivate the field. (The child appears interested in the barn. She plays with the tractor for a while. She plays with a horse and hayholder but apparently just for something to do. She doesn't seem to really be getting into the situation. She seems to direct her attention elsewhere at almost every attempt of the player's to get her "into" something. The player completely dominated the situation. The child appeared bored. Any noise draws her attention.) We're going to have to work on it a lot to get it ready to plant things. We need the tractor for that, don't we? OK, let's unload the pig at the market. Here we go. That's a good idea how to haul the hay. How come I didn't think of that. Yeah, that's what the horse is for, isn't it? Now after we get through cultivating, we're going to have to sow the field. We're going to have to plant the seeds, and when it's all planted and grows up, we're going to have to go out and harvest it. (The child again is ignoring the player but answering "yes" to any question she is asked. She doesn't say anything but isn't given much opportunity by the player.) Gather it all in. Is that a cat?

Child: Yeah, that's a kitty cat.

Player: What happened to the horse? Did he get tired? Looks like he fell down. Probably is tired. He's been hauling this wagon around. Can I put him in his house? Look at that, he's too big for his
house. Oh, there, that one fits. It's a good thing he fits in that house, cause that's a chicken coop and that's where he has to live. Do we store anything in there? I think after we harvest the crops, we'd better put them in there. Let's go out and gather the crops. We'll put them in this wagon, OK? Here, you want to put the crops in there and bring them back? I think we need, oh, dear. OK, the chicken goes in there, OK?

Child: I'll put it over here.

Player: Oh, OK. You going to have the chicken eat?

Child: Uh huh.

Player: Look at all these little ... how come they're lying down?

Child: They're tired.

Player: Oh, there they go. Oh, there we go. There's the combine. The combine is for the wheat. We'd better drive it out to the field. Can you drive it there? See this goes around and around and brings all the wheat in. It needs to have a wagon beside it to pick up the wheat as it comes out. We'll drive it together. I'll get on the other side, oops, it came unhitched. Let's go out in the field. We've got to harvest the wheat. We'd better gather it up and bring it in. See that sheep? He's bigger than the cow. Pretty big sheep to be bigger than a cow. Maybe that chicken. That chicken?

Child: That chicken.

Player: That chicken. Maybe she's hatching eggs. I bet she is. She's going to have little baby chickens come out of the eggs. That's a good place to put it. She'll be safe and she'll take care of the eggs. We haven't been out in the field yet. Want to bring the combine?

Child: Uh huh.

Player: There we go. OK, I think we got all the wheat. We'll bring it in and store it. Want to bring the tractor in? OK, oops, there we go.

On the Cowboy Vocabulary Post-Test for this child,
it was reported that she appeared to gain a correct concept of only one of the ten words deliberately interjected into the Toy-Talk situation by the player. She was able to verbalize the meaning of guarding. She did not appear to know the meanings of abandon, advance, capture, invade, injure, surrender, wounded, fort, or warrior. This child was so rejecting of the whole process that it was difficult to determine what kinds of understanding she appeared to have. The word injure was not interjected into the Toy-Talk by the player.

In the Farm Vocabulary Post-Test the child appeared to gain a correct concept of three of the ten words deliberately interjected into the Toy-Talk situation by the player. These words included hay, calf, and slaughter. The child was not able to verbalize the meanings of enter, hatch, plowing, colt, harvesting, chicken coop, and cultivate. As in the Cowboy setting, this child was very rejecting of the entire process and it was difficult to determine what understandings, if any, she appeared to possess. The words calf and colt were not interjected into the Toy-Talk by the player.

Responses by this child to the following questions posed by her classroom teacher after her Toy-Talk experience indicate that she said she enjoyed the experience despite her apathy. When asked, "Did you like what you did with the toys?" she responded, "Yes." When asked why, she
responded, "I like playing with farm toys." She said she would like to do it again. There was nothing she didn't like about the play and said she liked "playing with them." When she was asked if she learned something, she said, "No."

Case #5 is a black male child who at the time of the study was six years, six months old. In this case the child was accepting of the Toy-Talk interaction regardless of test scores. This acceptance then became the basis for inclusion here rather than test scores. His teacher reported that she considered him to be of high verbal fluency. This opinion was inconsistent with his "t" score of 16 on the Torrance Test of Creative Thinking. There were only six children who participated in the study who scored lower than he.

He was a "bouncy," talkative little boy who appeared extremely interested and excited about the whole process. His teacher reports that he is an only child, living with both parents. There are two foster girls also living in the home. The teacher states that he is an eager student and is anxious to learn. It was further reported that he relates well to adults and peers. He plays well with all children, both male and female, though some of the boys often follow him home. He seems capable of handling this harrassment though he is small in stature.

It was noted during the testing sessions and play process that this child appeared very verbal. He was
fairly positive and always responded, whether correct or incorrect. Following the prescribed acquainting procedure, this child elected to play with the farm situation first.

(Child #22)

**Player:** Is there anything in the barn? Why don't you get the things out of the barn? OK, let's take the cattle out. Where's the goat? Where are the colts? Here's one. Let's take them out in the pasture so they can graze on the grass out here and get nice and fat. (The player mentions the cow. The child picks one up and agrees to have the cows grazing.) OK. Then they can graze and eat and get as much as they want.

**Child:** Here's one.

**Player:** Yes, there's one.

**Child:** There's one.

**Player:** Do you want to have that grazing out in the field too? (The player explains that cows graze in the field. The child accepts the word and adds another animal to the grazing group.) Pretty soon we'll have to take one of the cows back into the barn so he can be slaughtered. So he can be cut up, so we can have meat to eat. So we'll slaughter him in the barn here. OK? OK, we'll get these two horses. They're mares. We'll put them over here and hitch them to the hitching post. They have saddles.

**Child:** This one don't got no saddle. (The child notices a horse and points to one that doesn't have a saddle.)

**Player:** No, so put him over here by the water trough so he can drink a little water. This big horse, these two mates will stay here. (The player shows two horses as mates.)

**Child:** Uh huh.

**Player:** Now, the farmer is ready to go out in his field. Here's the farmer and his wife. The farmer's going to go out in the field where the cows are.
Child: What's this one?

Player: He's a helper. He's going to be harvesting the corn and everything.

Child: He don't supposed to go no where. He's supposed to stay in the barn.

Player: You want to put the sheep in the barn then?

Child: Uh huh.

Player: OK, then why don't you put him in the barn then? Better watch out there . . . this cow's being slaughtered. (The child puts some sheep in the barn for slaughtering because that is where they are slaughtered. The child moves to put sheep in the barn. He appears to know "barn." He agrees to slaughter the sheep also.)

Child: But the sheep won't. But the sheep won't. He, the sheep want to, so he can get all that meat up.

Player: You going to slaughter the sheep too?

Child: Uh huh.

Player: This is the farmer's helper. He's going to be plowing the ground, but he's going to need the tractor to help plow.

Child: Uh huh.

Player: When you plow, you need a tractor.

Child: Uh huh.

Player: Now, this lady is here with the chickens. See what she's got here: What's that in there? Looks like a basket of something.

Child: That's a bowl.

Player: Yes, or a bucket or something. I think she's going to get the eggs here. She's going to deliver the eggs to all the people in the community. To all the houses around. (The player mentions "deliver" and explains it to the child.)

Child: But this one, this one can't stand up.
Player: He can't stand up? Maybe he's too young. Maybe he's just a baby.

Child: But this one's staying up, cause he's bigger'n this one. Cause he's big. But his legs, his leg's almost close. He can't stand up. He can't stand up.

Player: OK, well I think it's about time for the farmer to bring in all the cattle here that have been grazing on the land, and herd them into the barn. You want to help the farmer herd the rest of these into the barn? OK, herd them in. He's herding them in. (The child picks up cows to herd them into the barn. He picks up the grazing animals and herds them into the barn. He puts the large cow into the barn also.)

Child: One horse fell down.

Player: Yeah. I'm going to bring the wife over here since she's still over here and make some butter. To make butter, you have to churn it up. You get milk from the cow and you churn the butter.

Child: Uh huh.

Player: Here's this man filing them all in. He needs a tractor.

Child: Is he going to file them in too?

Player: Well, what do you think? When you herd them in, I guess he does.

Child: But they can't go in there every day.

Player: Why don't we take this to the side of the barn? She's finishing churning. OK? OK, guess this guy's . . .

Child: Here's a ladder here. (The child points out the ladder that he sees in the barn.)

Player: No, that's how you get to the hayloft. I think this man is . . .

Child: The cows are coming in. This cow leads the little one in. All the little ones.

Player: Everybody in now? This man out here, see
the farmer's helper here? He's done cultivating the land, so he's going to file in with the tractor. He's going to come back. He's going to talk to the farmer. What happened to the farmer? He's got to make sure that the farmer agrees with him that it's time to go back in. So let's see what they have to say. (The player pretends to have the farm hand and the farmer talk together.) Yes, I guess that they agree that it's time to go back in. All right, I think that we're finished playing with the farm. Why don't we bring out everything and set them up. Then we'll play with the cowboys and Indians. Everything up now? Cows been slaughtered? Is he out?

Child: Everything can't get out.

Player: Oh, I know that.

Child: That going to be closed? (The child appeared to enjoy the situation and playing. He was very willing to play with the toys and talk to the player. In this activity, the player did most of the talking, but the child cooperated and accepted almost everything he was told and cooperated with all the activities given him. The player allowed the child to play freely and the child accepted him.)

Player: Yeah, we'll close it. OK, let's go play with the cowboys and Indians. Want to be a cowboy or do you want to be an Indian?

Child: Cowboy.

Player: OK, you go behind the fort there.

Child: Over there?

Player: Yeah, over there on the other side. There are these Indians here.

Child: Here's some cowboys.

Player: Where's the cowboys going to be?

Child: Huh?

Player: Where is your leader?

Child: I'll take this one. (The child points out the leader to the player.)
Player: OK.

Child: Not this one, this one.

Player: This one over here. OK, he's going to lead the cowboys.

Child: Who're these?

Player: These are men who're going to help them defend the fort. They want to defend the fort, cause we're going to try to invade your fort. That means that we want to get in.

Child: This man's supposed to get shot down over here, right?

Player: Well, he might. He's supposed to defend it. He's a guard.

Child: Both of them are guards.

Player: OK.

Child: This one's going to shoot that man off the horse.

Player: This one here's an Indian scout. He's going to check where all the men are. He's going to sneak around here, and he's going to come back and he's going to tell the leader where the Indians are. He's going to tell him there's some Indians there. He's going to betray them. (The player defines betray.)

Child: Pow, pow, pow.

Player: My Indians are starting to advance. Finally, one of the guards sees them. He sees my Indians advancing.

Child: Pow.

Player: I'm going to try and invade your fort here. You going to stop us?

Child: I'll stop, here's one Indian.

Player: So you're ready to fight. You ready to fight?
Child: Pow.

Player: Well, what's one Indian. I guess that's the . . . Well, you ready to fight? Tell me when you're ready to go.

Child: He's going down the hill. He's getting ready to go down and get you. There he goes.


Child: Pow.

Player: Oh, you got one man. Looks like he's injured.

Child: Pow.

Player: Oh, got him! Got him, he's injured too. He has a bad wound in his stomach. See his wound?

Child: Uh huh. (The player defines "wound." The child says he saw the wound. The child agrees to examine the wounded Indian and cowboy. The player pushed a cowboy down and said he'd have to get one. After that the child picked up the same cowboy and shot the player's man.)

Player: It's a bullet wound in there.

Child: He's hurt.

Player: OK, I'm going to put him over here. I'm going to have my medicine man come over and examine him.

Child: Here's one! Here's one!

Player: Yes, you take your wounded man and put him over here. All the men that are wounded over here.

Child: All my men's are hurt. Whatta I do?

Player: You got a doctor in the fort?

Child: Uh huh.

Player: Where's your doctor?

Child: Right here.
Player: OK, let your doctor examine them and see how they are. Oh, looks like he's going to be out of action for a while.

Child: My men, my doctor, my men, my doctor fixed my men right now.

Player: We're going to try and invade your fort. You'd better stop us.

Child: Pow.

Player: Got the man off the horse. Here comes my man.

Child: Pow.

Player: Oh, you got him too. Here comes a man right here, right here.

Child: Pow.

Player: You got that one, but here comes this one.

Child: Pow.

Player: Oh, you got him too.

Child: Pow.

Player: Oh.

Child: Pow, pow.

Player: They're falling off the horses. You got them.

Child: Pow.

Player: Oh, you got him. I got a lot of injured men.

Child: Pow.

Player: Oh.

Child: Pow, pow.

Player: Oh, no.

Child: Pow.
Player: I got one . . .

Child: Pow.

Player: I got one in here.

Child: Pow.

Player: Oh, no! Where's my Indian chief? Where's my Indian chief? We're losing here, so where's your leader? Get your leader out. We want to talk peace.

Child: Here he is. We got two men. Here's two leaders.

Player: OK, we want to come over and talk peace. OK, we surrender. The Indians surrender.

Child: I know what that means.

Player: What does surrender mean? (The child explains surrender to the player.)

Child: It means, uh, you won, uh, it means, uh, you been fightin'. (The child is quite involved and very excited. He was very attentive to the player.)

Player: Fighting and he loses, right?

Child: Uh huh. Cause these men don't want to fight no more, cause they lost some men. The Indians shot all of the men.

Player: Uh huh. And here's the one who betrayed your fort. He's the one. Let's get all these injured men.

Child: That man's injured. The brown men shot them. The doctor fixed them right now, cause the doctor be a good guy.

Player: Well, the doctor always has to examine a person who's hurt or injured, right? Let's get all these injured and wounded men up here for the next person who wants to play.

Child: How about the Indians up here inside with the doctor? But the Indians were bad, but the doctor shoots one of them.
Player: You held back the advance, and you didn't have to abandon the fort, did you? OK, let's get all the Indians on this side.

Child: This man dead. This man dead. He abandoned the fort. He came out here and put Indians to fight.

Player: Right, he must have abandoned the fort. OK, let me get all my Indians set up here and cowboys set up.

Child: Hey, how'd that man get there?

Player: He must have been injured too.

Child: That man shot all them Indians. But this man he wasn't no good shot. He got up cause one man almost get him cause he was, cause he put his hat on, and the Indian shot him and he jumped off the horse.

Player: OK, I think we're ready. Let's go back to your room.

In the Farm Vocabulary Post-Test, the child appeared to gain a correct concept of five of the ten words deliberately interjected into the Toy-Talk situation by the player. He was able to verbalize the meanings of slaughtered, plowing, delivered, churn, and agrees. Words which he appeared not to know in this Vocabulary Post-Test situation included graze, mate, harvesting, herd, and cultivating.

In the Cowboy Vocabulary Post-Test, the child appeared to gain a correct concept of six of the ten words deliberately interjected into the Toy-Talk situation by the player. He was able to verbalize the meanings of betray, injured, wound, examine, surrender, and lead.
Words which he appeared not to know in the Vocabulary Post-Test situation included defend, invade, advance, and abandon. Though the word lead was not interjected into the Toy-Talk Context, it is reported that this child appeared to know its meaning on the Post-Test.

Responses by this child to the following questions posed by his classroom teacher after his Toy-Talk experience indicate that he enjoyed the experience. When asked, "Did you like what you did with the toys?" he responded, "Yes." When asked, "Why?" he responded, "I liked playing with cowboys and Indians. I liked playing with the farm and the farm animals." He said he would like to do it again but he didn't like the sheep. When asked if he learned something, he said, "The cows are killed so that the farmer and his family will have food. The farmer's wife got eggs from the hen house. The wife cooked eggs with butter."

Case #6 is a black female child who at the time of the study was five years, ten months of age. This child was accepting of the Toy-Talk interaction regardless of test scores. This acceptance then became the basis for inclusion here rather than test scores, though these scores are reported. Her verbal fluency "t" score on the Torrance Test of Creative Thinking was 27, which placed her in the middle of the children who participated in the study in terms of verbal fluency.
Her teacher indicated that she considered her to be of high verbal fluency. She was a pleasant, smiling little girl who appeared quite eager to participate in the study. Her teacher reported that she "works very well both alone and in a group situation." Also, she stated that the child relates well to her peers and to the adults who work with the children in the classroom. She is seen as a child who is developing a mature sense of responsibility in that she is aware of and respects the rules of the school and her classroom. After the acquainting procedure was completed, this child elected to play with the cowboys first.

(Child #14)

Player: I'll put my cowboys over here. You put your Indians over there. Why don't you have your Indians advance over to here? Have them come over to here? (The player attempted to move in order to get the child to move. She did and advanced the men. The player uses this word quite often and the child seems to understand.)

Child: Over here?

Player: What kind of Indian is that?

Child: The chief.

Player: Which one?

Child: This one.

Player: This one. Are you going to come over and invade my fort, huh? You going to come over here and come charging in? (The player asks a question to which there is no response on the part of the child.)

Child: Uh huh.
Player: OK. Have your men ready to advance and come charging over into the fort.

Child: He fell down.

Player: Are you ready? Are you on guard, huh? (The child smiled but had a puzzled look. The word is used often by the player. The child appears to understand. She is aware of the player's use of the word. The child appears slightly confused.) Your man's coming in injured. (There is no response by the child.) I'm creeping up on him. Oh, he advanced and knocked him down. He got injured. You hurt him. I'm going to have this other one come over here and injure you. (The child seems to understand. She knocks down a cowboy.)

Child: (Laughs.) Bang.

Player: Oh, he got hurt. He got injured too. Is this one injured? (The child shakes her head "no" when asked if her man is hurt.) Is that why he's lying down?

Child: No.

Player: Why?

Child: Because, because he's resting.

Player: Oh, is he resting or is he hurt? Or is he injured? Injured means he's hurt.

Child: This Indian fell.

Player: Fell?

Child: Fell.

Player: Oh, yes, fell on the bow. You'd better look out. This Indian's got a nail. He's going to come over and stab one of your men and injure them. (The child's reaction is fighting back, but there is no evident knowledge, gain, or understanding.) Oh, oh, you hurt him. Is he hurt?

Child: Yeah.

Player: OK. My men are going to come over here and surround them. Indians are going to advance
over here. Cowboys, cowboys are going to **surround** you. (The player demonstrates for the child.) What'd you do with my Indian?

**Child:** (Laughs.)

**Player:** Oh, he got **stabbed**. He got hurt! That **Indian** stabbed him. Is that what happened to him? Did he get **stabbed**? What happens to him when he gets **stabbed**?

**Child:** He get hurt. (The child says he gets hurt on questioning by the player. The player further explains to the child what stab is.)

**Player:** He gets hurt. Does that mean he gets **injured**?

**Child:** Yeah.

**Player:** Oh, he might even die. My Indians are going to **advance** there and get you. Are you ready? Here's some cowboys coming. The cowboys are coming out of the fort. They're advancing. Oh, that's an Indian. He can't go after an Indian, can he? Here comes a cowboy. What's that Indian going to do? He's going to **stab** him. Is he going to **stab** him? What happens if he **stabs** him? (The child understands what this means.)

**Child:** He gets hurt.

**Player:** He gets hurt? He'll get hurt? How does he get hurt?

**Child:** Um . . . he'll die.

**Player:** He'll die? How will it come? What will he do to him if he **stabs** him? Will he take a knife and go . . . Oh-h-h, oh, he got **injured**. You'd better **abandon** the fort. We're getting ready to **surround** you. What's that mean?

**Child:** Huh?

**Player:** What's . . .

**Child:** Cowboys.

**Player:** Cowboys? What's going to happen?
Child: Bam!

Player: Bam! Oh, you shot him and he got hurt. Do your Indians ever chase cowboys and chase them. What will happen if they catch them? What will happen?

Child: I don't know.

Player: You don't know. What do you think they might do to cowboys? What do you think they might do?

Child: Cowboys, I mean . . .

Player: Well, say your Indians caught my cowboys. What would they do? Let's say your Indians caught my cowboys, what would they do to them?

Child: Run across.

Player: Run across and catch them and torture them. (The child doesn't seem to understand the word "torture." She appears uncertain as to what this means.) Is that what you might want to do?

Child: Uh huh.

Player: OK, oh, oh. My cowboys are abandoning the fort and they're surrounding your Indians more. They're advancing. They're going to creep up on you.

Child: I see them. They're going to get caught.

Player: Best of luck, cowboys. Abandoning the fort, abandoning the fort. They're going to advance and come up on you.

Child: (Laughs.)

Player: You're just taking all my cowboys. You're trying to surround.

Child: (Laughs.)

Player: We're getting all around you. We're surrounding you.

Child: (Laughs.) Pow!
Player: Oh, you killed one. You injured another one.

Child: (Laughs.)

Player: Oh, boy, he's on guard. He's not going to let anything happen.

Child: Bang! Bang!

Player: Oh, you fooled them. You got him. Look at that one run.

Child: Pow.

Player: Oh, no.

Child: Pow.

Player: Oh, you injured him. What'd you do? Huh, what'd you do?

Child: I got him! I... stabbed him. (The child uses the word "stab." She shows that she knows what it means.)

Player: Stabbed him with a knife. Stabbed him in the heart. All the cowboys have abandoned the fort except for one. There's only one left on guard. What's going to happen? He's watching. He's on guard. He's looking away. Look at him run, run.

Child: Bye-bye.

Player: Bye-bye. Nobody left now but an Indian.

Child: Pow, pow!

Player: Oh, you injured all my men.

Child: Bang.

Player: OK, you stabbed him. Hey, let's play with another toy. You want to play with another toy?

Child: Uh huh.

Player: OK, let's play with the farm. Have you ever been on a farm?

Child: Uh huh.
Player: You have?

Child: I went to a farm with our teacher.

Player: Oh, you went to a farm with your teacher? This is going to be Farmer Jones' farm and this is going to be Farmer Brown's farm. You take care of that farm and I'm going to take care of this farm. My cows are going to be over here.

Child: What?

Player: My cows are going to be over here grazing. They're hungry. How'd you like to be a cow and eat grass? (Laughs.) You wouldn't like to graze, would you? (There is no response from the child but she seems to understand the word "graze.")

Child: What's this?

Player: What's this? That's a combine. It plows up the earth so that you can plant things. (The child uses the combine to "plow up" the fields. She makes a motion with the combine. She shows that she knows what the combine is used for.)

Child: Here's a tree.

Player: A tree? Use it to play in and put it over here in the field. This lady's going to enter the barn. (The child nods but is more obsessed with the animals. She seems to understand. She looks for the door.) OK, we're going to let her into the barn. Do you have any horses in here?

Child: Yeah.

Player: Why don't you let him join this horse. (It doesn't appear that the child is aware of the player's introduction of the word "join" but she appears to understand the concept. The player makes the child "join" the animals. The child responds successfully.) Why don't you have all the horses come together?

Child: Is this a plow?

Player: Why don't you use the plow to cultivate the land, cut up the earth so that you can plant something. OK? Now, while you're plowing, she's
going to enter the barn. So she goes inside.
Here are the chickens and ducks. You ever seen
a chicken? See a baby chicken hatch from an egg?
(The player relies on the child's past farm
experience. The child wants to watch hatching.)

Child: Yes.

Player: What happened? What did they do? (The
child appears to realize what hatching is and nods,
wanting to see when the player asks if she does.)

Child: Have a egg out of its body.

Player: Have an egg? What happens when the egg
breaks apart? Does the baby chicken come out?
Have you ever seen that? Have you ever seen a baby
chicken hatch from an egg?

Child: Huh uh. (The child never saw the egg hatch.
She seems to understand now.)

Player: No? That'd be kind of fun sometime, to
watch the egg hatch, wouldn't it? To see a baby
chicken come out of that egg? Oh, here's a cow.
He's grazing in the . . .

Child: Here's a pig.

Player: Yes, there's a pig.

Child: Here's three pigs.

Player: Oh, think we should slaughter these pigs,
so we can have some meat? (The child looks a bit
questioningly at the player but smiles.) OK, we're
going to slaughter those pigs. (The child agrees
to slaughter the pig.) So we'll have some meat,
but we'll have to kill them. OK, you can plow the
field. Let's just put all the horses in this area
here. I mean so we can enclose them in this little
fence. (The child does not seem aware of the
player's use of the word "enclose.") Are those all
our horses? OK, we're going to enclose them. (The
player demonstrates again.) OK, we'll just put
these over here. Think he might go into the barn?
Oh, here's another horse. He can go in with it.

Child: Here's the momma and the daddy. Wait, I
saw another.
Player: OK, let's have him down, too. Oh, these cows need milking.

Child: Uh huh.

Player: Do you know what we have to do to milk before we can drink it? Before we drink it, we have to sterilize it. We have to get all the germs out. (The child doesn't seem to understand.)

Child: That's a dog.

Player: Oh, will you collect all the pigs? Would you collect all the pigs? (The child seems to understand the concept.)

Child: Yes.

Player: Oh, OK, you collect all the pigs. Those are too little to slaughter. They wouldn't have nothing to eat on them. We'll just let them eat all they want today and wait till they grow up. You think they're hungry? How about the cows? You think they're still hungry? Why don't you put them out? Pretend there's some grass over there.

Child: Here's another baby.

Player: OK, some guy out by himself. He went right over the fence. He's going to run away. Do you think this lady might want in the farm? Is there any way she can get in? Any little door? Here's a door so she can enter. (The player uses enter again.) She can enter in here.

Child: She can climb up there.

Player: She can climb up here? OK. So she got in the window. That's how she entered. OK?

Child: Oh, where's the sheep?

Player: They entered the barn. That's where they are.

Child: Oh.

Player: Oh, here's the silo. That's where they keep the feed. Oh, look, here's a baby something. You want to put that with those? You want to put
those in the barn? They can join the rest. (The child seems to understand after the player enters. The child does overt collecting.)

Child: OK.

Player: Think there are any eggs here?

Child: They can't.

Player: They can't?

Child: They can't. They can't. They can't stand up.

Player: They can't stand up? OK. We'll let them lay there. They're tired. Are these cows still grazing? Think they're still eating? Think they're still eating? Here are the chickens. You think they might have any eggs in there that might have hatched? Any baby chickens? OK, let the eggs alone so they can hatch.

Child: Here goes . . .

Player: Yeah, we'll have to take that to the dairy so we can sterilize it, so we can drink it. (The child doesn't seem to understand.)

Child: Here.

Player: This should go in the barn then, OK? Thank you. Do you agree then that this should go in the barn with the other horses?

Child: Yeah.

Player: OK. OK, here's the tractor to plow the field. Why don't you put it over here with the other things to plow the field?

Child: What's that?

Player: Remember that's the other thing to help plow the field. Put it on the back. And the discer. He's starting to fix the field so he can plow.

Child: OK.

Player: Oh, here's some sheep. I think I'll put them in the wagon.
Child: Here's a cow.

Player: Hey, here's another horse.

Child: What's this?

Player: That's a big bull. That's a kind of a cow. He might as well come over here and graze too. OK, I guess we ran out of time to play. We're going to have to go back now.

In the Cowboy Vocabulary Post-Test, the child appeared to gain a correct concept of four of the ten words deliberately interjected into the Toy-Talk situation by the player. She was able to verbalize the meaning of capture, guard, injure, and stab. Words which she appeared not to know in the Vocabulary Post-Test situation included abandon, advance, invade, surrender, surround, and torture. The words surrender and torture were not interjected into the Toy-Talk by the player.

In the Farm Vocabulary Post-Test, the child appeared to gain a correct concept of five of the ten words deliberately interjected into the Toy-Talk situation by the player. She was able to verbalize the meanings of enter, hatch, join, agree, and collect. Words which she appeared not to know in this Vocabulary Post-Test situation included enclose, graze, plowing, slaughter, and sterilize.

Responses by this child to the following questions posed by her classroom teacher after her Toy-Talk experience indicate that she enjoyed the experience. When asked, "Did you like what you did with the toys?" she responded,
"Yes." When asked "Why?" she responded, "It was fun and because I fed the animals." She said she would like to do it again because she liked to play and the toys were a lot of fun. When she was asked if she learned something, she said, "No."

Data Analysis

In the statistical analysis, Table 1 presents a listing of the twenty-four children who participated in the study, the class, time within class, verbal fluency score, Pre-Test scores and Post-Test scores. This listing is reported from high to low in order of verbal fluency scores reported on the Torrance Test of Creative Thinking.

Table 2 gives the relationship between correct number of responses on the Farm Toy-Talk Vocabulary Post-Test and correct number of responses on the Cowboy Toy-Talk Vocabulary Post-Test and verbal fluency scores.

It can be seen that children who attained a high verbal fluency score on the Torrance Test of Creative Thinking scored low on both the Cowboy and Farm Post-Test. The medium-high negative relationship between verbal fluency and the Cowboy Post-Test was significant at the .01 level. The low negative relationship between verbal fluency and the Farm Vocabulary Post-Test was not significant at the .05 level. Children who did well on the Cowboy
Vocabulary Post-Test also did well on the Farm Vocabulary Post-Test.

TABLE 1

TOY-TALK PROCESS DATA: CHILD, TIME, CLASS, FLUENCY "t" SCORE, PLAYER, AND COWBOY, FARM AND TOTAL POST-TEST SCORES

<table>
<thead>
<tr>
<th>Child</th>
<th>Time</th>
<th>Class</th>
<th>&quot;t&quot; Score</th>
<th>Player</th>
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*Children selected for case analysis.
TABLE 2
PEARSON r CORRELATIONS BETWEEN VERBAL FLUENCY
COWBOY AND FARM POST-TEST SCORES

<table>
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<tr>
<th>Variable</th>
<th>Verbal Fluency</th>
<th>Cowboy</th>
<th>Farm</th>
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<tr>
<td>Farm</td>
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<sup>a</sup> \( p < .01 \)

<sup>b</sup> \( p < .10 \)

The \( r \) was a medium-high positive .53. Thus, it is possible to say that both Cowboy and Farm settings are equally productive in terms of vocabulary development. It can also be concluded that verbal fluency is negatively related to the development of vocabulary through Toy-Talk procedures.

Tables 3 and 4 provide data to determine whether or not there were differences between the children who attained high or low verbal fluency scores on the Torrance Test of Creative Thinking, from the two classrooms in the morning and the two classrooms in the afternoon.

Table 3 presents a summary of the analysis of variance for the Farm Toy-Talk Vocabulary Post-Test, including the initial full three-way variance; that is, time of day by classroom by level of verbal fluency.
TABLE 3
FARM TOY-TALK ANALYSIS OF VARIANCE BETWEEN
LOW AND HIGH VERBAL FLUENCY

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<td>9.42</td>
<td>9.42</td>
<td>2.30</td>
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<tr>
<td>4. VF by Time of day</td>
<td>4/5</td>
<td>1</td>
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<td>1.16</td>
<td>2.83</td>
</tr>
<tr>
<td>5. Class within VF by Time of day</td>
<td>5/6</td>
<td>2</td>
<td>.92</td>
<td>.41</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>6. Sw C within VF by Time of day</td>
<td>16</td>
<td>64.67</td>
<td>4.19</td>
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</table>

Table 3 presents the initial full three-way analysis; that is, time of day by classroom by level of verbal fluency. None of the sources of variance was found to be significant at the .05 level for the Farm Toy-Talk Vocabulary Post-Test.

Table 4 presents a summary in terms of verbal fluency by time of day, class within verbal fluency by time of day and student within class within verbal fluency by time of day.

Since terms 4 and 5 in Table 3 were not significant, the data were re-analyzed (Table 4) with terms 4, 5, and 6 pooled, but the effect of the level of verbal fluency was still not significant. There was no difference between the
low and high verbal fluency children on the Farm Post-Test.

**TABLE 4**

**SUMMARY OF TERMS OF FARM TOY-TALK ANALYSIS OF VARIANCE BETWEEN LOW AND HIGH VERBAL FLUENCY**

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<thead>
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<td></td>
<td></td>
</tr>
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<td>3.42</td>
<td>3.42</td>
<td>1 ns 1,2</td>
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<td>12.41</td>
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<td>1.74ns 2,19</td>
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<td><strong>Within Groups:</strong></td>
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</tr>
<tr>
<td>3. Verbal Fluency</td>
<td></td>
<td>9.42</td>
<td>9.42</td>
<td>2.64ns 1,19</td>
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<td>4. 4, 5, and 6 pooled</td>
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<td>66.75</td>
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</table>

Summary of the analysis of variance for the Cowboy Toy-Talk Vocabulary Post-Test, using the same formula for computation as that used in Tables 3 and 4, is presented in Tables 5 and 6.

Table 5 presents the initial full three-way analysis; that is, time of day by classroom by level of verbal fluency. None of the sources of variance was found to be significant at the .05 level for the Cowboy Vocabulary Post-Test.

Since terms 4 and 5 in Table 5 were not significant, the data were re-analyzed in Table 6 with terms 4, 5, and 6 pooled. The level of verbal fluency was significant at the .01 level. Children who scored low on the test of verbal fluency scored significantly higher (p .01) on the Cowboy Vocabulary Post-Test than did children who scored high on the test of verbal fluency.
TABLE 5
COWBOY TOY-TALK ANALYSIS OF VARIANCE BETWEEN LOW AND HIGH VERBAL FLUENCY

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<tr>
<td>3. Verbal Fluency</td>
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<td>8.82</td>
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<td>1,2</td>
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</table>

*Significant at < .01.

TABLE 6
SUMMARY OF TERMS OF COWBOY TOY-TALK ANALYSIS OF VARIANCE BETWEEN LOW AND HIGH VERBAL FLUENCY

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<td>1.24ns</td>
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<td>11.00*</td>
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<td>4. 4, 5, and 6 pooled</td>
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<td>1.37</td>
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</table>

*Significant at < .01.

The survey of data shows that the only variable which was significant in the vocabulary development using the Toy-Talk process was that of verbal fluency. Low verbal fluency children gained significantly in the Cowboy Toy-Talk, the familiar context.
More importantly, the data show that both Cowboy and Farm Contexts Toy-Talk processes will result in a gain in vocabulary development. It can be concluded that as a means for improving the verbal facility of inner-city children, the Toy-Talk process may be useful.

This chapter has presented the data indicating the utility of the Toy-Talk process in vocabulary development. It reveals that variables of time of day, sex, and class within time are not significant factors. It indicates that verbal fluency may well be a factor in vocabulary development with the process apparently more productive for low verbal fluency children than for high.

A description of selected cases was presented to illustrate the kinds of interaction that occurred in the process.

Chapter V will summarize the study, provide instructions for the technique, and give recommendations.
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

It was the purpose of this study to explore the feasibility of a method for improving the verbal fluency of low-income children. The design of this method involved the use of specially devised toy situations as a medium of teacher-student communication.

Two representative Toy-Talk Contexts were developed, Cowboy and Farm. Each context was accompanied by (1) a Vocabulary Pre-Test, (2) Toy-Talk input, procedures and materials, and (3) a Vocabulary Post-Test.

The study evolved from an attempt to test some of the hypotheses set forth by Strom of Arizona State University in a pilot study at The Ohio State University, including:

1. Toys are a first companion for children and serve to enhance the child's natural strength, imagination.

2. To improve conversation between generations, the provision should be made to allow the child's natural strength to affect the relationship.

3. Toys may serve as a medium for adult-child relationships.
4. The child's strength, imagination, should be complemented by the adult's strength, vocabulary and meaning. The strengths should be allowed to merge.

5. In this manner the extent of a child's vocabulary may be discovered.

6. The amount of meaning the child is able to attach to this vocabulary may be discovered.

7. Misconceptions which the child has about certain words and concepts may be discovered.

8. This information will then make it possible to replace misconceptions about words and concepts, introduce new vocabulary accurately, and correct pronunciation.

A further premise of the pilot study was that Toy-Talk provided immediate feedback, correction without embarrassment, and engendered a respect for creativity (Strom, 1969b).

The sample for the study was drawn from children attending kindergarten at an inner-city elementary school in Cleveland, Ohio, during the 1968-69 school year. From a random sample of forty children from the four kindergarten classes, twenty-four were selected for the study on the basis of their verbal fluency scores on the Torrance Test of Creative Thinking. The three highest scores and the three lowest scores from each class were selected to comprise the study sample of twenty-four children.

These children were given two Vocabulary Pre-Tests, one test for each toy context. The Vocabulary Pre-Test
consisted of selected words relating to the Toy Contexts. No attempt was made to employ a graded vocabulary. The pre-testing ceased as soon as ten words from each Pre-Test were identified as ones that the children displayed either a misconception of or no knowledge.

The Toy-Talk Contexts were of two kinds. The Cowboy Context was used because it represented a play area which was thought to be familiar to children. Toys employed in this context included a fort, a cannon, six horses, eleven cowboys, sixteen Indians, a canoe, a totem pole, a teepee, a well and bucket, a flag pole and flag.

The Farm Context was selected because it was thought to represent a play area which might be unfamiliar to urban children. Toys employed in this context included a barn, combine, hay trailer, tractor, discer, hayloft, water trough, hen house, silo, well and bucket, trees, chickens and chicks, ducks and ducklings, cows and calves, horses and colts, pigs and piglets, sheep, two men, a woman, and two children.

There were three identical settings. Each setting included a Cowboy Toy Context, a Farm Toy Context, a tape recorder, an adult player, and two adult observers. The adult players, one white male and two white females and the six observers, all white females, were juniors in the College of Education at The Ohio State University. The children selected for the study were brought to the
classroom used for the study, independently, by each adult player. Three Toy-Talk Play Interactions were conducted simultaneously in segments of ten minutes each.

The procedures employed in the ten minute Toy-Talk play activities included an attempt by the adult to enter a selected word into the Toy-Talk Context when appropriate. Such words were to be defined or clarified in an acting or behavioral manner rather than a declaration manner by the adult player. In an effort to reinforce the correct meaning of a word, the word or concept was mentioned or repeated again during the course of the Toy-Talk activity if necessary.

At times it was necessary to clarify a word or concept, replace a word or concept used by the child for another, or otherwise correct misconceptions which children had about words or concepts. This was done as part of the play activity and became a natural part of the Toy-Talk interaction. Attempts to assess the child's understanding of a word or concept were made in the same non-threatening fashion. That is, if a question were asked by the adult and the child failed to respond or responded negatively or incorrectly, this behavior was accepted without admonition from the adult.

Success during the Toy-Talk interaction was determined by the child's behavioral or verbal recognition of the selected words. The data were analyzed in two ways.
In the descriptive analysis, six recorded case studies were analyzed describing the Toy-Talk process. Included were background information on the setting, toys and procedures; a verbatim transcript of each of six Toy-Talk sessions; and a summary following each case.

The vocabulary development data were reported as a preliminary survey of the effectiveness of the Toy-Talk process. Data on the words learned through the process were analyzed using Pearson r correlations between verbal fluency and Post-Test scores and analysis of variance between low and high verbal fluency.

Conclusions

Play was assumed to be a natural process for children, a process whereby the child's natural strength, imagination, would be enhanced. Further, play was believed to be a process which could be used in the classroom for learning. The use of play activity to facilitate communication was perceived as a phenomenon which would encourage vocabulary development in children. Moreover, play would be an activity which might be engaged in by non-teacher adults as they interact with children in mutually satisfying ways for the purpose of aiding children in their intellectual development. Thus, the following conclusions can be drawn from a survey of the findings as they relate to the purposes of the study.
It can be concluded that Toy-Talk procedures will result in increased vocabulary development in children. These procedures can be easily duplicated in the classroom for this purpose. It appears that Toy-Talk does reflect the natural play process and children will accept Toy-Talk as non-threatening. Any adult or older youth could bring about increased vocabulary through play. There appears to be distinct playing styles among adult players. As yet it cannot be determined whether or not these styles result in differential achievement in vocabulary development among children.

Second, it can be concluded that differences may exist in learning sets and appropriate teaching methods for children of low socio-economic backgrounds. Children who were perceived as active and potential discipline problems in the classroom were not seen as discipline problems while engaging in the Toy-Talk activities. Children who were perceived by the teachers as well-adjusted and accepting of classroom procedure were not necessarily those who engaged most productively or learned more through Toy-Talk procedures.

Third, there are discrepancies in classroom teacher perceptions of children and observations of children made during their play activity. Teachers reported evaluations of verbal fluency of the children different from those revealed through test scores of verbal fluency and behavior
in the play process. This raises the question of commonality of definitions of verbal fluency as well as the relationship between verbal behavior of children and the settings in which they use words. Verbal fluency may depend then as much on the circumstance in which the child is observed or the means by which fluency is measured as on the fact of the ability within the child.

Fourth, it can be concluded that verbal fluency as an ability in children, as measured by tests, is related to the gain in vocabulary through Toy-Talk procedures. Gain scores on the Vocabulary Post-Tests indicated that children of low verbal fluency seem to learn vocabulary better through Toy-Talk than do children of high verbal fluency. It appears that the naturalness of play and the spontaneity of the activity were more readily accepted and engaged in by the more active, less verbal children. It raises the question of the effects of socialization, or, more precisely, "educationalization," on the learning process of children.

Recommendations

The following recommendations are suggested for using the Toy-Talk process in the classroom.

1. Teachers should implement a Toy-Talk procedure
for vocabulary development which would approximate the following guidelines:

Rationale

Academic success in our schools is predicated upon the level of verbal development. Verbal fluency is a factor in verbal development. Toy-Talk process appears to be a productive procedure for improving the verbal fluency of low verbally fluent children.

Learning experiences that are meaningful to children will draw upon those strengths which the children possess in order to facilitate learning. These learning experiences will enhance the dignity of the child and his self-perception, as well as promote development in vocabulary.

Objective

Given five minute Toy-Talk sessions for vocabulary development, the primary school child will improve his vocabulary by learning words he did not previously know.

Procedures

Space.—Provide a space for the activity. This should include ample floor space covered with a rug for comfort. Allowance should be made for the normal noise production of two persons' toy play.

Toys.—Toys used should be sturdy and minimum in number. A large number of toy items distracts rather than enhances Toy-Talk activity. Toys should be selected on the basis of their appropriateness to a central context theme.

Toy-Talk Context.—Cowboy and Farm Toy-Talk Contexts are effective themes. Additional contexts may be developed which center around desired vocabulary lists.

Setting.—Insofar as possible the setting for the play activity should be within the classroom. However, other spaces within the building may be utilized as they become available.
Players.—The teacher, teacher aides, student teachers, or older children may function as players in the Toy-Talk process.

Continued development.—Provision should be made for classroom reinforcement of words and concepts incorporated in the Toy-Talk process.

Evaluation

Evaluation of the effects of Toy-Talk procedures should be conducted. Attention should be given to pre- and post-testing of the effects of the activity. Continued evaluation should be made of the child's use of concepts and words learned as he functions in other situations.

2. The Toy-Talk process should be expanded to include cognitive areas other than vocabulary development. Concept formation, including mathematics, science, and social science should be experimented with. Various play techniques could be utilized and examined for effect. Interventive play, non-interventive play, and structured activities which follow as closely as possible the natural process should be examined.

3. Toy-Talk process should be expanded to include affective, social, and psycho-motor development, as well as cognitive. Focus on these aspects of development in and of themselves comprises legitimate educational endeavor. Moreover, the influence of these on cognitive development is often crucial. Play as a natural process provides the opportunity for integrative experience for the child.
Recommendations for Further Study

This study represents an attempt to design and test the feasibility of Toy-Talk methodology. The following recommendations for further study are offered:

1. A study needs to be conducted on a broad statistical basis, utilizing the methods developed here which will provide further evidence of Toy-Talk as a positive force in developing verbal fluency in low verbally fluent children.

2. A study needs to be conducted to develop improved means of assessing vocabulary strengths of children. This method would include arriving at means for more valid methods of testing vocabulary gain in children.

3. A study needs to be conducted which will focus its attention on the discrepancies between teachers' perceptions of children and results of test scores.

4. A study needs to be made similar to this one, using a sample population of a different socio-economic background to determine if this process may have merit in teaching children of various cultural settings.

5. A study needs to be made which will focus more specifically on the process itself, including toys and techniques, to determine if these make a difference in results obtained.

6. The use of video tape should be employed in
any further study of Toy-Talk as a means of assessing behavioral dynamics of the Toy-Talk interaction.
APPENDIX A

COWBOY VOCABULARY PRE-TEST
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APPENDIX C

VOCABULARY POST-TEST
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APPENDIX D

OBSERVATION SHEET
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<tr>
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<td>Observer</td>
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APPENDIX E

INSTRUCTIONS FOR STUDENT OBSERVERS
OBSERVATION

1. Recognize what is happening in the dynamics of the play situation.

2. Be keen in terms of anecdotal comments.

3. Look for overt behavior--that the tape recorder does not pick up.

4. Focus should be on teacher and on child as he interacts with teacher.

5. You are looking for the non-verbal behavior mostly.

6. As observer your job is:
   1. interpretation
   2. reflection
   3. description

7. When a child enters a word, underline it.
   When a child enters a word the teacher doesn't know, underline it.
   When a child enters a word for which he has a misconception, underline it.

8. You are writing a little chronological report of what kinds of behaviors were exhibited. So record in chronological, anecdotal fashion.

9. Use this key: 1 refers to teacher
   2 refers to child.
APPENDIX F

TEACHER REPORTING FORM (PRE-)
Dear ______________,

Thank you so much for allowing us to work with the children in your classroom for our study. Today will be our last day at John W. Raper and we will be happy to discuss aspects of the study with you or answer any questions you may have, at the close of the school day.

So that we may have a more complete picture of the children whom we studied, we would appreciate it if you would provide us with additional information about the children. Of course the child's identity will not be disclosed in the writing of the study.

Since we are returning to Columbus this evening, I have attached a stamped, self-addressed envelope for your convenience in returning the information to me.

We will appreciate receiving the information as quickly as possible in order that we may tabulate our data.

Thank you,

Donna B. Brown
Graduate Teaching Associate
Ohio State University
Child's Name ________________________________

Birthdate: ________________________________

Reading Readiness Tests scores: (sub-scores and total score)

__________________  _______________  ____________  _______  total

What Readiness Test are these scores derived from?

From his class work do you consider this child to be of high verbal facility or low verbal facility?

What general kind of statement would you make about this child? How does he relate to school in general?
APPENDIX G

TEACHER REPORTING FORM (POST-)

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Dear ________________,

It will aid us greatly in evaluating our study if you will question each child with whom we work, as he comes back to your classroom, and jot down his answers to the attached questions.

We'll pick up the questions and answers at the end of the school day.

Thank you,

Donna B. Brown
Child's Name _______________________________

1. Did you like what you did with the toys?

2. Why?

3. Would you like to do it again?

4. Why?

5. What didn't you like? (If child says he would not like to do it again.)

6. Did you learn something?
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