

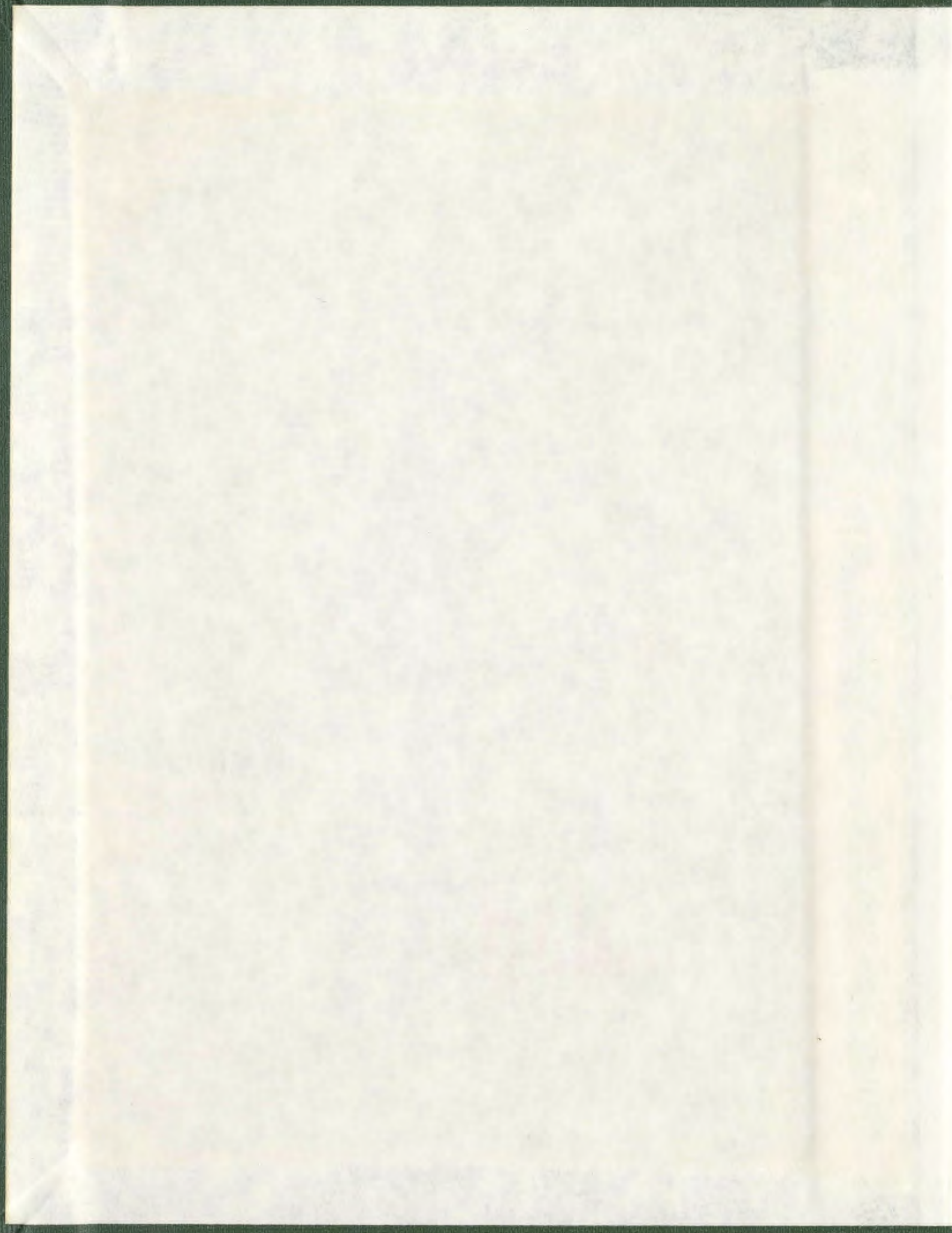
HOME STIMULATION PROGRAM  
FOR LANGUAGE DEVELOPMENT  
IN KINDERGARTEN CHILDREN

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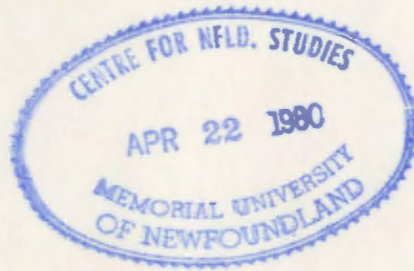
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DAVID ALLAN WRIGLEY





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HOME STIMULATION PROGRAM FOR LANGUAGE DEVELOPMENT  
IN KINDERGARTEN CHILDREN

by

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A Thesis submitted in partial fulfillment  
of the requirements for the degree of  
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## ABSTRACT

The first purpose of the study was to evaluate the effectiveness of the Learning to Tell section of the Learning Language at Home kit (Karnes, 1977) used by mothers of lower socioeconomic status with their kindergarten-age children. The second purpose was to evaluate two different methods of implementing an intervention program using this section of the kit over a ten-week period.

The Blishen Occupational Class Scale (1976) was used to select a sample of 48 mothers who were randomly assigned to three groups: sixteen were given the section of the kit, instructed in its use, and assigned a weekly home intervener ( $E_2$ ); sixteen were given only the section of the kit and instructed in its use ( $E_1$ ); and sixteen parents were given no treatment and served as a control group ( $C_1$ ).

The Reynell Developmental Language Scales (1969) and the Verbal Expression subtest of the Illinois Test of Psycholinguistic Abilities (1968) were used to assess the children's expressive language and verbal comprehension.

The pretest and posttest data were treated with a covariate statistical analysis to determine how and to what extent the independent variables (the two treatments by the interveners) explained the results of the dependent variables (the expressive language posttests). The analysis of covariance tested all hypotheses for significance. Verbal comprehension was measured using an F test statistic on the posttest data.



The following conclusions were reached: (1) The use of the kit did not result in significantly higher expressive language or verbal comprehension scores for the  $E_1$  group than for the  $C_1$  group within the given conditions of the program. (2) The method of treatment given to group  $E_2$  did not result in expressive language or verbal comprehension scores that were significantly higher than those of the  $E_1$  and  $C_1$  groups. (3) Significantly greater improvements were found in the Verbal Expression subtest scores of the I.T.P.A. in favor of the  $E_1$  group when compared to the  $E_2$  group which was contrary to one of the directionally stated hypotheses.

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# TABLE OF CONTENTS

	Page
LIST OF TABLES .....	vi
CHAPTER	
I INTRODUCTION .....	1
Purpose of the Study .....	1
Rationale .....	1
Research Questions .....	9
Significance of the Study .....	11
Limitations .....	12
II REVIEW OF LITERATURE .....	14
Language Acquisition .....	15
Language and Socioeconomic Status .....	29
Language and Learning .....	39
Age of Intervention .....	42
Intervention Programs .....	46
Parents as Educators .....	56
Early Childhood Education in Newfoundland .....	68
III HYPOTHESES, INSTRUMENTS AND THE LANGUAGE KIT .....	72
Hypotheses .....	72
Instruments .....	73
The Language Kit .....	79
IV METHODOLOGY .....	82

CHAPTER		Page
	Background of the Study .....	82
	Sample .....	83
	Collection of Data .....	85
	Research Design .....	87
	Data Treatment .....	89
	Implementation of the Intervention Program .....	90
	Initial Training Session for Mothers .....	90
	The Home Visitors .....	95
	Training for Home Visitors .....	96
V	ANALYSIS OF DATA .....	102
	Evaluation of Hypotheses .....	102
	Supplementary Analysis .....	107
VI	DISCUSSION OF RESULTS, SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS .....	114
	Discussion of Results .....	114
	Summary and Conclusions .....	122
	Recommendations for Future Research .....	126
	SELECTED REFERENCES .....	128
	APPENDICES .....	143
A	LETTER OF REQUEST TO SCHOOL BOARD .....	144
B	LETTER IN REPLY FROM SCHOOL BOARD .....	146
C	LETTER TO PARENTS FROM PRINCIPALS .....	148
D	QUESTIONNAIRE TO PARENTS .....	150



# LIST OF TABLES

TABLE		Page
1	Pretest, <u>F</u> -test Analysis for the R.D.L.S. and I.T.P.A. Scores for Boys and Girls .....	87
2	Pretest Descriptive Statistics on the Three Groups as Measured by the R.D.L.S. and I.T.P.A. ....	103
3	Posttest Descriptive Statistics on the Three Groups as Measured by the R.D.L.S. and I.T.P.A. ....	104
4	Posttest <u>F</u> -test Comparison Between the Three Groups as Measured by the Adjusted Scores of the R.D.L.S. Expressive Language Subtests and the I.T.P.A. Verbal Expression Subtest with the Pretest as Covariate Eliminated .....	108
5	Pearson's Product Moment Correlation Coefficient on the Three Language Scores .....	109
6	A Pretest-Posttest Correlated <u>F</u> -test for the Unadjusted Scores of Groups $E_1$ , $E_2$ , $C_1$ , on the R.D.L.S. and I.T.P.A. Scores .....	110
7	Posttest <u>F</u> -test Comparison Between the Three Groups as Measured by the Combined Total Adjusted Scores of the R.D.L.S. Expressive Language Subtests and the I.T.P.A. Verbal Expression Subtest with the Pretest as Covariate Eliminated .....	111
8	Percentage Responses to the Questions Contained in the Questionnaire to Parents .....	112

## CHAPTER I

### INTRODUCTION

This chapter provides an introduction to the study, presents the purpose and rationale, outlines the questions used as the basis for research, assesses the significance of the study and points out the limitations.

#### Purpose of the Study

Research has shown (Bereiter & Engelman, 1966; Deutsch, 1965; Hess & Shipman, 1965; Thomas, 1963; Williams & Naremore, 1969) that children who come from families of lower socioeconomic status (LSES) do not score as well as on tests of language ability as children whose families are of middle and higher socioeconomic status. When the children with LSES background start to attend regular school their poorer facility in coping with the language demands of a standard English linguistic environment may interfere with their learning. Communications with the teacher and other children, acquisition of reading skills (Deutsch, Katz & Jensen, 1968) and development of cognitive abilities (Davidson, 1964; Inhelder & Sinclair, 1969; Jensen, 1968; Lawton, 1968) may be impaired. This study sought to find answers to some of the questions that arise concerning effective and efficient means of helping such children overcome their language problems.

The first purpose of this study was to evaluate the effectiveness of a new educational kit designed to promote the language development of children between three and five years of age. The



Learning Language at Home kit was produced by Merle B. Karnes in 1977 and is intended for use by parents with their children. This study undertook to test the effectiveness of a section of the kit when used by mothers of lower socioeconomic status (LSES) with their kindergarten-age children. Personal communication of the researcher with M.B. Karnes revealed that although a questionnaire concerning its reception and effectiveness had been circulated to a number of people, the kit had not been empirically field-tested on any population, to say nothing of a population of LSES, although it is this section of society that has been shown to be most in need of help with language skills.

Evaluating the effectiveness of the kit involved comparing the scores on (a) expressive language and (b) verbal comprehension tests of children whose mothers had used the kit with them, with the scores of children who had received no intervention. The mothers who used the kit were given one initial training session and then left for 10 weeks to carry out the program. The researcher's telephone number was provided for the mothers to call if they needed more assistance and advice. Only one of the four sections of the kit, the Learning to Tell section, was evaluated.

The second purpose of this study was to compare two different methods of implementing a language intervention program using the Learning to Tell section of the Learning Language at Home kit, as well as comparing the two different methods with a no treatment control group. Research into home-based educational programs with children is in its early stages. This study appears to be the first to investigate the relative effectiveness of programs where different degrees of help in carrying out the program were given to parents by

an outside intervener. The researcher anticipated that results of these comparisons would have valuable implications for personnel who initiate and organize home intervention programs. Through this study they might be helped to make more efficient and effective use of their own and parents' time.

The first method of intervening consisted of LSES mothers being given the Learning to Tell section of the Learning Language at Home kit, one initial training session, a telephone number to call for help if necessary, and then being left for 10 weeks to carry out the program with the children. The second method consisted of LSES mothers being given the Learning to Tell section of the kit, one initial training session and also being assigned a weekly visitor who gave encouragement, advice and assistance to them throughout the 10-week program. The analysis involved comparing the scores on tests of (a) expressive language and (b) verbal comprehension of children in both groups and also of children in a no treatment control group.

### Rationale

Attempts to help children whose language ability and other abilities are below standard for their age has often taken the form of preschool programs such as Headstart in the United States. In Newfoundland, there is no such scheme, apart from one preschool in St. John's which receives financial assistance from the Department of Social Services of the Provincial Government and which accommodates some children from disadvantaged homes. However, it cannot admit all the needy children. There are, of course, many private preschools



on the island which charge an attendance fee and this may mean that parents of LSES either cannot afford to send their children, or do not choose to spend their money in this way. Thus, there are children in the province who come from LSES homes, whose language ability is below standard for their age (Chapter II, p. 30), and who have a need for some type of intervention program. In places like Newfoundland, where at present there are no administrative bodies to organize and no funds set aside to finance intervention programs, the possibility arises that schools might assume responsibility for them. Programs could be offered for preschoolers, but the task of establishing and maintaining contact with the children might be difficult. Alternatively, a program for children who are already at school is suggested, where contact and administration may be much easier. It was anticipated that the type of intervention program carried out by this researcher could be quite easily initiated and organized by school personnel for children who were already attending the school.

If intervention is to be successful it should take place in the early years of the child's life. Research has shown that the older the child, the less amenable he is to remediation. Kirk (1952) stated that:

Favorable changes in intellectual growth may be accomplished more readily with young children than with older children. It is possible that rigidity and stereotyped behavior developed during preschool years may be too difficult to change by cultural and educational advantages at a later age. (p. 694)

Other researchers support this contention (Ausubel, 1967; Bloom, 1964; Deutsch et al., 1967, 1968). Most educators suggest that the preschool years are the optimal time for intervention; however, this researcher decided to conduct the study with children in their first year of school.

Waiting until kindergarten to initiate an intervention program has two advantages: firstly, implementation is facilitated by the school's assuming responsibility and acting as the agent for administration and organization and, secondly, the children are being recruited into a program at a time when they and their families may have a heightened awareness of and interest in learning because they are in the initial stages of their school career.

Taking into account the existing situation in Newfoundland, an intervention program which could be initiated and organized by a school for its kindergarten-age children to help improve their language skills was seen as a promising alternative to a preschool intervention program. It was anticipated that if the program and methods used were proven successful, the idea might then be adopted and implemented regularly each year by concerned and innovative schools.

Intervention has frequently taken the form of center-based programs where needy children and sometimes their parents are taught in groups at a center where they meet on a regular basis. Research has shown (Gordon, 1969; Gray and Klaus, 1966; Karnes, Teska, Hodgins & Badger, 1970; Levenstein, 1971; Weikart, 1969) that home-intervention programs are a viable alternative to center-based programs for disadvantaged children. Home-based programs which use parents as teachers of their own children have a number of advantages. Firstly, they can produce a diffusion effect whereby the parents as well as the child learn during the intervention. Secondly, it is suggested that subsequent children as well as the target child profit. Gilmer, Miller and Gray (1970) reported a difference of 11 IQ points at school entrance in favor of the younger siblings of preschool age experimental children



whose mothers had been involved in a home training program, compared to siblings of children who had not been involved in preschool home-education. Thirdly, a common complaint of educators is the lack of available time for influencing children's development in school. One solution is an education program for parents. Programs have been slow to be implemented due to the narrowly conceived definition of education; certain people must be teachers, certain people must be learners, only certain subjects must be taught and they must be taught in a specific place of learning, that is, a school. The result of a home intervention program may be to remove such underpinning assumptions and inculcate the belief that parents can be sensitized to their potential influence on a child's academic and socioemotional development in the home.

Thus, research and circumstances led to the conclusion that a home-based program organized through the school was an appropriate vehicle for giving young children of LSES in Newfoundland the opportunity to improve their language skills. Support for this idea was given by White (1975) who recommended that the public educational system assume responsibility for preparing and assisting families in their roles as educators.

Although there is some research to show that home intervention programs conducted elsewhere have been successful (Gordon, 1969; Gray & Klaus, 1966; Karnes, Teska, Hodgins & Badger, 1970; Levenstein, 1971; Weikart, 1969), this area is quite new and relatively little is known about it. Programs, methods and approaches are still in the experimental stages. M.B. Karnes of the University of Illinois, who has for many years been involved in the field of education, recently compiled a kit which can be used by parents at home with their children, the Learning

Language at Home kit (Karnes, 1977). Before publication, the kit had not been empirically field-tested, and yet, being the only one of its kind--a kit especially designed to help parents foster the language development of their children at home--it was important that its efficacy be determined.

The design of the kit seemed to make it particularly suitable for use in a home-intervention program. There are four sections, Learning to Look, Learning to Do, Learning to Listen, and Learning to Tell. Each section is self-contained and it was decided that only one section, the Learning to Tell section, was to be used in this study, because this was all that time would allow. There are 50 lessons in each section, each one on a separate card which outlines the objectives of the lesson, materials needed, procedure and follow-up, and review activities. The format and wording of the cards is simple and easy to follow. The suggested activities are intended to foster verbal interaction between parent and child. The activities appear to be both interesting and stimulating. It was anticipated that the results of the empirical testing would provide valuable information to educators who might be interested in using the kit as the basis of a language-oriented home intervention program.

Thus, the first purpose of this study was to test the Learning Language at Home kit and it was decided to test it with families of LSES because this is the group whose children are most in need of help with improving their language skills. Research has shown (Ausubel, 1967; Brown, 1968; Jensen, 1968; Whiteman and Deutsch, 1968) that parents of LSES do not spend as much time in verbal interaction with their children as parents of higher socioeconomic status. Also, when inter-



action does take place it is of a different nature. LSES parents tend to use a more restricted code with shorter sentences (Hess & Shipman, 1965). Stodolsky (1965) and Stodtbeck (1967) report that in the lower-class family, control over the child's behavior is often achieved by physical means rather than through verbal exchange. Research indicates (Bereiter & Engelmann, 1966; Deutsch, 1965; Hess & Shipman, 1965; Thomas, 1963; Williams & Naremore, 1969) that children from these families do not score as well on tests of language ability as children from other socioeconomic strata. An intervention program which is based in the home and which involves parents provides an opportunity to open up channels of communication and foster much needed verbal interaction between these children and their mothers.

The second purpose of the study was to compare different methods of intervening with children and their mothers. Research into intervention programs has concentrated for the most part upon those concerned with cognitive and language development in classroom settings with or without parent participation, but little research has been done in the field of parent programs that emphasize parent-child activity in the home. The review of literature did not reveal evidence of any research dealing with the comparative efficiency of different methods of intervening in home-based language-oriented programs. The area was seen as ripe for investigation and it was anticipated that the findings would be valuable to initiators or organizers of home intervention programs in helping them decide how their own and parents' time could be most efficiently and effectively used.

The nature of the Learning Language at Home kit was such that it could be used by parents with little or no assistance from outside

interveners. Home-based programs, particularly those which involve the mother as the primary teacher of her child, however, require a high level of parental commitment. Bessent, Breivogel and Greenwood (1972) have written that a characteristic of parents from low income backgrounds is a feeling of powerlessness to influence the school or its activities. It was hypothesized that such parents might be more successful in using the kit if they were given encouragement, advice and assistance on a weekly basis to motivate and help them. Thus, the investigator sought to ascertain the relative effectiveness of a program where the mothers were only given one initial training session and then left with a series of daily lessons to continue the program alone with the child for 10 weeks; a program where the mother was provided with an initial training session, a series of lessons and a weekly intervener who gave encouragement, advice and assistance for the 10-week period; and a program where there was no intervention.

### Research Questions

The first purpose of this study, which was to evaluate the effectiveness of the Learning to Tell section of the Learning Language at Home kit when used by mothers of lower socioeconomic status with their kindergarten-age children, generated the following research question.

#### Research Question No. 1:

What are the differences in scores on (a) expressive language and (b) verbal comprehension tests conducted with LSES children of kindergarten age whose mothers after one initial training session use the Learning to Tell section of the Learning Language at Home kit with them and tests conducted with LSES children who receive no intervention?



The second purpose of this study was to compare the relative effectiveness of home-based educational programs where different degrees of help in carrying out the programs were given to parents by an intervener. A comparison was effected between two different methods of intervening as well as a comparison of each method of intervention with a no treatment control group. This purpose generated the following research questions.

Research Question No. 2:

What are the differences in scores of (a) expressive language and (b) verbal comprehension tests conducted with LSES children of kindergarten age whose mothers use the Learning to Tell section of the Learning Language at Home kit with them after one initial training session and weekly visits from an intervener who provides encouragement, advice and assistance throughout the program and tests conducted with LSES children whose mothers use the kit with them after only one initial training session?

Research Question No. 3:

What are the differences in scores on (a) expressive language and (b) verbal comprehension tests conducted with LSES children of kindergarten age whose mothers use the Learning to Tell section of the Learning Language at Home kit with them after one initial training session and weekly visits from an intervener who provides encouragement, advice and assistance throughout the program and tests conducted with LSES children who receive no intervention?

Research Question No. 4:

What are the differences in scores on (a) expressive language and (b) verbal comprehension tests conducted with LSES children of kindergarten age whose mothers after one initial training session use the Learning to Tell section of the Learning Language at Home kit with them and tests conducted with LSES children who receive no intervention?

It should be noted that though research question No. 4 is identical to research question No. 1, generated by the first purpose, it was used in each case to lead to different conclusions.

### Significance of the Study

The study is significant for the following reasons:

1. In Newfoundland, there is a paucity of research into early childhood education. Four studies in the province (Brown, 1970; Fisher, 1973; Taylor, 1974; Sharp, 1977) have investigated several aspects of center-based early childhood education programs, but this study was the first completed research focusing on a home intervention program.

2. Most major research into home intervention programs (Gray & Klaus, 1970; Karnes, 1968; Levenstein, 1971; Weikart, 1969) has been primarily concerned with curriculum evaluation. This researcher discovered no studies which focused on the frequency or nature of outside intervention as a factor affecting the success of the program. This is, therefore, a worthwhile and necessary topic to study.

3. During the present period of financial restraint, it is important to maximize the utilization of school personnel and materials. It was, therefore, important to discover whether parents could be motivated and directed through a home intervention program to assist the school in furthering their children's language development.

4. The study field-tested one section of a new language kit which had not been empirically field-tested before. Because it is the only commercially produced kit of its kind—a language-oriented kit specifically designed for use by parents at home with their children--the results of the field-testing are significant for educators and implementers of home intervention programs.

5. Since parents are usually the key agents in the child's development it was important to investigate ways and means of helping



them carry out programs at home with their offspring. It was particularly important to find out how successful mothers of LSES could be.

6. After the program finished, those parents who were involved could continue to talk and share language games and activities with their children.

### Limitations

The following limitations are to be considered when interpreting or generalizing from the results of the study.

1. Although the subjects of LSES were randomly selected, selection bias was introduced when the mothers had to agree or refuse to participate, irrespective of being randomly chosen. This limitation proved to be of minor importance as only six parents refused to participate.

2. The Blishen Occupational Class Scale (Blishen, 1967) has limitations. The compiler states:

Its most serious limitation ... is that rank, although it is based on the income and educational level of the average incumbent of that occupational class across Canada, fails to consider other factors contributing to socioeconomic level. Among these other contributing factors are working wives, working children, family size, inheritances, regional cost of living, and wise and unwise investments. These, however, are not reflected by the occupation of the head of the household. (pp. 41-42)

Since the study was not concerned with comparing one socioeconomic group with another and since it used the broad category of "lower" SES parents rather than "low" SES parents, this limitation is not very serious.

3. The LSES of the subjects may have inhibited oral responses. Labov (1969) found that LSES black children's test-taking set was

impaired when the examiner was of a higher SES. To minimize this, the examiners made a conscientious effort to establish rapport with the subjects before and during testing.



## CHAPTER II

## REVIEW OF LITERATURE

Since the major thrust of this study was concerned with trying to improve language development in young children of LSES backgrounds it seemed important to consider seven major areas.

First, it was necessary to find out how children acquire and develop language in order to base the intervention program on principles derived from this research.

Second, since the children involved were from one particular social stratum--lower socioeconomic--and since the program was to be based in the home, a study of the relationships between SES and language development was called for.

Third, because the program was focusing only on language, an investigation into the relationship between language and other aspects of learning was carried out in order to estimate the significance of such a program if it proved to be successful.

Fourth, it was important to determine the optimum age for intervention to take place, so a review of the research had to be conducted in this area.

Fifth, the researcher believed it was necessary to investigate different types of intervention programs before selecting one which he felt was likely to be the most appropriate and effective in the circumstances surrounding the research.

Sixth, since parents were to be involved in the program in a teaching role, it was important to ascertain what research had discovered

about their weaknesses and strengths in this capacity. In particular, the investigator needed to make himself aware of the possible limitations of having LSES parents teach their own children, weigh these against the advantages, and on this basis make the decision as to whether it was worthwhile to carry out the program.

Finally, in order to establish the need for implementation of the type of intervention program used by the researcher, it was necessary to conduct a survey of existing facilities and programs in Newfoundland for very young children.

### Language Acquisition

#### The Process of Language Acquisition

The distinction should clearly be made between language and speech. Cazden (1972) said:

Language is knowledge in our heads, speech is the realization of the knowledge in behavior. Language consists of all the words in a person's mental dictionary and all the rules at his (usually unconscious) command for combining those words into an infinite number of novel sentences and for interpreting the equally novel sentences that he hears. Speech, by contrast, consists of his actual utterances spoken to particular people in particular situations. (p. 3)

By the time most children are of school age they have mastered their native language so well that they can generate and understand an amazingly complex array of new sentences, sentences they have never heard or said before. During their early years, children learn, with varying degrees of expertise, the essential components of their language without the benefit of school or teachers. Various theories have been put forward to explain how they do it, but as yet there is no completely



satisfactory explanation for the whole process.

Systematic research into child language did not begin until the middle of the nineteenth century (Bar-Adon & Leopold, 1971). Much of the literature has assumed, explicitly or implicitly, that children speak an imperfect version of adult language, that they share a grammar as though "child language is adult language filtered through a great deal of cognitive noise and impoverished of vocabulary" (McNeill, 1966). Thus, research has often focused on case histories of gradual elimination of errors (Leopold, 1971), surveys of vocabulary (Smith, 1926), and surveys of frequency of syntactic classes (McCarthy, 1930). Researchers have perceived child language as gradually approximating the adult syntactic model.

The early descriptions of child language were an outgrowth of linguistic attempts to construct grammars as models of language, that is, as theories of how language is organized. A grammar describes the semantics, syntax and phonetics of language and shows how these elements interrelate in the construction of sentences. The processes by which the child acquired his present linguistic proficiency were in large part ignored.

Currently there are three major theories of language acquisition which do focus on process. They are similar in that they are all attempting to describe how children acquire language but they differ in respect to the role of inheritance, imitation, reinforcement, experience, and the child himself in the acquisition process. The three theories are (a) the nativistic theory which argues that language development is determined from within the child rather than by external factors (that is, language is innate); (b) the cognitive theory which,

like the nativistic theory, suggests that children are born with certain abilities to acquire language but which disagrees as to the nature of these abilities; and (c) the behavioristic theory which asserts that children learn their language through imitation of individuals around them.

### Nativistic theory.

Proponents of this theory such as Lenneberg (1967) and McNeill (1966) argue that language development is determined from within the child rather than by external factors such as imitation or training. Language is innate; in effect the child is born with a propensity for language much the same as a bird is to migrate. Evidence cited in support of this theory includes:

- (a) Only man among all species on earth has the necessary anatomic and physiological features to engage in sustained speech activities.
- (b) Language cannot be taught to non-human forms of life. Noting that although bees, dolphins, and some birds do have communication systems, it is pointed out that they cannot grasp human language. Apes, though they have a high intelligence relative to other animals, cannot learn human language, yet young children can do so without any formal training.
- (c) It is almost impossible to suppress language acquisition among humans; even the blind, deaf, and retarded learn language to some degree.
- (d) Although the pace may vary, the sequence of language development appears to be the same for all people. Moreover, the onset and accomplishment of minimal language development seems to be unaffected by cultural or linguistic variations.
- (e) Finally, there are certain characteristics of language which appear to be "universal"; they exist in all languages throughout the world.



Lenneberg (1967) argued that all languages are based on the same universal principles of semantics, syntax and phonology. Each language has words for relations, objects, feelings and qualities, and any human can learn any language in the world.

### Cognitive theory.

Like the nativists, proponents of the cognitive theories of language acquisition hold that children are born with certain abilities to learn language but disagree as to what these abilities are. Slobin (1966) stated:

It seems to me that the child is born not with a set of linguistic categories but with some sort of process mechanism—a set of procedures and inference rules, if you will—that he uses to process linguistic data. (pp. 87-88)

Language development is seen as a process in which certain abilities develop, closely related to thinking or mental abilities. These include cognitive ability to deal with the world, short-term and long-term memory, as well as the ability to process information. Language acquisition is not viewed simply as a passive process of progressively mastering the adult model. Rather it is seen as an active process in which the child generates hypotheses concerning the rules underlying the somewhat fragmented and piecemeal speech samples with which he is presented in his everyday environment. This position is reflected in the writings of Bloom (1970), Bowerman (1973), Brown (1973), and Menyuk (1969).

From a relatively small set of data, the child searches for regularities and infers tentative rules (hypotheses) which account for the phonological, morphological, and syntactic regularities in this

linguistic corpus. These hypotheses are tested against further linguistic data and then modified again and again if necessary until they account for the linguistic data. A rule is thus shaped and reshaped until it merges with the rule in the adult grammar (Bloom, 1970). To facilitate this, a child needs an adult model with whom he can interact in order to risk errors and test hypotheses. One of the strongest reasons that researchers propose to support this thesis of children developing "rules" of language is that though the kinds of "errors" they make may not conform to adult usage, they are nevertheless rule-bound.

The process of induction is at the basis of this theory of language acquisition. Studies such as that of Berko (1958) have shown that children have induced much of the latent structure of language by the age of four. This is evidenced by their application of grammatical rules to irregularities in the language, for example, the addition of the regular past tense morphemes to irregular verbs in comed and runned; and in their application of inflections to nonsense syllables in constructed tests. Children need exposure to much language in order for this induction to occur. John and Goldstein (1967) suggested that,

children develop and test their tentative notions (hypotheses) about the meanings of words and the structure of sentences chiefly through interaction with more verbally mature speakers. (p. 165)

Hearing a word several times in different contexts helps the child discover its meaning or use, or as John and Goldstein (1967) stated: "Generalizing a word from one setting to another requires the discovery of the irrelevant variations which accompany the essential constancy" (p. 170).



### Behavioristic theory.

This theory contends that children learn their language through imitation. Evidence cited in support of this view has included the fact that children learn the language of those around them even down to the dialectical variations in that child's speech community. Further, children often repeat or "parrot" words and expressions of those around them. The generalized stimulus response and reinforcement theories of learning are also put forward in support of this being the way that language is learned. Proponents of this theory argue that those around the child provide a model for him, along with "rewards" which motivate him to learn.

This concept of reinforcement or operant conditioning, following B.F. Skinner's writings, has been central in theories of language development held by psychologists. According to Skinner (1957), the child babbles random sounds which are relatively unpatterned. These are selectively reinforced and the child's utterances gradually assume the forms of his native language. Although this is an important factor, it has limitations. John and Goldstein (1967) stated that "such a model presents certain difficulties in that it emphasizes a one-to-one relationship between stimulus and response" (p. 166). They pointed out that the word to be learned is usually embedded in a sentence and its referent (the object) is surrounded by numerous extraneous features in the environment. Learning labels requires selective attention and the inhibition of irrelevant aspects. This behavioristic viewpoint simplifies the child's role in acquiring language. Instead of analyzing, inducing rules, testing hypotheses, and generally deriving a theory of his native language, the child is looked upon as merely behaving,

while his social environment determines shifts in his behavior and selects for approximations to adult language through a process of reinforcement. The research of Bricker and Bricker (1974), Guess, Sailor, and Baer (1974), and Lovass (1968) also reflected this approach to language.

To a certain extent, imitation and reinforcement probably do play an important role in language learning. According to Jenkins and Palermo (1964) children may imitate adult language as they do other adult behavior and as they are reinforced for imitating. However, in recent years, behavioristic theories of language acquisition have been challenged. Challengers suggest:

- (a) The task of memorizing all of the possible language structures and associating with each structure a particular conceptualization is virtually an impossible task. Gough (1967) has<sup>45</sup> argued that for a 15-word sentence there are 10<sup>45</sup> possible different ways to construct it, a formidable task if one were to memorize each structure.
- (b) Children utter expressions which it is doubtful they would hear anyone say, especially an adult. For example, one child said, "Grandpa, higher the swing, my feet are dragging." It is unlikely that the child had heard such an expression before; it is doubtful that he was "imitating" anyone. Nativistic and cognitive theorists argue that these unique structures suggest that there exists some system or mechanism within the child which he uses to generate sentences, and these mechanisms cause him to produce on occasion such unusual, unique structures.
- (c) A third argument against a simple imitation theory is based on evidence that children's language is highly resistant to alteration by adult intervention. For example, Gleason (1967) reported a conversation between her and a 4-year-old child:



- Child: "My teacher holded the baby rabbits and we patted them."
- Gleason: "Did you say your teacher held the baby rabbits?"
- Child: "Yes."
- Gleason: "What did you say she did?"
- Child: "She holded the baby rabbits and we patted them."
- Gleason: "Did you say she held them tightly?"
- Child: "No, she holded them loosely" (p. 1441).

As may be noted, the child continued to use her own form of language although she heard and comprehended the adult form.

McNeill (1966) reported a similar lack of success on the part of a mother when she tried to teach her daughter an alternate form:

- Child: "Nobody don't like me."
- Mother: "No, say 'nobody likes me.'"
- Child: "Nobody don't like me." (eight repetitions of this dialogue)
- Mother: "No. Now listen carefully; say 'nobody likes me.'"
- Child: "Oh! Nobody don't likes me" (p. 15).

Even with the intense efforts on the part of the adult, the child's language was modified, but only slightly.

Church (1961) presented several arguments in his questioning of behavioristic theory as an adequate explanation of language acquisition:

- (a) parents often reinforce babbling indiscriminately;
- (b) one can increase the volume of babbling the baby does, but there is no evidence that one can selectively reinforce particular babbles;
- (c) babbling stops when speech begins; the two are discontinuous forms of behavior;

- (d) the child's expressions do not always elicit appropriate consequences;
- (e) the actual word the child utters comes first, indicating it has already been learned; reinforcement follows;
- (f) every word which the child says does not receive special treatment;
- (g) there is little occasion for reinforcement in the learning of grammatical rules;
- (h) reinforcement is closely tied to motivation, whereas neither motivation nor reinforcement is essential to learning;
- (i) reinforcement theory remains ambiguous as to what it is that is reinforced;
- (j) the reinforcement formulation does not account for passive learning or the passive language that precedes active speech (pp. 80-85).

Church concluded: "All in all, it probably makes no better sense to say that speech is selectively reinforced babbling than that writing or drawing is selectively reinforced scribbling" (p. 84). Church agreed that reinforcement has its place in overt learning and modification of verbal behavior.

This researcher inclines towards the cognitive theory as an explanation of language acquisition and development. The study has been founded upon one of the basic premises of this theory, which is that language is learned through the risking of errors and the testing of hypotheses. Consequently, the environment in which the child learns language must be conducive to such risk-taking and hypothesis-testing. The child should not be made to feel inadequate or stupid when he says things that do not conform to adult usage, but should rather be applauded for his efforts and subtly given corrective feedback at an appropriate time. In addition, in spite of the divergencies and discrepancies of



the three different theories outlined in this section, they all agreed on one critical point--that adults have a crucial role to play in the child's acquisition of language. Thus, attempts by educators to foster or improve the language skills of young children must initially be founded upon the adult-child dyad.

### Factors Influencing Language Acquisition

Our present knowledge of language development in early childhood has come from biographical studies parents have made of children's language; longitudinal studies, notably those of Brown and associates (Bellugi & Brown, 1964; Brown & Bellugi, 1964); and measures of the language of groups of children made by such investigators as McCarthy (1930) and Templin (1957).

These studies described the rapid growth of vocabulary in the early years, the shifts in proportion of various parts of speech, the increase in complexity, and the expansion in mean length of utterance. For example, a child of 18 months is in the one-word sentence stage and a year later is speaking average utterances of two to three words (McCarthy, 1954). The period from two to four years of age is one of very rapid language development. In spite of the fact that these general trends and phases of language acquisition can be identified, all children do not develop language in the same manner, at the same rate, or to the same degree of sophistication. Investigations have been conducted into the specific factors which differentially affect language acquisition.

Some factors believed to be related to language development are: (a) quantity of interaction with adults, (b) signal to noise ratio,

(c) feedback, (d) quality of interaction with adults, (e) effective relationships.

#### Quantity of interaction with adults.

Children need verbal stimulation if they are to develop language skills. In 1934, Vygotsky (1962 trans.) proposed that the development of language is dependent largely upon the availability of adults for verbal interaction with the child. Kagan (1969) found long periods of play between mother and child to be important. During these periods the thought processes, no matter how primitive, were rewarded. McCarthy's (1954) review of the literature of language development in children cited references to the language superiority of children who:

- (a) come from families in which they are encouraged to actively participate in meal-time conversation;
- (b) are given satisfactory answers to their questions and thus are encouraged to ask more;
- (c) through frequent association with adults get more than an average amount of practice in using longer sentences as well as more advanced patterns of language.

Thus, if adult attention is an important contributing factor to language development in children, it would stand to reason that parents and other family members can and should actively engage in activities that supplement and parallel the school's programs.

#### Signal to noise ratio .

Deutsch (1967) hypothesized that the noisy environment and the weak signal conditions under which some lower-class children live predispose them at an early age to learn to tune out auditory stimuli,



so that they tune out both meaningless noise and meaningful stimuli such as language. Data is not yet sufficient to confirm or disconfirm this but other researchers have given credence to this hypothesis.

### Feedback.

Feedback has been highlighted as important in language development (Ausubel, 1964; Bloom, Davis & Hess, 1965). John and Goldstein (1967) emphasized that "of particular importance is the amount of attention to the child's own attempts at early verbalizations--the opportunity made available to the child to learn by feedback" (p. 173). Feedback need not always be corrective but may be modifying or expanding. The possibility exists that constant immediate correction of a child's speech inhibits language and lowers self-esteem and that subsequent rewording of a phrase may suffice.

Brown and Bullugi (1964) concluded that the adult's expansion of the child's utterances is powerful assistance for the development of grammatical rules because the child "encodes additional meaning at a moment when he is most likely to be attending to the cues that teach meaning" (p. 143). Cazden (1965) suggested that the sequencing of the parent's responses is done under the guidance of the child and that this constitutes "a case of mutual feedback where each participant in a dynamic system guides and influences the other" (p. 18).

### Quality of interaction with adults.

White (1969) conducted an investigation into the characteristics of mothers whose children had highly developed language skills. They were found to educate their children constantly but in a play manner.

They did a lot of talking to the child. Pushaw (1971) called it "self-talk". It was as if the mother were describing everything she did or what the child was doing. She gave language to the concept that she thought was occupying the child's attention. She took an idea, elaborated on it and added bits of relevant information. Nelson (1973) also suggested that the parents' matching of the child's ideas and actions with language was of central importance to language development. Bernstein, Henderson and Brandis (1972) identified specified maternal behaviors that correlate with cognitive and linguistic development. How the mother responded to the child's conversation and questions, and how she controlled her child and explained her own actions were found to be relevant. Hess and Shipman (1965) concluded from their research that the mother's linguistic and teaching behavior is the most powerful influence upon the child's early learning.

#### Affective relationships.

A major emphasis has been on the key role of the mother-child relationship in language development. Much of this emphasis has come from psychoanalytic thinking. Institutionalized children who lack "mothering" are often retarded in language development (Yarrow, 1964). According to Ainsworth (1962), there is disagreement about whether the deprivation associated with institutional care is "attributable to the absence of a mother figure or to environmental deprivation contingent upon a relatively low level of stimulation in the institutional setting" (p. 103). Casler (1961) maintained that the deficits can best be explained in terms of "perceptual deprivation" (p. 42). However, Ainsworth insisted there was ample evidence that for children from six



months to three years,

the most significant aspect of deprivation in the ordinary institution is the lack of opportunity to form an attachment to a mother figure .... 'Perceptual deprivation' seems equivalent to insufficiency of maternal care. In the case of the child over two, efforts to enrich the institutional environment by providing nursery-school experience seem to be less effective in stemming retardation of development than efforts to facilitate the attachment of the child to a substitute mother. In short, the deprivation offered by the institution chiefly stems from insufficiency of intimate interpersonal interaction. (p. 156)

McCarthy (1966) placed much emphasis upon the affective relationship.

She stated that there seems to be,

a gradient of normal language development related to the amount and kind of contact with the mother. Only children and especially only girls, who have the most intensive and prolonged contact with the mother, are the most advanced in language learning. (p. 324)

Referring to the language retardation found in children who have undergone prolonged separation from the mother, McCarthy further maintained:

These are the children who have no opportunity to identify with the mother or a mother substitute, so that the identification with the person who normally serves as the language model, and who mediates the structure of the mother tongue to the child, cannot occur. (p. 324)

Nurture, then plays a part in the stimulation of language, although it might be difficult to isolate it from other factors in the mother-child interaction. Ieler (1970) found that the most powerful home variables associated with children's language performance were the mother's acceptance of the child, her use of praise and her rewarding of his independence.

Thus, the mother-child interaction and relationship can supply a number of the factors related to language development: affective

relationship, mature speech model provided by the mother, variety in words and patterns, quantity of language stimulation, and response to the child in reinforcement and feedback. This investigator concluded that the affective relationship and the verbal interaction between mother and child were crucial factors in language development. Such a conclusion is supported and made more obvious if the two extremes are contrasted; the accepting, affectionate mother who talks to her child and responds to his verbalizations, and the rejecting mother who ignores her child's verbal efforts or commands him to "shut up". As the child's remarks are ignored or silenced, thus non-reinforced or at least not reinforced positively, he makes fewer verbalizations and the interaction decreases further.

It was seen by the researcher as essential that programs intended to improve young children's language skills should not only involve parents, and in particular mothers, but should also take into account in their design those factors outlined above which have been found to differentially affect the quality of the child's language development.

### Language and Socioeconomic Status

#### Relationship Between Socioeconomic Status and Language

With no known exceptions to the researcher, studies of children between the ages of three and five years from lower socioeconomic status families have shown them to be retarded in intellectual abilities. This retardation is not always severe but it exists when these children are compared to average children. The differences are largest



in those abilities most relevant to school success, especially language abilities.

Nearly 50 years ago, McCarthy (1930) in her pioneer study, found a significant relationship between socioeconomic status and language development. Later studies gave further support. Upon reviewing the literature in 1954, McCarthy stated, "There is considerable evidence in the literature to indicate that there exists a marked relationship between the socioeconomic status of the family and the child's linguistic development" (p. 586). Several studies over the years have indicated that children of LSES show a retardation in relation to various aspects of language development in comparison with children of higher socioeconomic status (Day, 1932; Davis, 1937; Milner, 1951; Templin, 1957; Riessman, 1962; Deutsch, 1965; Hess & Shipman, 1965; Freeberg & Payne, 1967; Klaus & Gray, 1968). Among those who have said that language is one of the principal areas of retardation in socially disadvantaged children are Bernstein (1961) and Whiteman, Brown & Deutsch (1967).

Of course, not all children from lower-class homes have language problems. Levenstein (1970) cautioned:

On the basis of observation of some extremely disorganized low-income families, educators may be too ready to assume that all low-income families lack the capacity to provide the elements essential to very young children's learning. (p. 427)

Group designations (such as social class) should be regarded only as gross preliminary classifications that are useful in research on language and education. They should not be employed to prescribe identical language programs for every individual who falls into a given social group. Further, Moore (1971) stated that,

only a small subset of the total set of language differences observed between individuals and between

groups puts certain individuals or groups at an educational disadvantage. (p. 4)

### Language Characteristics Associated with Lower Socioeconomic Status

All children disadvantaged by social and economic situations do not show the same developmental characteristics. However, language deficiencies have been found in samples from several different ethnic and sociological groups which have been studied by different researchers. Studies of various groups of children have led to descriptions of their language. Bernstein (1961) found that the language patterns among working-class youth in England were characterized by: short, grammatically simple, often unfinished sentences with poor syntactical form; simple and repetitive use of conjunctions; little use of subordinate clauses; rigid and limited use of adjectives and adverbs; and infrequent use of impersonal pronouns. In contrast, middle-class language was more complex and accurate in syntax, and both the frequency and range of various parts of speech were greater. Comparison of speech samples of adolescent boys from different social classes in group discussions of capital punishment revealed that middle-class speakers used more passives, more complex verbs, and a greater proportion of subordinate clauses (Bernstein, 1962).

In a replication of Bernstein's study, Lawton (1964) found that middle-class children used significantly more passives, more subordinate clauses in general, more adjective clauses, and more complex verbs, while lower-class children used fewer uncommon adjectives and adverbs (as judged by word-frequency counts).

Loban (1963) interviewed children each year from first through sixth grade. In these interviews which dealt partially with past



experiences, he found that middle-class children used phrases and clauses that were structurally more complex than those of lower-class children, and they used more infinitive and more complex noun phrases as subjects of sentences.

Krauss and Rotter (1968) employed an experimental situation in which social class differences consistent with the work of Bernstein, Lawton and Loban were observed. In a communication task in which two subjects were separated by a screen, one was asked to communicate to the other the order in which blocks inscribed with nonsense forms should be put on a peg. Six-year-old lower-class speakers did poorest on the task as senders and receivers, even when they were listening to members of their own social class. Heider (1968) completed further work on the nature of language used in this situation. Lower-class children used metaphorical descriptions to communicate information ("It's like a boat"). In contrast, the more successful middle-class children used an analytic style, describing specific details of the stimulus ("It has a little opening at the top and there are sharp points on both sides").

Studies by Silverman, cited in Bloom, Davis and Hess (1965), indicated that socially disadvantaged children tend to have a limited vocabulary range, restricted language usage with much communication through gestures and other nonverbal means, and restricted and non-standard grammatical form. Deutsch (1963) found signs of impoverishment in the language of the culturally deprived, mainly in its formal, abstract, and syntactical aspects. Deutsch and Brown (1964) reported a lower vocabulary range among the lower socioeconomic samples in groups they studied in New York. John and Goldstein (1964) tested the com-

prehension vocabulary of lower and middle-class children and found that 6-year-old lower-class children were inferior to middle-class children in defining words describing common actions such as "digging". Lesser, Fifer and Clark (1965) found receptive vocabulary differences for first-grade children from different social classes and ethnic groups on a word-meaning test which employed only referents prominent in their urban environment.

Hawkins (1969) collected speech samples from lower- and middle-class children in structured situations described as "narrative", "descriptive" and "instructive". He found that middle-class children employed nouns more than pronouns in these situations and also that they used a greater number of pronouns which had specific noun referents preceding them ("They kicked the ball and it broke the window"). The difference is important:

Firstly, because it enables the middle-class child to elaborate—he can talk about "three big boys" but he cannot talk about "three big they" and secondly, and more important, the middle-class child can be understood outside the immediate context, without reference to the here and now. (Hawkins, 1969, p. 130)

The findings of Hawkins with respect to differences in the use of pronouns between social class groups were replicated by Tough (1969) in a study of 3-year-olds from middle-and lower-class backgrounds based on father's occupation. In a speech sample collected while the child was playing and engaging in conversation with peers, Tough observed differences in pronoun use, in noun phrase complexity, in verb phrase complexity, in mean sentence length, and in use of subordinate clauses. She also found that the relative frequency with which the children talked about particular aspects of their environment was different.



The "less-favored" children gave nearly three times as many instructions to their peers; the favored children talked about qualitative attributes, relationships such as causation, the function or purpose of an object, and things recalled from the past or anticipated in the future from two to seven times as often.

All of the children's items of representation (of which the above list is a part) were rated as to whether they required the presence of the concrete situation for effective communication. This "concrete component" constituted 20.9 percent of the representations of the favored children and 34.5 percent of the representations of the less favored children. The most frequent forms of the "concrete component" were pronouns whose only reference was to something pointed at in the environment. Such "exophoric" reference was contrasted with "anaphoric" reference, where pronouns refer to an antecedent previously supplied in words. The percentage of anaphoric references (which would communicate without the concrete context) was 22.8 percent for the favored children and only 7.7 percent for the less favored children. These differences were found among children who were in the same range of scores on the Stanford-Binet. This means that children of equivalent intellectual ability are not equally disposed to use language in particular ways.

Hess (1971) reported that lower-class black children have difficulty in coping with representation in the form of the nonpresent or the inferential or representation of reality. The lower-class child rarely used words to refer to inner feelings or inner thoughts. When given three dolls and asked to tell a story about them, the stories of lower-class children were primarily statements of immediate actions

and interactions with little reference to the past or future. Thus, one of the skills which lower-class children most need to practice is communicating ideas explicitly without dependence on gestures or concrete referents.

Imitation and comprehension of fairly complex syntactic structures were employed by Osser, Wang and Zaid (1969) in comparing 5-year-old lower-class Negro and middle-class white children. Osser found that the lower-class Negro children made significantly more errors on the comprehension task. He also found that they made significantly more errors on the key grammatical structures on the imitation task, even when the responses on this task were corrected for dialect differences. Osser concluded that his results "suggest that the Negro lower-class group's control over some common syntactic structures in standard English is markedly inferior to that of whites" (p. 1073). Recent investigations by Jones (1972) have shown that the language code of LSES Newfoundland children is markedly restricted, that is, it is rigid in its syntactical expression and tends to lack descriptive modifiers.

#### Characteristics of a Lower Socioeconomic Environment and Their Effect on Language Development

Several investigators have tried to determine what is lacking in the situation of many socially disadvantaged children to cause such inadequacies. Deutsch has been among those who have pointed to the family environment and interaction. Family interaction data gathered by Deutsch (1965) indicated that there is a dearth of organized family activities in a large number of lower-class homes as compared with middle-class homes. "As a result, there is less conversation, for



example, at meals, as meals are less likely to be regularly scheduled family affairs" (p. 80).

Milner (1951) attempted to determine the family variables that were related to high and low language scores on the California Test of Mental Maturity. She found that those who scored high had participated more in family conversation and had received more demonstrations of affection and less harsh physical punishment. Lower-class families were found to be less verbal than upper-class families, with fewer books, less reading to the children and less verbal interaction with the parents. Maas (1951) reported that lower-class parents were often inaccessible to the communications of their children. Walters, Connor and Zurich (1964) found fewer interactions between lower-class mothers and their children than between middle-class mothers and their children.

Studies of a number of different groups have indicated that lower-class children typically spend less time in direct interaction with their parents than do higher-class children, and when they speak they do not receive as much corrective feedback (Bloom, Davis & Hess, 1965). Raph (1965) concluded in her summary of studies that the process of language acquisition for children from lower socioeconomic levels, in comparison with children from higher socioeconomic levels was,

more subject (a) to a lack of vocal stimulation during infancy, (b) to a paucity of experiences in conversations with more verbally mature adults, (c) to severe limitations in the opportunities to develop mature cognitive behavior, and (d) to the types of emotional encounters which result in the restricting of the children's conceptual and verbal skills. (p. 396)

This points to the importance of the mother's role in language development. Wach, Uzgiris and Hunt (1971) and White (1972) supported the

concept that what parents do in the early years of behaving as broadly defined teachers of their children is critical to language development. Hess and Shipman (1965) found a lack of cognitive meaning in lower-class mother-child interactions and less availability of choice in the child's exploration of his surroundings. Freeberg and Payne (1967) have indicated that the amount of verbalization and styles of parent-child communication favor the middle-class child; ample reading material is provided, questions are encouraged and answered in detail, the child is challenged to reason and think independently and to communicate his experiences.

A number of authors have suggested that lower and middle-class home environments differ dramatically with respect to their verbal responsiveness (Ausubel, 1967; Jensen, 1968; Whiteman & Deutsch, 1968). In the lower-class family, the frequent presence of a large number of siblings may have a variety of effects on the development of language competence (Jensen, 1968). The mother is likely to have much less time for verbal interaction with any given child. This might delay the acquisition of language and speech by reducing the richness and variety of linguistic stimulation available to the child. In addition, the language models, or the linguistic stimulation, provided by siblings are unlikely to be of such an extent and variety that the induction of latent structure is facilitated (Brown, 1968).

LSES children may be reared in crowded quarters where loud voices and the blare of television or radio might habituate their orientating responses to human vocalization and thereby help to produce that inattention to human vocalization reported by Deutsch (1965). When parents of LSES are communicating with their children, they



typically verbalize in telegraphic sequences substantially shorter than those of middle-class parents (Deutsch, 1965). Parents of LSES tend to respond to crying by touching or holding instead of giving the vocal reassurance more typical of parents of the middle class (Yarrow, Rubenstein & Pedersen, 1971). The conversation in the LSES home tends to be more concerned with what is present in limited space and known to all. The LSES child is less frequently called upon to abstract, to learn the names for such aspects of objects as their color, their shape, their size and position in relation to other objects, to give causal explanations, and to form conceptions of such things as space and time.

Bernstein has argued that in her verbal communication with the child, the lower-class mother tends to be "status" rather than "person" oriented. Thus, she is likely to regard her child's requests for information (especially if she is pressed) as a challenge to her status. The middle-class mother, in contrast, is more oriented to the personal development of her child's intellect; thus she sees the child's questions not as challenges to her status but as requests for information that will further his intellectual development (Bernstein, 1967). The effect of negative reactions on the child's verbal questions will not only retard his intellectual development, ("shut up" is less informative than "the glass is made of plastic so it won't break"), but will also depress the child's general use of language. Middle-class parents also say "shut up" but they typically explain why they have told the child to be quiet.

These findings which relate language development to socio-economic status strongly imply that attention must be directed to trying to improve the language skills of children of LSES. Further, since

the home environment and especially parent-child interaction exert so much influence upon language development, any plans and schemes to improve the language skills of these children should involve the home and the parents.

### Language and Learning

Children from lower-class homes do not in general score as well as children from higher-class homes in many areas of ability susceptible to objective assessment. It is possible to gear intervention programs to any one of these areas of ability, and indeed programs have been directed to many of them. Many children from lower socioeconomic strata have problems in language skills and since so much of the school curriculum involves the use of language, the prime necessity for directing remedial efforts towards skills in this area has been recognized.

Bereiter and Engelmann (1966), Bernstein (1962), and Taylor and Skanes (1975, 1976) have pointed to the significance of language facility in educational achievement. The child who is retarded in language development is at a clear disadvantage in the present school system. However, the particular aspects of the lower-class child's language which affect school achievement are still a matter of study. It is generally agreed that the disadvantaged child has a smaller vocabulary than his middle-class peer. Lavatelli (1971) reported that when the LSES child is asked to follow directions, participate in discussion, compare two objects or events and make discriminations between them, classify or draw inferences, he is often at a loss to do



so. An additional handicap of the average lower-class child is his relative lack of ability to use a precise language of description, especially in situations where:

- (a) speakers cannot rely on previously shared information;
- (b) the speaker must specifically describe referents which are not perceptually present or about which the listener lacks information;
- (c) the bulk of the communication load falls on the language code itself as opposed to such extra-linguistic activities as gesturing (Moore, 1971).

Lillie (1975) stated that the child who cannot clearly communicate his needs or understand the needs of others will find it very difficult to cope with academic tasks. He proposed that language development should receive a great deal of emphasis in early childhood education with focus upon both the receptive and expressive aspects.

Studies of the consequences of language and cognitive delay for reading development have been correlational but not causal. The verbal fluency hypothesis summarized by Whiteman et al. (1967) states that researchers and theorists tend to agree on the need for a rich and varied language experience as an essential condition for successful reading.

Bernstein (1960) and Loban (1963) have pointed out that spoken language among the lower-class is less like written language syntactically, and in overall sequential organization and logical progression, than is the case among the middle-class. Consequently, there should be relatively less positive transfer from lower-class verbal experience to the formal language books. Cohen (1964) suggested that the cause of some of the frequent reading problems among children of LSES was

that they,

have trouble moving from the visual symbol (printed word) to the oral-aural symbol (spoken or heard word) to the experience. Even when they break the code and move from the visual to the oral-aural, they cannot reach final closure to the experience. The word is meaningless because the original experience is lacking. (P. 6)

In a longitudinal study, Loban (1963) found that children who had the largest vocabulary and the highest achievement in kindergarten continued to exceed other children in reading achievement as they progressed through grades one through six. Those who were high in language ability were also high in reading skill; those who were low in language ability were also low in reading skill.

Language is also crucial in concept formation, in problem-solving, in relating to the environment, and in making interpretations. Taylor, Nurcombe and de Lacey stated:

Language is not only an academic problem. It is a central issue as, without a flexible syntax and an adequate vocabulary, the speaker is limited in his choice of action. (p. 2)

It has been shown that language becomes an important intellectual process in concept formation (Francis-Williams, 1970) and as a directive-integrative function (Luria, 1961). Children who have delayed language development may also be delayed in the intellectual use of language, so delaying the aspects of further intellectual development which depend on this. In the absence of an adequate language, concept formation and operational thinking cannot develop (Inhelder & Sinclair, 1969).

Finally, in addition to the cognitive and academic problems that may befall the child whose language development is inadequate, Cooper, Moodley and Reynell (1974) pointed out that social and emotional



problems may result from his inability to cope with the school environment as well as his peers.

Since language has been shown to play such a central role in learning, this research project has focused the intervention program on language. Gulliksen (1950) made the distinction between intrinsic and extrinsic correlates of success in education and pointed out that a primary concern is to help children hold their own in an academic situation. He believed it necessary for educators to focus attention upon those specific characteristics and deficits that are intrinsically related to academic achievement, and language has proved to be one of these intrinsically related skills.

#### Age of Intervention

Some educators have long acknowledged the importance of the experiences of children in their early years. Proponents of the principle of early education include Comenius, Pestalozzi, Froebel and Montessori. It has now been well established that the early years in a child's life are crucial with respect to his later intellectual and emotional development.

The two long-entrenched assumptions of fixed intelligence at birth and the predetermined unfolding of cognitive abilities have come under attack by a number of investigators. Hunt (1961, 1964a, 1964b) has presented extensive evidence from both animal and human studies which document the influence of early experience on cognitive growth. He also affirms that there are critical periods in a child's development in which certain stimuli must be present if the child is to develop

his potential. The preschool years, he feels, constitute the most important of these critical years with respect to cognitive development.

Bloom (1964), on the basis of his exhaustive review of longitudinal studies, estimated that as much as 50 percent of intellectual development (as measured by I.Q. at age seventeen) takes place between conception and age four, with 30 percent being attributable to the years between four and eight and the remaining 20 percent to the period from age eight to seventeen. These findings suggest that earlier influences upon the child are more potent than later ones.

Deutsch and associates (1967) supported the need for early intervention when they pointed to what they termed the "cumulative deficit" shown by black and lower-class children in data from their study. These children showed a progressive decline in I.Q. and in some verbal scores as they became older. It has been found that the disadvantaged child does not make significant gains in ability once he enters school; he only falls further behind the advantaged child. Small deficiencies at an early age lead to inferior learning which in turn increases the magnitude of deficiency, and "cumulative deficit" is the resulting phenomenon.

Ausubel (1967) assigned great importance to the timing of initial intervention. He suggested that early deprivation significantly limits the extent to which later environmental stimulation can increase the rate of cognitive growth. He, too, believed that in the absence of early remedial action, a deficit will increase cumulatively over time and "lead to permanent retardation" (p. 309).



Hebb (1949) discussed the role of experience in mediating neural connections and in the formation of cell assemblies. That later learning is dependent on earlier learning has also been demonstrated by Krech, Rosenzweig, and Bennett (1962). They found differences in learning ability and chemical and neurophysiological changes favoring rats raised in enriched environments over those raised in impoverished environments. Further, research has demonstrated that the differences in mental growth between children of upper and lower SES groups are to a large extent the result of differential early stimulation and experience (Hunt, 1961; Lesser et al., 1965). Although most researchers have clearly advocated a program of intervention during the early years of life, the precise age for the most effective intervention has not been determined.

Some researchers felt that intervention should begin well before the age of three; others felt that the target group should comprise children aged three to five years old; still others believed that intervention should be directed toward children during the year prior to their entry into the public school kindergarten.

White (in Silverstone, 1970) stated that basic learning patterns are set early in life, well before the age of three. Before the child is old enough for most preschool programs, he has completed that period of his development when he is most affected by learning experience. White further maintained that after the child reaches the age of three, it becomes increasingly difficult to bring about a change in his level of competence. Other researchers have supported this view and have established parent training programs for infants and children under three years of age (Gordon, 1969; Schaefer in Silverstone, 1960; Weikart in Stanley, 1972; White, 1973, 1975).

Project Headstart was a program that received much emphasis and dealt with large numbers of children in an older age range--three to five-year-olds. The aim of the project was to break the poverty cycle through educating both parents and preschool children. It tried to give "disadvantaged" children an academic boost before they reached school (Research Triangle Institute, 1972).

Several educators have selected the age of four as the time to intervene (Gray in Gordon, 1970; Bereiter & Engelmann in Stanley, 1972; Karnes in Stanley, 1972). Others have felt that four years old was too late to begin intervention in the case of disadvantaged children (Educational Research Services, Inc., 1976).

Though the optimal age for intervention to occur has not been clearly established, it is evident that most authorities agree it should commence in the preschool years. In spite of these findings, this researcher on a pragmatic basis elected to conduct his intervention program with children who were no longer of preschool age, but who were entering the first semester of kindergarten. Provision of preschool intervention programs with children of LSES is grossly inadequate in the province of Newfoundland. Funding is not available to hire staff to organize and carry out the programs. In the absence of other agencies to take responsibility for intervention, the public schools might assume this role. However, initiating and maintaining contact with preschool-age children and parents would be difficult for the schools. If the schools directed a program to their kindergarten children, contact with the population involved would be facilitated. In light of this, the researcher decided to carry out the study with kindergarten-age children, anticipating that the results would be of interest and value to schools



in Newfoundland and elsewhere who were prepared to take the initiative and implement intervention programs with children of LSES. Another reason for conducting this study with children of kindergarten-age is that very little research has been conducted into programs using parents to help develop their children's language skills and there is no evidence to suggest that a home-based language intervention program at this age cannot be in some measure successful.

### Intervention Programs

#### Overview of Intervention Programs

Until the 1960's and early 1970's, the child-centered philosophies of Froebel, Pestalozzi, and Dewey had influenced nursery school and kindergarten programs for more than two generations. Emphasis was placed on providing a nurturing environment which facilitated the child's development. Instead of structured rote learning, socialization and self-expression were emphasized (Hoepfner, Stern & Nummedal, 1971). In the 1960's traditional programs were re-examined by a growing number of researchers who felt that cognitive development deserved greater emphasis at an early age if the child was to succeed in school (Leeper, Dales, Skipper & Witherspoon, 1974).

Early childhood education was further changed in the 1960's by findings of psychologists concerning the importance of the early years on intellectual development (National School Public Relations Association, 1973). Contributing to these changes was Piaget's work on cognitive processes. Other notable works influencing researchers to direct their attention to the early years of development were Hunt's

Intelligence and Experience (1961) and Bloom's Stability and Change in Human Characteristics (1964). Hunt contended that change in the intellectual structures is most rapid during the early years and that the effects of environmental encounters during the early years are most potent. Bloom supported this, basing his summary on more than a thousand research studies. It became evident to educators that the early years were crucial to the child's development.

Because the academic achievement of children from poor homes was found to be consistently low and because it was felt that schools alone were not able to meet the needs of a large segment of the population, additional educational services began to be provided in some places at an early age, usually for the preschool child, in an attempt to compensate for what was often termed his "disadvantaged" background. It was in this context that the first well-designed experimental programs of preschool intervention were instituted by Samuel A. Kirk, Susan W. Gray and David P. Weikart in the United States. They produced dramatic initial gains of up to fifteen or more I.Q. points in the space of a few months. These experiments were followed almost immediately by the widespread adoption of preschool programs at the State and Federal level in the United States. The most notable, Headstart, was launched in 1965 and was momentous in developing an awareness of the need for intervention with poor children between three and five years of age.

Since then many different types of preschool intervention programs have been implemented both in the United States and elsewhere. At first, most took place in a center-based group setting where numbers of children gathered each day to work with teachers. Research conducted into the results of preschool center-based intervention programs showed



that, in most cases, children manifested substantial gains in I.Q. and other cognitive measures during the first year of the program, attaining or even exceeding the average for their age (Bronfenbrenner, 1974).

However, by the first or second year after completion of the program, sometimes while it was still in operation, the children began to exhibit a progressive decline, and by the third or fourth year of follow-up had fallen back in I.Q. scores. The period of sharpest decline occurred after the child's entry into regular school. It has been suggested that this decline may be offset by the continuation of intervention programs, including strong parent involvement, into the early grades.

Results from a number of studies have pointed to factors in and around the home as critical to the child's capacity to profit from group programs both in preschool and the elementary grades. For example, several researchers revealed that the greatest loss in cognitive performance of disadvantaged children took place not while they were in school but over the summer months. More than a decade ago, Bloom, Davis and Hess (1965) analyzed various studies involving enriched preschool programs for socially disadvantaged children such as those of Deutsch (1962) in New York, and Weikart, Kamii, and Radin (1964) in Michigan. Following their analysis, they recommended that every effort be made to involve parents in these programs. Other investigators have recommended parent participation and education but until recently it has been minimal, non-existent, or inadequately planned in many programs. Fortunately, in the seventies there has been a trend away from research into center-based group programs for children and a move towards experiments with programs involving both children and parents and often situated in the home.

One type of program was the home-based tutoring program which involved a trained person visiting the home to teach individual children. Results were similar to those for preschool programs in group settings. Children showed dramatic gains while the project was in operation but began to decline when the home-visits were discontinued. Essentially, nothing in the home had been permanently altered. Klaus and Gray (1968) pointed out that if gains were to be maintained over the years, changes had to be made in the home conditions of the child or the situation which created the original deficit would continue to take its toll. In 1968 they utilized visitors who actively engaged parents in the education of their own children as a supplement to a preschool program and they found significant differences in mental test scores between the control and experimental groups of disadvantaged children.

In 1970, Gray contrasted a center-based preschool program with a program that taught mothers how to foster the development of their children. The home program showed equal effectiveness at far lower cost. Weikart and Lambie (1969) utilized trained educators to teach parents how to support the child's education in conjunction with half-day preschool programs. The results showed mean I.Q. gains of up to thirty points in low I.Q. disadvantaged children.

Levenstein (1970) conceptualized books and toys as "Verbal Interaction Stimulus Materials", and utilized home visitors called toy demonstrators who took carefully selected materials to the mothers. The mothers used the materials under the supervision of the demonstrator who then left them in the home until the subsequent visit. Over a seven-month period the two and three-year-old subjects showed a mean I.Q. gain of approximately seventeen points from an I.Q. of 85 to 102. In



this experiment the home visitors were paraprofessionals.

Karnes et al. (1970) worked with small groups of mothers of infants in the first and second years of life on child-centered educational activities and materials. They concluded that the results of the study suggested that a program of mother training could do much to prevent the inadequate cognitive and linguistic development characteristic of the disadvantaged child.

Karnes, Studley, Wright, and Hodgins (1968) instituted a 12-week program in which mothers attended weekly two-hour meetings and professional staff visited the homes to observe the mother teaching the child. The experimental groups gained 8.6 months in total language age on the I.T.P.A. while the control group gained only 4.3 months during the three-month period.

Research projects have relied upon a variety of staffing patterns though few attempts have been made to evaluate these differences. Karnes et al. (1970), however, conducted a comparison of the progress made by 4-year-old children taught by professional staff or paraprofessionals. They reported that using paraprofessionals as opposed to professionals as home interveners did not result in a loss of effectiveness as measured by I.Q. and achievement tests. Levenstein (1971) conducted his experiment twice, using paraprofessional and professional toy demonstrators to teach infant mothers effective techniques for teaching her child. The two groups produced comparable I.Q. gains. It can be speculated that the congruency of the results may have been due to the social distance of the professional, rather than the presence of any special skills by the paraprofessional. Karnes and Zehrbach (1972) criticized the lack of success of some parent programs

as being due to the "expert" attitude of the professional intervener. These results make it possible to conclude with some confidence that programs developed by professional staff can be delivered by a paraprofessional worker, under supervision, without loss of program effectiveness.

Most of the home intervention programs have been conducted with the preschool child and operated by personnel who have had no direct connection with public school programming. Karnes and Teska (1975) pointed out that little attention has been paid to the careful coordination of intervention programs and school experiences. One method of facilitating this is for the public schools to assume responsibility for organizing programs. They can then ensure that school and home experiences are correlated and mutually supportive and reinforcing.

Although this overview suggests that the most successful delivery system for intervention programs is home-based mother training, there are limitations to the research findings. The precise nature of what has taken place in the home to effect changes in the child is difficult to ascertain, and so it is almost impossible to replicate such studies exactly, or to use the methods outlined with the same assurance of success. Nevertheless, this has not discouraged the expansion and further implementation of parent-centered home-intervention programs.

#### Nature of Intervention Programs

A strategy used by many intervention programs was found to be provision for the disadvantaged child of those experiences believed to contribute to the advantaged child's superiority of learning. Typical



programs took the children on trips to parks and provided them with toys and painting materials they would not experience at home. The types of curricula offered to these children were very similar to those offered by traditional nursery schools for the middle-class. Such programs did not prove to be very successful in achieving their aim of "catching the child up" to his middle-class peers. Jensen (1969) suggested that the reason for the failure was that while the disadvantaged child was gaining through the experiences which the privileged child had already gone through, the privileged child was also going through new experiences. In other words, the privileged child was not standing still but was experiencing new situations and learning new skills.

It was therefore seen as vital that the designers of intervention programs focused on activities that produced maximal learning in a short time and that the objectives of the programs were limited to those experiences that were linked to and would promote school success.

In 1965 the Task Force of the National Council of Teachers of English in the United States recommended that the development of skill in language and concept development be the overriding concern of pre-schools for disadvantaged children and that emphasis on all other objectives be reduced accordingly (N.C.T.E., 1965). A survey of descriptions of intervention programs clearly indicated that language skills and cognitive skills are major components of most programs (Gordon, 1969; Bereiter-Engelmann in Stanley, 1972). Typical examples of the new trend in preschool curricula were noted in Weikart's Perry Preschool Project (Stanley, 1972) and the Bereiter-Engelmann Project (Stanley, 1972). While the approaches varied from a Piagetian developmental approach to a structured task-analysis approach, both curricula

leaned heavily on language and cognitive areas. Lillie, in 1975, on the basis of the research findings of the previous decade, drew up a curriculum for teachers of preschool children which was divided into four areas: perceptual development, development of reasoning processes, receptive language development and expressive language development. Cedoline (1972) suggested a curriculum which would develop visual and auditory perceptual skills and cognitive skills such as classifying, analyzing, judging and assessing. In the language area, Cedoline's major objective was to teach the children to speak clearly and make themselves understood to others.

Those programs which utilized a structured curriculum plan aimed at developing language skills and cognitive abilities (conceptual, linguistic, and numerical) have appeared to be substantially more successful than those utilizing the traditional, more unstructured curricula of the nursery schools (Hunt, 1969; Karnes, Teska & Hodgins, 1969). It was found that the traditional nursery preschool was not likely to foster the specific language skills or cognitive skills which the lower-class child needed most to master. The more unstructured programs have typically placed greater stress on social and affective objectives and yet Karnes, Zehrbach and Teska (1974) posited that there were indications that the children in the structured programs also gained on social and affective objectives, contrary to the thinking of some critics of these programs.

Concerning the fostering of language development in young disadvantaged children, the best method of doing so is still a matter of study. Some programs have adopted the "English as a second language" approach, a position which assumes that whatever the child has by way



of language is too poor to be built upon and so English must be taught as if it were a second language. The remedy according to this school of thought is to program the child's mind with certain sentence patterns which will enable him to express ideas. These language patterns are taught to children in a highly repetitive fashion. The Bereiter-Engelmann model is perhaps the best known example of the second language approach.

An alternative approach involves the systematizing of the natural method of language learning. The program planners who advocated this natural method argued that the normal child has a biological capacity for language of which he can avail himself if the environment provides stimulation and opportunity. An impoverished environment may result in a deficit in language production but not in language capacity. The deficit can be overcome in part by sufficient exposure to well-formed English sentences addressed to the child and to which he must make a response. The sentences provide the raw material which the child can process to find relations in sentences and the rules for forming them. This method has been found to be more difficult to implement than the Bereiter-Engelmann approach because it involves more one-to-one interaction and hence more adult time per child is needed. It seems, however, to be a more pleasurable and humane way of learning than by "pattern drill". The type of intervention program which is not center-based but which involves parents in teaching their own children at home seems to be highly appropriate for implementation of the second approach outlined above because the parent-child dyad facilitates the necessary one-to-one interaction.

M.B. Karnes produced a program in the early seventies which was intended for use in center-based preschool programs for disadvantaged

children. It was called Game Oriented Activities for Learning (GOAL) (Karnes, 1972) and was designed primarily to develop the basic language procesess (based upon the I.T.P.A. model) though it also taught specific content in the areas of mathematics, language arts, social studies and science. The GOAL program was a forerunner of the Learning Language at Home kit published by Karnes in 1977. The latter was based upon the same I.T.P.A. model but focused only on language activities and was directed towards parents who would teach their own children in the home, rather than toward a center-based group.

Karnes et al. (1969) published the results of an extensive comparative study of intervention programs with disadvantaged children using both short-term and longitudinal data from five programs. The first was a traditional nursery school program for disadvantaged children; the second was the GOAL program by Karnes; the third was the Bereiter-Engelmann program in language, reading and arithmetic; the fourth was the Montessori program; the fifth was a Community Integrated Program where, in a traditional nursery school program, small numbers of disadvantaged children were mixed in with a larger group of middle-class children. After the first year (preschool), the Karnes and Bereiter-Engelmann programs had clearly achieved gains superior to those of the other three groups. In language development, as measured by the I.T.P.A., the Karnes group gained six months more than the program interval, and the Bereiter-Engelmann and traditional groups gained four months more than the program interval. This difference was maintained in the second year (kindergarten). Follow-up data collected at the end of the first year after the program had ceased (first grade) showed a regression in I.T.P.A. scores with the Bereiter-Engelmann program showing



more loss than the Karnes program. However, on the achievement test results of the California Achievement Test in reading, the scores were more encouraging. The Karnes and Bereiter-Engelmann groups scored higher than the other groups--approximately five months above the grade level. At the end of the next year (second grade), the children in the Karnes and Bereiter-Engelmann groups still had higher reading achievement scores on the California Achievement Test. At the end of the following year (third grade), the situation had changed somewhat. The Karnes group was reading at grade level but the Bereiter-Engelmann group was achieving scores about two months below grade level.

Thus, the study showed that the Karnes and Bereiter-Engelmann groups were superior to the others at the end of first and second grades in reading achievement and the Karnes group was superior to all the groups in reading achievement at the end of third grade. The Karnes' GOAL program was fairly highly structured though it did not involve teaching through the pattern drill method favored by Bereiter-Engelmann. The Learning Language at Home kit (Karnes, 1977) used in this study was also quite highly structured in that a series of lessons were provided of increasing difficulty, detailing exactly what parents were to say and do with their children.

#### Parents as Educators

Although home-based parent-focused intervention programs have been lauded by many as the best type for young children of disadvantaged families, they do have some limitations. A comparison of their advantages and limitations was undertaken to highlight the advantages

and draw attention to those limitations which have to be taken into account in the design of programs.

#### Advantages of Home-Based Programs Involving Parents

The concept of parental involvement, as it relates to early education of young children, is not a new phenomenon. Before the introduction of institutionalized education, parents and tutors initiated learning experiences designed to equip young children with cognitive, social, emotional, and physical skills needed to cope with an ever-changing world. As the institutional setting for children's education--the school--evolved, less and less dependence was placed by educators on parental input. Over the years, unless a concerted effort was made to sustain parental influence in educational decision-making, parents tended to fade from the scene as educators assumed more and more responsibility for the education of children.

Educators are now recognizing the need to involve parents once more because of the vital part they play in their children's development. The cognitive and affective development of a child begins with his parents in his own home. Their influence is irrefutable. Even the most advanced compensatory program or the most culturally enriching program cannot negate or reverse the ultimate influence of a parent on his child. Parents play a primary role in the development of emotional attitudes, physical growth, and the formation of language skills. Parents stimulate a child's early awareness of, and interest in, all aspects of learning.

Much research has been done to determine the relationship of environmental factors and learning. In a report on the Equality of



Educational Opportunity, Coleman (1966) concluded that the effects of school staff and facilities on achievement are not so great as the effects of family background. The implication of this finding according to Krus and Rubin (1974) is that achievement can best be attained by improving the child's total environment--school and home.

In the area of intellectual and language development, relatively stable differences in mean mental test scores between socioeconomic groups have been observed to emerge in the second and third year of life (Hindley, 1965). This may be interpreted as evidence of the steady and continuing influence of parents and home environment. Klaus and Gray, cited in Schaefer (1972), have stated that,

the evidence is overwhelming in indicating that ... performance results from the continual interaction of the organism with its environment. Intervention programs, well conceived and executed, may be expected to make some relatively lasting changes. Such programs, however, cannot be expected to carry the whole burden of providing adequate schooling for children from deprived circumstances; they can provide only a basis for future progress in schools and homes that can build upon that early intervention. (p. 236)

Hess, Shipman, Brophy, and Bear (1969) found that the mother plays a vital role in the early years as the child's socializing agent. Later in life the outside environment exerts a more direct influence upon the child, but when young, the child takes his cues from his mother. The mother's behavior reflects her own ability to deal with the problems of his environment. Her attitude toward school is often transmitted to the child and this may impinge on his success in school. Kagan (1969) found that the child's experiences with his mother during the first 24 months of life are major determinants of the quality of his motivation, his likelihood of success and his cognitive abilities during the school

years. The idea of home intervention programs is not new. Gordon (1972) related that as early as 1891 educators were urged to enter the child's home at least once a week. It was hoped that through home visitation the teacher would have some influence on the child's environment. Seventy years elapsed between this suggestion of home visitation and its implementation.

Research has shown that enriched day-care programs and child-centered home tutoring programs lead to immediate gains in mental test scores, but evaluations after termination of intensive child-centered enrichment revealed significant declines in I.Q. Such findings have led to recognition of the need for education of the parents in order that the home may foster continued development after the termination of programs or in conjunction with institutional education (Klaus & Gray, 1968; Schaefer, 1970). The implementation of programs to train parents to foster the development of their children has been viewed as an appropriate response to the need for early and continuing education of the child.

Parent-child intervention programs have resulted in substantial gains in I.Q. and other measures of ability and achievement which were still evident three to four years after the termination of the program (Gordon, 1972; Levenstein, 1972). An additional benefit of involving parents was that the effects were found to be cumulative from year to year, both during intervention (Levenstein, 1972) and, in some instances, after the program had ended (Levenstein, 1972).

Bronfenbrenner (1974) outlined some of the benefits of home-based intervention programs:

- (a) parent and child are involved in interaction with each other, usually round an interesting



and challenging task;

- (b) the mother not only trains the child but the child also trains the mother;
- (c) a mutual attachment between mother and child is given an opportunity to develop during these interactions (p. 17).

Parent-child intervention has been discovered to be of benefit not only to the target child but also to his younger siblings. Klaus and Gray (1968) found evidence of vertical diffusion. The younger children in the experimental group families were given impetus in their development though they were not enrolled in the program. In addition, horizontal diffusion throughout the neighborhood was reported. Gilmer et al. (1970) found that younger siblings, whose mothers had participated in a home-intervention program, obtained higher I.Q. scores both during and after the program than younger brothers and sisters of children in the control group.

Participation in an intervention program has been found to bring important benefits to the mother. It influences the attitudes and behavior of the mother not only toward the child but in relation to herself as a competent person capable of improving her own situation. Karnes et al. (1970) reported that the confidence and capabilities demonstrated by the mothers in the program they carried out were reflected in increased community involvement.

Gilmer et al. (1970) reported similar findings and felt that the increased community involvement of the mothers seemed to be the result of the development of environmental mastery which may be expected to have a supporting effect on the child's continued development. Garber and Ware (1972) stated that as the parent experiences the success

of teaching the child and seeing the child grow, the mother's self-concept, feeling of mastery, and teaching style changes. With this change, the home environment becomes more supportive of the child.

Such changes in the mothers suggest that they may well continue to be better fosterers of development in their children after the program ceases, and thereby help to insure greater permanence of the effects of the program in the lives of their children. In reviewing the findings of the Parent Readiness Education Project in the United States, Bert and Levinson (1974) reported that parents who were able to stimulate and enrich the home environment when specific direction was provided helped to improve readiness skills in their preschool children. Gordon (1969) and Schaefer (in Silverstone, 1970) strongly supported using parents as teachers. Karnes' findings (in Stanley, 1973) indicated that parents can acquire important skills in teaching their children at home. White (in Silverstone, 1970) supported this view and stated that the family as a delivery system has been underemphasized.

A further advantage of a home-based program with the mother as tutor is that while the LSES child may find it difficult to use expressive language within the milieu of the school, which can be socially constricting and competitive, the one-to-one situation involved in the mother teaching her child at home provides him with the opportunity and confidence to make responses. In many classrooms, no overt response is consistently required, and so the child can remain silent and non-participating, whereas the mother-child dyad demands the child's continual active participation. Silvern (1975) reported:

A common complaint of educators was the lack of available time for influencing children's development. The amount of time the child spent in



school was only a small fraction of the total time during which his development occurred. (p. 24)

Parents need to be shown how to use the time that they spend with their children at home in profitable ways. Boss, DeFrain and Swinton, as cited in Silvern (1975), asserted that in a society of technology and training, "[parenting] is the last remaining bastion of amateurism" (p. 24).

Research supported the need to view parents as students of educational methods and as teachers in their own right rather than being just aides or assistants to a professional teacher. Gains from parent intervention during the preschool years was reduced to the extent that primary responsibility for the child's development was assured by a staff member rather than left with the parent, particularly when the child was simultaneously enrolled in a group intervention program (Gilmer et al., 1970). Intervention programs which cast the parent in a subordinate role or have the effect of discouraging or decreasing his participation in activities with the child are likely to be counter-productive.

In conclusion, an awareness of the major role of the parent as educator has emerged. Research findings suggest the need to return to a traditional comprehensive definition of education as opposed to a restricted, professional and institutional one. Research on parent behavior and child development points to the need to develop a life-time and life-space perspective on education which recognizes the major educational role of parents.

The evidence indicates that the family is the most effective and economical system for fostering and sustaining the development of

the child. It further indicates that the involvement of members of the child's family as active participants is critical to the success of any intervention program. Without such family involvement, any effects of intervention, at least in the cognitive sphere, appear to erode fairly rapidly once the program ends.

The promising results of parent-centered intervention programs have shown that working with mothers is an effective method for producing gains in intellectual functioning. Parent-centered, as contrasted with child-centered, early intervention programs had equal immediate effectiveness and greater long-term effectiveness, were less expensive, produced vertical and horizontal diffusion of language through the family and community, and effected positive changes in the mother.

#### Limitations of Home-Based Programs Involving Parents of Lower Socioeconomic Status

Most of the limitations seem to focus around the parent who will teach the child. Parents from LSES background are reported to have a tendency to deal with their children in ways that are not conducive to optimum development, have negative attitudes towards education, and are not themselves highly competent in the language skills that they are supposed to be fostering in their children.

In children learning language from others, the quality of the language model was seen by some as a factor. Ausubel (1964) considered a "faulty syntactical model" to be one aspect related to language retardation. Whether the language model must be correct according to the rules of standard English was a matter of controversy in the literature. In order to develop longer and more complex utterances,



children have certainly to be exposed to utterances more complex than their own. Gray and Klaus (1963) found that the language models of lower-class children were often meager and restricted as well as grammatically incorrect. Olim, Hess and Shipman (1965) found that the child's use of abstractions was related to the mother's language style including her tendency to use abstract language. Alternatively, Cazden concluded that children's syntactic development did not seem to be sensitive to differences in the quality of mother's speech (Cazden, 1965). Hess and Shipman (1965) demonstrated significant differences between families from lower and higher SES backgrounds with respect to children's and mother's task approaches, linguistic codes and maternal teaching styles. Lower-class mothers were more punitive and less capable of anticipating difficulties the child may have had in completing the task.. They used more imperatives and fewer informative instructions. Also they employed a more restricted language code than middle-class mothers. They tended to use shorter sentences with less elaboration. Bee, Van Egeren, Streissguth, Nyman and Leckie (1969) reported consistent differences in mother's teaching as a function of social class. The differences indicated that middle-class mothers tended to use more non-specific suggestions, less frequent nonverbal cues and less negative feedback than lower-class mothers. The lower-class mothers tended to intrude physically in the children's problem-solving activities, gave more negative feedback, and gave the children more specific and concrete suggestions than did the middle-class mothers. Brophy (1970) carried out a detailed analysis of the mother's teaching styles. He said that teaching must be regarded as continuously variable from limited reactive teaching to diversified proactive teaching. There was consistency in

that lower-class mothers tended to use reactive teaching and control systems based on demands, all of which resulted in ineffective teaching. The middle-class mothers, on the other hand, used proactive teaching and offered alternatives to simple compliance. Stodolsky (1965) and Stodtbeck (1967) reported that lower-class mothers did not use language to control their child's behavior to the same degree as middle-class mothers. Their dependence upon physical means of control reduced the amount of cognitive mediation required by the child in controlling and directing his behavior.

Gray and Klaus (1965) reported that the "culturally disadvantaged" mother was not likely to spend much time shaping the behavior of the child as she spent most of her time "coping". According to Bernstein (1961), the "culturally disadvantaged" child received less reinforcement from adults, but more from peers and siblings and from the sensations of gross motor activity. Even when the parent was the verbal reinforcing agent, the "culturally disadvantaged" child received less complex verbal responses. Reinforcement, when provided by the parent, was given for those behaviors that made coping easier. The child was rewarded for inhibitory rather than exploratory behavior.

Reinforcement by parents may be diffuse, such as, "You're a fine boy." The work of Zigler and Kanzer (1962) on verbal reinforcers and that of Bernstein (1961) on language codes has suggested that the diffuse type of verbal reinforcement may be more characteristic of the deprived than of the privileged. When reinforcement is diffuse, the child's attention is not directed toward the quality of the performance, nor is it possible for him to become self-reinforcing in terms of evaluating and improving his own performance.



Karnes and Zehrbach (1975) suggested that the lower-class mother may have had bad personal experiences when she was in school so that her personal norms would interfere with her establishing positive feelings towards a school-based program for her child. Home-based programs require a high level of parental commitment. Schaefer (1969), in a home tutoring program, found that the disinterested parents obtained less positive results with the child. Schaefer also found that about one-third of the parents who received home visits in his project showed little interest in providing for their children the educational activities suggested by the home visitor.

Several studies showed that a mother's high aspirations for her child concerning school achievement influenced the child's motivation to achieve and his actual achievement (Bing, 1963; Wolf, 1964). The findings paralleled Rosenthal and Jacobson's (1966) studies of teacher's expectations of children. Schaefer (1969) stated that it was critical for parents to see themselves as potential educators. If parents lack self-esteem and confidence, there is little motivation for them to agree to participate in a home intervention program. Bessent (1972) stated that parents from low income backgrounds tended to stay away from the school, did not trust school personnel, and felt powerless to influence the school or its activities. According to Hess and Shipman (1969), lower-class parents' attitudes revealed a sense of futility, powerlessness and lack of alternative routes of action open to them in their dealings with the school system.

Stern (1967) stated that parents with these estranged and hopeless feelings about their own roles in society are apt to transmit to their children the belief that effort expended in school learning

has little value. Bronfenbrenner (1974) maintained that the conditions of life are so harsh in many homes that the parent has neither the will, nor the capacity, to participate in educational activities with the child.

Hess et al. (1969) found that children in homes where the family had a high regard for education, where parents themselves read and also read to their children, where children had their own books and were encouraged to ask questions, and where their questions were answered tended to develop skills and attitudes that prepared them to perform more successfully in school. They asserted that parents provide children with an orientation towards school. Those parents who feel rejected by the school are less likely to promote attitudes in their children that are accepting of school and that allow them to benefit from its teachings.

In conclusion, the major limitations to the use of parents as teachers of their own children in the home are that the language model they provide might be inadequate, their teaching styles are not as good as those of the middle-class parent, and they lack motivation and task orientation.

#### Overcoming the Limitations of Using Parents of LSES as Educators

In spite of the limitations of using parents of LSES as teachers of their own children in a home intervention program, this researcher believed that they were outweighed by the advantages of such an approach. The limitations, however, were taken into account in planning the type of intervention which took place. To compensate for the possible deleterious effect of the parental speech model, the Learning Language at Home kit was seen as being appropriate for use with parents of LSES,



because it is fairly highly structured, explicit, and in many cases sets out exactly what the parent must say. To help improve teaching styles the mothers were given advice at the initial training session about how to deal with their children--both on the linguistic and the behavioral dimension. For the group who received home visitors as well as the training session, the advice was continually repeated and reinforced by the visitors on appropriate occasions and assistance was given in the form of a lesson demonstration. To motivate the mothers, they were given an explanation of the objectives of the program and the assurance that they could be successful agents in helping their children. In addition, the experimental group was provided with weekly home visitors whose duty it was to encourage and motivate the mothers to continue the program.

#### Early Childhood Education in Newfoundland

In order to justify the idea of implementing a home-based, kindergarten-age language intervention program in Newfoundland, it was necessary to review the present facilities offered in this province for young children who may be in need of more help in developing their language skills than the home is presently providing.

The Department of Education's commitment to provide funds for kindergarten is assured in Newfoundland [although there are still a number of School Boards who do not provide kindergarten classes for a few of the schools under their jurisdiction (Sharp, 1977)]. In contrast, preschool education does not receive funds from the Department of Education, nor from any other level of government on a continuing basis.

In recent years voluntary organizations, women's committees, church groups, and social action groups have assumed some of the responsibility for providing preschool education. According to the Early Childhood Development Association's newsletter (Fall, 1976), there are 10 all-day and 13 half-day preschool centers in the environs of St. John's. Parents pay a fee for their children to attend these schools. The Dominion Bureau of Statistics (1969) reported that children enrolled in private kindergartens and preschools come predominantly from middle-and upper-class environments. In all probability this applies to Newfoundland. The fees for these programs are usually prohibitive for low income families, ranging from \$100-\$200 per month for a full-time program (Sharp, 1977). The Happy Times Preschool in St. John's each year accommodates a few sponsored children recommended by medical practitioners and social workers as being able to benefit from a preschool education, but in most instances the children are from middle to higher socio-economic backgrounds. The Teach-a-Tot Day Care Center in St. John's is one of the few exceptions to this pattern. The center, which was founded as a consequence of being awarded a Local Initiative Project (L.I.P) grant, has a high percentage of children from LSES families. Many of the children who attend are currently subsidized by the Provincial Government Department of Social Services and many others come from families receiving social assistance. The program is full time, five days a week. The children are transported to and from the school and its activities and intentions are similar to the Headstart programs. A research report on the center (Taylor, 1974), presented to the Government of Newfoundland and Labrador, reported the beneficial effects of this day care center's program. Likewise, the Newfoundland Status



of Women Council started a project in January 1976, funded by a L.I.P. grant for children from LSES backgrounds, that was called the Headstart Nursery School. The project involved mothers bringing their children to St. David's Church where the mothers became involved in activities as well as receiving instruction in child care, basic nutrition, and budgeting. The program continued throughout 1977 without a L.I.P. grant but has now ceased. The importance of funding is further illustrated by reference to the Blackhead Road Project, a Saturday morning language development program for children from a LSES area of St. John's which was operated under the auspices of the Canadian Federation of University Women, but was discontinued due to the lack of funds.

The review of the preschool education which is available in St. John's indicates a need for more provision to be made for children from LSES backgrounds. Many children who, because of impoverished environments, lack of intellectual stimulation in the home, or parental neglect, may be in need of compensatory education in the early years are not being accommodated. Many parents from LSES backgrounds are probably not aware of the benefits that can be derived from preschool education. Even if they are, they perhaps cannot or will not pay the fees for attendance at a private preschool. In the absence of adequate preschool provision in Newfoundland, a viable alternative is for the regular school system to assume responsibility for initiating intervention programs with children who are in need of extra help and assistance to develop their potential.

The foregoing review of literature has examined scholarly findings in a number of areas which are relevant to this research.

These findings were used as a basis and guide in the conception, planning and execution of the study.



## CHAPTER III

### HYPOTHESES, INSTRUMENTS AND THE LANGUAGE KIT

This chapter presents the research hypotheses, a description of the instruments used for testing the hypotheses, and a description of the Learning Language at Home kit which was the basis of the intervention program.

#### Hypotheses

The following hypotheses were tested in order to answer the research questions. There were four research questions, but only three hypotheses because the first hypothesis was designed to lead to the answer to two questions (research questions numbers one and four).

H<sub>1</sub> It is hypothesized that there are significantly greater scores on expressive language and/or verbal comprehension tests conducted with LSES children of kindergarten age whose mothers use the Learning to Tell section of the Learning Language at Home kit with them after one initial training session, than on tests conducted with LSES children who receive no intervention.

H<sub>2</sub> It is hypothesized that there are significantly greater scores on expressive language and/or verbal comprehension tests conducted with LSES children of kindergarten age whose mothers use the Learning Language at Home kit with them after one initial training session and

weekly visits from an intervener who provides encouragement, advice and assistance throughout the program, than on tests conducted with LSES children whose mothers use the kit with them after only one initial training session.

H<sub>3</sub> It is hypothesized that there are significantly greater scores on expressive language and/or verbal comprehension tests conducted with LSES children of kindergarten age whose mothers use the Learning to Tell section of the Learning Language at Home kit with them after one initial training session and weekly visits from an intervener who provides encouragement, advice and assistance throughout the program, than on tests conducted with LSES children who receive no intervention.

### Instruments

Two instruments were used in the research, the Reynell Developmental Language Scales (R.D.L.S.) (Reynell, 1969), and the Verbal Expression subtest of the Illinois Test of Psycholinguistic Abilities (I.T.P.A.) (Kirk, McCarthy & Kirk, 1968).

#### Reynell Developmental Language Scales

The Reynell Developmental Language Scales were constructed by Joan K. Reynell and first published in 1969 after six years of development and standardization. They are designed to be a language assessment tool, producing Expressive Language and Verbal Comprehension scores for children between six months and six years of age. Their intention is to provide both a quantitative and qualitative assessment. The



scores are given in terms of equivalent age levels and standard scores. The test takes approximately 30 minutes to administer.

The Expressive Language test has three parts. Part one measures language structure, part two measures vocabulary, and part three measures language content. This test has two advantages over some of the other expressive language tests available. Firstly, language structure is measured from spontaneous expression and is scored incidentally during the execution of the Vocabulary and Language Content sections of the test. The child's incidental comments, conversation and responses, before, during, and after the test are examined for the various items which produce a Language Structure score. Thus, the language examined is probably nearer to the child's natural expression than would be the language obtained through responses to specific language structure questions. Secondly, the situation provided for the testing of vocabulary and language content is designed to facilitate spontaneous and natural responses. In all test items except one, the child is provided with objects or pictures which he can hold and manipulate while the examiner asks questions in connection with them. The material is intended to be attractive enough to hold the attention of distractable children, and to evoke a response even from very shy children.

The Verbal Comprehension test, like the Expressive Language test, involves the child in manipulating objects. The child is presented with attractive toys and household objects, such as dolls, doll's furniture, farm animals, cars, buttons, pencils, and a brush and comb. He is required to move them, rearrange them and point in response to the examiner's instructions and questions. The advantage of this method of testing is that no verbal response is required so the child

is not penalized for failing to express himself adequately in a verbal manner. He is only required to respond in a non-verbal manner.

The instrument was standardized on 636 children from six months to six years inclusive. Mean and standard deviations of scores were calculated for each age group and from these data it was possible to plot all the scores on a continuum so that an equivalent age level was obtained for any raw score. To achieve comparability between scores of varying means and standard deviations, all scores were converted into standard score units. Reliability coefficients were calculated for each age group in each scale using a split-half technique with odd and even numbered items making up the two halves. To correct for this shortening of the test, the Spearman-Brown formula was applied to each coefficient. The reliability coefficient for the age range of children in this study is .84 for Expressive Language and .78 for Verbal Comprehension. The correlations between Expressive Language and Verbal Comprehension are relatively low ( $r = .23$ ), particularly after four years of age, suggesting these are very different aspects of language development which should always be separately assessed (Reynell & Huntley, 1971).

Standardization for this instrument was not extensive--only 636 children were used. An additional limitation is that it was standardized on a British population in the London area. Nevertheless, the researcher selected this instrument in preference to others for the following reasons. As has already been mentioned, the Expressive Language test is specifically designed to elicit spontaneous and natural expression from the children, and the Verbal Comprehension test has the advantage of requiring nonverbal rather than verbal responses to



instructions and questions. The instrument has been widely used in research in Great Britain by Cooper, Moodley and Reynell, 1974; Jeffree and Cashdan, 1971; Petrie, 1975; and Randall, Reynell and Curwen, 1974. It has been used in Atlantic Canada in recent years by M.J. O'Neill, formerly of the Institute for Research in Human Abilities at Memorial University of Newfoundland, and M. Rodda of the Psychology Department of Mount Allison University, New Brunswick. It was recommended to the researcher by M.J. O'Neill. The R.D.L.S. are currently being employed as a testing instrument in Newfoundland for a project with deaf children (House & Neville-Smith, ongoing research project).

#### The Illinois Test of Psycholinguistic Abilities

The revised edition of the Illinois Test of Psycholinguistic Abilities was devised by Samuel A. Kirk, James J. McCarthy and Winifred D. Kirk, and published in 1968. Its purpose is to test the psycholinguistic abilities of children between the ages of two and eleven years.

This edition, as well as the experimental edition of the I.T.P.A., grew out of Osgood's communication model (Osgood, 1957). In their clinical model, Kirk et al. (1968) hypothesized three dimensions of cognitive abilities:

(a) Channels of communication. These are the routes through which the content of communication flows. Included here are the modalities through which sense impressions are received and the forms of expression through which a response is made. The channels may include various combinations of sensory input and response output. The major modes of input are auditory and visual; those of output are

vocal and motor (p. 7).

(b) Psycholinguistic processes. Three main processes are involved in the acquisition and use of language:

- (i) The receptive process, that is, the ability necessary to recognize and/or understand what is seen and heard.
- (ii) The expressive process, that is, those skills necessary to express ideas or to respond either vocally or by gesture or movement.
- (iii) An organizing process that involves the internal manipulation of percepts, concepts, and linguistic symbols. It is the central mediating process elicited by the receptive process and preceding the expressive process (p. 7).

(c) Levels of organization. The degree to which habits of communication are organized within the individual determines the level of functioning. Two levels are postulated in the clinical model of the I.T.P.A.:

- (i) The representational level, which requires the more complex mediating process of utilizing symbols which carry the meaning of an object.
- (ii) The automatic level, in which the individual's habits of functioning are less voluntary but highly organized and integrated (p. 7).

The entire test comprises twelve subtests, but the researcher used only one of these--the Verbal Expression subtest. This subtest is designed to assess the ability of the child to express his own concepts verbally. The child is given four familiar objects one at a time (a ball, wooden block, envelope, and a button), and the examiner makes the request, "Tell me about this." The scoring does not reflect elegance of expression or grammatical propriety, but focuses on quantity



of concepts expressed. A concept is any relevant, discrete, and approximately factual term which expresses a function or relationship of the object. To be relevant, the concept must be specifically appropriate for that object. To be discrete, the concept must express a single idea that is not redundant to the expression of that same idea in another form. To be approximately factual, the concept must provide attention to reality within certain rather broad limits (Kirk, et al., 1968).

While extensive research has been conducted on the experimental edition of the I.T.P.A. (McCarthy & Kirk, 1961), research is more limited on the revised edition. Paraskevopoulos and Kirk (1969) provided some reassuring data on the psychometric characteristics of each subtest and the test as a whole, the parameters of the population on which the test was standardized, and some guidelines in the use of the test and the interpretation of the scores. The median internal consistency coefficient was .85 for the eight age groups of average children (corrected for restricted intelligence range) on the Verbal Expression subtest. For students whose age levels were between 4.7 and 5.1, it was .86, while for students whose age levels were between 5.7 and 6.1, it was .72. The stability coefficients over a period of five months were .74 for 4-year-olds and .63 for 6-year-olds. Interscorer reliabilities for both experienced and novice scorers were unusually high, .98 and .99, respectively (Paraskevopoulos & Kirk, 1969).

Hatch and French (1971) tested 21 educationally mentally retarded subjects, whose mental ages were between 3.7 and 9.9, twice, employing three-month intervals between tests. Six criterion instruments were also administered to explore concurrent validity. It was determined from

this that the I.T.P.A. is a fairly stable instrument, with a Verbal Expression test-retest correlation coefficient of .91. The study revealed that the two expression subtests emerged as stronger in this study than they did in the work of Paraskevopoulos and Kirk (1969).

Hare, Hammill, and Bartel (1973) investigated the Verbal Expression subtest's construct validity with 126 third-grade children who met the same criteria used to select the original I.T.P.A. standardization sample. The reliability coefficient for the Verbal Expression sample, items 2 and 4, was .96, and for items 1 and 3 was .98. The findings of this part of the study support the construct validity of this subtest of the I.T.P.A.

The I.T.P.A. was selected for use in this study because, in addition to its having high validity and reliability data, Karnes (1977) based the Learning Language at Home kit upon an instructional model derived from the clinical model which is the foundation of the I.T.P.A.

### The Language Kit

The Learning Language at Home kit (Karnes, 1977), which was used as the basis for the home intervention program, was developed by Merle B. Karnes, Professor of Special Education at the Institute for Child Behavior and Development, University of Illinois. The kit is designed for implementation by parents in the home with children between the ages of three and five years. The activities are organized according to the communications model developed by C. Osgood (1957) which was incorporated into the revised edition of the Illinois Test of Psycho-



linguistic Abilities (I.T.P.A.) (Kirk, McCarthy & Kirk, 1968).

The complete I.T.P.A. model was used as a guide in developing the activities in the kit because it ensured that all communication processes would be included. The lesson plans are divided into four areas rather than into the twelve I.T.P.A. subtest areas because the kit constructor believed that such specific categories were inappropriate for the design of a program directed chiefly to parents. For example, there is no separate grouping of the Visual Reception, Visual Association, Visual Memory, and Visual Closure skills. These skills are all grouped under Learning to Look. The other three groupings are labelled Learning to Do, Learning to Listen, and Learning to Tell.

The four skill areas are not mutually exclusive, for example, in the Learning to Tell section, an activity which emphasizes verbal skills, such as finishing a story, may also include motor, auditory, and visual skills.

The fifty lessons grouped under Learning to Tell are designed to encourage the child to talk without undue pressure. The initial lessons concentrate on helping the child acquire labels for objects and actions. Later lessons emphasize a more extended use of language, introducing fundamentals of syntax and grammar such as combining plural nouns with plural verbs, formulating questions, and expressing likeness and difference. The cards are sequenced in approximate order of difficulty and each activity card has the same format.

The consistency of the format and headings is an aid to the reader's understanding. Each card is headed by a simply stated behavioral objective to announce the main purpose of the lesson. A list of what is needed to teach the lesson follows. In most instances

materials are readily available in the home. Following this is a step by step procedure for the activity. Specific suggestions are provided for (a) setting up the proper physical environment for learning, (b) employing alternative methods to help the child achieve success, (c) achieving an appropriate parent-child interaction during the lesson, (d) maintaining the child's interest in the task, and (e) helping the child who fails to respond correctly. Sample dialogue is included to suggest how parents may express key concepts in the lesson. In the final section, the designer provides other ideas for reinforcing, extending and reviewing what has been taught.

The kit is fairly highly structured with detailed directions to parents of what to do and say. Research has shown (Hunt, 1969; Karnes et al., 1969; Weikart & Lambie, 1969) that highly structured programs achieve superior results.



## CHAPTER IV

### METHODOLOGY

The methodology related to this research is presented within the following structure: background of the study, sample, collection of data, research design, and data treatment. Also described in this chapter are: implementation of the intervention program, initial training session for mothers, the home visitors, and training for home visitors.

#### Background of the Study

In March 1977, a letter was sent to the District Superintendent of the Avalon Consolidated School Board in St. John's, Newfoundland, explaining the nature and purpose of the study (see Appendix A). Permission was granted to work in some of the schools under the School Board's jurisdiction during the period from September until December 1977, subject to the approval of the principals and teachers involved (see Appendix B).

The principals in four schools were contacted in the months of May and June 1977 and the aims and objectives of the program were outlined. The names of all incoming kindergarten children registered for September 1977 in these schools were obtained and children for the study were selected according to the Blishen Occupational Class Scale. Following the completion of the selection of children, a letter was sent from the principal of each school to the parents in the two groups that

were to receive the language kit, announcing the school's support for the project (see Appendix C).

### Sample

Four schools were used for the study. The schools were selected by inspection to provide a representative sample both in catchment area and in the nature of the school building and facilities. Virginia Park Elementary was the newest school, opened two years ago, and Dawson Elementary was the oldest, opened twenty-eight years ago. The type of homes the children came from varied from the large, new, detached, privately owned homes and the new low-cost rental housing of the Virginia Park subdivision, through the modest, detached, semi-detached and row houses of the Pennywell Road area, to the older property, privately owned or rented, such as was found in some of the downtown areas of St. John's. The parental occupations of the children in these schools ranged from medical practitioners and provincial government employees to taxi-drivers and laborers.

In May 1977, the names of all incoming kindergarten students from Virginia Park, Dawson, St. Andrews, and Harrington Elementary Schools were taken from school admission cards. This amounted to 224 children. The occupation of the student's father, which is an indicator of socioeconomic status, was noted from the school admission cards. Where the mother was the sole wage-earner her occupation was noted instead. The Blishen Occupational Class Scale (BOCS) (Blishen & McRoberts, 1976) was then used to determine the SES of each student's family. The BOCS is a Canadian scale devised in 1958 and revised in



1967 and 1976. It ranks various occupations according to their SES. Each child's family was assigned a numerical rank between one and one hundred according to the occupation of the chief wage-earner in the household. Those who fell below the 50th percentile were categorized as being of lower socioeconomic status, those above the 50th percentile were of higher socioeconomic status. The families of 121 kindergarten students were of lower SES. These students were categorized according to sex--male and female--and assigned numbers. The male students were numbered from 1-55 and the female students from 1-66. A table of random numbers was then used to randomize each list. The random numbers were taken from RANCAL, a random number computer program cited in Kerlinger (1973).

Forty-eight subjects were required for the study, 24 males and 24 females. They were to be divided into three groups with sixteen members in each, eight male and eight female. A telephone call was made to the parents of the first 24 males and first 24 females on each randomly ordered list. The researcher requested permission to visit the homes to explain the purpose of the study. During the home visits the researcher explained the study more fully and asked the parents if they would agree to participate as members of one of the three proposed groups to which they would be assigned. It was explained that the principal of the school their child attended supported the aims of the program. The parents who agreed were placed randomly into one of three groups, taking into account the sex of their child.

There were five refusals over the telephone whereby the parent would not allow the researcher to visit the home to explain the program. More names were then taken from the original randomly ordered lists

and more visits made until the complement of eight males and eight females in each of the three groups was attained. This process was necessary in only a few instances. Only one parent refused to participate following the home visit.

### Collection of Data

All children included in the program were administered the Expressive Language subtest of the R.D.L.S. and the Verbal Expression subtest of the I.T.P.A. during the third and fourth weeks of September 1977. Three testers, who were graduate students in the Faculty of Education at Memorial University of Newfoundland, administered the R.D.L.S. and the I.T.P.A., following training and practice in the use of the instruments. The training program included the viewing of a video-tape of the administration of the R.D.L.S. given by M.J. O'Neill of Memorial University of Newfoundland, an experienced user of the instrument.

Testing took place in the child's school in rooms adjacent to the classroom. Students were randomly assigned to testers. Rapport was established with the student through the tester spending some time in the classroom. A toy dog was used to promote the student's interest and confidence in the testing situation.

Scoring was done by two of the testers who worked independently in order to carry out an inter-rater reliability study on the pretest scores ( $r = .91$ ,  $p < .06$ ). It was anticipated that there might be a "slide effect" on the scoring of the Content item of the R.D.L.S. and the Verbal Expression subtest of the I.T.P.A. (This is where the order



in which a paper appears in front of the examiner tends to affect its score. Papers read earlier are likely to receive higher ratings than those nearer the end.) To counter this, a sorting procedure was undertaken for these two subtests. The answer sheets were first read through and sorted into five groups, ranging from superior to very inferior sheets. Each answer sheet was then reread and scored.

Posttesting took place 10 weeks later at the termination of the program. In addition to the Expressive Language subtest of the R.D.L.S., and the Verbal Expression subtest of the I.T.P.A., the Verbal Comprehension subtest of the R.D.L.S. was also administered to supply additional information. Procedures of random assignment of students to tester was reapplied.

After testing, self-report questionnaires were mailed to all the mothers who had used the Learning Language at Home kit with their children (see Appendix D). Two slightly different forms of the questionnaire were used for the two different groups of mothers. Those who had received only the initial training session were given a questionnaire with seven items. Those who had received a weekly visit from an intervener as well as the initial training session were posed an additional question pertaining to the assistance that the intervener had been able to give them. The parents were assured, and granted anonymity, so there was no incentive to be untruthful. A stamped, addressed envelope was included to encourage correspondence. All parents were telephoned after two weeks had elapsed to remind them to return the questionnaire. The percentage of questionnaires returned was 100 percent from Group  $E_2$  and 81.25 percent from Group  $E_1$ . The number of returns from  $E_2$  was 15, and from  $E_1$  was 13, out of a total possible 31 returns.

### Research Design

Prior to the final determining of the design, preliminary analysis was undertaken to see if the sex of the children was an intervening variable. The results revealed that there was no significant difference between the two sexes on either the R.D.L.S. or the I.T.P.A. scores as shown in Table 1. Therefore, the scores of the boys and girls were combined and a one-factor design as reflected in the hypotheses was utilized.

TABLE 1

Pretest, F test Analysis for the R.D.L.S. and I.T.P.A. Scores  
for Boys and Girls

Sex	Test	<u>n</u> of Cases	Mean	<u>SD</u>	<u>SE</u>	<u>F</u>	2-Tail Prob.
Boys	R.D.L.S.	24	43.67	5.94	1.21	1.70	.209
Girls	Expressive Language	24	42.75	4.55	0.93		
Boys	I.T.P.A.	24	12.71	4.61	0.94	1.06	.888
Girls	Verbal Expression	24	10.71	4.75	0.97		

The independent variables were the two treatment programs and the control group. The dependent variables were the children's scores on the R.D.L.S. and the Verbal Expression subtest of the I.T.P.A. Subjects were randomly selected and assigned to the three groups and treatment was administered to the two experimental groups. The first



experimental group ( $E_1$ ) received a booklet of 50 lessons from the Learning to Tell section of the Learning Language at Home kit, and the mothers of the students in the group were given training sessions in its use. They were also given a telephone number to call if they needed advice and then left for 10 weeks to carry out the program with their children. The second experimental group ( $E_2$ ) received the same materials. The mothers were given an initial training session and assigned an intervener who visited the home weekly for the duration of the program to give encouragement, assistance and advice. The third group was the control group ( $C_1$ ) and they received no intervention.

<u>Groups</u>	<u>Randomization</u>	<u>Pretest</u>	<u>Treatment</u>	<u>Posttest</u>
$E_1$	R	O	kit/initial training session/telephone number	O
$E_2$	R	O	kit/initial training session/weekly visitor	O
$C_1$	R	O	no treatment	O

The study used a combination of a pre-posttest control group design and a posttest-only control group design (Campbell & Stanley, 1963). Pretest measures were taken to ensure that the initial bias between groups was randomized, and to eliminate any distrust of the randomization process. The pre-posttest control group design provided internal validity by controlling for the effects of history, maturation and mortality. One limitation of the design was that internal validity may have been hampered through the awareness of the children in the two experimental groups that they were participating in an experiment,

resulting in an unrepresentative posttest performance. A pragmatic consideration which may have limited external validity was that the study was initiated by an "outside" researcher and utilized "outside" testing personnel and "outside" home interveners rather than school personnel.

#### Data Treatment

In December 1977, after the datum had been collected from the pretest and posttest and scored, it was transferred to computer cards to facilitate analysis. The data obtained were analysed by using NYBMUL (Finn, 1966), a statistical package used for univariate and multivariate analyses of variance and covariance. A covariate statistical analysis was used to determine how, and to what extent, the independent variables (the two treatments by the interveners) explained the results of the dependent variables (the expressive language posttests). The analysis of covariance (ANOCOVA) tested all hypotheses for significance. The analysis eliminated variability due to differences in the initial scores between groups. A one-tailed  $F$  test was used to measure the significance of the directional hypotheses. The research also utilized the Statistical Package for the Social Sciences (S.P.S.S.) (Nie, Hull, Jenkins, Steinbrenner, Bent, 1975) to analyse data from the Verbal Comprehension subtest as an ANOCOVA was not possible due to lack of pretest data.



### Implementation of the Intervention Program

Of the three groups used in the study only two of them,  $E_1$  and  $E_2$ , were involved in using the Learning Language at Home kit. The third group was the control group. The children in this group were pre and posttested but received no intervention.

The two experimental groups had sixteen children in each, making a total of thirty-two. In the first phase of the study the researcher visited each of these children's homes and gave the mothers an initial training session in the use of the Learning Language at Home kit. At the same time they were issued with a booklet containing the 50 lessons of the Learning to Tell section of the kit. Details of the training session are in the following section. The mothers in the first experimental group,  $E_1$ , were given the telephone number of the researcher and told to call if they needed advice or assistance during the term of the program. The mothers in the second experimental group,  $E_2$ , were assigned an intervener and they suggested a time when it would be convenient for the intervener to call on them each week throughout the 10-week program. The mothers began the program in the last week of September 1977.

### Initial Training Session for Mothers

1. The objectives of the program were explained to the mothers.

Objective 1. To improve the expressive language and verbal comprehension skills of the child by increasing the quality and quantity of mother-child interaction through use of the Learning Language at Home kit.

Objective 2. To foster an atmosphere conducive to learning in the home environment.

Objective 3. To foster interaction between mothers and their children.

2. The booklet of lessons was given to the mother and the format and materials needed were explained.

3. A sample activity card was explained. Each card followed the same four-part format:

Heading. An objective served as the heading for each card and announced the main purpose of the lesson. The mother was to keep this objective in mind while teaching.

What you need. A list of what was needed to teach the lesson followed. In most instances the materials were readily available at home or were easily made by parents according to directions given.

What you do. A step-by-step procedure for the activity was explained. Alternative methods were sometimes included especially for the child who might have difficulty achieving the objective.

What else you can do. The final section of each lesson offered ways to reinforce, extend, and review what was taught in the lesson. The mothers were urged to make use of these throughout the day. They were reminded that children do not attain proficiency in a certain skill merely because a single lesson objective was met. Practice in new settings must be provided if skills are to be mastered and internalized.

4. The researcher gave the following advice to mothers in connection with the Learning Language at Home kit. Some of the advice was based upon suggestions provided by Karnes (1977).

- (a) The mother should establish a place in the house where she can consistently work with the child on the program. Changing the setting sometimes detracts from the learning activity. A child can more readily understand the kind of behavior expected of him if the teaching/learning environment is stable.



- (b) Lighting in the teaching/learning center should be bright enough for the child to see shapes, colors and details. The center should be kept uncluttered so the child is not distracted by the surroundings.
- (c) Teaching should take place when the child is rested and when the mother is able to give him undivided attention. The mother should not interrupt the child if he is in the middle of an activity he is enjoying to force him to join her in a lesson as he may then feel negatively about the activity.
- (d) Interfering stimuli such as the radio, television, and other family members should be avoided when mother and child are working together.
- (e) The mother should adapt the lessons according to the child's interests and capabilities. The mother should be sensitive to the child's interest in an activity. It is best to terminate a session while his interest is high rather than to wait until boredom or restlessness sets in.
- (f) Materials for each lesson should be prepared in advance.
- (g) The mother should be sure she has read through the lesson and understood the objective and the procedure to follow before she begins.
- (h) The mother should be sure to gain the child's undivided attention before she starts the lesson.
- (i) The mother should provide the child with feedback on what he says. This may be corrective but should also be of a modifying or expanding nature.
- (j) The mother should be patient with the child and give him time to respond. She should not be quick to provide answers that he does not seem to know or to show him how to do things but should give him the opportunity to think and work things out. If necessary, she should guide him with more questions rather than instructions.
- (k) The mother should take every opportunity to make the child feel he is successful in what she is asking him to do. A child's learning ego can be built up by repeated success. The child should not be scolded if he cannot perform an activity successfully. Failures should be ignored and the mother should refrain from criticizing the behavior of the child

during the lesson. Self-confidence is important, and punishment, whether physical, verbal, or even in tone of voice or facial expression, inhibits learning and destroys self-confidence and enthusiasm. The child has a right to be treated with respect and courtesy. He should never be shamed or belittled, regardless of how incorrectly he may have responded to a situation.

- (l) The mother should convey to the child the message that she enjoys working with him and is pleased with what he is doing. Reinforcement is very important. The child should be praised for his verbal efforts. Even minimal performance should be rewarded. Expressions of praise should be varied. The mother should not use the same words or expression repeatedly or they lose meaning. One way to avoid this is for the mother to compose sentences which refer specifically to the particular response the child made-- "You gave a very vivid description of that animal;" "You must have listened carefully to what I said to have remembered so many things;" "I enjoyed that story you just told me."
- (m) The mother should seize appropriate opportunities to talk to the child about what he is doing in the lesson. She can describe his actions giving language to the concept that she thinks is occupying his attention. This should not be taken to extremes because constant talk can be distracting and annoying.
- (n) The mother should listen carefully to the child talk. She should look at the child while he speaks and try to sustain the conversation by asking questions and making comments.
- (o) The mother should not expect the child to remember a word, a skill, or a piece of information after just one or two learning periods. She should be reminded that mastery comes with repetition and sustained learning occurs only when the child encounters the same skill or information in varied contexts.
- (p) The mother should encourage the child to ask questions and in return should provide direct and concise answers.
- (q) The mother should not supply the child with missing words in order to hurry him alone. She should give him time to struggle for the word he wants. After the child has finished what he wants to say, the mother can reflect verbally and expand on what has



been said if she thinks he is interested.

- (r) The mother should be made aware that lessons often fail because the child is not cooperating and may be misbehaving. To help the mother manage the child's behavior the following techniques were suggested.
  - (i) We often take proper behavior for granted and fail to reward it. The child should be told when his behavior is pleasing. This reinforces the behavior. If he fails to receive attention for appropriate behavior he may resort to inappropriate behavior to get attention. If the mother rewards the child when he is "good" she may not have to punish him for being "bad".
  - (ii) The mother should be consistent in her behavior towards the child. It is frustrating to the child to receive varying responses to the same behavior on different occasions. If the mother is inconsistent, the child fails to learn what is "good" and what is "bad".
  - (iii) The child works best if he knows what is expected of him. The mother should be sure that her expectations are reasonable for a child of his age.
  - (iv) A child may become uncooperative and resistant because he is afraid of failure. The mother should make sure the activities are commensurate with the child's abilities and that he achieves success. Experience of repeated success builds a child's confidence and he will enjoy participating in the activities that bring him that feeling of success.
  - (v) The mother should pace lessons according to the child's learning rate. She should not proceed so slowly that he becomes bored and restless, nor so rapidly that he becomes frustrated and confused.

- (vi) The child needs to know that he is loved even when his behavior is unacceptable. If he must be reprimanded, the criticism ought to be focused onto that particular behavior and not onto the child as a whole person. The mother should express how she feels about the behavior. She should send "I" messages rather than "you" messages. If a child rips a piece of writing paper in half the mother might say, "I feel very annoyed when I see a good piece of paper being torn and wasted," rather than, "You shouldn't have ripped that paper."
- (vii) The child must be helped to develop acceptable ways of behaving, especially of expressing his feelings of disappointment and anger. The mother should be understanding of his feelings but also firm. The limits of behavior must be clearly defined and the consequences of misbehaving should be known by the child.
- (viii) The mother should try to use verbal rather than physical means to control her child's behavior.

5. It was suggested to the mother that she try to complete five lessons per week for ten weeks. She was asked to work through the lessons chronologically and to begin the program immediately.

#### The Home Visitors

The interveners who visited the homes of the E<sub>2</sub> group weekly were third-year students in the Department of Social Work at Memorial University of Newfoundland. With the cooperation of their professor, the visits were incorporated as a credit-earning part of the course they were taking that semester, Social Work 3211.



Training for the interveners took place in September 1977 and consisted of two one-hour sessions. Each intervener was given the name and address of the mother whom he was to visit. The visits were to last approximately 30 minutes, were to begin in the last week of September, and were to continue each week for 10 weeks. They were given copies of the 50 lessons with which the two experimental groups had been issued. The principles of intervention and the role of the intervener were explained to them. They were given mimeographed notes on the topics covered in the training. Details of the home visitors' training are found in the following section.

#### Training for Home Visitors

1. The role that the home visitors were to play was set forth:

- (a) They were to assist the mother to develop an effective teaching relationship with her child.
- (b) They were to help sustain the interest and participation of the mother through to the end of the program.

2. Some principles of intervention were explained to the home visitors. They were given a model to use as a basis and guide for their work.

The model provided was the "Context, Input, Process, and Product" (C.I.P.P.) evaluation model (Stufflebeam, 1968). This model provided four strategies by which interveners gain information from the home for decision-making. The home interveners were advised to operate within these four strategies.

### Context

The first step was context evaluation, the purpose being to define the environment where change was to occur, assess the environment's unmet needs, the problems underlying those needs and the opportunities for change.

### Input

The second step was the input evaluation wherein the home visitor defined objectives from his observations in the home during the visits. He had to consider appropriate methods and alternative approaches to meet the program's objective taking into account the home environment.

### Process

Once the objectives were decided upon and the home visitor had begun to implement methods, process evaluation was needed to provide periodic feedback both to the home visitor himself and to the project supervisor (in this case the researcher). The objective of the process evaluation was to detect or predict defects in the procedural design or its implementation. The home visitor assessed:

- (a) The quality and effectiveness of the interpersonal relationship between the mother and the home visitor. The intervener was requested to assess the effect of each visit upon the mother, decide in what respects he had been most successful and least successful, and modify his behavior accordingly on the next visit.
- (b) Progress and/or problems in the mother's understanding of and compliance with the intent and procedures of the program.
- (c) The adequacy of the resources, physical facilities, mother's involvement and time schedule with respect to the program.



## Product

The final step was product evaluation which was to be carried out by the project supervisor (the researcher) to determine the effectiveness of the program after it had run to its conclusion. Its goal was to relate outcomes to objectives. The product evaluation was to involve administering tests to the children and giving a self-report questionnaire to mothers.

3. The objectives of the program were explained to the home visitors.

Objective 1. To improve the expressive language and verbal comprehension skills of the child by increasing the quality and quantity of the mother-child interaction through use of the Learning Language at Home kit.

Objective 2. To foster an atmosphere conducive to learning in the home environment.

Objective 3. To foster interaction between mothers and their children.

4. The home visitors were instructed to visit the mother each week, at a time convenient to her, and to stay approximately thirty minutes.

5. The home visitors were told that the mothers had been given a booklet of 50 lessons which comprised the Learning to Tell section of the Learning Language at Home kit and had been asked to complete five lessons per week for ten weeks. They were given a copy of the booklet and asked to study it.

6. The role of the home visitor was explained. During the course of the visits, home visitors were to give encouragement, advice and assistance to the mothers in the following ways:

- (a) Encouragement and motivation  
Providing encouragement, support and motivation to mothers was an important part of their role. Mothers who were having difficulties or whose

enthusiasm for the program was waning were to be encouraged to continue. Various techniques could be used:

- (i) Praise. The mothers should be praised for any successful lessons they had shared with their children.
  - (ii) Parents' sense of responsibility. The home visitors were to appeal to the parents' sense of responsibility. They were to urge the parents to see the program through to the end now they had started it.
  - (iii) Parents' concern for the children's welfare. The home visitors were to point out the benefits of parents' working in this way with their children and how it could help the children.
  - (iv) Showing interest. The home visitors were to show interest in what the mothers had been doing with the children and the children's responses. They were to discuss the previous week's lessons and what transpired in them.
  - (v) Parents' confidence. The home visitors were to assure the parents that they could play a valuable and worthwhile part in their children's education and that this program was an excellent way of helping them.
- (b) Advice  
 During the initial home visit the mother was given advice by the researcher pertaining to the program. The home visitor was told to ascertain whether the mother had been following the advice and, if not, the visitor was to seek opportunities to remind her of it. The initial training session had provided mothers with a lot of information all at once in an unapplied situation. The home visitors were to relay the same ideas and suggestions again but this time they were to be given in an applied situation because the mother was now actively involved in implementing the program. The advice that the home visitor was told to give is found in part four of the section "Initial Training Session for Mothers".



(c) Assistance

The home visitor was to provide assistance to the mother in the following ways:

- (i) Demonstrate a lesson from the program with the child.
- (ii) Suggest ways of obtaining or making the materials necessary for the forthcoming week's lessons.

7. In order to gain opportunities to offer encouragement, advice and assistance, the home visitor was told to ask the mother questions which might illuminate problem areas and provide a starting point for discussion. Suggested questions were:

- (a) Which lesson or activity was most successful during the last week? Why did the mother think it was successful?
- (b) Which lesson or activity did the child find the most challenging and difficult to perform?
- (c) Which lesson or activity did the child seem to enjoy the most? Why?
- (d) Were any of the lessons or activities too easy? Could the mother have adapted them to make them more challenging?
- (e) Did the child find any lessons or activities boring? Could the mother have adapted them to make them more interesting?
- (f) Did the mother find it difficult to get her child to sit down and concentrate? If so, what can be done about it?
- (g) Does the child respond well verbally during the lesson? If not, why not? What can be done about it?
- (h) Is the mother enjoying doing the program with the child?
- (i) Does the child seem to be enjoying the program?
- (j) Is the mother managing to cover five lessons per week? If not, why not?

- (k) Does the mother employ the suggestions for review, extension and reinforcement provided at the end of every lesson? Does she use them at any convenient times throughout the day?



## CHAPTER V

### ANALYSIS OF DATA

This chapter describes the statistical analysis of the data collected to test the hypotheses presented in Chapter III. The study was a posttest-only control group design with the pretest as covariate eliminated. An  $F$  test was used to test the hypotheses which were to be retained if the results were significant at or beyond the .05 level of confidence on a one-tail test.

The total raw scores of the Expressive Language and Verbal Comprehension subtests of the R.D.L.S. and the Verbal Expression subtest of the I.T.P.A. were computed by the S.P.S.S. The presentation of the pretest and posttest descriptive statistics are contained in Tables 2 and 3.

#### Evaluation of Hypotheses

The NYBMUL statistical package was used to conduct an analysis of covariance using the pretest scores as the covariate. The Verbal Comprehension subtest was unable to be included as no pretest data was recorded. An intergroup comparison including covariate adjustment was made for the Expressive Language tests, using an  $F$  test statistic on the posttest data, to test the following hypotheses.

##### Hypothesis 1:

It is hypothesized that there are significantly greater scores on expressive language and/or verbal comprehension tests conducted with LSES

TABLE 2

Pretest Descriptive Statistics on the Three Groups as Measured by the R.D.L.S. and I.T.P.A.

Test		<u>n</u> of Cases	Mean	<u>SD</u>	<u>SE</u>	<u>Min.</u>	<u>Max.</u>	Range
Experimental Group 2								
R.D.L.S.	Expressive Language	16	43.84	5.86	1.47	34.00	54.00	20.00
I.T.P.A.	Verbal Expression	16	13.00	5.56	1.39	5.00	24.00	19.00
Experimental Group 1								
R.D.L.S.	Expressive Language	16	42.53	5.32	1.33	35.50	52.00	16.50
I.T.P.A.	Verbal Expression	16	9.75	3.61	0.90	00.00	14.00	14.00
Control Group 1								
R.D.L.S.	Expressive Language	16	43.25	4.78	1.20	36.00	54.00	18.00
I.T.P.A.	Verbal Expression	16	12.38	4.49	1.12	3.00	23.00	20.00



TABLE 3

Posttest Descriptive Statistics on the Three Groups as Measured by the R.D.L.S. and I.T.P.A.

Test		<u>n</u> of <u>Cases</u>	Mean	<u>SD</u>	<u>SE</u>	<u>Min.</u>	<u>Max.</u>	Range
Experimental Group 2								
R.D.L.S.	Expressive Language	15	48.80	6.08	1.57	35.00	57.00	22.00
I.T.P.A.	Verbal Expression	15	15.53	7.68	1.98	6.00	31.00	25.00
R.D.L.S.	Verbal Comprehension	15	53.40	2.67	0.69	49.00	57.00	8.00
Experimental Group 1								
R.D.L.S.	Expressive Language	16	48.31	4.61	1.15	42.00	56.00	14.00
I.T.P.A.	Verbal Expression	16	14.94	6.46	1.62	7.00	29.00	22.00
R.D.L.S.	Verbal Comprehension	16	52.31	2.73	0.68	47.00	56.00	9.00
Control Group 1								
R.D.L.S.	Expressive Language	16	47.31	5.36	1.34	38.00	55.00	17.00
I.T.P.A.	Verbal Expression	16	13.94	5.58	1.39	6.00	25.00	19.00
R.D.L.S.	Verbal Comprehension	16	52.62	2.45	0.61	48.00	58.00	10.00

children of kindergarten age whose mothers use the Learning to Tell section of the Learning Language at Home kit with them after one initial training session, than on tests conducted with LSES children who receive no intervention.

The first hypothesis was tested to determine if, on the Expressive Language subtest of the R.D.L.S., the adjusted mean score of the  $E_1$  group differed significantly from the adjusted mean score of the  $C_1$  group. There were no significant differences between the  $E_1$  group and the  $C_1$  group on the Expressive Language subtests of the R.D.L.S. ( $F_{1,28df} = 1.93, p < .088$ ).

The Verbal Expression subtest of the I.T.P.A. was tested to see if the adjusted mean score of the  $E_1$  group differed significantly from the adjusted mean score of the  $C_1$  group. There were no significant differences between the  $E_1$  group and the  $C_1$  group on the Verbal Expression subtest of the I.T.P.A. ( $F_{1,28df} = 2.34, p < .068$ ).

The Verbal Comprehension subtest of the R.D.L.S. was also tested to see if the mean posttest score of the  $E_1$  group differed significantly from the mean post score of the  $C_1$  group. There were no significant differences between the  $E_1$  group and the  $C_1$  group on the Verbal Comprehension subtest of the R.D.L.S. ( $F_{1,30df} = 1.24, p < .340$ ).

Each of the three subtests considered led to the rejection of hypothesis one.

### Hypothesis 2:

It is hypothesized that there are significantly greater scores on expressive language and/or verbal comprehension tests conducted with LSES children of kindergarten age whose mothers use the Learning to Tell section of the Learning Language at Home kit with them after one initial training session and weekly visits from an



intervener who provides encouragement, advice and assistance throughout the program, than on tests conducted with LSES children whose mothers use the kit with them after only one initial training session.

The second hypothesis was tested to determine if, on the Expressive Language subtests of the R.D.L.S., the adjusted mean score of the  $E_1$  group differed significantly from the adjusted mean score of the  $E_2$  group. There were no significant differences between the  $E_1$  group and the  $E_2$  group on the Expressive Language subtests of the R.D.L.S. ( $F_{1,27df} = 1.46, p < .118$ ).

The Verbal Expression subtest of the I.T.P.A. was tested to see if the adjusted mean score of the  $E_1$  group differed significantly from the adjusted mean score of the  $E_2$  group. There were significant differences between the  $E_1$  group and the  $E_2$  group on the Verbal Expression subtest of the I.T.P.A., but they were in favor of the  $E_1$  group ( $F_{1,27df} = 3.34, p < .039$ ). The  $E_2$  group did not achieve significantly higher scores than the  $E_1$  group.

The Verbal Comprehension subtest of the R.D.L.S. was also tested to see if the mean post score of the  $E_1$  group differed significantly from the mean post score of the  $E_2$  group. There were no significant differences between the  $E_1$  group and the  $E_2$  group on the Verbal Comprehension subtest of the R.D.L.S. ( $F_{1,29df} = 1.04, p < .470$ ).

Each of the three subtests considered led to the rejection of hypothesis two.

### Hypothesis 3:

It is hypothesized that there are significantly greater scores on expressive language and/or verbal comprehension tests conducted with LSES children of kindergarten age whose mothers use the Learning to Tell section of the Learning Language at Home kit with them after one initial training session and

weekly visits from an intervener who provides encouragement, advice and assistance throughout the program, than on tests conducted with LSES children who receive no intervention.

The third hypothesis was tested to determine if, on the Expressive Language subtest of the R.D.L.S. the adjusted mean score of the  $E_2$  group differed significantly from the adjusted mean score of the  $C_1$  group. There were no significant differences between the  $E_2$  group and the  $C_1$  group on the Expressive Language subtests of the R.D.L.S. ( $F_{1,27df} = 0.14, p < .353$ ).

The Verbal Expression subtest of the I.T.P.A. was tested to see if the adjusted mean score of the  $E_2$  group differed significantly from the adjusted mean score of the  $C_1$  group. There were no significant differences between the  $E_2$  group and the  $C_1$  group on the Verbal Expression subtest of the I.T.P.A. ( $F_{1,27df} = 0.28, p < .299$ ).

The Verbal Comprehension subtest of the R.D.L.S. was also tested to see if the mean posttest score of the  $E_2$  group differed significantly from the mean posttest score of the  $C_1$  group. There were no significant differences between the  $E_2$  group and the  $C_1$  group on the Verbal Comprehension subtest of the R.D.L.S. ( $F_{1,29df} = 1.19, p < .371$ ).

Each of the three subtests considered led to the rejection of hypothesis three. The findings are summarized in Table 4.

### Supplementary Analysis

The interrelationship of the three posttest scores was examined by the use of the Pearson's Product Moment Correlation Coefficient. The results show a high correlation between the Expressive Language scores on the R.D.L.S. and the I.T.P.A. The correlation



TABLE 4

Posttest  $F$  Test Comparison Between the Three Groups as Measured by the Adjusted Scores of the R.D.L.S. Expressive Language Subtests and the I.T.P.A. Verbal Expression Subtest with the Pretest as Covariate Eliminated

Groups	<u>n</u> of Cases	Unadjusted Mean	Covariate Adjustment of Mean	<u>F</u>	<u>df</u> <u>Hyp.</u>	<u>df</u> <u>Err.</u>	1-tail Prob.
R.D.L.S. Expressive Language							
E <sub>1</sub>	16	48.31	48.83	1.92	1	28	.088
C <sub>1</sub>	16	47.31	46.80				
E <sub>2</sub>	15	48.80	47.71	1.46	1	27	.118
E <sub>1</sub>	16	48.31	49.41				
E <sub>2</sub>	15	48.80	48.30	0.14	1	27	.353
C <sub>1</sub>	16	47.31	47.82				
I.T.P.A. Verbal Expression							
E <sub>1</sub>	16	14.94	15.91	2.33	1	28	.068
C <sub>1</sub>	16	13.94	12.96				
E <sub>2</sub>	15	15.53	13.61	3.34	1	27	.039
E <sub>1</sub>	16	14.94	16.86				
E <sub>2</sub>	15	15.53	15.20	0.28	1	27	.299
C <sub>1</sub>	16	13.94	14.27				

between the Expressive Language scores and the Verbal Comprehension scores was low at .254 and was still significant at the 95 percent level, as shown in Table 5.

TABLE 5

Pearson's Product Moment Correlation Coefficient on the  
Three Language Scores

Test <sup>a</sup>	Test 1	Test 2	Test 3
Test 1			
Coefficient	1.000		
Cases	47		
Significance	0.001		
Test 2			
Coefficient	0.7235	1.000	
Cases	47	47	
Significance	0.001	0.001	
Test 3			
Coefficient	0.2316	0.2547	1.000
Cases	47	47	47
Significance	0.059	0.042	0.001

<sup>a</sup>Test 1 indicates the R.D.L.S. Expressive Language subtest  
 Test 2 indicates the I.T.P.A. Verbal Expression subtest  
 Test 3 indicates the R.D.L.S. Verbal Comprehension subtest

A pretest-posttest correlated F test for the unadjusted scores of Groups  $E_2$ ,  $E_1$ , and  $C_1$  revealed that all three groups showed significant gains between pretesting and posttesting on the R.D.L.S., as shown in Table 6. Slightly different findings were found on the I.T.P.A. where



Groups  $E_2$  and  $E_1$  showed significant differences between pretesting and posttesting, while Group  $C_1$  was not significant ( $p < .121$ ).

TABLE 6

A Pretest-Posttest Correlated  $F$  Test for the Unadjusted Scores of Groups  $E_2$ ,  $E_1$ ,  $C_1$  on the R.D.L.S. and I.T.P.A. Scores

Group	Pretest/ Posttest	<u>n</u> of Cases	Mean	Mean Diff.	<u>SD</u>	<u>SE</u>	1-tail Prob.
R.D.L.S. Expressive Language Subtest							
Group E <sub>2</sub>	Pre	15	44.433	-4.368	3.861	1.434	.000
	Post	15	48.800			1.571	
Group E <sub>1</sub>	Pre	16	42.531	-5.781	4.378	1.330	.000
	Post	16	48.313			1.154	
Group C <sub>1</sub>	Pre	16	43.250	-4.063	4.139	1.195	.000
	Post	16	47.313			1.341	
I.T.P.A. Verbal Expression Subtest							
Group E <sub>2</sub>	Pre	15	13.133	-2.400	4.239	1.480	.023
	Post	15	15.533			1.983	
Group E <sub>1</sub>	Pre	16	9.750	-5.188	4.983	0.901	.000
	Post	16	14.938			1.616	
Group C <sub>1</sub>	Pre	16	12.375	-1.563	5.125	1.121	.121
	Post	16	13.938			1.395	

It was believed that combining the total scores on the R.D.L.S. Expressive Language subtests and the I.T.P.A. Verbal Expression subtest would assist in tempering the influence of any extreme scores. This was a justifiable procedure as it was shown that the scores on the two instruments were highly correlated ( $r = .71$  on the pretest, and  $r = .72$  on the posttest, where  $p < .001$ ). Table 7 shows the three groups to be effectively the same.

TABLE 7

Posttest F Test Comparison Between the Three Groups as Measured by the Combined Total Adjusted Scores of the R.D.L.S. Expressive Language Subtests and the I.T.P.A. Verbal Expression Subtest with the Pretest as Covariate Eliminated

Groups	n of Cases	Unadjusted Mean	Covariate Adjustment of Mean	F	df Hyp.	df Err.	1-tail Prob.
E <sub>1</sub>	16	63.25	64.56	2.56	1	29	.061
C <sub>1</sub>	16	61.25	59.94				
E <sub>2</sub>	15	65.00	62.20	1.76	1	28	.098
E <sub>1</sub>	16	63.25	66.05				
E <sub>2</sub>	15	65.00	63.86	0.26	1	28	.306
C <sub>1</sub>	16	61.25	62.39				

The self-report questionnaire provided "soft" data on how the parents responded to the program. The responses presented in Table 8 are percentage figures for the E<sub>1</sub> and E<sub>2</sub> groups.



TABLE 8

Percentage Responses to the Questions Contained in the  
Questionnaire to Parents

1. How many lessons were you able to complete between the beginning of the program and December 4th?					
	<u>Less than 13</u>	<u>14-26</u>	<u>27-37</u>	<u>38-45</u>	<u>46-50</u>
E <sub>1</sub> <sup>a</sup>	0	30	10	30	30
E <sub>2</sub>	14	20	6	40	20
2. If you were given the choice of having a home-visitor to give you advice on the program, which would you prefer?					
	<u>Visitor once a month</u>	<u>Visitor every 3 weeks</u>	<u>Visitor every 2 weeks</u>	<u>Visitor once a week</u>	<u>No Visitor</u>
E <sub>1</sub>	40	0	30	0	30
E <sub>2</sub>	60	0	10	16	14
3. How much progress do you feel your child has made during the program in <u>speech</u> and <u>language</u> ?					
	<u>Very Outstanding Progress</u>	<u>Good Progress</u>	<u>Adequate Progress</u>	<u>Very Limited Progress</u>	<u>No Progress</u>
E <sub>1</sub>	10	80	10	0	0
E <sub>2</sub>	0	60	26	7	7
4. I now know a lot more about my child's abilities in the use of language.					
	<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
E <sub>1</sub>	20	80	0	0	0
E <sub>2</sub>	20	54	13	13	0

(cont'd.)

Table 8 (cont'd.)

5. I now know a lot more about how to help my child at home.

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
E <sub>1</sub>	30	70	0	0	0
E <sub>1</sub>	34	40	13	13	0

6. I am very pleased with this educational program.

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
E <sub>1</sub>	60	20	20	0	0
E <sub>2</sub>	40	27	27	6	0

7. Did you find your home visitor was able to give you any assistance that you requested? (additional question for E<sub>2</sub>)

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
E <sub>2</sub>	14	60	20	0	6

<sup>a</sup>n of Cases for E<sub>1</sub> is 13

n of Cases for E<sub>2</sub> is 15



## CHAPTER VI

DISCUSSION OF RESULTS, SUMMARY, CONCLUSIONS  
AND RECOMMENDATIONS

This chapter presents a discussion of the results of the study, summarizes the results, draws conclusions from the results, and presents recommendations for further research.

Discussion of Results

The first purpose of the study was to evaluate the Learning to Tell section of the Learning Language at Home kit. The scores of the  $E_1$  group and the  $C_1$  group on Expressive Language and Verbal Comprehension tests as measured by the R.D.L.S. and I.T.P.A. subtests were compared. No significant differences were found in test scores between the two groups indicating that the kit was not effective when used under these conditions. Some tentative explanations may be offered to cause the results to be viewed circumspectively rather than to be naively accepted as a valid and complete indictment of the ineffectiveness of the Learning to Tell section of the kit.

Firstly, it is possible that the children in  $E_1$  group suffered more test anxiety than the  $C_1$  control group on the posttest which may have kept their scores low. A higher degree of test anxiety for the  $E_1$  group may have resulted from the fact that this group was aware of the impending posttest. They had been "preparing" for it for a number of weeks. The mothers may have been anxious that the children perform

well when the test was administered and additional anxiety may have been transmitted by them to the child. Children of LSES are said to be more susceptible than others to test anxiety. Labov (1969) warned that in his research with LSES black children, the test-taking set was impaired on oral response tests when the examiner was of a higher SES. Fishman, Deutsch, Kogan, North, and Whiteman (1964) pointed out that a disadvantaged child's anxiety can be at a disruptive level during test-taking. The control group,  $C_1$ , had not been "preparing" for the posttest; they were not aware that a test was impending; and during the test they were not aware of its significance to the same extent that the  $E_1$  group might have been.

Secondly, the period allotted for execution of the program was only 10 weeks which may have limited the effectiveness of the kit. A longer duration of the program may have evinced significant gains for the  $E_1$  group.

A third factor which may have contributed to the failure of  $E_1$  to achieve significantly higher scores on the posttest is that many of the parents did not complete the program. Question one on the self-report questionnaire (Table 8) indicates that only 30 percent of the  $E_1$  group who responded completed the full 50-lesson program, while 40 percent completed less than 37 lessons, and 30 percent completed less than 26 lessons. In order for this to be a controlled study all parents had to be allotted the same amount of time to complete the program--10 weeks. For some, this was obviously not sufficient. Perhaps some failed to complete the program because of disinterest or because they could not cope with it, in which case this is to some extent an indictment of the program when used by LSES mothers because



the kit was designed to be used by parents without outside motivation and assistance. Some may have failed to complete the program because they could not always manage to find time each day to do a lesson. They may have fallen behind but, given extra time, might have taught the full complement of lessons and the children may then have achieved significantly higher scores on the posttest. Thus, it might be found that if this program were implemented using a flexible time schedule for its completion, it might have more positive effects.

Returning again to the question of possible disinterest of mothers in the program or inability to cope with its demands as an explanation for the unsatisfactory completion of the program, and the resultant hypothesis that poor test scores for  $E_1$  might have been a consequence of this, the researcher suggests that if this is the case, the kit may be unsuitable for use with LSES mothers or, alternatively, only suitable if effective motivation and assistance are provided for the mothers throughout the program.

Fourthly, it is possible that an opposite phenomenon may have operated on some mothers--the ones who did complete the entire program. They may have hurried the child through the program at a pace inappropriate to his abilities. They were asked to complete one lesson a day and they may have done this whether or not the child was understanding the lessons or deriving benefit from them.

One of the basic problems in conducting a study like this is the lack of researcher control over the behavior of the people involved in the experiment. This makes it very difficult to do anything more than identify the possible sources of variance which account for the results. Pinpointing the causative one or ones is impossible without

further research. Four possible reasons for lack of significance in the results of the  $E_1$  group have been offered above. Any one, some, or all of these may account for the results. Alternatively, the results of the R.D.L.S. and I.T.P.A. tests may be an accurate indication of the effectiveness of the kit. It is not possible to be definitive.

The second purpose of the study was to compare the effectiveness of two methods of intervening administered to the  $E_1$  and  $E_2$  groups as well as comparing these two groups with a no treatment group,  $C_1$ . Results of the R.D.L.S. revealed no significant differences between the scores of all three groups. Results of the I.T.P.A. subtest showed that when the scores of the two groups,  $E_1$  and  $E_2$ , were separately compared to the scores of the no treatment control group,  $C_1$ , there were no significant differences indicating that neither of the two methods of treatment was more effective in improving language scores than was no treatment. When the scores of the  $E_1$  group were compared to the scores of the  $E_2$  group on the I.T.P.A. subtest, however, there was a significant difference in favor of the  $E_1$  group. This test indicated that the treatment received by the  $E_1$  group was more effective than the treatment received by the  $E_2$  group, although it had been hypothesized that the treatment of the  $E_2$  group would be more effective than that of the  $E_1$  group.

Results of the R.D.L.S. and the I.T.P.A. subtests are contradictory. The first question to be answered is, "Which results are likely to be more reliable?" The researcher suspects that the R.D.L.S. might not have been a sufficiently sensitive instrument for detecting changes in the children's performance in only 10 weeks, compared to the I.T.P.A. The R.D.L.S. was found to be inappropriate for some of the



children who reached the ceiling on certain test items in all three sections of the test, rendering those parts of the test non-discriminating for these children. No children approached the ceiling on the I.T.P.A. subtest.

Unfortunately, the revised edition of the R.D.L.S. (Reynell, 1977) was not available before the commencement of the program. The revised R.D.L.S. includes the following changes which the researcher believes would have assisted in the present study:

1. The scales are now reliable up to 7 years old, instead of 6 years old and were restandardized using a broader and larger sample of 1318 children.
2. In the Language Structure items of the Expressive Language scale, items 16 onwards are now designed to reach a higher ceiling and to allow more differentiations at the upper end of the scale. The scale is now designed to elicit pronouns, prepositions, past and future tenses, with a minimum of prompting.
3. In the Vocabulary section of the Expressive Language scale, the "pictures" and "words" items have both been altered slightly in order to raise the ceiling without extending the testing time. This was achieved by introducing some more difficult words and by eliminating some words which proved to be duplications in terms of discrimination.
4. In the Language Content items of the Expressive Language scale, the tasks have been kept the same, but the instructions and scoring have been altered. The number of pictures has been reduced to three and an alternative set of pictures provided.

5. In the Verbal Comprehension scales many of the toys have been eliminated or substituted. For example, the hens were eliminated because it was mainly a cultural difference which determined their recognition. The scales have been expanded to make them more difficult at the top end.

In view of the apparent shortcomings of the experimental edition of the R.D.L.S. used in this study--made evident both by the fact that children exceeded the ceiling on it and that the revised edition has changed a number of aspects of the experimental edition which had proved to have limitations--it is postulated that more confidence should be placed in the results of the I.T.P.A. subtest than in the results of the R.D.L.S.

The failure of the  $E_1$  and  $E_2$  groups to achieve significantly higher scores than the no treatment control group on either the R.D.L.S. or the I.T.P.A. subtest must be investigated because it is contradictory to the hypotheses. In the foregoing discussion of the results obtained in pursuing the first purpose of the study, four possible explanations were advanced for the failure of the  $E_1$  group to achieve significantly higher scores than the no treatment control group. The same reasons may be used to explain why the  $E_2$  group also failed to score significantly higher than the no treatment control group although in this case there was the additional intervening variable of the home visitors who may have, contrary to expectations, contributed to the poor results of the program. The possibility arises that the social work students who acted as interveners were not only ineffective but adversely effective.

Not only did the  $E_2$  group fail to achieve significantly higher scores than the  $C_1$  control group but it also achieved significantly lower



scores than the  $E_1$  group on the I.T.P.A. tests. Research had suggested that the presence of interveners who visited homes weekly to give encouragement, advice and assistance might enhance the effects of a home-based language program for LSES families. The theoretical basis of the study gave rise to the hypothesis that the  $E_2$  group would achieve significantly higher scores than the  $E_1$  group. Not only was this hypothesis rejected; its opposite was found to hold--the  $E_1$  group achieved significantly higher scores than the  $E_2$  group. Explanations must be offered for this phenomenon. Three main ones are advanced.

Firstly, the social work interveners may have had a deleterious effect on the program in the following way. Research has shown that the best results of intervention programs are obtained when parents assume full responsibility for their children rather than operating on the assumption that they share the responsibility with someone else because, in that case, there is a tendency for them to abdicate too much of their role and they are not as enthusiastic, diligent or productive in their work with the child (Bronfenbrenner, 1974; Gilmer et al., 1970). The mothers may possibly have viewed the interveners in this light, feeling that they were sharing the responsibility and hence did not take as much pride in their work or exert as much effort as the  $E_1$  mothers. This would indicate that respective roles should be made very clear. The weekly visitor should be sure to indicate that his role is a minor one and explain to the mother that she is the prime agent in the program.

A second explanation might be that the interveners had an adverse effect upon the mothers and discouraged rather than encouraged them. Because the interveners in  $E_2$  group were students, this may have

had negative connotations for the parents. Their age and social status may not have been conducive to their being recognized as bona-fide interveners. The  $E_1$  group was visited only by the researcher. He was in an older age group than the student interveners and had a vested interest in carefully describing the program. The  $E_2$  group was also visited by the researcher and given the initial training session but, after that, the social workers assumed responsibility. Perhaps, in the eyes of the mothers of  $E_2$ , the program no longer had the same credibility that it did for the mothers of the  $E_1$  because it may not have appeared as important when young students seemed to be in charge. As far as the  $E_1$  mothers were concerned, the higher status researcher was still in control. This may be the reason why the  $E_1$  group achieved higher scores on the I.T.P.A. test than the  $E_2$  group. The latter may not have had the faith, confidence or enthusiasm to carry out the program as they were not inspired by the person who was regularly visiting them. In other words, far from motivating and encouraging them, the student interveners in this study may have had a detrimental effect. Using these students was unavoidable because no other people were available for this regular, long-term visiting and it did seem they had many qualities which would have equipped them admirably for the job. Nevertheless, they were young, they were students, and they were doing the visiting as a small part of the credit for a social work course--not because they had expressed interest or had volunteered. The 10 visits earned them 20 percent credit and many of the students may have regarded the time and effort they were expected to spend on visiting as disproportionate to the reward. The parents themselves did not seem particularly impressed by the weekly visitors. The questionnaire to



parents (Table 8) following the program, showed that only 16 percent of the parents wanted a home visitor once a week, while 60 percent preferred a home visitor only once a month. Though home visitors may in many instances be a source of support and help and lead to increased scores, in this case they may have had the opposite effect.

A third explanation of why the  $E_2$  group achieved significantly lower scores than the  $E_1$  group is an extension of one of the reasons offered for the failure of both of these groups to achieve significantly higher scores than the no treatment control group. That is, that test anxiety interfered more with the responses of the children in  $E_2$  than the children in  $E_1$ . The children in  $E_2$  may have even been more anxious than the children in  $E_1$  because of additional pressure which may have been exerted on them by the weekly visits of the social work students. This might have been indirect in that the visits caused anxiety on the mother's part for the child to do well and this could have been transmitted to the child. The social work interveners reported in their log books that the mothers were quite preoccupied with the idea of the posttesting of their children. The results of the post-program questionnaire could be used in support of this explanation. Table 8 shows only 16 percent of mothers wanted a weekly home visitor and 60 percent wanted a visitor only once a month. This could indicate that the visitors were a source of anxiety rather than support to the mothers.

### Summary and Conclusions

In conclusion, the statistical results of this study indicated the following:

1. The Learning to Tell section of the Learning Language at Home kit when used by LSES mothers after one initial training session was not more effective in bringing about significant improvements in the scores of their kindergarten-age children on (a) expressive language, and (b) verbal comprehension tests than was no treatment.

2. The Learning to Tell section of the Learning Language at Home kit when used by LSES mothers after one initial training session and weekly visits by an intervener did not bring about significantly greater improvements in the scores of their kindergarten-age children on (a) expressive language, and (b) verbal comprehension tests than did no treatment.

3. The Learning to Tell section of the Learning Language at Home kit when used by LSES mothers after one initial training session and weekly visits from an intervener, did not bring about significantly greater improvements in the scores of their kindergarten-age children on (a) expressive language, and (b) verbal comprehension tests than did the same section used by mothers after only one initial training session. On the contrary, the Learning to Tell section of the kit when used by LSES mothers with their kindergarten-age children after only one initial training session, brought about significantly greater improvements in Verbal Expression as measured by the I.T.P.A. subtest than did the same section used by mothers after one initial training session and weekly visits from an intervener.

However, all these conclusions must be viewed circumspectively in the light of the following variables which may have affected the statistical results:

1. The mothers in  $E_1$  and  $E_2$  groups did not complete the entire



Learning to Tell section of the kit. In  $E_1$ , only 30 percent of the mothers completed the 50 lessons; 40 percent completed less than 37 lessons and 30 percent completed less than 26 lessons. In  $E_2$ , only 20 percent of the mothers completed the 50 lessons; 40 percent completed less than 37 lessons, 20 percent completed less than 26 lessons and 14 percent completed less than 13 lessons.

2. Test anxiety may have interfered with the results. This was a sample of LSES children who are notably more subject to test anxiety than other children. The anxiety of the  $E_2$  group may have been even greater than the anxiety of the  $E_1$  group because those children and parents were subjected to more severe pressure and continuous reminders of the impending test through having weekly visitors.

3. Results of the R.D.L.S. may not be reliable. A number of children exceeded the ceiling on some test items and so they could not be measured accurately. During the actual implementation of the testing program a revised edition of the R.D.L.S. was published which amended a number of parts which had been found to be unsatisfactory.

4. The presence of the interveners may have had an adverse effect in that the mothers in the group who received weekly visits may not have felt that they were completely responsible for their child's progress but rather that the responsibility was being shared by the interveners. It should have been made quite clear to the mothers that this was not the case and that in fact the success of the program lay in their hands.

5. The interveners may have had a deleterious effect. Such factors as their youth, their lack of status, and in some instances their lack of enthusiasm and interest--possibly because of a feeling that the effort

was disproportionate to the reward--may have adversely affected the credibility and importance of the program in the eyes of the mothers. It is evident from study of the self-report questionnaires administered to mothers after the program that the mothers in the groups who had weekly interveners felt less positive about the program than those who had conducted the program after only one initial training session. The above two parts lead to the conclusion that either home visitors per se is not a good idea or that a different type of visitor and/or a different approach should be used.

6. Because of the rigid time period allowed for the completion of the program (10 weeks), it is possible that the mothers who did complete all the lessons did so at the expense of understanding and benefit on the children's part. They may have felt obliged to "get through" the lessons whether or not the children were able to keep pace.

It is impossible to draw definitive conclusions from this study. The results of the tests may be accepted at face value, or they may be interpreted in light of the above variables which may have had an effect in order that people who are interested in using the Learning Language at Home kit will not be misled into a wrong estimate of its potential usefulness. It is possible that the results of such programs as that of M.B. Karnes may be long-term rather than short-term. Perhaps their greatest usefulness lies in their potential for establishing a habit of verbal exchange between mother and child and helping the mother develop methods and techniques for making this an enjoyable, satisfying and interesting activity that both participants wish to perpetuate.



In the next section, recommendations are presented which may, in future research, help to eliminate some of the sources of variance which it is suggested might have emerged in this study.

### Recommendations for Future Research

The following amendments to the program are suggested for further research:

1. Intervention by school personnel, that is, a teacher or school counselor, under the direction of a researcher would help the external validity of the program.
2. If the program were operated from "within" the school, it might reduce the possible anxiety felt by parents and children in the experimental groups. If the program appeared to be an integral part of school life rather than empirical research, results may be different from those in this study.
3. Telling the mothers to try to complete the program in the 10-week period was necessary to be able to evaluate the effectiveness of the kit, but was certainly not conducive to taking account of the individual differences of the child, mother and environmental circumstances. Therefore, replication is suggested over a longer period of time to evaluate the program with a more flexible progression through the kit to take account of individual differences.
4. In view of the inconclusive research findings, the program should be reassessed using the revised edition of the R.D.L.S.
5. Research should be conducted using a different type of home visitor, perhaps people who have expressed interest in the task or who

have a vested interest in seeing good results for the program. Also, perhaps the home visitors should be older than the student social workers in this study and thus give the program more credibility in the eyes of the mothers.

6. When visitors are assigned to visit homes they should be told to make clear that their role is a minor one in the program and that major responsibility for implementation and success lies with the parent.

7. Children of parents should not be told that they will be tested at the end of the program because this may lead them to regard the lessons as "preparation" for an impending test, potentially resulting in debilitating test anxiety.



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## APPENDICES



## APPENDIX A

LETTER OF REQUEST TO SCHOOL BOARD

The Proctor  
Spencer Hall  
Queen's College  
Prince Philip Drive  
St. John's  
April 28, 1977

Mr. Newman Kelland  
Avalon Consolidated School Board  
Box 1980  
St. John's  
A1C 5R5

Dear Mr. Kelland,

I am a graduate student in the Department of Educational Psychology preparing to collect data for my M.Ed. thesis under the supervision of Dr. Lorne Taylor.

The purpose of the thesis is to show how many children entering kindergarten who are language-delayed can benefit from a language development program administered by the mothers in their own homes. I would like to select and pretest the students in September this year, and posttest the students in December.

My request is that I can obtain the father's occupation of the kindergarten students as part of the sampling procedure essential to placing each household on the Blishen Rating Scale. Parental occupation is the only information I require. Secondly, I would need the cooperation of the principals and kindergarten teachers in four schools to allow me to individually test 48 kindergarten students. This would involve taking one student to an adjoining room and testing the student for a period up to thirty minutes which will cause the minimum of disruption to the classroom schedule. Finally, in December, the same students will have to be posttested following completion of the program. The instruments I intend to use are the Reynell Developmental Language Scales and the Illinois Test of Psycholinguistic Abilities.

I feel this is going to be an exciting undertaking and hopefully with the School Board's cooperation will result in the acceleration of kindergarten language development of children within the four schools.

Thanking you in anticipation of your cooperation.

Yours sincerely,

David Wrigley  
Graduate Student



## APPENDIX B

LETTER IN REPLY FROM SCHOOL BOARD

# The Avalon Consolidated School Board

P. O. BOX 1980  
ST. JOHN'S, NEWFOUNDLAND  
A1C 5R5

Chairman: H. W. R. CHANCEY  
Vice-Chairman: B. S. BUTTON  
Secretary: R. MITCHELL, C.A.  
Treasurer: DR. D. H. RENDELL

Superintendent: N. KELLAND, B.A.(Ed.), M.Ed.  
Asst. Superintendent: J. J. PARSONS, M.A., M.Ed.  
Business Administrator: F. P. FOLLETT

May 11th, 1977.

Mr. David Wrigley,  
The Proctor,  
Spencer Hall, Queen's College,  
Prince Philip Drive,  
ST. JOHN'S, Newfoundland.

Dear Mr. Wrigley,

On behalf of the Avalon Consolidated School Board, this is to grant you permission to collect data on Kindergarten students as indicated in your letter of April 28, 1977. This is, of course, on the condition that you get the approval of the principals and teachers concerned.

You should also obtain approval from the parents of any children that you deal with.

We would appreciate getting a copy of any report that you might produce.

Yours very truly,

N. Kelland,  
Superintendent.

NK/cw



APPENDIX C

LETTER TO PARENTS FROM PRINCIPALS

**VIRGINIA PARK ELEMENTARY SCHOOL**

MIDDLETON STREET  
ST. JOHN'S, NEWFOUNDLAND

ROBBINS, B.A. (ed), B.A., M.Ed.  
Principal

G. MEADUS, B.A. (Ed.), B.A.  
Vice-Principal

Sept. 26, 1977

Dear Parent,

Recently you have been visited by Mr. David Wrigley who talked about a language program for your child. Mr. Wrigley has our approval to carry out this project and we trust, with your help, it will be beneficial to the children concerned.

We are pleased you have taken advantage of this opportunity and we hope you enjoy working with your child, on the daily activities.

Yours sincerely,

RR/jc

R. Robbins



APPENDIX D

QUESTIONNAIRE TO PARENTS

The Proctor  
Spencer Hall  
Queen's College  
St. John's  
Newfoundland  
December 3, 1977

CONFIDENTIAL PARENT QUESTIONNAIRE

Thank you for having participated in the home teaching program. The goal of this program is to provide me with information as to how effective the lessons were for children in kindergarten. The purpose of this questionnaire is to obtain information that will help me to determine if the program meets this goal. This questionnaire will be used to summarize information about all of the parents' involvement in this program. The results of a single questionnaire will not be presented to anyone.

Put this questionnaire in the enclosed stamped, addressed envelope and mail it by return post. Please do not sign your name on this form.

D. Wrigley



INSTRUCTIONS: On these questions, select the best answer and circle your choice. Answer all questions honestly. (Remember, I don't know who you are).

1. How many lessons were you able to complete between the beginning of the program and December 4th?

Less than 13	14-26	27-37	38-45	46-50
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

2. If you were given the choice of having a home visitor to give you advice on the program, which would you prefer?

Visitor once a month	Visitor every 3 weeks	Visitor every 2 weeks	Visitor once a week	No Visitor
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

3. How much progress do you feel your child has made during the program in speech and language?

Very Outstanding Progress	Good Progress	Adequate Progress	Very Limited Progress	No Progress
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

4. I now know a lot more about my child's abilities in the use of language.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

5. I now know a lot more about how to help my child at home.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

(cont'd.)

6. I am very pleased with this educational program.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
—	—	—	—	—
—	—	—	—	—

7. The mothers in E<sub>2</sub> received an additional question:

Did you find your home visitor was able to give you any assistance that you requested?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
—	—	—	—	—
—	—	—	—	—

8. Do you have any comments or suggestions you would like to share with me on any aspects of the program? If so, please write them below.













