

EDUCATIONAL INTERVENTION PROGRAMMES FOR VERY YOUNG CHILDREN:

AN OVERVIEW:

WITH SPECIFIC REFERENCE TO THE HOME EARLY LEARNING PROGRAMME

OF THE ATHLONE EARLY LEARNING CENTRE

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the degree of Master of Science in Clinical Psychology

by

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ABSTRACT

The concept of educational intervention for very young children is discussed from the standpoint of ethical implications, practical implementation and effectiveness. Specific programmes are described as background to the Home Early Learning Programme and the Crèche Programme of the Athlone Early Learning Centre.

Using a newly developed instrument, viz. the Grover Developmental Charts for Very Young Children, 36 children participating in the Home Early Learning Programme and 24 children attending the Crèche were assessed. They were divided into four equal age groups, i.e. 15, 21, 27 and 33 months. Number of home visits received/number of months spent at the Crèche were correlated with deviation scores obtained from the Grover Developmental Charts. Results computed indicate that Crèche children show statistically significant improvement over time on Chart 3 (Socialisation) and Chart 5 (Expressive Communication), while children participating in the Home Early Learning Programme show statistically significant improvement on Chart 2 (Interaction with Objects, Dexterity and Fine Co-ordination). Significant differences between the two groups were found on Chart 5 (in favour of the Crèche children) and Chart 2 (in favour of the Home Early Learning Programme children). It is suggested, however, that these results should be treated with caution, and the difficulties inherent in testing young children are discussed. The importance of qualitative evaluation in defining success in this field is emphasized.



## INTRODUCTION

The crucial importance of the first years of life for future optimal development has led to much recent research (Caldwell & Ricciuti, 1973; Hellmuth, 1967; Stone et al, 1974). Having identified conditions which may hinder such development, attention is then paid to possible means of preventing this.

The interactional nature of the infant's reaction to his environment has been stressed by writers such as Bruner (1973) and Herzog and Lewis (1970). The basic ability of "learning to learn" is established during the first years of life (Bruner, 1973). This leads to a discussion of the "critical period" hypothesis (Denenberg, 1964) where it is suggested that the pessimistic implications of the hypothesis should be replaced by adopting Wolff's (1971) view of "sensitive" periods, as periods when the child has maximum susceptibility to learning particular skills.

By the process of socialisation, parents transfer to their children the norms of the social class to which they belong (Bee et al, 1969). Child-rearing practices thus reflect the attitudes and expectancies that are correlated with class membership.

Research on differences between lower and middle class families has predominantly assumed a middle-class norm as the ideal standard (Sroufe, 1970). Thus lower-class characteristics are regarded as "deficits" with middle-class mothers being seen as generally more in tune with their child's individual needs (Bee et al, 1969). Sroufe (1970) emphasizes the importance of scrutinising the "values,

experiential framework and conceptual model of the researcher" (p.142) before accepting the objectivity of results presented.

Social class differences in language modes has been documented by Bernstein (1960) and Hess and Shipman (1965). An impoverished language environment in lower-class homes has been described by Bee et al (1969), and summarised by Bruner (1973), who suggests that lower-class language, being more affective and metaphoric than formal or analytic, reflects the kind of problem-solving characteristic of "those who have accepted occupancy of the bottom rôles and statures" (p.20).

Taking issue with the "inadequate mother hypothesis", Baratz and Baratz (1970) draw a necessary distinction between cause and correlation and suggest that a child's apparent "ineducability" is more the result of an insensitive educational system than directly caused by inadequate child-rearing practices.

Proponents of the concept of the "culture of poverty" see a self-perpetuating and self-defeating autonomous subculture amongst the poor. A sense of fatalism and an inability to delay gratification are linked with low educational motivation, thus perpetuating "unemployment, poverty and despair" (Leacock, 1971, p.11).

The concept of the "culture of poverty" has been criticised by Leacock (1971) on grounds of its ethnocentrism. "Blaming poverty on the poor" (Valentine, 1971, p.215) is seen as a comforting, middle-class belief (Lewis, 1971).

The associated concept of "cultural deprivation" has been used to explain the lack of academic and occupational achievement found amongst the lower classes. The term "culturally disadvantaged" is preferred as describing a group set aside by virtue of its lowered economic capacity. However, as Baratz and Baratz (1970) state, "A disadvantage created by a difference is not the same thing as a deficit" (p.259). One is nevertheless concerned with groups that are unable to function satisfactorily in a technological society, and strategies for alleviating this condition must be devised.

"Deficit" and "non-deficit" explanations of low academic performance by poor children are compared. "Deficit" models include the "learning experiential deficit" model (Lambie et al, 1974); the "genetic deficit" model (Jensen, 1969); and the "psycho-physiological trauma" model (Birch & Gussow, 1970). "Non-deficit" models include the "school-as-failure" model (Hess, 1971, in Lambie et al, 1974); the "cultural-difference" model (Lambie et al, 1974); and the "social structural" model (Stein & Susser, 1970, in Lambie et al, 1974). It is suggested that as this study cannot encompass that argument which proposes radical political and economic change, a "deficit" model must be adopted, so that psychological change in the ecology of the lower-class child may be implemented to enable him to help himself and his community more effectively (Bruner, 1973). The "learning-experiential deficit" model is chosen as the basis of most educational intervention programmes.

The concept of compensatory education for disadvantaged children has been heavily criticised for being regarded as a panacea for the effects of centuries of poverty and discrimination (Morton &

Watson, 1971; Sarason, 1973; Winschel, 1970). However, if one views intervention programmes such as Head Start as limited but nevertheless valuable means of helping individual children to develop to the limits of their innate potential, early childhood educational intervention is considered to have intrinsic value.

Within the field of early childhood educational intervention there are three main issues, viz. timing of intervention; day-care vs. home-care; and evaluation of programmes.

Research has indicated that by the age of two to three years disadvantaged children begin to show a deceleration in rate of development (Caldwell, 1967 & 1970; Golden & Birns, 1968). It is suggested that intervention should commence at the beginning of the period of early language development (Schaefer, 1972), or as early in life as is feasible, "affectively tolerable and intellectually consistent with the level of development when intervention begins" (Palmer, 1973, p.438).

Concurrent with the concept of developmental day-care (Zigler, 1972) the importance of infant-mother attachment was recognised (Bowlby, 1969). However, Caldwell (1972) and Fowler (1978) found no distortion of attachment behaviour under conditions of high-quality group day-care.

Home-based programmes under the aegis of Home Start aimed at helping parents to enhance the total development (cognitive, language, social, emotional and physical) of all their children. Six well-documented home-based intervention programmes are described.

Evaluation of intervention programmes is complex and contentious (Horowitz & Paden, 1973). Many confounding variables militate against rigorously controlled evaluation studies. The field of infant testing is itself fraught with difficulties. The predictive validity of infant mental tests for adult intelligence is practically nil (Escalona & Moriarty, 1974). Moreover, the administration of infant intelligence tests is particularly hazardous. When applying infant tests to intervention programmes it is "necessary to match the evaluation of the intervention with the appropriate instrument" (Lewis, 1976, p.10). Nevertheless, as Haith (1972) concludes, existing tests will continue to be used until more appropriate and standardised inventories of infant behaviour are available.

Evaluations of the six previously described home-based intervention programmes are presented. A general overview of the effectiveness of early education is summarised by Bronfenbrenner (1974) who found that intervention without family involvement is likely to be unsuccessful, in that whatever effects are achieved tend to disappear once the intervention is discontinued.

The present study takes place against the background of the Athlone Early Learning Centre. The overall aim and functioning of this project are described, with emphasis focused on the Crèche Programme for Infants and Juniors, and the Home Early Learning Programme (Short, 1974; Stern & Kessel, 1972).

The use of a new assessment instrument, the Grover Developmental Charts for Very Young Children (Grover, 1978) is discussed. The

areas of development measured by the Charts are (a) body management and mobility, (b) interaction with objects, dexterity and fine co-ordination, (c) socialisation and awareness of self and others, and (d) communication, both receptive and expressive.

The aim of this study is broadly to present the concept of early educational intervention with particular emphasis on home-based programmes. More specifically it compares the Home Early Learning Programme and the Crèche Programme on scores obtained by using the Grover Developmental Charts. Furthermore, it is hoped to assess the usefulness of the Grover Developmental Charts in such a setting. Finally, it is hoped that follow-through investigation using the preliminary data presented here will demonstrate the importance of pre-school intervention programmes and lead to greater public and governmental support.

#### METHOD

The sample on which this study was carried out consisted of a group of sixty Coloured children of both sexes aged between 15 and 33 months. Group A, consisting of 24 children (12 male and 12 female) attended the Crèche. Group B, consisting of 36 children (21 male and 15 female) participated in the Home Early Learning Programme. The amount of intervention each child had received was represented by (a) number of months during which each child had attended the Crèche (Group A), and (b) number of visits each child had received (Group B), up to date of testing. Each group was divided into four equal age groups (viz. 15, 21, 27 and 33 months). Fifteen children were tested at each age level.

The subjects were tested on the Grover Developmental Charts. The Charts were scored according to criteria specified in the Manual. A developmental age was obtained for each child on each of the five Charts.

## RESULTS

For each subject a Deviation Score was computed by subtracting his Developmental Age from his Chronological Age.

Length of attendance at the Crèche/Number of visits were correlated with the Deviation Scores. The correlations between Groups A and B were compared for each Chart.

Significant negative correlations were found for Charts 3 and 5 for Group A, and for Chart 2 for Group B.

Significant differences between Group A and Group B were found for Charts 2 and 5.

## DISCUSSION

Results indicating negative correlations between deviation scores and number of months at Crèche/number of visits, were only obtained on three of the five Charts, and were so low as to necessitate being treated with caution. Various explanations were suggested for this, with methodological considerations being emphasized. The hazards of obtaining accurately quantifiable responses from very young children were highlighted, and certain difficulties in the

scoring criteria of the Grover Developmental Charts were discussed. It was suggested that the apparent "superiority" of Group B over Group A on Chart 2 could be explained by the fact that tasks presented in this Chart are similar to the activities found in the Home Early Learning Programme. The converse "superiority" of Group A over Group B on Chart 5 is tentatively explained by the Crèche environment providing more positive reinforcement for the production of speech than is found in many of the homes, in spite of the influence of the Home Visitors.

#### CONCLUSION

It is suggested that to place too much reliance on the quantitative results obtained would lead to an unjustifiably pessimistic assessment of the two Programmes. Using the trends which have emerged as a basis for future planning of the Home Early Learning Programme could lead to more structured emphasis on language development and socialisation skills.

The qualitative aspects of the Programmes are again emphasized, with caution being urged against the exclusive use of absolute values to define success in this field (Horowitz & Paden, 1973). While acknowledging the limitations and implications of attempting to change one aspect of the existing social structure in isolation, it is nevertheless concluded that the educational programmes described have a positive value and appear worth undertaking.



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1. INTRODUCTION

## 1.1 INTRODUCTION AND RATIONALE

The field of early education, or infant learning, has been the focus of increasing interest and concern over the past 15 years. With growing understanding of the crucial importance of the first years of life for later optimal development, research has been directed towards various aspects of infancy such as the physical, cognitive, social and emotional (Caldwell & Ricciuti, 1973; Hellmuth, 1967; Stone et al, 1974). Much attention has also been paid to a consideration of those conditions which are likely to hinder optimal development. Apart from such gross factors as physical and mental handicap, emphasis has been increasingly placed on the concept of environmental deprivation, with all that it implies with regard to social, economic, cultural and class differences (Denenberg, 1970; Schaffer, 1971).

Having identified those conditions which adversely affect development, the next question concerns those steps which may be taken not only to remediate imperfect development, but, more importantly, to prevent this from occurring in the first place. Under the heading of early intervention/enrichment programmes, as opposed to later, remedial programmes, one finds a vast literature describing many varieties of such programmes, both institution- and home-based (Bronfenbrenner, 1974; Haith, 1972; Lambie et al, 1974). When evaluating these programmes one has to consider how their effectiveness may be measured, and what assessment instruments are best fitted to quantify the tangible, and, more frequently, intangible results of such early learning programmes. The use of one such instrument, the Grover Developmental Charts for Very

Young Children, in one particular setting, the Athlone Early Learning Centre in Kewtown, Cape Province, forms the basis of this study.

The Early Learning Centre (ELC) was established by the Bernard van Leer Foundation in 1972 as an educational research institution, concerned with the needs of pre-school children and parents who live in socio-economically depressed circumstances.

The overall aim of the project was defined as "enabling children growing up in poverty to make better use of the limited opportunities available to them by promoting early childhood education" (Athlone Early Learning Centre, undated).

During the years subsequent to the establishment of the ELC, the writer became involved in devising and implementing a home-based intervention project, run under the auspices of the ELC, and known as the Home Early Learning Programme (H.E.L.P.). This project, based on several home-based enrichment programmes in the United States, aims at assisting mothers of pre-school children to provide a more adequately stimulating learning environment within the home itself, thereby increasing the probability that the children will be able to benefit as fully as possible from the educational opportunities available when they reach school-going age.

To assess the efficacy of the H.E.L.P. so that an objective evaluation of the fulfilment of its goals might serve both as guidelines for future development of the Programme, and as a

model for enrichment projects amongst other disadvantaged communities, a suitable testing instrument was sought. As the writer had been involved in the standardisation procedure of a new instrument, the Grover Developmental Charts for Very Young Children, during 1976, and as this scale offered several unique features not found in other infant scales, it was decided to apply it to the children of the H.E.L.P. At the same time the children attending the Crèche section of the ELC were assessed as a comparison group so that results of both home-based and centre-based programmes might be compared, not in a spirit of rivalry or competition, but so that strengths and weaknesses in both types of intervention might be highlighted. Thus a new instrument would be tried and assessed for its usefulness in identifying developmental spurts and lags in very young children, while the personnel involved in administering the two programmes would acquire a quantified assessment of the progress their young subjects were making. In broader terms, it was hoped that a cogent case for increasing and enlarging the establishment of pre-school projects (both home- and centre-based) for disadvantaged communities would be authoritatively presented.

To understand the rationale underlying the establishment of the ELC one needs to consider the question of the importance of intervention during infancy. How does a child develop under normal conditions; what circumstances may impede this development; what consequences may such disruption engender; and what measures of intervention may be implemented to prevent this from occurring? We need firstly, then, to consider normal development.



## 1.2 NORMAL DEVELOPMENT

Discarding the traditional concept of the young baby as a passive receptacle of environmental input; without what Kagan (1973) has termed a "compass of his own", recent writers have stressed the interactional nature of the infant's reaction to his environment (Bruner, 1973; Herzog & Lewis, 1970). This active relationship has been summarized by Wertheim (1975) as a "bio-adaptive, epigenetically evolving process rooted in the interactions between the infant and his environment" (p.108). Thus autonomy and competence are both available to the young baby and may be used by him in the development of his relations with inanimate objects. The capacity for perceptual analysis, imitation, language, inference, deduction, symbolism and memory are all universal competences. However, as Kagan and Klein (1973) write, the emergence of these basic abilities can be speeded up or slowed down by environmental experience. Research indicating that neonates and young infants relate actively and selectively to their environment via their distance receptors has led to greater understanding of the appearance of exploratory behaviour for its own sake (Wertheim, 1975).

In spite of the abundance of literature describing normal human development, no fully satisfactory definition of the conditions essential for its occurrence has yet been evolved (Blank, 1970). Apart from the adequacy of factors such as nutrition and health care, attempts to define such variables as perceptual and sensory stimulation presupposes an available ideal or standard against which the evidence may be measured. Inadequately controlled

research has resulted in ambiguous and contradictory findings, so that one is left with little more specific than the description of the optimal environment for young children which is proposed by Caldwell (1967) as being one in which the young child is cared for in his own home in the context of a warm, continuous relationship under conditions of varied sensory and cognitive input.

The importance of early experience in the development of cognitive and emotional functioning has been well documented (Horowitz & Paden, 1973). The first six years of life have been seen by Freud (1933) as crucial in determining the structure of personality and the success of socialisation, while Piaget (1958, in Horowitz & Paden, 1973) emphasizes the importance of those years for cognitive development. Bruner (1973) suggests that during the early period there is a kind of "learning to learn that is tremendously important" (p.110). All in all "the strong empirical evidence derived from normative studies has suggested that by the time a child reaches five years of age, his response characteristics on a variety of tasks begin to stabilize" (Horowitz & Paden, 1973, p.338).

Evolving from the research surrounding the significance of the early years is a complementary interest in the so-called "critical period" hypothesis.

### 1.3 CRITICAL PERIOD HYPOTHESIS

The "critical period" hypothesis has been promulgated by Scott

(1962, in Denenberg, 1964) as follows: "There are certain limited time periods in development during which a particular class of stimuli will have particularly profound effects and the same stimulation before or after this interval will have little, if any, effect upon the developing organism" (p.336). This theory, based upon work with animals, has been extended to human behaviour by writers such as Deutsch (1964) and Bruner (1966, both in Schultz & Aurbach, 1971). The implication of the hypothesis is pessimistic: humans deprived of sensory stimulation at certain times will not be able to recoup their intellectual losses. Others, however, have argued against the application of critical periods to human learning (Caldwell, 1962; Schultz & Aurbach, 1971; Wolff, 1970; Wolff & Feinbloom, 1969).

Discussing the dangers of cross-species generalisation, Wolff (1970) suggests that stimulus deprivation during critical periods of early childhood has not yet been proved to be solely responsible for scholastic failure. Other aberrant physical and social conditions such as malnutrition, poor obstetric care, pre- and peri-natal infection, may all influence the mental development of the child. Rutter and Madge (1976) condemn the critical period hypothesis as being unduly simplistic and conclude that what happens in the early years will only have a permanent effect if it is subsequently reinforced and built upon.

Caldwell (1962) has suggested a distinction between two aspects of the critical period hypothesis: (a) a critical period beyond which a given phenomenon will not appear, and (b) a critical

period during which an organism is especially sensitive to various developmental modifiers, i.e. a period of maximum susceptibility. This concurs with Wolff's (1971) discussion of "sensitive periods", a term which refers to chronologic periods in development when the child learns particular skills more easily than at other times but does not imply that the individual must learn particular items at particular times or not learn them at all (Wolff & Feinbloom, 1969). However, this still implies that central nervous system maturation independent of experience regulates the child's ability to learn (Wolff, 1970). And, although central nervous system maturation probably does set upper and lower limits on particular intellectual functions, nevertheless Wolff concludes that an epigenetic sequence, relatively independent of chronological age, determines what and when the child can learn with profit. It is the effect of the environment on this sequence that will be discussed in this paper.

#### 1.4 SOCIALISATION

Not only cognitive, but also social and emotional development make up the considerable body of learning a young child has to achieve. The way in which this occurs is by a process of socialisation or the transmission of culture patterns.

Parents, particularly mothers, mediate between the child and the outer world, and in so doing transfer to the child the benefits and limitations of their own personalities, cognitive and emotional resources (Bee et al, 1969). These, in turn,

reflect the norms of the social class to which the mother belongs. "Both through compelling effects of approval and disapproval and by the modelling of 'rule-bound' behaviour, the family passes on class patterns of goal striving, problem-solving, paying attention and so forth" (Bruner, 1973, p.22). Thus the study of child-rearing practices in a particular group becomes a study of how children are prepared to function as members of their parents' social class (Wortis et al, 1963). Hence the importance of social class in a discussion of child-rearing practices and the results thereof on the cognitive, emotional and social development of the child.

#### 1.5 SOCIAL CLASS

The importance of social class as a determinant of child-rearing practices has been the subject of much research (Birch, 1968; Bradley & Caldwell, 1977; Deutsch, 1973; Golden & Birns, 1968; Havighurst, 1976; Kagan & Tulkin, 1971; Wortis et al, 1963; Zigler, 1970). As Kagan and Tulkin (1971) write, social class is not studied because it is a causative agent per se, but because there are clusters of attitudes, expectancies and practices that are correlated with class membership. These, in turn, continuously influence parenting practices so that the infant's development is shaped by these class-related parental attitudes and expectancies.

One of the most noticeable differences between members of different social classes is their sense of effectiveness in being able to control the environment. Members of different

social classes, by virtue of experiencing different conditions of life, come to see the world differently, to develop different conceptions of social reality, different aspirations and fears, different conceptions of the desirable. This last is of crucial relevance to the present discussion, as it is from people's conceptions of the desirable that child-rearing objectives are developed (Kohn, 1963, in Havighurst, 1976).

That social class differences do exist is generally accepted - "The total body of class difference literature suggests that there are observable class differences in both a wide variety of performance measures and in parental communication patterns" (Sroufe, 1970, p.141). What these differences are and how they are manifested in child-rearing practices with resultant consequences for the development of the child emotionally, socially, cognitively, has been the subject of much contradictory research. As Golden and Birns (1976) write, "research concerning the relationship between an infant's growth and development and the behaviour of its primary caretaker is as elusive as it is compelling. How can we best select among all the events, actions and non-actions that help shape the life of a growing human being?" (p.320). In the absence of any satisfactory answer to this question, such evidence as has been collated is presented here in an attempt to draw some valid conclusions.

#### 1.5.1 Differences between lower and middle class families

Most studies have concentrated on the difference between lower and middle class families with attempts to identify the charac-

teristics of each.

However, as Sroufe (1970) writes, "much of the class difference research seems to be within the framework of a pathology model with a middle-class norm as the standard of 'health'. The contemporary social scientist replaces the concept of genetic inferiority with the concept of environmental inferiority..... Thus deviations from the white middle-class norms by lower-class ....children....are generally described in terms of 'deficits', 'deficiencies' and 'limitations' " (p.142).

By focusing on the covariation between the practices and attitudes of the mother or caretaker on the one hand and the psychological development of the child on the other, various attempts have been made to identify the so-called "hidden curriculum" which supposedly forms the basis for the middle-class child's superior cognitive functioning.

Kagan and Tulkin (1971) describe the middle-class mother as unconsciously "playing theme and variations" with her infant (p.180). She is continually transforming her interaction with the infant to keep him "happily surprised". The infant is thus taught to maintain a state of "alerted attentiveness towards the outside world" (p.180). In contrast, lower-class mothers were found by Wortis et al (1963) to be so overwhelmed by their problems that they based their child-rearing practices on consideration of convenience and their own needs of the moment, and not on any theory of good child care. Davis (1946) and Sears (1957, both in Wortis et al, 1963) found that working-class

mothers were more punitive toward their children than middle-class mothers. Moreover working-class children were more likely to live in a disorganised family and to lack an exclusive relationship to one maternal or paternal figure.

The fact that lower-class mothers do not interact with their children as often, as long as, or as consistently as middle-class mothers do is explained by Kagan (1970) as resulting from their lack of confidence in their own ability to mould their children. This corroborates the findings of Hess and Shipman (1965) that middle-class mothers use more direct and efficient teaching strategies than do lower-class mothers.

Bee et al (1969) present a clear and consistent picture of social class differences in maternal behaviour, with middle-class mothers using more instruction, less physical intrusion, less negative feedback and being generally more in tune with the child's individual needs and qualities.

However, in a critique of this research, Sroufe (1970) suggests that both methodological and philosophical flaws invalidate the results presented. The distinction between correlation and causation is considered as having been confused, while the value judgements implicit in the interpretation of the results have rendered them objectively unreliable.

When one compares classes with respect to sensory stimulation available, the original assumption that poor environments are lacking in sensory stimulation has been replaced by a recognition



of the existence of excessive stimulation, so that the child inwardly "tunes it all out, thus creating a vacuum for himself" (Deutsch, 1968, in Baratz & Baratz, 1970). Quantitative deficit therefore has been replaced by qualitative disadvantage; the stimulation that the lower-class child receives being less "distinctive".

Many other studies have compared lower- and middle-class child-rearing patterns but unless one scrutinizes the "values, experiential framework and conceptual model of the researcher" (Sroufe, 1970, p.142) the objectivity of the results must remain open to question.

#### 1.5.2 Differences in language between lower and middle classes

The importance of language for the optimal cognitive development of the child has been well documented. The existence of social class differences in language modes was originally demonstrated by Bernstein (1960) and Hess and Shipman (1965), who found that middle-class parents used more complex syntax, e.g. "elaborated" as opposed to "restricted" codes (Bernstein, 1960), longer sentences, more qualifying modifiers and fewer personal pronouns. Confirming these findings Bee et al (1969) provided evidence of an impoverished language environment in lower-class homes so that those children have not been exposed to the "highly differentiated language structure that is most suitable for verbally mediated analysis of the environment" (Bee et al, 1969, p.307). Kagan (1970) has suggested that although the lower-class mother spends as much time as the middle-class mother talking in the vicinity

of her infant, her speech at such times is not salient to the child. She engages in fewer reciprocal face-to-face talking sequences, and when she does it is in sentences of less variety, complexity and specificity.

In comparing mother-child interaction in the first year of life, Kagan and Tulkin (1971) concluded that although working-class mothers care for their infants as extensively as middle-class mothers, nevertheless differences occur in areas involving maternal stimulation of cognitive development. Speaking to their infants was largely regarded as futile and "silly" until the infant itself began to talk.

Further evidence derives from the work of Schachter et al (1977) who summarized their findings: (1) there are extensive differences in mother speech between advantaged and disadvantaged groups; (2) advantaged mothers appear to facilitate and support the actions of their toddlers. They show an increment in total responsive speech, responding in kind to their child's initiatives, explicating and fulfilling desires and reports, etc. They minimise "Don'ts" and when they do say "Don't", they justify it with an explanation. They repeat the child's own speech, either checking to make sure they have understood the child's communication or confirming it (Schachter et al, 1977).

In a review article Bruner (1973) suggests that what differentiates the language skills of children of different classes is neither the amount of language acquired nor the use of the rules that govern the language. The critical issue seems to be language

use in a variety of situations and the manner in which home and subculture affect such usage. Thus middle-class children use language as an instrument of analysis-and-synthesis in problem solving, and have also learned to use language without dependence upon shared percepts or actions. This decontextualisation permits communication with those who do not share one's daily experience or actions. Lower-class language, in contrast, is more affective and metaphoric than formal or analytic in its use; it is more tied to place and affiliation. In fact it reflects the kind of goal striving and problem solving characteristic of "those who have accepted occupancy of the bottom roles and statuses....that....constitute the position of poverty" (Bruner, 1973, p.20).

Further evidence of the effect of language environment on the development of children is provided by Bee et al (1969) who conclude that lower-class children respond to an impoverished language environment and ineffectual teaching strategies by learning a great deal about global rules of conduct, but have not been encouraged to learn general techniques of problem solving.

Kagan (1970) lists seven major kinds of difference between poor and privileged children, of which the comprehension and expression of language is one. The others are: (a) mental set to activate cognitive structures to solve problems; (b) attachment to an adult; (c) inhibition - the poor child tends to be impulsive; (d) sense of effectiveness - the middle-class child seems to have acquired stronger faith in success as a result of reinforcement by the mother; (e) motivation and expectancy of failure.

Kagan concludes that "the combination of inadequate language resources, low motivation, and little faith in success leads inevitably to the retarded school progress so characteristic of the lower-class child" (p.15).

Taking issue with the "inadequate mother hypothesis" Baratz and Baratz (1970) assert that the lower-class mother is unfairly accused of causing language retardation in her child. The fact that the child has developed language, and that no study has indicated the amount of stimulation necessary for the child to learn language, is offered as contradictory evidence to that quoted above. While admitting the lack of similarity between lower- and middle-class mothers, Baratz and Baratz draw a necessary distinction between cause and correlation. "A developmental process cannot be demonstrated or investigated through the study of a contemporary relationship between two variables" (Sroufe, 1970, p.141). In other words, when considering the cognitive and social behaviour of the lower-class child one cannot assume a direct causal link with the child-rearing practices of the mother. If he appears "ineducable" the cause should be sought in his failure in an educational system that is insensitive to the culturally different linguistic and cognitive styles that he brings to the classroom setting. "Educability" is therefore defined as specific middle-class mainstream behaviours, rather than as the possession of universal processes through which specific behaviours can be channelled (Baratz & Baratz, 1970).

## 1.6 THE "CULTURE OF POVERTY" CONTROVERSY

When considering the characteristics and features of lower-class families as discussed above one crosses the thin dividing line between the field of psychology and those of sociology and anthropology.

One of the most influential ideas put forward in recent years has been the concept of a "culture of poverty", originally propounded by the anthropologist Oscar Lewis (1966, in Leacock, 1971). This term, which has subsequently been elaborated, interpreted and applied in a variety of ideas, policies and programmes is based on the belief that poverty is a culture which is radically different from the dominant, middle-class culture. Poverty is seen as promoting a different kind of life style, which is passed on from one generation to the next, binding people to an impoverished existence. "The major assumption made by many "culture-of-poverty" theorists is that a virtually autonomous subculture exists among the poor, one that is self-perpetuating and self-defeating. This subculture....involves a sense of resignation or fatalism and an inability to put off the satisfaction of immediate desires in order to plan for the future. These characteristics are linked with low educational motivation and inadequate preparation for an occupation - factors that perpetuate unemployment, poverty and despair" (Leacock, 1971, p.11).

Lewis (1966, in Havighurst, 1976) has listed the features of the culture of poverty as being:-

- (1) a large proportion of one-parent families usually headed by a mother or grandmother;
- (2) children at an early age have to take responsibility for their own care;
- (3) people have a low level of aspiration for educational and occupational achievement;
- (4) people have a poor self-image;
- (5) people believe they cannot control their environment;
- (6) people believe that chance or luck determines much of what happens to them;
- (7) people spend their income for present needs and do not save;
- (8) people have a low degree of control over their aggressive impulses.

These are seen as "an adaptation and a reaction of the poor..... They represent an effort to cope with feelings of hopelessness and despair which develop from the realisation of the improbability of achieving success in terms of the values and goals of the larger society" (Lewis, 1966, in Robinson, 1976).

Although Lewis subsequently modified his position (1969, in Havighurst, 1976) by saying that he expected these characteristics to be fully present in only 20% of poor families, nevertheless some or all of them continue to appear in descriptions of lower-class families. Thus Bruner (1973) has suggested that lower-class children and their caretakers will respond to their environment by frustration-saving reduction in the setting of goals, in the mobilizing of means and in the cultivation of delay in gratification. This pattern of behaviour has been identified by Liebow (1967, in

Tulkin, 1972) as deriving from the conditions of life encountered in this population. Thus the "realities of life" are the primary determinants of this pattern, and in turn affect child-rearing practices. In the example cited, when a streetcorner man squanders his week's pay, it is not because he is unconcerned with the future - it is precisely because he is aware of the hopelessness of the future. Thus "I want mine right now" is ultimately a direct response to the future as he sees it (Liebow, 1967, in Tulkin, 1972) (cf. Lewis' characteristic No.7).

The "culture of poverty" has been conceptualised by Cole and Bruner (1972) as a "deficit hypothesis" in which the disorganisation of a poor community is manifested in various deficits such as less guidance in goal-seeking from the parents, less emphasis upon means and ends in maternal instruction, and less positive and more negative reinforcement. A particularly strong emphasis has been placed on the linguistically deficient environment of the disadvantaged child, with Bernstein's (1960) well-known distinction between "elaborated" and "restricted" codes of language being frequently quoted. However, as Tulkin (1972) has emphasized, the characteristics of the "culture of poverty" are only apparent amongst those poor people who occupy "a marginal position in a class-stratified, highly individualised, capitalistic society" in which there is a "lack of effective participation and integration of the poor in the major institutions of the larger society" (p.330).

Leacock (1971) discusses and questions the assumptions behind the "culture of poverty" theory. She sees these assumptions as being related to three intricately related areas:- (1) child development,

(2) the effect of culture on individual personality, and (3) the effect in turn that individual personalities in toto have on the further development of culture.

1. Developmental Stages and the Culture of Poverty

Culture-of-poverty theory assumes a person's "value-attitude system" and response pattern to be virtually set by the age of six or seven. Discussions of the ill-effects of poverty culture on children usually assume that what happens prior to school entry is more important than what happens later. While acknowledging fully the importance of the early years in shaping personality, Leacock states that to imply that values and motivations are set by six or seven flies in the face of findings in developmental psychology.

2. The Effect of Culture on Individual Personality

Poverty-culture theory generally implies that culture is a mould which produces a uniform set of dominant characteristics in those growing up under its influence. "The match between culturally prescribed behaviour and individual personality is thereby exaggerated and an unwarranted homogeneity of both is assumed" (p.14). Moreover, as Leacock points out, people may choose from conflicting and contradictory goals and values so that individual behavioural styles do not simply mirror dominant cultural goals.

A further aspect disregarded by culture-of-poverty theorists is the lack of internal consistency within any one person.



### 3. The Effect of Individual Personalities on Culture

The implicit assumption is that childhood experiences in the family, having become encapsulated in the personality, are somehow projected into the institutional structures that pattern adult behaviour and beliefs. This static view of culture as perpetuating itself through the medium of "group personality" is rejected by Leacock as being a "psychological reductionist" and non-dynamic view of the individual in society, "given the contemporary world of accelerated change and conflict" (p.15).

The concept of the "culture of poverty" is also open to criticism on grounds of its ethnocentrism. Derived and used as it has been by middle-class theorists, a tendency is found to interpret lower-class behavioural patterns as shortcomings from some presumed "middle-class" ideal, so that lower-class behaviours which deviate from that ideal are frequently viewed as problems of the lower class. Rodman (1968, in Leacock, 1971) writes of the "cross-eyed, middle-class view of lower-class behaviour", while Valentine (1971), in a searching and scathingly incisive consideration of Lewis' writings suggests that the popularity of the "culture of poverty" concept is that it is "an old and satisfying belief in a new guise. Blaming poverty on the poor has long appealed to comfortable and affluent groups" (p.215).

Lewis (1971) comments "Like the idea of race, the idea of culture of poverty is an idea that people believe, want to believe and perhaps need to believe....The idea of a culture of poverty is a fundamental political fact. There are times when it seems

chillingly like the idea of race" (p.347).

The importance for this study of understanding the controversy surrounding the concept of "culture of poverty" is that its proponents assume that members of this group perpetuate their own poverty as a result of self-defeating attitudes, values and behaviour patterns by socially transmitting them from one generation to the next and thus establishing an intergenerational cycle of disability, which prevents the children of such families from taking full advantage of educational and other opportunities to break out of poverty (Golden & Birns, 1968).

Before considering an alternative explanation for the conditions surrounding poverty, it is necessary to discuss another associated phrase which gained popularity concurrently with "the culture of poverty" - viz. the concept of "cultural deprivation".

#### 1.7 THE CONCEPT OF CULTURAL DEPRIVATION

The concept of environmental or cultural deprivation<sup>1</sup> has been used to explain the relative lack of academic and subsequent occupational/professional achievement which is said to be typical of lower-class individuals. However, as Robinson (1976) points out, even the deprived do have a culture, so to speak of "cultural

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1. Rutter (1977) prefers the term "privation" as implying lack, as opposed to "deprivation" which implies loss. However, in spite of acknowledging this semantic correctness the term "deprivation" will continue to be used throughout this paper.

deprivation" is a non sequitur. One cannot be deprived of one's own culture. Therefore the term "culturally disadvantaged" has become more acceptable. Who, then, are the "culturally disadvantaged?" The term has been used to describe individuals who have been set apart as a group by virtue of their lowered economic capacity, and who have cultural variations of religion, race and/or language in common. That they are disadvantaged by virtue of their differing from the dominant culture is difficult to contradict. Describing an Indian child, Wax and Wax (1971) write, "It is not that (he) is deprived of culture, it is that the culture which is associated with his parents is derogated because they are impoverished and powerless" (p.138). However, as Baratz and Baratz (1970) state "A disadvantage created by a difference is not the same thing as a deficit" (p.259).

It is nevertheless necessary to accept the hard facts of Western society's expectations - that a child who has not mastered the culturally specific skills of reading, writing and arithmetic will be maladapted to that society and will fall behind his middle-class, privileged peer and may never catch up (Kagan, 1973).

Kagan (1973) distinguishes between "universal competences" which are inherent to all humans, and "culturally specific competences" which will not appear unless the child is exposed to or taught them directly. This category includes such abilities as reading, arithmetic and the understanding of specific words and concepts. Dissatisfaction with the value judgement implicit in the term "cultural deprivation" or "disadvantage" has led to the use of the more acceptable term "cultural difference". However, as Cole

and Bruner (1972) so forcefully point out, the "great power of the middle-class has rendered differences into deficits because middle-class behaviour is the yardstick of success" (p.176).

One is concerned, therefore, with "populations that fail to meet the criterion for functioning in a technological society"

(Horowitz & Paden, 1973, p.336) where a large number of children from impoverished homes are coming to school with skills and abilities that may be useful in their own life situation, but which are not congruent with the kinds of skills and concepts that are currently valued either by the school or by society at large (Nimnicht, 1973).

What, then, is to be done?

#### 1.8 RATIONALE FOR INTERVENTION

To adopt, temporarily, a medical model, the diagnosis of the condition seems unarguable - children from disadvantaged environments achieve poorly at school and on standardised tests (Bruner, 1973; Kagan, 1973; Rutter & Madge, 1976). The cause, and subsequent treatment of the condition, however, has led to diverse opinions which may be divided broadly into two groups - the "deficit" and the "non-deficit" models.

##### 1.8.1 "Deficit" models

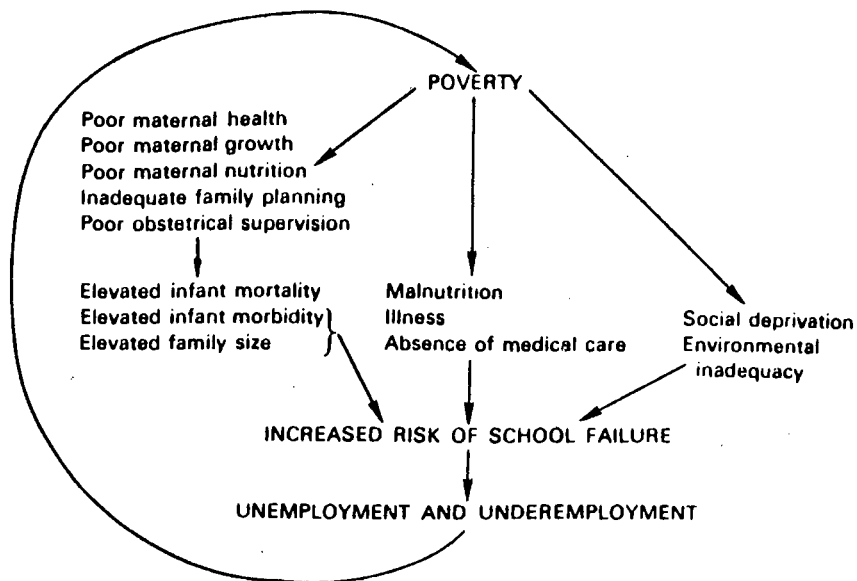
On the one side are the writers who believe that the child comes from a "disadvantaged" background and is thereby "deprived" of the opportunity to develop his educational and intellectual skills.

to their fullest (Bruner, 1973; Kagan, 1970). This model has been termed a "learning experiential deficit" model (Lambie et al, 1974, p.12). The low-income child is assumed to be the product of a "disadvantaged" environment, within which family resources are seen as inadequate for the task of socialising the child. Language deficits are usually emphasized, resulting from delayed speech acquisition and the use of non-standard English dialects. The implications of this model, leading as they did to the War on Poverty, and Headstart Programmes, will be discussed in detail below.

A second deficit explanation of low academic performance is the "genetic deficit" model. Here one encounters the work of Jensen (1969) who has argued that genetic deficits account for a substantial part of observed differences in school performance among socio-economic strata and among racial or ethnic groups. As these "deficits" are genetically determined, they are therefore seen as irreversible and are considered an adequate explanation for the failure of educational programmes which attempt to equalise academic-intellectual skills among all sections of society. These genetic hypotheses have been seriously challenged by writers such as Deutsch (1969) and Kagan (1969), who find Jensen's conclusions unacceptable from both a methodological and a philosophical standpoint.

A third deficit model is the "psycho-physiological trauma" model. This refers to physical impairments resulting from pre-, peri-, or post-natal traumas, and includes such impairments as perceptual handicaps, minimal brain damage and other disabilities in which

the etiology of the deficit is less clear physiologically. As these conditions may result from such class-related factors as malnutrition, lead poisoning, perinatal hypoxia, untreated childhood diseases, etc., they should, in theory, be preventable by a programme directed specifically towards alleviating the health problems which Birch and Gussow (1970) state underlie the school failure of impoverished children. These authors argue that a society genuinely determined to educate socially disadvantaged children must concern itself with the full range of factors contributing to educational failure, "among which the health of the child is a variable of potential primary importance" (p.9). The relationship between poverty, illness and educational failure is conceptualised in this diagram (Birch & Gussow, 1970, p.268):



**FIGURE 11.1**  
**Environmental Relationships Between Poverty and Educational Failure**

Thus the goal for intervention is seen as a need to attack the deficient health environment of the disadvantaged child who "from conception until death is also at differential risk with respect to a whole spectrum of physical hazards, any one of which may be productive of intellectual deficit and educational failure"

(p.10). Or again, as Meier et al (1970) write - "it becomes a frustrating intellectual exercise to see an eight-year old ghetto child, born prematurely, whose young mother had no pre-natal care, and to try to decide if his severe learning disability is predominantly the product of his environment or his damaged nervous system" (p.407).

The broader implications of this model, although it is presented as a "deficit model", link directly with the "non-deficit models" in which institutions in the larger society, not the children or their families, are held responsible for academic failure among low-income children.

#### 1.8.2 "Non-deficit" models

The first "non-deficit" model to be discussed is the "school-as-failure" model (Hess, 1971, in Lambie et al, 1974). This perspective argues against existing forms of education for all children on the basis of education's overall irrelevance to the needs of both individuals and society. More specifically, with respect to low-income children, it is argued that schools are insensitive to cultural differences and, in fact, penalise children for these differences (Lambie et al, 1974). The negative attitudes and low expectations of teachers, together with the use of

instructional methods and materials ill-suited to the developmental needs of the children are seen as explaining the widespread and cumulative academic retardation found among disadvantaged children (Wilkerson, 1970). This argument is supported by writers such as Baratz and Baratz (1970) who criticise the expectations of the educational system as being inappropriate; Deutsch (1967) who considers the failure of children with an intact brain to learn "is the failure of schools to develop curricula consistent with the environmental experiences of the child and their subsequent initial abilities and disabilities" (p.69); and Bernstein (1971) who stresses the need to provide an adequate educational environment instead of labelling children and their families as "culturally deprived". This non-deficit model implies therefore that educational retardation is reversible and that children can learn if effectively taught (Wilkerson, 1970). "The most immediate target of change is the school" (p.28), and the specific foci for change are the conditions and contexts of the educational environment - i.e. the curriculum, teacher and school administration organisation.

This approach is described by Lambie et al (1974) as currently appealing to humanists, technologists, liberal middle-class whites and minority group members. The ultimate result of such thinking could lead to the radical proposal by Ivan Illich to "deschool" society (1973).

Linked with the "school-as-deficit" model is the "cultural-difference" model where problems of lower-class children at school are seen as resulting from their cultural "differences" and not



from "deficits". This follows on from the discussion of the "culture of poverty" and has led to the situation wherein the child is expected "to drop his social identity, his way of life and its symbolic representation, at the school gate" (Bernstein, 1971, p.192). Thus the goal of education should not be to assimilate minority children into the majority culture but to "effectively interrelate subcultures by helping all children become competent and mobile in a pluralistic society" (Lambie et al, 1974, p.14). This may be achieved by giving a child credit for his strengths, different though they may be from those of his powerful middle-class counterpart.

Finally, we come to the viewpoint propounded by radical writers, and defined by Hess (1971, in Lambie et al, 1974) as the "social structural" model. This model of social, as opposed to educational change, is highlighted by Stein and Susser (1970, in Lambie et al, 1974) - "Only radical environmental change can be expected to bring about rapid improvement. It seems likely that the greatest advantage will come from a serious attack on poverty and its concomitants in unemployment, deteriorated housing, physical environments, in poor and inappropriate schooling" (p.15). Similarly, Rainwater (1969, in Leacock, 1971) writes - "the only solution of the problem of the under-class is to change the economic system accordingly" (p.36). And Valentine (1971) concurs by stating that Americans have used concepts such as the "culture of poverty" to evade "hard questions about changes in the distribution of resources and the structure of society needed to resolve the problem of inequality which is the essence of the poverty crisis" (p.216).

Bruner (1970) has urged that we consider not only the psychological question of why a poor and/or black child does not cope well at school, but also look at the very structure of our society that created this condition. Similarly Valentine (1971) in his cogent criticism of "the dogma of a culture of poverty" suggests that "whatever is distinctive in social life at the lowest socio-economic levels is determined primarily by the structure of the society as a whole and forces beyond the control of the poor people" (p.205). And, finally, Oscar Lewis himself, contradicting his earlier work, writes - "In the long run the self-perpetuating factors (in the subculture of poverty) are relatively minor and unimportant as compared to the basic structure of the larger society" (1969, in Leacock, 1971, p.36).

We return, then, to the original question - what is to be done? Having accepted the existence of the problem and that there is need for change, which model is to be used as a basis for understanding etiology and planning treatment? If we accept a "non-deficit" model we are confronted with the need to tackle not only the educational system but the whole political and economic structure of the society in which we live. Tempting as this might be, it is suggested that for the purposes of this study, we must, like Bruner (1973), ignore the implication of the radical argument and limit ourselves to a discussion of change within the existing social context. Can we then (considering a second "non-deficit" model) tackle the educational system? As it has been argued that political change is the responsibility of the politicians, so educational change is seen as the speciality of the educationalist and therefore outside the scope

of this study.

The psychologist, therefore, must confine his attempts to determining methods of allowing the members of the less powerful/deprived/disadvantaged group to acquire the intellectual instruments necessary for success in the dominant culture (should they so choose) (Cole & Bruner, 1972). What is needed is psychological change in the ecology of the lower-class child in order to increase the probability that he will be more successful in attaining normative skills (Kagan, 1970). It is not suggested that the lower-class child should grow more effectively into a middle-class child (who has problems of his own) but into one capable of helping himself and his own community more effectively (Bruner, 1973).

How is this ecological change to be achieved? By considering and studying the child in his own environment and by attempting to identify those factors which lead to later academic success or failure, we hope to intervene at such a time and in such a way as to promote the optimal development of all children. But here again we are immediately confronted by the basic ethical question of whether we have the right to impose middle-class standards on lower-class families? Moreover, if we decide that such manipulation of the lives of poor people is necessary and appropriate, will the people in question share this opinion? "Social engineering" has come under considerable fire from writers such as Baratz and Baratz (1970) and Sroufe (1970). What the latter proposes is that the psychologist sees to it that his "analytical tools and skills are made available to....poor people,

to be employed within the value base of the community in question" (p.144). Bearing this caveat in mind, let us continue the search for an acceptable model of intervention.

Having rejected (for reasons discussed above) "non-deficit" models, not for their causative explanations but for their treatment implications, we are left with a choice between the "deficit" models described. The genetic inferiority hypothesis cannot be accepted; health problems are seen as falling under the wider umbrella of political/social structures; so that we are finally left with the "learning-experiential deficit" model, which has, in fact, formed the basis of most educational intervention programmes (Lambie et al, 1974).

#### 1.9 THE CONCEPT OF COMPENSATORY EDUCATION

If one accepts a "deficit" model of poor academic performance then the goal of intervention is to compensate for presumed deficiencies and to bring all children "up" to mainstream norms - hence the term "compensatory education". This term has been defined by Anderson (1973) as "a preventive and global....intervention into the lives of people judged to have socio-economic handicaps....assumed to be predictive of unnecessarily limited scholastic achievement and life chances" (p.198).

Early workers in the field such as Klaus and Gray (1968, in Richards, 1971) write of the "original deficit" being caused by home conditions and that the solution was to bring the mother up to providing a home situation analogous to that of a more favoured

middle-class child. Tulkin (1972) writes of the "missionary" approach of interventionists, amongst whom Pavenstedt (1967, in Tulkin, 1972) states "we set ourselves the task of bettering their early upbringing, we wanted to prepare them for the competitive struggle with which their parents were incapable of coping" (p.324).

The concept of compensatory education for disadvantaged children evolved in the United States during the late 1950's as a result of two interweaving strands - the resurgence of the environment-oriented theory of intelligence, and the emerging belief that social and educational equality are as legitimate goals for a democratic society as is political equality. Thus compensatory education was seen as an answer to the achievement problems facing many low SES youths. "Pump in enough money, lower the teacher-pupil ratio, introduce new teaching techniques and new materials, be more responsive to the individual's needs for self-worth, and any child can be successful in an educational system which offers the technology and skills required for entry into the successful working and middle-class groups" (Weikart, 1973, p.190). This naive belief in the efficacy of educational change as a general panacea for the effects of centuries of poverty and discrimination has laid the concept of compensatory education open to widespread attack and criticism.

Discussing compensatory education from a radical viewpoint, Morton and Watson (1971) contend that "the ideology of compensatory education is a specific expression of the liberal ideology..... (wherein).....problems (are seen as being) rooted in individuals rather than in the overall social order" (p.292).

Winschel (1970) is scathing in his contention that "compensation in the educational process was to be an affluent society's payoff for two and a half centuries of exploitation and humiliation, the reward for a history of servitude and neglect" (p.6).

Sarason (1973) writes, "Is it not....amazing how many people really believed that if disadvantaged groups....were provided new and enriched educational experiences they would as a group blossom quickly in terms of conventional educational and intellectual criteria?.....What combination of ignorance and arrogance permitted people to proclaim that if we delivered the right kinds of programs and spent the appropriate sums of money we could quickly undo what centuries had built up? Historically rooted discrimination is immune to change by short-term efforts" (p.969).

Birch and Gussow (1970) write - "compensatory education, however useful, cannot of itself, solve the educational problems of the poor....it is not food alone, or health care alone or compensatory education alone, or improved housing alone which will make the difference between school success and school failure for poor children. One-shot treatments will not overcome handicaps brought on by generations of neglect" (p.xii).

These criticisms have been focused on those programmes which were designed to implement the War on Poverty of the 1960's - and specifically on those under the umbrella of Head Start. "Head Start was one of a series of extraordinarily swift moves by which, in 1964-1965, the government went to war on poverty" (White, 1970, p.163). A large number of pre-school compensatory projects

were designed and hastily implemented with the aim of preparing disadvantaged children to cope with later school life and to prevent developmental deficits from occurring.

Although justifiably criticised (Zigler, 1973) for falling far short of its goals as "a massive experiment to break the cycle of poverty" (p.2) (a failure largely the result of the naïveté, lack of careful planning, and the poorly thought through perspective of the Programme), Head Start was nevertheless successful in creating a "wave of enthusiasm and an awakening of conscience which have led to better thought out and more useful programmes" (Rutter & Madge, 1976, p.133). Thus although initial disappointment and disillusionment followed on the publication of the Westinghouse Report (Cicirelli et al, 1969), later programmes were able to benefit from the lessons learned through Head Start, one of these being that the "ill-effects of longstanding and persisting privation cannot be corrected by short-term environmental tinkering followed by the child's return to the depriving circumstances" (Rutter, 1977, p.77).

Viewing compensatory education as a strategy to overcome poverty has resulted in its being judged a "fraud perpetrated upon a poor and unsuspecting citizenry which has traditionally looked to education to lead it out of bondage" (Winschel, 1970, p.3). But if one views it as a limited but nevertheless valuable and more immediately implementable method of helping individual children to develop to the limits of their innate potential, while politicians continue to debate the creation of a more socially just society, it is worth studying. "Education cannot compensate for society"

(Bernstein, 1970), but carefully planned, implemented, and assessed programmes of intervention may beneficially affect the lives of children born into poverty. "A policy for education and poverty must give priority to the development of the individual now, then debate the creation of a more socially just society" (Robinson, 1976, p.99).

In view of the criticisms levelled at it from the variety of stand-points discussed above, the term "compensatory education" is not entirely satisfactory and should be replaced by one more appropriate (Chazan, 1973): for the purposes of this paper the term "early childhood educational intervention" is preferred.

#### 1.10 ISSUES WITHIN THE FIELD OF EARLY CHILDHOOD EDUCATIONAL INTERVENTION

The main issues within the field of early childhood intervention may be summarised as follows:-

1. Timing of intervention
2. Day-care vs. home-care
3. Evaluation of programmes

##### 1.10.1 Timing of intervention

This issue involves a return to our model of normal development. If we question the critical period hypothesis as inappropriate to human cognitive development, what basis may we use to determine the optimal period for early intervention? By when, if we were to wait, would it be too late for the inoculation to take? Conversely, can we do harm by intervening too early, or at least



achieve no better results than by waiting until later? As the majority of intervention programmes are for children of poor families, it is important to know when socio-economic factors become significant in intellectual development.

Rejecting the critical period hypothesis does not imply a belief in unlimited modifiability, although writers such as Blank (1971) propose an optimism about the almost endless modifiability and flexibility of human behaviour. Kagan and Klein (1973) in comparing rural Guatemalan with American children found that evidence of cognitive retardation in infancy did not predict retardation at pre-adolescence, thereby concluding that "infant retardation seems to be partially reversible and cognitive development during the early years more resilient than had been supposed ....(nor does)....infant retardation....prevent a child from eventually developing basic cognitive competences" (p.957).

What has not been unequivocally established, however, is the upper age limit beyond which complete reversal of cognitive ill-effects is possible (Rutter, 1972). Skills which are rapidly learned at an early age will require much greater time and effort at a later age (Blank, 1971). What one has to identify, therefore, is the optimal age for intervention to begin, so that the "deceleration in rate of development which seems to occur in many deprived children around the age of two or three years" (Caldwell, 1967, p.17) may be prevented or circumvented, rather than remediated.

The precise age at which the deficit begins to appear has not yet been clearly identified. The standard reference has tended to

be Bloom's (1964) statement that 80% of the variance in cognitive performance between lower- and middle-class children is accounted for by the age of three. Golden and Birns (1968) suggest that the critical period with respect to socio-economic class differences lies between 18 and 24 months. Reviewing the relevant research, Caldwell (1970) concludes that during the first year of life infants from deprived and non-deprived homes appear to develop at approximately the same rate; by the age of three the difference is striking. Such findings suggest that the optimal time for preventing the deficit from appearing is between the ages of one and three. Support for this hypothesis is offered by both Bayley (1965) and Ireton et al (1970) who found no significant differences between infants from differing social classes up to the age of 15 months. Thereafter infants who come from homes poor in certain kinds of experiences have mental scores that progressively decrease (Bradley & Caldwell, 1977). As mental test differences between social groups have been found to appear concurrently with the emergence of early language skills, it would follow that intervention should commence at the beginning of the period of early language development (Schaefer, 1972). If the cumulative effects of non-optimal environmental conditions become apparent in the second year (Horowitz & Paden, 1973) intervention programmes which start before that time should have the greater impact.

Additional rationale for such early intervention is provided by Blank (1971) who suggests that weaknesses in early learning leave the child not only with a lag in development but an increasing disadvantage relative to his chronological age. Therefore the earlier such disadvantage can be remedied, the fewer the handicaps

to be overcome and the shorter the period of catching-up required (Rutter & Madge, 1976).

Emphasizing the importance of early rather than later intervention, Palmer (1973) quotes research which indicates that "intervention ....should occur as early in life as is administratively feasible, affectively tolerable and intellectually consistent with the level of development when intervention begins" (p.438).

Criticising intervention programmes for considering only environmental factors in the development of the infant, Bromwich (1977) suggests that a balance needs to be restored so that internal influences are not entirely discounted. She therefore warns that inappropriately timed external stimulation may in fact interfere with a newly achieved level of neural integration, for example that of neurological control dependent on inhibitory mechanisms. "The type, intensity and timing of stimuli in the young infant's environment seem to bear significantly on whether the stimulation is beneficial or detrimental to development....The neurophysiological functioning of each infant should direct the responses of the caregiver of that infant" (p.74). And, again, "the accurate reading of the behavioural cues of the infant becomes a very important ingredient in decisions regarding the what, how, when and where of the stimuli presented to the infant" (p.75) (italics added).

#### 1.10.2 Day-care vs. home-care

Traditionally, day-care had been offered as a custodial service

to the children of working mothers. With the awakening interest in child development in the 1960's, it was realised that a safe, supportive environment for the child should and could be coupled with comprehensive activities planned to foster the overall development of the child. Moreover early intervention programme designers had assumed that lower-class parents were inadequate in child-rearing and that their children would benefit more under the care of professional child-rearers. Much emphasis was therefore based on improving the services offered by day-care centres with enormous research and money being poured into curriculum development (Caldwell, 1972; Doyle, 1975; Fowler, 1975; Honig, 1974; Macrae & Herbert-Jackson, 1976). Thus the concept of developmental day care was born (Zigler, 1972).

Concurrently, increasing awareness of the importance of infant-mother attachment (Bowlby, 1969) led to much questioning of the effects of day care on this, as well as on the cognitive, aspect of development. Summarising current research, Ainsworth (1973) found that there is a sensitive phase for the development of infant-mother attachment "during which attachment will develop if sufficient interaction is provided, and after which even the provision of normal opportunity for interaction will not result in attachment" (p.55). She suggests that this sensitive phase lasts from when the baby is one month old until an attachment has been formed, or sometime between 18 and 24 months of age. She further states that whereas the amount of mother-infant interaction determines whether the infant becomes attached, it is the kind of interaction which determines the quality of that attachment. The implications of this for day-care are numerous and

complex.

Ainsworth (1973) suggests further that more research is needed to answer such questions as "Can an infant, already attached to his mother, sustain day-care without damage to his attachment relationship?" and "Can an infant entering day-care before he has become attached still form an attachment to his mother?" (p.70). Reviewing available studies, Ainsworth finds four interrelated factors:- the quality of the substitute care, its continuity and stability, the developmental level of a child entering such care and the personality of the mother. To unravel such complex variables makes it difficult to generalise about the effect of day-care on young children.

Early studies showing the detrimental effect on infants of deprivation and separation from a warm available maternal figure had been based mainly on long term separations, especially those taking place in institutional settings.

However, the effects of the briefer, repeated separations which are characteristic of group day care have been shown to be not necessarily detrimental to the cognitive and emotional growth of infants, in contrast to the known effects of institutionalisation. Doyle (1975) measured attachment to mother in 24 children aged between 5 and 30 months who attended a day-care centre for 7 months, and compared them to a matched control group reared at home. In summary she found that very young children experiencing high quality group day-care differed little from home-reared children, and concluded that such group day-care for infants is an acceptable

alternative child-care arrangement.

Similarly Caldwell (1972) reports no significant differences between day-care and home-reared infants with regard to attachment behaviour when assessing children aged 30 months who had been in a day-care programme from the age of one year.

In a recent report Fowler (1978) describes a five-year longitudinal investigation of infant and child day-care in a group setting. The project aimed at answering such questions as how well babies develop in group care with the daily detachment from home in an atmosphere of multiple care relations and the give and take of relations with peers; what the essentials of group care are so that the developmental needs of infants may be met; how critical the early years for a child's development are; and what the differential effects of length of stay in the programme on the infant's development are.

By comparing children in group day-care with home-reared children Fowler hoped to identify those factors which would make development of children in day-care at least as adequate as that of comparable children reared exclusively at home.

Although attachment behaviour as such was not identified and assessed, Fowler found affective development in general to be broadly even and similar for both groups, "the result of multiple interacting influences not differentiated by the measures employed" (p.98). An even, gently-rising course throughout the investigation was found for both groups of children. Ratings were obtained by using the Bayley Infant Behaviour Record and the

Schaefer and Aaronson Behaviour Inventory.

Summarising results of cognitive development, Fowler states that the mental development of the day-care and home-reared children followed quite different courses, with the day-care children making greater gains during infancy (6-18 months) while the home-reared children gained during the pre-school period (18-54 months). By school age both groups had converged around average levels. Socio-emotional and motivational processes for both groups were highly positive, suggesting average, adequate child care.

An important component of Fowler's programme was the involvement of parents, who received regular guidance in a planned schedule of parent-teacher consultation on methods of child rearing and early cognitive play stimulation consonant with contemporary knowledge of child development. Thus the programme had a stated comprehensive ecological basis with recognition being paid to the "total matrix of relations within and between the environments in which the child lives (which) affect (his) development for good or bad" (p.4). This emphasis allowed Fowler to conclude that "day care....when combined with close and continuing consultation with parents....can prevent many emotional and learning difficulties from developing....The significance of maintaining adequate quality in day care, coupled with continuing parent guidance throughout development, is apparent" (p.62).

Other workers in the field, apart from Fowler, had become increasingly aware of the importance of the role of the parent as not only practically important but morally essential in planning

and implementing programmes designed to affect the entire process of child development. Based on the assumption that a child's experiences with his mother (or other adult caretaker) during the first two years of life are major determinants of the quality of his motivation, expectancy of success, and cognitive abilities during his school years, a new project, Home Start, was derived as a variation on the theme of Head Start, without detracting from concurrent improvements made in Head Start programmes.

1.10.2(a) Home Start

The Home Start project had four major objectives:-

1. To involve parents directly in the educational development of their children;
2. To help strengthen in parents their capacity for facilitating the general development of their own children;
3. To demonstrate and evaluate methods of delivering comprehensive child development services to children and parents (or to substitute parents) for whom a centre-based programme is not feasible; and
4. To determine the relative merits of centre- and home-based comprehensive early childhood development programmes, especially in areas where both types of programmes are feasible.

Home Start programmes which evolved from 1972 onwards aimed at helping parents to enhance the total development (cognitive, language, social, emotional and physical) of all their children. Following the belief that the parent is the first and most



influential educator of his or her own children, Home Start aimed at involving parents as a major means of helping the children.

With typical American bounty each of the 16 Programmes running by 1974 had been funded to the extent of \$100 000 per annum, to serve 80 families each (Deloria et al, 1974).

A cynical comment then current among middle-class professionals is quoted by Valentine (1971) - "Poverty is where the money is" (p.217).

Under the aegis of Home Start a wave of better planned, carefully controlled and systematically implemented early learning programmes were developed and subsequently evaluated (Gray, 1971; Karnes, 1969; Lambie et al, 1974; Levenstein, 1970). Recognition had finally been paid to the fact that if the mother is the single most important factor in her child's early learning environment, then it is she who has most potential for changing and improving that environment - intervention, therefore, to be both effective and justifiable must primarily involve the mother. "Parents have the capacity to rear their own children but need support to overcome specific problems that are common to all families in all sectors of society but often more pressing among those with extremely limited resources" (Lambie et al, 1974, p.20).

Bruner (1970) has suggested that as there are many different ways in which we can operate effectively, the issue of day-care vs. home-care is a false dichotomy. For the purposes of this study, then, more emphasis will be placed on home-care programmes as it was the writer's personal involvement with one such programme that provided the stimulus for this paper.

Let us now consider the what, how, when and where of the various home-based intervention programmes which form the concrete structure on which the theory of this study has been hung.

#### 1.10.2(b) Home-based American Intervention Programmes

Six well documented home-based intervention programmes will be described with emphasis on their aims and methods. Evaluation of results will be discussed in the following section.

Parent Education Program : Gainesville, Florida. Director Ira J. Gordon (Chilman, 1973; Golden & Birns, 1976; Gordon, 1973; Haith, 1972).

This programme, begun in 1966, represents an attempt to demonstrate the usefulness of para-professionals to guide educationally disadvantaged mothers in educating their infants. The goal of the project was to "simultaneously raise the chances that a young child will reach a higher level of intellectual and personal development and that the significant adults in his life will gain in competence and feelings of self-worth" (Gordon, 1973, p.98). More specifically the project aimed at investigating the effectiveness and practicability of a home-centred technique for cognitive, language and personality development of mother and child, based upon the use of parent and child educators who are themselves members of the population to be served.

The theoretical basis for the programme was essentially Piagetian with an emphasis on experience which would facilitate cognitive development through accommodation (Haith, 1972).

Twenty-four para-professionals (mainly Negro women) were chosen as parent educators. They were drawn from the same disadvantaged population as the families they were to serve but virtually all had high school education. Selection criteria used were experience with babies, ability to communicate verbally, ability to comprehend a short written description of the project and an expressed interest in the basic aim of the work. They were to work with 84 Negro and White mother-infant dyads of lower socio-economic status. These "parent educators" received intensive pre-project training over a five week period during which lectures, discussions, role-playing, field trips and practice with babies were used. The training was problem-centred and mostly focused on reality situations. Intensive instruction in a specific set of exercises based on the conversion of Piagetian principles and measurement tasks into instructional activities was given, together with an explanation of the rationale for these exercises.

The mothers were visited once a week for an hour from the time their babies were 3 months until they were 2 years old. They were taught how to exercise their babies, how to construct inexpensive toys and were given magazines as "gifts". Some difficulties were encountered vis-a-vis maternal participation - explanations for this as given by the parent educators included disinterest and disbelief by some mothers, opposition of husband or other family members and friends, competing social interests, embarrassment by mothers that they had not followed the exercises day by day as they were told to do, and general personal and family disorganisation (Chilman, 1973). The impression was gained that the more economically secure and upwardly mobile mothers

were more inclined to co-operate in the project. Group meetings were not successful as so few mothers attended, even when given help with transportation.

An extension of Gordon's original programme was developed to include children of 2-3 years (Gordon, 1973). A small-group setting in the homes of mothers whose children were in the programme was devised for additional instruction beyond the home visit approach. Each child spent four hours a week in two separate sessions at a backyard centre. A centre was simply a specially equipped home where at least five children were brought twice a week for small-group instruction and activities under the guidance of a Director who was also a parent educator. The mother in whose home the activities took place was employed as a helper to the Director. The work of the mother in the weekly home visits and the work in the backyard centre were integrated so that home and centre activities complemented and supplemented each other.

Structured Tutorial Program for Infants : Urbana, Illinois.

Director, Genevieve Painter (Golden & Birns, 1976; Haith, 1972; Horowitz & Paden, 1973).

The aim of this highly structured home-tutoring programme was to study the effects of intervention prior to the pre-school age. In view of the lack of a comprehensive theory related to children at this age level, Painter used an eclectic approach with ideas drawn from Piaget, Bereiter and Engelman (who proposed that disadvantaged children do not use language as a tool for reasoning), common sense, and trial and error (Haith, 1972).

The subjects were Negro and White children aged between 8-24 months. The tutors were female college graduates who received training for one week prior to the start of the programme, followed by in-service training. Parents were not involved in the home tutoring sessions which took place for one hour a day, five days a week over the course of a year. There were three categories in the programme: (a) sensorimotor training subdivided into input, association and integration, and output; (b) conceptual training subdivided into the concepts of body image, space, number, time and categorical classification; and (c) language training subdivided into beginning language, elaborative language, the breaking down of giant word units, and the facilitation of internal dialogue. Sessions were not considered primarily playful, but were seen as "school" by the children. As the child had to complete one task before attempting another, he was given a non-preferred activity before one which he especially liked. In this way "the orderly and sequential presentation of the activities fostered good discipline" (Painter, 1968, in Haith, 1972, p.31). The number of tasks presented in the sessions decreased as the attention span of the child increased.

Mothers' Training Program : Urbana, Illinois. Director, Merle Karnes (Golden & Birns, 1976; Gray, 1969; Karnes et al, 1969). The unique feature of this intervention programme is that there was no direct intervention with the children - it aimed at facilitating intellectual development in low SES infants by working only with their mothers. Karnes believed that if feelings of dignity and self-respect were fostered in the mothers and if they were taught ways of facilitating their children's intellectual

development, the cognitive and language skills of the children might be enhanced.

Fifteen mothers were enrolled in the programme when their children were aged between 15 and 24 months. The mothers attended two-hour weekly group sessions over 15 months. The sessions included such child-centred aspects as the use of educational play material. Inexpensive materials or items easily found in the home were used. The teacher taught the mothers appropriate songs and finger games to use during the following week at home with their children. Books and puzzles were available on loan. Materials were selected to stress useful vocabulary, basic manipulative skills and mathematical readiness concepts. Language development was the major emphasis of all activities which were designed to teach the child words needed for labelling environmental objects; to make more precise verbal observations; to generalise; to use grammatically correct forms; to understand and to ask questions and to formulate answers (Karnes et al, 1969). To evaluate the appropriateness of the activities and to demonstrate teaching techniques the teacher did visit each home at two-week intervals where mother and child were observed.

During the parent-oriented sessions the mothers were encouraged to become politically active so as to reduce the feeling of powerlessness which is frequently expressed by the poor.

The Infant Education Research Project : Washington D.C.

Director, Earl Schaefer (Golden & Birns, 1976; Haith, 1972; Horowitz & Paden, 1973; Schaefer & Aaronson, 1973).

The purpose of this project was "to facilitate the intellectual development of disadvantaged children through a period of home tutoring during the second and third year of life" (Schaefer & Aaronson, 1972, in Haith, 1972, p.36). Thirty-one Negro male infants from a low SES background were chosen, having fulfilled two of the following criteria: family income under \$5000, mother's education under 12 years of schooling, mother's occupation, if any, either unskilled or semi-skilled. Homes judged to be "too crowded or unsuitable for home visiting" were excluded (Schaefer & Aaronson, 1973, p.414).

The infants were 15 months at the start of the programme, and 36 months at the end. The particular age range selected was based on research evidence indicating that early sensorimotor development does not predict later intelligence and that social class differences emerge during the second and third year of life, when language develops rapidly. As intellectual performance is highly correlated with language ability, Schaefer's intervention concentrated on the facilitation of language skills. At the same time such character traits as co-operation, curiosity, perseverance and goal-directed behaviour were reinforced while the child's feelings of self-esteem and competence were also enhanced. Summarising the major components of an infant-education project, Schaefer and Aaronson (1973) propose (1) the development of a positive relationship with the child and his family; (2) the provision of varied and complex experience for the child; and (3) the provision of age-appropriate language stimulation for the child, i.e. the programme was designed to provide the types of experience and verbal interaction "that typically occur in a

highly motivated middle-class family" (p.414).

The eight programme tutors were college graduates, chosen on the basis of their warmth, dedication, previous background and familiarity with ghetto conditions. They were trained over a three-month period by lectures, reading relevant literature, and observing babies in institutions and homes - in-service supervision on a weekly basis continued throughout the programme. The format of the intervention consisted of one-hour visits by the tutors to the homes, five days a week. The mothers were encouraged but not required to participate. It was found that they were approximately evenly divided between those who were eager to participate, those who were moderately interested and those who showed little interest - however it appears that they were paid for the sessions (Schaefer & Aaronson, 1973).

Although language development was primarily emphasized, the "curriculum sequence was to a large degree evolutionary, rather than prespecified....The tutor talked with the child, showed him pictures and constructed simple jigsaw puzzles, etc. Lesson plans were not rigid; emphasis was upon a flexible, spontaneous and pleasant interaction between tutor and child" (Haith, 1972, p.37). Whatever materials were used were exploited to the fullest for their stimulus value in teaching basic vocabulary, receptive and expressive language, and concept formation. Simple materials were developed by individual tutors into toys and articles which could be used for sorting, classifying, differentiating and discriminating. Thus food tins, for example, were collected by the mothers, covered with coloured paper and then used for nesting



and stacking. Similarly, assorted bells were used for size, colour, rhythm, counting and singing. Much emphasis was placed on picture books, with a project byword evolving - "Get the children hooked on books". Scrapbooks were made using illustrations meaningful in the child's own experience.

An important aspect of the programme was that the children were taken out for neighbourhood walks by the tutors. Outings to the shops; library visits; picnics in the park; trips to the zoo, pet shop, petrol station, bakery, police station, airport and circus were all used as ways of broadening and enriching the child's understanding of his environment.

Jigsaw puzzles, games, music and toys were also used to facilitate interaction and to provide learning experiences for the child. In fact, "there is the clear impression that tutors used virtually every kind of experiential input at their command" (Haith, 1972, p.37).

The Verbal Interaction Project : Freeport, New York. Director, Phyllis Levenstein (Bronfenbrenner, 1974; Golden & Birns, 1976; Haith, 1972; Levenstein, 1968(a) & (b); Levenstein, 1970; Streissguth & Bee, 1972).

This programme is considered to be one of the ten most successful early intervention programmes in the United States and has been successfully replicated throughout the country (Golden & Birns, 1976). Starting in 1965, it has subsequently evolved through various phases and has been characterised by carefully planned research using several experimental and control groups which

differ on such variables as age of entry into the programme, length and intensity of intervention and prior experience. The goal of the project was to "increase the young child's capacity for verbal symbolization, or verbal intelligence, by encouraging meaningful verbal interaction between very young children and their mothers, organised around toys and books" (Haith, 1972, p.32).

Levenstein's theoretical orientation was based on the supposition that "the child's use of toys weighted with motoric features may foster the perceptual development necessary to verbal and cognitive growth" (Levenstein, 1968(a), p.12). It is conjectured that motor behaviour and subsequent sensory feedback might be conducive to perceptual adaptation via "reafference" loops which are theorised by Bruner (1966, in Haith, 1972) to assist enactive representation.

Believing that patterns of "restricted" (in the Bernstein (1960) sense) verbal interaction between poorly educated mothers and their children in the early pre-school years, is one factor directly responsible for later intellectual and educational deficits in disadvantaged children, Levenstein attempted to change that verbal interaction to an "elaborated" code. She was also aware of the importance of fostering a positive emotional relationship between mother and child, and therefore worked directly with the mother-child dyad to facilitate the child's intellectual, verbal and psychosocial development.

The course of the programme was carefully structured. Semi-weekly half-hour visits were made to the home by Toy Demonstrators who were originally unpaid female social workers with Master's degrees

but were subsequently and successfully replaced by paid former mother-participants with a high school education or less. "The low SES Toy Demonstrators seem to be as effective as the more highly educated women as reflected in the fact that the children whose mothers they have trained show comparable intellectual gains" (Golden & Birns, 1976, p.336). The Toy Demonstrators were trained over an eight session 2-3 week workshop during which they received lectures on the psychosocial development of two to three year olds; the relationship of language to cognitive development; and working in poverty areas in general. Films and role-playing were also used. In-service training consisted of weekly conferences when the Supervisor showed the use of that week's materials and gave out guide sheets for each.

Over a period of two school calendar years Toy Demonstrators visited the homes of experimental children, starting when the children were two years old, an age which Levenstein considers to be an optimal age because of the rapid growth of language during this time and because of the emotional mother-child involvement still present. The Toy Demonstrators showed the mother how to stimulate their children's cognitive and language growth through the use of carefully selected age-appropriate play materials and books - known as "verbal interaction stimulus materials" (VISM). Toys and books were brought to, and left with, the child on alternate weeks, with the second session of each week being used to review the material brought previously. Each VISM kit cost in the region of \$100. Each of the 16 toys and 12 books were chosen to satisfy several of the following criteria:-

1. Facilitates verbal interaction.
2. Encourages motor activities.
3. Possesses possibilities for working with colour, size, shape discrimination; acoustic and tactile potentialities (perceptual).
4. Stimulates play, imagination, concept formation and can be used for problem-solving games (conceptual).
5. Is durable and safe (physical).
6. Offers possibilities for mastery and competence, identification outlets for aggression (emotional).
7. Demonstrates ethnic and sexual neutrality (cultural).

Each Toy Demonstrator was provided with a list of the potential attributes for each of the following nine "modelling" techniques for mother and child, thereby facilitating uniformity in sessions:-

1. Giving information - shape, size, etc.
2. Eliciting responses - by question and invitation.
3. Describing their own manipulations - matching, fitting, making noises.
4. Giving positive motivation.
5. Verbalising social interaction.
6. Encouraging reflection - consideration of alternatives, re-direction of attention.
7. Divergence - curiosity, imagination, independence.

With books the following were added:-

8. Engaging the child's interest - pointing, eliciting verbalisation around the story, associating with the child's experience, reading.

## 9. Classifying.

The Toy Demonstrators encouraged the mothers to interact with the children as early as possible in the training sessions, and once she was doing so comfortably, the Toy Demonstrator would fade into the background, subtly changing roles with the mother so that she herself would become the "demonstrator". In all sessions the Toy Demonstrator was to "treat the mother like a colleague in a joint endeavour on behalf of the child" (Levenstein, 1970, p.429). Furthermore, "the mother, rather than a stranger-expert, is the primary agent of intervention" (Bronfenbrenner, 1974, p.340).

### Ypsilanti-Carnegie Infant Education Project : Ypsilanti, Michigan.

Director, David Weikart (Bronfenbrenner, 1974; Haith, 1972; Horowitz & Paden, 1973; Lambie et al, 1974; Weikart & Lambie, 1970).

The purpose of the project as defined by Weikart and Lambie (1970) was "to assess the effectiveness of systematic intervention by public school teachers, starting at the period of infancy, in preventing the intellectual deficits commonly found in children from disadvantaged populations" (p.92). Underlying the programme was the fundamental belief that all mothers have both the potential and the motivation to raise competent children. The programme therefore aimed at helping mothers to realise this potential by supporting their own exploration and discovery rather than by implementing change through direct instruction. Mothers were involved as co-equals with teachers in operationalising goals for their children and reformulating their approaches to child rearing (Weikart & Lambie, 1970).

The theoretical background to the project was Piagetian. Children were drawn from lower-income families and entered the programme at 3, 7 and 11 months of age. Three groups were compared: (a) mother-child dyads were visited by qualified and supervised teachers who carried out a flexible but organised curriculum; (b) mother-child dyads were visited by volunteer para-professionals who used "intuitive wisdom" to provide a less theoretically based programme of attention to the child and service to the family; (c) a non-treatment control group.

Infants were visited once a week for an hour over an 18-month period. The teacher maintained a friendly relationship with the mother, showing genuine interest in the family and observing the child's language, motor and cognitive growth. The visits were organised around five points:-

1. Individualised programming for each mother-child dyad.
2. Development of the mother's teaching style.
3. Development of the mother's language style.
4. Development of the mother's control techniques.
5. Direct tutoring of the child.

"The key element of concern....is that the mother stimulate and support the child's growth" (Haith, 1972, p.39).

Activities related to language, cognition and motoric skills were designed, based on the Uzgiris-Hunt Scales as a framework or matrix which the teacher uses to systematically make the small, everyday decisions necessary to sustain the child's interest and

growth. An understanding of Piagetian developmental stages facilitated the teachers' explanations to mothers about changes in the child's daily behaviour which form part of a continuum of cumulative behaviours (Weikart & Lambie, 1970). A typical lesson plan and evaluation sheet were developed so that goals, conditions and techniques to be used in the lesson could be recorded, as well as actual performance of the child, teacher intervention, and trends and recommendations (see Appendix A).

In summarising these programmes one finds a variety of aims, techniques and methods. Some programmes focused on mothers alone, some on children alone, some on the mother-child dyad. Tutors, parent educators or Toy Demonstrators were chosen for a variety of abilities and came from a variety of backgrounds. Children ranged in age, programmes in length of duration, visits ranged in frequency and in level of structure from the most loose and flexible to the most highly structured and disciplined. Materials, too, ranged from inexpensive home-made articles to carefully chosen and expensive sets of toys. "All of these variables may interact with age and confound any interpretations that may be drawn of the specific effects on their subsequent development of the age of the children when intervention begins" (Golden & Birns, 1976, p.342). To compare such disparate and varied programmes in the hopes of finding some common thread or link from programme to quantifiable results is therefore a task fraught with hazard. As Horowitz & Paden (1973) write, "it is difficult to determine just what factors have what effects" (p.353). Nevertheless the question of evaluation, being essential to the whole field of early education, as well as to the present study, must now be

considered.

### 1.10.3 Evaluation of Intervention Programmes

Robinson (1976) has defined the purpose of evaluation as being to provide information for decision takers so that the most efficacious policies can be formulated. However, as Haith (1972) has indicated, "Research into the effects of day care and home intervention is not for the scientist who is impatient, weak of spirit or short on tolerance for ambiguity. It is an incredibly difficult area, containing a staggering number of variables and variable values, some of which seem impossible to control" (p.54). The result of this is that most research projects may be criticised for less than rigid adherence to statistical demands. Such aspects as sampling problems, experimenter bias, test milieu, test sophistication, etc. are all cited as confounding the results presented by most researchers (Haith, 1972).

There are many contentious issues which arise in the complex field of programme evaluation. The task, as defined by Horowitz & Paden (1973) is "to define environmental additives and identify the criteria for determining effectiveness" (p.335). However, the difficulty of maintaining over time "anything worthy of the name of experimental design" (Gray, 1969, p.2) is confounded by such factors as the high mobility of the sample being studied; and the difficulty of maintaining an uncontaminated control group. Apart from evaluation of individual programmes, comparisons across programmes are particularly hazardous, concerning as they do a variety of age groups; length of time spent in the programme;



frequency and intensity of contacts; content and methods employed; and whether the programme was directed at the child, the mother or the mother-child dyad (Golden & Birns, 1976).

One finds, then, two trends emerging: either the intervention programme lacks a basis sufficiently rigorous and empirical to lead to adequate evaluation, so that the number of well-designed, implemented and carefully documented studies are few in number (Gray, 1969); or, when intervention programmes have been adequately evaluated they have seldom met the investigator's expectation (Palmer, 1973).

Most programmes have been evaluated in terms of the child's cognitive development, although some have also attempted to discern gains made emotionally and socially, as well as changes in attitude and behaviour on the part of the mother. One has to consider, therefore, the methods used to evaluate the variables, with particular emphasis on infant tests of so-called "intelligence".

1.10.3(a) Infant tests: problems of definition, application, predictability

The development of infant mental abilities is rapid and not easily measured. Therefore it is largely acknowledged that the term "intelligence test" is misleading when applied below the age of 18 months (Escalona & Moriarty, 1974). Infant tests obviously do not measure what is measured by such tests as the Stanford-Binet or the Wechsler. What they do purport to measure is abilities and skills that, to a large extent, "are the bases and precursors

of later mental development" (Honzik, 1976, p.91).

As Streissguth and Bee (1972) write, "outcome research in relation to cognitive development is particularly difficult because of the lack of a equately studied dimensions of early cognitive development as well as the fact that "intelligence" tests apparently measure something different in infancy from what they measure later" (p.179). Moreover, the younger the child, the more acute are the problems of changing test content (Gray, 1969). "Performance on developmental tests during the first years of life is notoriously unstable; the instability is composed of error or measurement variance and variance due to some 'true' increase or decrease in competency" (Bradley & Caldwell, 1976, p.94). Moreover, the relationship between that which is measured by infant tests and that which we later call intelligence remains largely unknown (Escalona & Moriarty, 1974). What is clear is that the predictive validity of infant mental tests for adult intelligence is practically nil (Crano, 1977; Escalona & Moriarty, 1974; Honzik, 1976).

Numerous studies attempting to relate developmental test scores obtained during infancy to standardised intelligence scores given later in childhood and adolescence have shown that "test scores earned in the first year or two have relatively little predictive validity, although they may have high validity as measures of the children's cognitive ability at the time" (Bayley, 1970, in McCall et al, 1972, p.728). The explanation offered for this apparent paradox lies in the basic concept of "intelligence" which must be discarded as being an unchanging characteristic that governs nearly all an individual's mental performance at every age (McCall et al,

1972). Summarising research results, the authors conclude that

- (a) until the second year of life there is relatively poor prediction from infant tests to IQ assessed in middle or late childhood;
- (b) the low predictive correlations are not a function of poor test reliability;
- (c) predictions from 12-24 months may be increased slightly by adding parental socio-economic class into a multiple regression formula with infant test score.

The poor prediction of subsequent intellectual status suggests that the behaviour measured by infant tests is "somewhat irrelevant to later intellectual performance" (Caldwell, 1967, p.13). Thus the conception of a simple continuity of general mental precocity at one age with general mental precocity at another age during the infancy period is abandoned in favour of a more neutral label such as Piaget's "sensorimotor behaviour", or even more specific classes of behaviour (eg. language, imitation, exploration). "The network of transitions between skills at one age and another is likely to be more specific and complex than once thought, and not accurately subsumed under one general concept" (McCall et al, 1972, p.746).

Mental measurement during infancy is also affected by what Honzik (1976, p.59) has termed the "triad of infant, test and examiner" - all of which appear more open to confounding by external variables than at later stages of development. In discussing research findings on cognitive development in infants of different ages and backgrounds, Golden and Birns (1976) suggest that the adminis-

tration of infant intelligence tests such as the Cattell and the Gesell is not as highly standardised as it is in intelligence tests for older children and adults. Furthermore, certain response parameters are not taken into account - the infant's score is based on the number of items he passes, without taking into account the number of trials, amount of time or methods required to get him to perform at his optimal level. As Shapiro (1973) writes, the testing situation is a face-to-face interaction in which one party holds almost all the power. The major options open to the person being tested are to withhold or give minimum or distorted responses. It cannot be assumed that the child being tested is motivated to do his best (Zigler & Butterfield, 1968). Yet when we evaluate a child's test performance we are making inferences about his capacity.

The questionable appropriateness of existing infant tests when being used to identify class-related differences is a further example of the hazards encountered. The difficulties of testing young children, together with problems of measurement, sampling, and the validity of the particular measures used, has led writers such as Golden and Birns (1976) to ask whether infant tests fail to detect social class differences because there are no SES differences in sensorimotor intelligence or because the tests are not valid? Similarly Tulkin (1972) writes: "One cannot infer that deficits exist when the test procedures have a different stimulus value to the groups one is trying to compare" (p.323); and again "research designs which compare lower income children to middle income children are so confounded that no clear conclusions can be reached" (p.322).

Rejecting the standard IQ test as containing "culturally arbitrary segments of knowledge", Kagan and Klein (1973, p.953) attempted to create tests that would be culturally fair when comparing rural Guatemalan with American children. Thus the tests used were not standardised instruments with psychometric profiles of test-retest reliabilities and criterion validity studies. Instead observational tests were designed to evaluate the processes of such basic cognitive functions of children as perceptual analysis, recall and recognition, memory and inference. The whole issue of "culture-free" testing is, however, outside the scope of this paper.

Bearing all these items in mind with regard to infant intelligence testing per se, we now come to their application in the evaluation of intervention programmes. As Lewis (1976) writes, "It is necessary to match the evaluation of the intervention with the appropriate instrument" (p.10). Thus if hide-and-seek tasks were being used to enhance the object permanence capability of the infant, it would be appropriate to measure the intervention with a test of sensorimotor capacity and not with, for instance, a test of verbal capacity. Lewis suggests that such matching of the nature of the intervention procedure to the criteria of effectiveness is seldom done. A result of this is that by using the wrong assessment instrument over a large number of programmes, one could erroneously conclude that intervention in general is ineffective in improving intellectual ability (thus supporting the point of view first popularised by Burt et al (1934, in Lewis, 1976) that, intelligence being genetically determined, environment can have little influence on its development).

In discussing the use of the Stanford-Binet, Gordon (1973) suggests that "it may not relate to some of the kinds of gains which the children made in their ability to deal specifically with elements of their environment. Further, in view of the present discussions in the field about cultural diversity in education, the Stanford-Binet may not indicate the various kinds of growth we see" (p.106).

While conceding many of the criticisms levelled at infant intelligence testing by Lewis (1976), Honzik (1976) nevertheless concludes that infant tests "with all their limitations, have served us well" (p.91). Possibly their main value has been in discriminating between those who will later show neurological and intellectual deficit and those who will not (Escalona & Moriarty, 1974), but they have also contributed substantially to our understanding of the various factors which make up the development of infant abilities (Honzik, 1976).

Discussing the "inordinate amount of emphasis" placed on IQ improvement in intervention programmes, Haith (1972) suggests this is partially a result of the absence of other kinds of standardised inventories. IQ tests provide indices for summarising the child's intellectual status with a few straightforward scores, and moreover, IQ scores are easily communicated and categorised. It appears then that until more appropriate and standardised inventories of infant behaviour are available, existing tests will continue to be used in evaluating the effectiveness of intervention programmes.

1.10.3(b) Evaluation of home-based intervention programmes

Bearing in mind these theoretical and methodological difficulties we may now consider the results of evaluations of the programmes previously described:-

1. Gordon's Parent Education Program, Gainesville, Florida :

Evaluation criteria were identified as follows:

To find out whether the use of disadvantaged women as parent educators of indigent mothers of infants and young children

(1) enhanced the development of the children; (2) increased the mother's competence and sense of self-worth; (3) contributed to knowledge of the home life of infants.

The children were evaluated on the Griffiths Scales up to 24 months, thereafter on the Stanford-Binet, the Bayley Scales, the Peabody Picture Vocabulary Test and Leiter International Scale. Results showed that (a) the more training the children had, the better their performance, with the greatest difference being between children with two or three years training and those with only one year or no training (the pattern of scores showed the verbal area lagged behind those areas involving motor skills), and (b) given equivalent periods of training, the age at which the children entered the programme did not significantly affect their performance, i.e. the time of intervention is not as crucial as the maintenance of the intervention once it is begun.

The results in relation to the second objective indicated

partial success. Mothers had been assessed both by interview and on Gordon's specifically devised "How I See Myself" (HISM) Scale. Movement towards a more internal control of reinforcement orientation was found. Mothers felt they had more control and more influence over what was happening in their own lives than they did when they entered the project.

In fulfilling the third objective, special note was made of the large range of individual differences in child-care practices and verbal input within a group which has tended to be seen as homogeneous. The importance of the relationship of individual factors to achievement within a social class was posited as a focus of future research (Gordon, 1969; Gordon, 1974; Haith, 1972).

2. Painter's Structured Tutorial Program for Infants, Urbana, Illinois :

The children were pre-tested on the Cattell Infant Intelligence Scale and post-tested on the Stanford-Binet. A significant 9,3 IQ difference ( $p < 0,05$ ) was found in favour of the experimental group. Painter concluded that a home-tutoring programme with a highly structured curriculum that emphasizes language and concept development can be effective in increasing the intellectual performance of socially disadvantaged infants at this age (8-24 months) (Golden & Birns, 1976; Haith, 1972).

3. Karnes et al's Mothers' Training Program, Urbana, Illinois :

A significant 15 point difference was found in favour of experimental children at 3 years of age. This result was



further enhanced by a 38 point difference in IQ between six experimental children and their untreated older siblings. This finding demonstrated that the programme had a strong impact in changing the ways the mothers interacted with their younger children (Golden & Birns, 1976; Karnes et al, 1969). However, when mother-intervention was combined with a pre-school programme for 4 year old children, the results were disappointing, with no differences in IQ between experimentals and controls after two years. This is explained by Karnes (1969, in Bronfenbrenner, 1974) as being caused by the mothers no longer seeing themselves as playing the critical role in furthering the development of their children. "The emphasis of home visits had changed from concern over mother-child interaction to concern over the delivery of materials.....to absentee mothers" (p.211).

4. Schaefer's Infant Education Research Project, Washington D.C. : Control and experimental children were tested at 14, 21, 27 and 36 months on the Bayley Infant Scales and Stanford-Binet Scales. At 36 months they were given the Peabody Picture Test, the John Hopkins Perceptual Test and the Aaronson & Schaefer Preposition Test. The IQ scores of controls dropped at 21 months and remained at a low level, while the IQ scores for experimentals, after a slight drop at 21 months, showed a consistent rise to 36 months. A significant 17 point difference in favour of the experimental children was found at 36 months (Haith, 1972). However, in subsequent follow-up testing after the programme had terminated, the differences between the two groups progressively diminished and by the end

of the first grade their IQ scores did not differ significantly nor did their academic achievement (Golden & Birns, 1976). On the basis of this "disappointing" follow-up data, Schaefer (1970) concluded that intervention should begin at birth, involving the mother in her infant's education as early as possible, and that the enrichment programme should continue throughout the school period, so that the emphasis should be shifted from the "need for early education to the need for early and continued education in the family as well as in the school" (Schaefer & Aaronson, 1973, p.428).

5. Levenstein's Verbal Interaction Project, Freeport, New York :

Five differentially treated experimental groups were tested at age 2 on the Cattell Test and at age 4 on the Binet.

Results showing a 15 point IQ difference in favour of the experimentals suggested that the earlier and more intensely mother and child were encouraged to engage in communication around a common activity, the greater the IQ gain shown by the child (Bronfenbrenner, 1974; Levenstein, 1970; Levenstein, 1971). Moreover, the children in this programme maintained their gains three years after they left the programme (Golden & Birns, 1976).

6. Weikart's Ypsilanti-Carnegie Infant Education Project,

Ypsilanti, Michigan :

Children were tested on the Bayley Infant Scales. Preliminary results after 4 months intervention showed large effects for the 7-month age-of-entry group, smaller effects for the 3-month group and no effect for the 11-month group. However, children

from the volunteer-intervention group improved as much as those in the teacher-intervention group (Haith, 1973; Weikart & Lambie, 1970).

On the basis of the above research Golden and Birns (1976) conclude that

- (a) early intervention is not necessarily better than later intervention;
- (b) there appears to be no relationship between the amount of intellectual gain children showed at the end of a programme and the age at which they entered it;
- (c) the only study in which children maintained their gains several years after leaving the programme was Levenstein's Mother-Child home programme (*italics added*).

Evaluation of a further sixteen Home Start projects has focused on the immediate and quantifiable results of the 7-month intervention programme (Deloria et al, 1974). Changes in both parent and child were assessed by pre- and post-intervention application of several measures, viz.

- (a) Pre-school Inventory
- (b) Denver Developmental Screening Test
- (c) Schaefer Behaviour Inventory
- (d) High/Scope Home Environment Scale
- (e) 8-Block Sort Task
- (f) Parent Interview
- (g) Child Food Intake Questionnaire
- (h) Height and Weight Measures
- (i) Pupil Observation Checklist
- (j) Mother Behaviour Observation Scale

A delayed entry "control" group who did not enter the programme until after they had participated in one complete cycle of autumn and spring testing was used to compare results. Further comparison data was obtained from children enrolled in four centre-based Head Start programmes.

Two hypotheses were examined: (1) that Home Start can stimulate gains in children comparable to gains made by children in centre-based Head Start programmes, and (2) that children participating in either Home Start or Head Start achieve at a higher level than control children who have not been enrolled in a pre-school intervention programme.

Highlights of findings have been summarised to "provide convincing evidence that a parent-focused, home-based child development programme can be a viable alternative delivery system producing outcomes at least comparable to those produced by a Head Start centre-based programme....in general Home Start children made gains comparable to those of Head Start children, and both Home Start and Head Start children made many statistically significant gains over the randomly selected control group" (Deloria et al, 1974, p.5).

Comparing Home Start with control group children, programme effectiveness was demonstrated in various areas. The mother-child relationship was assessed on (a) the High/Scope Home Environment Mother Involvement Scale which measures how often mothers spend time with their children in games and conversation, and (b) the High/Scope Home Environment Household Tasks Scale, which measures

how often children "help" their mothers with some simple household tasks, thereby reflecting to what extent the child is integrated into the mother's daily activities. In both cases Home Start mothers scored significantly higher statistically than did control mothers.

School readiness was assessed on the Pre-School Inventory, the Denver Developmental Screening Test Language Scale, the 8-Block Child Talk Score and the 8-Block Sort Task. On the first three Home Start children gained significantly more than the control children.

In social-emotional development there were no statistically significant differences between Home Start and control children except on a Task Orientation Scale which measures the child's ability to become involved in tasks for extended periods of time. On this scale Home Start children were favoured. The authors note that children's social-emotional growth "is very difficult to measure with available tests, and lack of differences may be due to imprecise techniques" (p.6).

In physical development Home Start children gained more weight than control children; they had also received more medical care for preventive reasons. However, there was no improvement in total nutrition scores among Home Start children compared to control children.

Comparing Home Start with Head Start children, it was found that Home Start children kept pace with Head Start children over the

7-month period. The major differences found were that Head Start children fared significantly better re nutrition, immunization and day care, while Home Start children fared significantly better on "things mothers teach their children". Thus the report concludes "Home Start can be viewed as delivering services which are comparable to those in the Head Start programme" (p.7).

A general overview of the effectiveness of early education is presented by Bronfenbrenner (1974).

In summarising the principles, problems and effects of pre-school intervention, he poses five questions to which recent research has contributed at least partial answers. They are:-

- "1. Do children in experimental programs continue to gain in intellectual development so long as intervention continues, or at least do they maintain the higher level achieved in the initial phase?
2. Do children continue to improve, or at least to hold their own, after termination of the program, or do they regress to lower levels of function once the program is discontinued?
3. Is development enhanced by beginning intervention at earlier ages, including the first years of life?
4. In terms of long-range impact, what kinds of programs are most effective?
5. Which children from what circumstances are most likely to benefit in the long run from early intervention?"

(Bronfenbrenner, 1974, p.329).

Two types of intervention projects were studied: viz. home-based and day-care centre-based. As only those projects which provided data comparable to results in other studies were included, the only measures available were IQ scores, thus limiting information

to the cognitive sphere, with a marked middle-class bias. However, as Bronfenbrenner points out, if children from disadvantaged homes can be shown to score on such tests at a level comparable to that of the average middle-class child of the same age, evidence has been provided that the child possesses intellectual ability and can use it. (Performance below the norm on tests of this type cannot, conversely, be taken as firm evidence that the child lacks mental capacity.)

Discussing methodological problems, Bronfenbrenner notes that in those projects where low IQ was the criterion for admission, the initial gains were appreciably inflated by regression to the mean. Secondly, failure to control for parents' motivation led to spurious results. "A child whose parents are interested in his development....is likely to be more advanced and to gain more from an intervention programme" (p.334). Thirdly, recent evidence cited by Herzog et al (1972) suggests that children from relatively less deprived homes are likely to achieve more favourable results - they write of "double deprivation" whereby the less a child has, the less he learns. Fourthly, Bronfenbrenner warns against other possible confounding sources such as children's age (the effects of deprivation increase as a child gets older - i.e. the cumulative deprivation hypothesis).

In considering pre-school intervention in group settings, Bronfenbrenner finds two striking trends. Firstly, pre-school intervention produces substantial gains in IQ as long as the programme lasts. But after intervention is terminated, the effects tend to "wash out". Secondly, the greatest and most enduring gains were

made in structured programmes which included an emphasis on verbal and cognitive training. It was also found that, contrary to expectation, children entering the programmes before the age of three did no better than late entrants. Finally, the children who profited least were those who came from the most deprived social and economic backgrounds, as measured by number of children in the family, employment status of the head of the household, level of parents' education and presence of only one parent in the family.

In investigating home-based intervention Bronfenbrenner considers mainly the programmes devised (and discussed above) by Schaefer and Levenstein. Most children in the latter programme not only made substantial gains but these increased and were maintained three to four years after intervention had been terminated. The crucial factor in this successful outcome has been unequivocally isolated as maternal interest and direct involvement in the teaching process (Schaefer & Aaronson, 1973). The resulting reciprocal interaction between mother and child involves both cognitive and emotional components which reinforce each other. "When this reciprocal interaction takes place in an interpersonal relationship that endures over time....it leads to the development of a strong emotional attachment which, in turn, increases the motivation of the young child to attend to and learn from the mother....the critical element appeared to involve mother-child interaction around a common activity" (Bronfenbrenner, 1974, p.340). As the participants in home-based programmes remain together after the intervention ceases, continuity for the future is ensured.

The effectiveness of parent intervention also appears to vary as



a function of age, with the greatest gains being obtained with two-year olds. Moreover, as Radin (1972) has concluded, the mother's perception of herself as educator of her children is enhanced by participating in such a programme. Thus perhaps new maternal behaviours are fostered which are conducive to the child's intellectual functioning.

In summary, then, "the family seems to be the most effective and economical system for fostering and sustaining the child's development. Without family involvement, intervention is likely to be unsuccessful, and what few effects are achieved are likely to disappear once the intervention is discontinued" (Bronfenbrenner, 1974, p.347). And this, it is proposed, is the crucial factor: however effective a particular type of programme may be in the short-term, unless it is shown to have long-term effects as well, one would have to query the justifiability of the expenditure of money and effort on what would be, at best, a temporary improvement in children's functioning.

The case for home-based intervention programmes appears to have been incontrovertibly and authoritatively stated.

#### 1.11 PRESENT STUDY

In transposing this discussion from an American to a South African context, one important difference must be established. The present study involves an investigation of "Coloured" children - by definition and because of the situation of the ELC these children come from lower socio-economic families. In the American studies

such families were mainly Negro - and as such were part of a specific cultural sub-group. Thus consideration had to be paid in that context to a possible confusion between cultural/ethnic and socio-economic factors. In the present study, however, it is submitted that the Coloured population are of Western or European orientation and thus fall into the same cultural stream as White South Africans in terms of language (English or Afrikaans), religion, education, recreational patterns (Kessel, 1973). However, as mentioned above, the children studied come from exclusively lower-class homes and may thus be expected to function similarly to the American Negro children, not on grounds of race, colour or culture, but on grounds of socio-economic level. What Herzog and Lewis (1970) have referred to as "the grinding intersection of poverty and blackness" (p.378) may be a necessary political fact but is not a sufficient sociological factor. "Our habit of reporting national statistics by colour rather than by socio-economic level often results in attributing to differences in ethnic background what are in fact class differences" (Herzog & Lewis, 1970, p.313).

#### 1.11.1 Background

##### (a) The Athlone Early Learning Centre

The Athlone Early Learning Centre (ELC) was established in 1971 by the Cape Educational Trust, with assistance from the Bernard van Leer Foundation, as a pre-school educational institution for the Coloured community living in Kewtown, a sub-economic housing area of Athlone.

The overall aim of the project has been defined as "enabling children growing up in poverty to make better use of the limited opportunities available to them by promoting early childhood education" (Short, 1977). Within this framework, three broad functions may be identified, viz. (a) to investigate and develop new approaches and materials for the education of pre-school children in disadvantaged communities; (b) to assist parents and other adults in the community who care for children to be more effective educators of their children; (c) to disseminate the ideas and methods which have been tried and tested at the Centre to others involved in the pre-school field (Kessel, 1973). Recognition was paid to the importance of intellectual development during the first six or seven years of a child's life; to the difficulties a disadvantaged child is likely to experience when he enters school, because of his restricted opportunities for development; to the importance of basing educational programmes on the experiences of the children they serve; and, finally, to the importance of involving parents in the educational process (Short, 1977).

Discussing the philosophy behind the project, Kessel (1973) proposes a "more positive view" than that inherent in the previously accepted concepts of "cultural deprivation" and "compensatory education", with their concomitant "deficit" view of disadvantaged communities. He sees the ELC's general function less in terms of compensating for parental deficiencies and more in terms of providing optimal and adequate pre-school services where these are either inadequate

or non-existent. Bruner (1970) makes the same distinction - he suggests that we tend to think of early assistance to growth as "intervention" or a "remedy" whereas what is needed is the "provision of the kind of environment necessary for growth, whatever one's parents' skin colour, religion, pocketbook, origin, or genetic structure" (p.112). Family and community involvement is regarded as essential, with teachers encouraged to view children and their families in positive terms. Pre-school efforts should not be limited to work with children and parents within the ELC itself, but should also reach out to encompass home-based educational programmes (Kessel, 1973). Moreover, the ELC is seen as "playing the rôle of general catalyst in stimulating thought and discussion about the importance of pre-schooling for the disadvantaged" (p.7).

The ELC serves directly families which are characterised by unskilled or semi-skilled occupational status, low parental educational level, large numbers of children and thus a high measure of over-crowding. The families of Kewtown not only conform to the 'standard' picture of disadvantaged urban communities but are also representative of families in many of the housing areas in the Cape Peninsula (Kessel, 1973).

The Centre consists of two nursery units each serving forty 3-6 year olds, and a Crèche unit catering for thirty children aged 6 months to 3 years. The children attend the Centre daily from 8.30 a.m. to 2.30 p.m. The ELC also offers an educational service to a further fifty to sixty children aged

9 months to 3 years in their homes. It is these children of the Home Early Learning Programme, together with the children in the Crèche, who form the subjects of this study.

(b) The Crèche Programme for Infants and Juniors

The development of a centre-based educational programme for young children aged 6 months to 36 months has been described by Short (1974). Infants attend the Crèche until they reach the age of 24 months and are then "promoted" to the Red School.

Underlying the programme are the seven tenets of the educational philosophy of the ELC viz:

1. The assumption that all aspects of an individual's development are influenced by both genetic endowment and environment.
2. The assumption that pre-school education is very important.
3. The belief that children learn most effectively through self-directed activity involving the exploration and manipulation of concrete things and through interaction with others.
4. The assumption that development takes place in stages.
5. The acceptance of individual differences in pace of development, needs and interest.
6. The acceptance of and respect for differences between poor and affluent children.
7. The belief that education involves both school and home and that parents should be involved as fully as possible.

The overall goal of the programme is to "help each child to realise his full potential in terms of our vision of human development" (p.3). To this end, specific objectives have been formulated with respect to socio-emotional and cognitive-language development.

In Eriksonian terms, the main goal in the socio-emotional area is the development of a sense of basic trust (Erikson, 1965), and feelings of self-worth. As the infant progresses from the Crèche to the Red School at the age of two years, emphasis shifts to the development of a sense of autonomy.

Cognitive-language objectives are defined as

1. To increase the child's knowledge of his physical, social and natural environment.
2. To foster the development of thinking skills which are used to structure and organise knowledge, to solve problems, and to think creatively and critically.
3. To develop the child's ability to represent and communicate his knowledge, with the emphasis on the use of language as a tool of thought and communication rather than on the correctness of speech patterns.

The programme, as implemented, has illustrated these basic concepts by concentrating on such tasks as the development of object concept and object permanence; the perceptual discrimination of similarities and differences and relationships between parts and wholes; the development of problem-solving strategies; and the understanding of spatial and simple time

relations. Non-verbal representation by means of imitation and vocalising is encouraged, with later introduction of language use per se. "Thus the emphasis is on developing ways and means for discovering things, for organising information, for solving problems and for communicating information, ideas and needs to others and to oneself" (p.5).

Gross and fine motor development are also fostered by providing suitable equipment according to developmental norms.

The implementation of the programme has continued since 1974. Such aspects as spatial organisation of the playroom, adult : child ratio, flexibility of daily routine, provision of suitable equipment with emphasis on everyday household objects rather than on commercial toys, have all been carefully considered so as to provide an optimal learning environment for the children. Thus the Red School programme includes five types of learning environment:-

1. Semi-structured small-group activities in the playroom.
2. Child-directed learning (play) in a semi-structured learning environment (in the playroom).
3. Semi-structured small-group tutorials in a separate room.
4. Outdoor free play.
5. Large-group activities - music and story.

At the beginning of the 1979 school year there were fifteen infants in the Crèche aged between 6 and 24 months, and fifteen children in the Red School aged between 24 and 36 months.

The Crèche is staffed by a Nursing Sister and three crèche-aides, while the Red School has one trained teacher and a teacher-aide.

(c) The Home Early Learning Programme (H.E.L.P.)

The H.E.L.P. was devised, implemented and supervised by the writer during the period 1972-1976 (Forman & Stern, 1974; Stern & Kessel, 1972; Stern & Short, 1974; Stern, Strydom & Kessel, 1973). Based on the descriptions cited of home-based intervention programmes in the United States (Gray, 1971; Karnes et al, 1969; Levenstein, 1970) the H.E.L.P. aims at assisting mothers (or caretakers) who have pre-school children at home (either by choice or through lack of day-care facilities) to provide a more adequate and stimulating environment within the home itself. The aims of the programme have been summarized (Stern & Kessel, 1972, p.3): "To work with and through the mother to promote the intellectual, social, emotional and physical development of the infant". Existing family strengths are built on to foster a daily, continuing learning environment for the child. But it is not only the child who gains from the programme, for by focusing on the mother in her rôle as "educational change-agent" for her child, she is encouraged to develop greater self-confidence so that the whole family may eventually benefit from her improved coping skills.

During the home-visiting phase of the programme (as opposed to the Follow-Through phase, which is outside the scope of



this paper), the mother<sup>1</sup> and child are visited once a week for an hour by a para-professional Home Visitor, who encourages them by example and with the aid of appropriate materials to engage in sustained patterns of verbal interaction around tasks which gradually increase in cognitive complexity as a function of the child's development. The importance of exploration is emphasized; growth of independence is encouraged; recognition of individual differences is respected; and in general the mother is helped to provide an environment in which emerging skills may be fostered by appropriate challenge which is neither too little nor too great. All areas of development are involved so that gross motor development might be encouraged by ball games, jumping or crawling around the furniture; fine motor co-ordination is catered for by the numerous carefully selected toys the Home Visitors bring with them each week; cognitive and language development are constantly encouraged by verbalisation of every activity and modelling of age-appropriate language usage by the Home Visitors; social and emotional development are fostered in the discussions the Home Visitors have with the mothers in which child-rearing practices are modified where necessary to conform to the less punitive, more accepting model of positive reinforcement on which the programme is based.

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1. The word "mother" is used to denote any permanent caretaker of the child, such as grandmother, aunt, neighbour, etc.

The involvement of the mother is the keystone to the success of the programme. If she is placed in a subordinate role the programme will be counter-productive, for it is only if she and the Home Visitor are seen as colleagues with a common aim that her total commitment to the programme may be achieved. As Bruner (1973) states, "she (the mother) had to be worked with, not compensated for" (p.25). That such a goal may be realised, even when the mother has limited mastery of symbolic codes of representation and is harried by the problem of large family and small income, has been shown by such American programmes as Levenstein's Verbal Interaction Project; Schaefer's Infant Education Research Project and Weikart's Ypsilanti-Carnegie Infant Education Project (Haith, 1972). Moreover, increasing the "educability" of young children from low-income homes by involving the mothers has the added advantage of affecting more than one child in each family unit. Gray (1969, p.5) writes of the spread of effect from older to younger siblings as "vertical diffusion", while "horizontal diffusion" involves the spread of effect to neighbouring families.

One of the most concrete ways of involving the mothers has been in the area of play materials. Apart from the commercially acquired toys (puzzles, pegboards, blocks, crayons, dolls, etc.) which belong to the ELC, mothers are encouraged to collect scrap material which they are then shown how to turn into educationally valuable toys. Mothers are trained to see what materials can be used, and, more significantly, how and why they should be used. Particular emphasis is placed on

the use of inexpensive materials and re-usable items. The mother learns to select, develop or make materials and observe various reactions and responses of the infant to the materials. Empty cooldrink tins are covered with Contac paper and used for stacking, rolling and shaking; different sized containers become nesting and stacking objects; egg boxes become "trains"; cotton reels substitute for beads in a threading exercise; and magazines provide a fertile ground for tearing, cutting, pasting and verbally labelling recognisable objects. Older children are encouraged to keep scrapbooks in which pictures are pasted and captioned by the mother in response to the child's labelling - themes are introduced such as "clothing", "furniture", "food", etc., all found within the natural environment of the child.

The mother is shown how she can interact with the child during the normal course of the day - that daily chores and routine need not be interrupted but may be used to incorporate a wide variety of learning experiences for the child. Peeling potatoes becomes a counting exercise; hanging out the washing involves naming, matching and sorting colours; nappy-changing and dressing is used as a lesson in identifying body parts; an outing to the shops becomes an opportunity to observe and enquire about the properties of a multitude of environmental objects.

There are many other aspects of the programme which may be mentioned here. Health and nutritional information is offered, the use of available community resources such as the library

is promoted; budgeting advice is available if requested; and mothers are encouraged to involve fathers in between-visit activities, when this is feasible. Meetings are held at the ELC on a regular basis when talks and demonstrations are given on subjects of general interest such as family planning, toy-making, first aid in the home. Fund-raising activities encourage a feeling of 'belonging' amongst the H.E.L.P. mothers and an annual outing in December is anticipated with great excitement by all.

(d) The Home Visitor

The key figure in the H.E.L.P. is undoubtedly the Home Visitor. Following the DARCEE (Gray, 1971) model, the following criteria were evolved: The Home Visitor was to avoid adopting an "ideal mother model" based on middle-class standards and values. She must be able to play the rôles of

- (a) teacher - showing the mother what to do, rather than telling her; initiating activities which are educational in nature and working within the existing structure of the home;
- (b) reinforcer and model - the Home Visitor acts the way she wants the mother to act and encourages the mother to strengthen the particular teaching style which seems most successful with her infant;
- (c) friend and confidante - the Home Visitor builds a relationship with the mother in which healthy rapport will give the mother a comfortable and secure feeling;
- (d) organiser - the Home Visitor structures the visit to allow time for planned activities, opportunity for the mother to talk and ask questions, etc.

The person to fill all these disparate and demanding roles must of necessity have particular personal attributes: she must be a good listener, be sensitive to the needs of families; be knowledgeable about child development and all the programme components; come from the same background as the families in the programme; be female and of an age to engender the respect of the people with whom she will be working. As far as educational qualifications per se were concerned, it was felt that the attitudes, values, cultural and language background of the Home Visitor were of greater importance than academic credentials (cf. Gordon's criteria, p.46). Bearing all this in mind suitable Home Visitors were recruited and subsequently trained (Forman & Stern, 1974). With the growth of the programme first one, then two and finally five Coloured Home Visitors were employed on a half-time basis so that eventually sixty families were able to be included in the programme with each Home Visitor responsible for visiting twelve families per week. The writer served as voluntary co-ordinator until January 1978.

In 1978 the number of Visitors was reduced to four, with supervisory duties being carried out by the longest-serving member of the team. Although none of them had studied beyond Std. VI, they have all shown themselves to be fully capable of carrying out the goals of the programme, of developing new and flexible ways of implementing it and of becoming a well-known and respected force in the community. Weekly supervision sessions ensure that the level of development of each child is discussed and that future lessons are

planned with his particular needs in mind.<sup>1</sup>

- (e) The age of the target child has undergone a certain transformation since the inception of the programme. Originally it was decided to work with children of between 18-24 months, but by the second year of the programme (1974) this had been extended downwards to 9 months and upwards to 36 months. The decision to extend the lower range was based on research which suggested that as some infants had shown signs of deprivation before the age of 15 months (Schaefer, 1969), intervention should begin before that.<sup>2</sup>

The upward extension of age was planned to accommodate those children who had been in the programme for a year and whose mothers wished them to continue for a further year. Thus a second year's programme was developed with new age-appropriate activities. This brought the H.E.L.P. into line with the two-year time span used in the Infant Education Research Project (Schaefer, 1969); the Mother's Training Program (Karnes et al, 1969); and the Mother-Child Home Program - Verbal Interaction Project (Levenstein, 1970; 1971).

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1. As from January 1979, two new Home Visitors have been appointed. They are both mothers whose children have participated in the H.E.L.P. and are now attending primary school. Not wishing to lose touch with the H.E.L.P. and wanting to work with children, these mothers (who have Std. V and Std. VI education respectively) approached the Supervisor and have been attending a training course/workshop prior to embarking on their new career.
  2. Recent research (Bronfenbrenner, 1974) suggesting that earlier intervention is not necessarily more effective than later intervention must be taken into account when planning future direction for the programme.

1.11.2 The Grover Developmental Charts for Very Young Children  
(See Appendix B)

The Grover Developmental Charts (GDC) were developed in an attempt to fill the need for a detailed, finely graded and sufficiently objective means of assessing a child's development in certain important areas between the ages of 10-36 months (Grover, 1978).

Although acknowledging the existence of a number of tests and scales for young children, it was nevertheless felt that these contained certain limitations, such as too high a "floor" or too low a "ceiling" level; being insufficiently finely graded to serve as anything more than a rough screening instrument; giving only a global result which tends to obscure rather than highlight the strengths and weaknesses of the child; (Stott and Ball (1965) report that a single IQ score gives an inadequate representation of a child's performance, and that subscores rather than general IQ scores are the most meaningful); failing to discriminate between level of competence in receptive and expressive language ability; and not having been standardised on a South African population (Grover, 1978). Thus the GDC attempt to overcome these limitations and to provide a method of obtaining a detailed and reasonably objective account of the young child's levels of functioning which are considered to result partly from the integrity and degree of maturation of the child's organism, and partly from the nature and quality of the human and material environment and experiences and opportunity he has had up to date.

Although the Charts were primarily intended for use with handicapped (particularly mentally retarded) children, they were standardised

on and may be used in the assessment of normal children.

The GDC consist of four major charts, the fourth being divided into two subscales, namely, Receptive and Expressive Language. Thus five separate scores are derived and these form the basis for the child's profile of functioning so that early detection of developmental deviations may be made.

Chart 1 : Progressive stages in Body Management and Mobility

This consists of 72 items chosen to tap gross motor development. The items reflect the gradual, finely graded progression in the development of the most important body management and mobility skills. Thus the development of walking is traced through stages:- the child's ability to pull himself to his feet at a rail; to stand at the cot rail; to walk with two hands held; to walk with one hand held; to stand briefly unsupported; to walk a few steps alone unsupported; and so on, until the final criterion of running well and stopping and starting easily has been reached. In a similar way other gross motor skills such as sitting, kneeling, pushing, pulling, jumping, climbing stairs, kicking, throwing and catching a ball, balancing, stretching and bending, and riding a tricycle, are all traced. The items on this chart follow the general principles of development in the area of body management and mobility, namely:-

- (a) Neuromuscular development follows the pattern of cephalocaudal and proximodistal maturity;
- (b) Development in general proceeds along the continuum from gross to fine movement, co-ordination and control (Plaut, 1978, p.44).



Chart 2 : Progressive stages in interaction with objects, dexterity and fine co-ordination

This Chart consists of 72 items chosen to tap fine motor development. They reflect the gradual, finely graded progressional development of manual and manipulative skills. They are graded so as to show the child's emerging ability to interact on an ever more meaningful level with a variety of common objects, thereby indicating his growing awareness of their properties. Amongst the skills traced are opening and closing; rolling and pushing; screwing and unscrewing; object constancy; pouring; turning pages; scribbling; imitation and copying of shapes; hand-eye co-ordination and visual discrimination in such tasks as formboards, pegboards, hook and ringboards, bead-threading.

The general developmental principles behind this Chart are

- (a) from lack of visuo-motor co-ordination to planned and controlled visuo-motor perception and co-ordination;
- (b) from bidexterous to unidexterous grasp;
- (c) from palmar to fine pincer and digital grasp;
- (d) from unidexterous ability to ability to co-ordinate separate but combined bidexterous movements (Plaut, 1978, p.45).

Chart 3 : Progressive stages in socialisation and awareness of self and others

This Chart consists of 72 items selected to tap personal-social development. The progressive, finely graded development from dependence to independence is seen in such items as eating; dressing and undressing; bladder and bowel control; washing and drying hands; avoidance of simple hazards; helping with household tasks; sharing; interaction with adults and children; imaginative

play; mimicry.

The general principles of development followed in this area are

- (a) from total helplessness and dependence towards autonomy, self-help and independence;
- (b) from unawareness of self as a separate being to knowledge of the child's own body and its actions, self attributes and limitations;
- (c) from immediate and direct satisfaction of needs to increasing ability to delay gratification of needs and control of behaviour according to subsequent approval or disapproval;
- (d) from self-centred egocentric activities to co-operative interaction with adults and peers (Plaut, 1978, p.46).

Charts 4 and 5 : Progressive stages in communication

The communication Chart is a unique feature of the GDC, being divided into two sections viz. (a) receptive and (b) expressive language. The Chart consists of 25 basic items, as yet undifferentiated, constituting the Common Section, followed by 25 receptive and 25 expressive items. The Common Section includes such items as recognising own name; shaking head in refusal; obeying a simple command; identifying one body part. The receptive skills tapped include identification of body parts, familiar objects, picture cards; obeying complex commands; listening to a story. Expressive language ability is seen in such items as progressively longer utterances (from two syllables up to a six-word sentence); increasing vocabulary; use of plurals and personal pronouns; naming body parts and familiar objects; naming items in picture cards and in a drawing.

The general developmental principles followed on this Chart are

- (a) from random vocalisation to babbling, to use of single words, to use of a growing vocabulary and complex sentence structure;
- (b) from language used as an accompaniment to action to language used as a substitute for action;
- (c) from general response to the human voice to the ability to interpret and carry out actions in accordance with increasingly complex verbal stimuli;
- (d) from recognition of real objects to recognition of symbols for objects (Plaut, 1978, p.48).

Clear guidelines for the administration and scoring of the Charts are given in the Manual (Grover, 1978). Interpretation of scores obtained into developmental levels (in months) is achieved by means of the Table of Norms. It is suggested that no purpose would be served by attempting to work out a general overall score, since a major objective of the Charts is to detect strengths and weaknesses in individual children. The Charts have been designed to yield high inter-chart correlations and, therefore, children developing normally are expected to achieve similar levels of development on all Charts (Grover, 1978).

As the GDC is a new instrument, only becoming available for use in 1978, no previous work on it exists for comparison. It has, however, been the subject of a research thesis (Plaut, 1978). Using a test-retest design, 108 subjects were assessed on the GDC and then were reassessed on the GDC between five and seven days later. During the session in which the children were reassessed they were also assessed on the Denver Developmental Screening Test.

The study of tester-observer agreement was carried out using 21 of the 108 subjects. Two female examiners (one of whom was the writer) took it in turns to be tester and observer.

Test-retest reliability was calculated by correlating the five scores obtained for each child at the first administration of the GDC with the corresponding five scores obtained for each child at the second administration. The five scores were the raw scores obtained for each of the five Charts. The correlations were computed by means of the Bivariate plotting method, BMDP 6D.

Tester-observer reliability was calculated by performing an analysis of variance, Programme BMDP 2V, between the scores obtained by two different examiners with repeated measures of five raw scores on the same child to establish to what degree the two scores thus separately obtained, differed. The test-retest correlation coefficients obtained on the five subscales ranged between ,951 and ,999. Tester-observer correlation coefficients ranged between ,997 and ,999. Criterion related validity was measured by using the Denver Developmental Screening Test, as a direct and independent measure of that which the GDC are designed to be a measure; namely, developmental age in certain selected areas. When the subscales on the GDC were correlated with the corresponding subscales on the DDST, the correlation coefficients ranged between ,863 and ,969. These results substantiate that the GDC are a valid measure of developmental age. Internal consistency was shown by correlations ranging between ,951 and ,990 when comparing the subscales scores with the total score. Thus the author is able to conclude that results indicate "excellent

test-retest and tester-observer reliability. Furthermore....the Grover Developmental Charts are a valid instrument and serve the purpose for which they were designed" (Plaut, 1978, p.xi).

In using the GDC as an assessment instrument in an investigation such as the present one, caution must be employed with regard to the extremely high correlation coefficients quoted. As no attempt was made to differentiate between subjects according to the criterion of age level, it is felt that the coefficients must be somewhat inflated.

#### 1.12 THE AIM OF THIS STUDY

If early intervention in the form of enrichment programmes for disadvantaged children is to be developed and expanded in this country as one means of attempting to interrupt the so-called "cycle of poverty" which prevents the majority of such children from eventually competing successfully in an increasingly industrialised technological society, a quantitatively tabulated evaluation of such programmes is evidently required. With inadequate funds available to establish sufficient pre-school facilities (in South Africa as a whole only 2,9% of Coloured pre-school children attend some kind of pre-school centre (Short, 1977))<sup>1</sup>, alternative and supplementary methods of preventing the

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1. In an article dated 1st March 1979 the Argus newspaper quotes a survey conducted by the ELC in which it was estimated that there are only 92 centres for the 141 000 Coloured pre-school children in the greater Cape Town area.

cumulative effect of a non-optimal environment must be considered. At the same time the case for increased expenditure on pre-school centres will be strengthened if objectively presented results can be quoted which demonstrate the efficacy of such education.

The aim of this study, therefore, is both broad and specific:- broadly it aims at presenting the concept of early educational intervention with particular emphasis on home-based programmes. More specifically it compares the H.E.L.P. and Crèche programme on scores obtained by using the GDC. Should such comparison indicate little significant difference between the two programmes when comparing developmental quotients over time, home visiting will have been shown to be at least as effective a method of intervention/enrichment as day care (in this particular setting).

A supplementary aim of this study is to apply a newly developed instrument, namely the GDC, to a population on which it has not yet been used. The usefulness of the instrument in such a setting may then be assessed, so that future researchers may be guided as to whether or not this particular instrument would be an appropriate tool to use in whatever setting they have chosen.

Finally, looking at this project from a broader perspective, it is hoped that follow-through investigation using the preliminary data presented here will demonstrate the long-term and comparative effects of pre-school intervention programmes, and thus pave the way for greater public and governmental acceptance of the importance of this type of education.

### 1.13 HYPOTHESIS

That developmental ages as obtained on the GDC will increase as a function of the length of time a child has participated in either one of two early education programmes, i.e. centre- or home-based.

## 2. METHOD



## 2.1 DESIGN

A total of 60 subjects were assessed on the Grover Developmental Charts, after they had attended the Crèche or participated in the H.E.L.P. for varying lengths of time.

## 2.2 SUBJECTS

Sixty children aged 15-33 months.

Group A (N = 24) attended the Crèche.

Group B (N = 36) participated in the H.E.L.P.

Within each group four separate age groups were formed so that an equal number of children was tested at each of four age levels viz:-

<u>Age in Months</u>	<u>Group A</u>		<u>Group B</u>		<u>Total</u>
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	
33	4	2	6	3	15
27	3	3	4	5	15
21	3	3	8	1	15
15	<u>2</u>	<u>4</u>	<u>3</u>	<u>6</u>	<u>15</u>
Total	12	12	21	15	60

The exact age at which the child was tested within the particular age group was obtained in this manner:- each child was assessed between plus or minus seven days of its chronological age in months. Thus if the child was to be tested at 27 months, for example, he could be tested at any time between 26 months 23 days and 27 months 7 days.

The amount of intervention each child had received was represented

by the following:-

Group A - the number of months during which the child had attended the Crèche up to date of testing.

Group B - the number of visits the child had received up to date of testing.

<u>Age</u>	<u>Group A</u>		<u>Group B</u>	
	<u>Months in Crèche</u>		<u>Number of Visits</u>	
	<u>Range</u>	<u>Mean</u>	<u>Range</u>	<u>Mean</u>
33	6-28	15,3	25-58	36,6
27	1-21	14,7	12-64	29,7*
21	8-13	10,0	11-23	16,2
15	1- 8	5,6	12-22	16,8

\* The large increase here is due to the fact that the older children had been in the H.E.L.P. for an extra year.

### 2.3 TEST

The Grover Developmental Charts for Very Young Children were administered to each subject. The examiner had previously been trained in their administration and interpretation.

### 2.4 ASSESSMENT PROCEDURE

Each child was assessed on the GDC by the writer. Group A children were tested at the ELC in a quiet room away from the Crèche, with either the Crèche-aide responsible for the child present, or only

the writer. Group B children were assessed in their own homes in the presence of (a) the Home Visitor who had been visiting the family and (b) the mother or caretaker. Each testing session lasted approximately one hour. The tester spoke either English or Afrikaans, according to the home language of the child.

Information on the Socialisation Chart was obtained from the mother or caretaker, or from the Crèche-aide.

## 2.5 SCORING PROCEDURE

The Charts were scored according to criteria specified in the Manual. A developmental age (D.A.) was obtained for each child on each of the five Charts.

3. RESULTS

### 3.1 STATISTICAL ANALYSIS

1. For each S a developmental age (D.A.), as indicated on each of the five Charts of the GDC was obtained.

For each S a deviation score (D.S.) was computed by subtracting his D.A. from his chronological age (C.A.). (See Appendix C)

2. Length of attendance at the Crèche/number of visits were correlated with the deviation scores. The correlations between Groups A and B were compared for each Chart.

Table 1

Pearson correlations between number of months at Crèche and deviation scores. N = 24.

<u>Chart</u>	<u>r</u>
1	,377
2	,261
3	-,380 *
4	,271
5	-,440 *

\* significant at the 0,05 level ( $> -0,344$ , tabulated  $r$ ,  $df = 22$ )

Table 2

Pearson correlations between number of visits and deviation scores.

N = 36.

<u>Chart</u>	<u>r</u>
1	,233
2	-,314 *
3	,117
4	-,135
5	,190

\* significant at the 0,05 level ( $> -0,275$ , tabulated r, df = 34).

Table 3

Comparison of correlations between Group A and Group B.

Fisher's r to Z transformation.

	<u>Chart 1</u>	<u>Chart 2</u>	<u>Chart 3</u>	<u>Chart 4</u>	<u>Chart 5</u>
Group A	,377	,261	-,380	,271	-,440
Group B	,233	-,314	,117	-,135	,190
Fisher's Z	,400	,270	-,400	,280	-,470
	,230	-,320	,120	-,135	,190
Test for significance	-,609	-2,11*	1,85	1,49	2,36*

\* significant at the 0,05 level ( $> 1,96$ , tabulated r)

4. DISCUSSION

#### 4.1 EVALUATION OF RESULTS

##### 4.1.1 Table 1

It was hypothesized that results would show a significant negative correlation between number of months spent at the Crèche and deviation scores. The results obtained indicate that this is only shown for Chart 3 (Socialisation and awareness of self and others) and Chart 5 (Communication : Expressive). Although these correlations are significant, they are nevertheless low and must therefore be treated with caution.

Can one, however, explain why it should be on Charts 3 and 5 as opposed to the other Charts that Crèche children show significant improvement over time? When one considers the areas covered in Chart 3 (feeding, dressing, toileting, initiative and imaginative play, relationship with adults and children) it seems probable that the daily environment provided by attendance at the Crèche would foster such development. Independence and interaction with others form part of the unwritten curriculum of the Crèche.

The increase in expressive communication is less easy to explain, and will be discussed further under a consideration of methodology. However one may presume that the structure of the Crèche curriculum would encourage verbal expression both amongst the children themselves and between the children and the caregivers. However, one would have expected a comparable rise in receptive communication ability and here again one will have to consider methodological difficulties.



The lack of significance in correlation on Chart 1 may be explained by the presumption that body management and mobility (or gross motor co-ordination) is the area of development least likely to be affected by environmental deprivation unless this is so gross that actual physical retardation results. The motor precocity of Negro (i.e. predominantly lower socio-economic class) babies has been documented by Bayley (1965), who found a significant difference in motor development between Negroes and Whites in favour of the former, when tested on the Bayley Scales of Mental and Motor Development. In other words, it is suggested that lack of improvement after intervention on Chart 1 is not so much a function of the programme offered but more of the relative lack of retardation present at the time of initiation of the programme.

Lack of significant correlation on Chart 2 (Interaction with objects, dexterity and fine co-ordination) is both surprising and disappointing. The Crèche curriculum itself is specifically aimed towards the development of problem-solving skills and as such involves an emphasis on fine co-ordination and dexterity (Short, 1976). One possible explanation for the result obtained might be the short length of time during which the Crèche programme had been in operation before testing commenced.

#### 4.1.2 Table 2

A different constellation of results has emerged from the correlation between the Charts and number of home visits. Here the only significant improvement was found on Chart 2. This may be easily understood when it is realised that a great many of the items

administered in this Chart are similar to the activities provided by the Home Visitors. Thus items such as the form board, peg-board, tower of cubes, beads, crayon and paper, are all included (albeit in a modified form) in the repertoire of the weekly visits. Familiarity with and skill in performing such tasks must therefore necessarily be reflected in increased scores over time on this Chart.

The lack of significance in correlation on Chart 1 may be understood in terms of the discussion on Table 1.

When considering the results on Chart 3, one must accept that to change the attitude and actions of a caretaker or mother on such items as feeding, dressing, toileting, which permeate daily child-care interaction, would entail a total restructuring of patterns and habits handed down through generations and probably perpetuated by ever-vigilant family members. A mother may learn very willingly to demonstrate a puzzle to her child; she will less easily acquire the patience necessary to encourage self-care independence when it is quicker and less messy to dress and feed the child herself.

The non-significant results on Charts 4 and 5 are particularly disappointing in the light of the great emphasis placed on language in the Programme. The encouragement of receptive and expressive communication forms an integral part of every home visit and although caretakers vary in their acceptance and understanding of this part of the programme, it had been hoped that at least minimal implementation took place between visits. However, as Horowitz and Paden (1973) write, "it is difficult to know reliably

what and how much mothers of experimental infants do the rest of the day or the week" (p.353).

#### 4.1.3 Table 3

According to the results obtained, the two programmes differ significantly from each other on Charts 2 and 5, the former being in favour of Home Visiting, the latter in favour of the Crèche. In the light of the above discussion the "superiority" of Home Visiting is understandable in that tasks such as seen in interaction with objects form the weekly and intensive core of the programme. Although similar equipment is available in the Crèche, it does not form part of the actual problem-solving programme (Short, 1976) and is therefore not focused on in a one-to-one teacher-child interaction.

The "superiority" of the Crèche as opposed to the Home Visiting programme vis-a-vis expressive communication is difficult to explain. However, one might hypothesize that in an environment where there are many children competing for attention, the child who is verbally efficient will receive more immediate attention to his needs. A further supposition is that whereas in the Crèche the asking of questions is supposedly greeted with enthusiasm and appropriate response by the caregivers, in the home (in spite of suggestions and modelling by the Home Visitor) verbal expression is frequently responded to either monosyllabically or with an admonition to "keep quiet", "go away", "stop worrying me". The findings of Schachter et al (1977) are of relevance here. If one substitutes Crèche caregivers for "advantaged mothers" one finds

that "they appear to facilitate and support the actions of their toddlers. They show an increment in total responsive speech. They respond in kind to their child's initiatives, explicating and fulfilling desires, explicating and confirming reports. They minimise Don'ts....(advantaged mothers use "don't" once in every 11,5 speech acts while for disadvantaged the figure is 1 in 3,7)... they repeat the child's own speech, either checking to make sure they have understood the child's communication or confirming the child's communication" (p.6). What disadvantaged mothers do is described as talking to children - the aim of the H.E.L.P. is to encourage mothers to talk responsively with children.

It should again be emphasized that the results obtained, even when significant, must be treated with caution. So that to infer either superiority or lack thereof of one Programme over the other on the basis of these results would be doing a grave disservice to the personnel involved in designing and implementing the two Programmes and also to the children at the receiving end.

#### 4.2 METHODOLOGICAL CONSIDERATIONS

The difficulties of evaluating intervention programmes have been discussed above. It is suggested that the number of well-designed, implemented and carefully documented studies are few in number (Gray, 1969).

##### 4.2.1 Design

When the present study was first mooted it was decided to attempt a

pre- and post-intervention, test-retest, design with a carefully matched control group. This, however, proved impracticable to implement as (a) the testing instrument (GDC) was not available for use until well after the intervention programmes had commenced, and (b) previous experience had indicated the practical difficulties of finding a comparable control group who would remain in the area and thus be available for the re-testing. Therefore the present design was adopted. Although subjects were divided into even age groups to avoid possible skewing towards one or other end of the test, similar balancing of numbers on the number of visits/months at Crèche continuum was not practically possible. Thus uneven distribution might have skewed the results.

#### 4.2.2 The Assessment Instrument

The second major methodological factor is the test itself. Although experimenter bias and test milieu were not considered to be hazards in this study, difficulties were encountered in administering and scoring certain items, in spite of the fact that the writer was fully familiar with the instrument, having previously tested approximately 100 children during the 1976 standardisation procedure. As one of the stated aims of this study is to assess the usefulness of a newly developed instrument, a detailed discussion of the difficulties encountered seems appropriate.

A major and overriding difficulty was encountered in acquiring accurate information on those items not personally witnessed by the examiner. Thus whereas the time taken by a child to complete a formboard could be accurately and quantitatively noted by the

examiner, reliance on reported competence or lack thereof characterised a certain number of the items. In Chart 1, for instance, when there were no stairs available at a home, the examiner had to enquire about the stair-climbing behaviour of the child. (At the Crèche a specially constructed double set of stairs was used in the test room.)

Chart 3, depending as it does to a large extent on information obtained during an interview with the mother or caretaker of the child, is particularly open to misinterpretation. In spite of the warning in the Manual that "great care must be taken....not to put answers into (mother's) mouth, particularly E must never suggest that child ought to be doing certain things" (Grover, 1978, p.21), the accuracy of information offered was occasionally suspect. The ideal information-gathering method of observation by the examiner would have involved many extra hours of watching dressing, feeding, toileting, etc. activities in each home, and at the Crèche. Although this procedure was necessary during the standardisation of the test, it seems too time-consuming to be acceptable as a future procedure. Thus one will have to rely on the subjective and inevitably partially inaccurate reports of the caretakers.

When one comes to Charts 4 and 5, it was found that in certain cases to obtain any score at all the examiner had to rely on information by the caretaker. Thus a child might be reported but not seen to "wave bye-bye". Receptive items were on the whole as easy to score objectively as were the items of Chart 2 (see below for certain exceptions), but expressive items were of necessity frequently solicited from the mother. The cause of this (unwillingness to

co-operate) will be discussed below, but its results (dependence on information from caretaker) made this Chart in certain cases the most difficult to score accurately. To take a caretaker's contaminated memory and interpretation of a child's speech-act as a basis for accurate scoring seems haphazard at the best and dangerously misinformative at the worst. An example might be appropriate here:-

When a child has not uttered a word during a testing session the examiner might ask the mother what the child habitually says. "He asks for food", she might reply. "What exactly does he say?", asks the examiner. "Mama, please I want some bread." This would be scored as a 6-word sentence (Item 29 on Chart 5). However, on closer questioning or further collateral investigation (i.e. from the Home Visitor) it appears that the child in fact says "Mama - bread" and the mother has herself supplied the missing words. Thus the accurate scoring would be "uses speech to gain ends" (Item 6). And the use of the word "I" which might have previously allowed the child to score on Item 19 (uses I and you) is now called into doubt. Strictly speaking only observed and recorded speech should be credited - does one then score a (temporarily) mute child on his test performance or on reported true ability? This problem must be considered when analysing the tabulated results of the study.

If a child refuses to talk during a testing session one can (with all the hazards implied) acquire certain information on the area from a caretaker. What is the position when a child refuses to jump off a walking board, walk backwards, build a tower, or interact in any way with a doll? As Golden and Birns (1968) write, "A distinction should be made between failures to respond to test items because the child does not have the relevant skills....and

those failures which may be due to motivational factors" (p.939). The question of motivational aspects during test performance has also been studied by Zigler and Butterfield (1968) who suggest that a culturally deprived child whose experiences have led him to be fearful and wary, responds "I don't know" in "order to terminate as quickly as possible the unpleasantness of interacting with a strange and demanding adult" (p.2). The writers go on to suggest that improvement in test results seen in intervention programmes might be due as much to the impact on such programmes of non-cognitive factors such as motivation, as well as of cognitive factors. Their findings in fact indicate that improvement shown in standard IQ performances was "attributable solely to motivational factors" (p.7).

A further difficulty in scoring the Charts was encountered when a child had had no opportunity to acquire a particular skill. This was especially apparent with items on Chart 1 such as riding a tricycle, climbing a ladder, pulling a small chair to a table (virtually no homes had such equipment as small chairs and tables - thus all these children "failed" this item).

To summarise then: Certain difficulties experienced in administering the GDC, such as lack of co-operation on the part of the subjects, lack of opportunity to experience certain of the tasks, and lack of reliability in the caretakers' reports of a child's non-observed competence, may all have affected the overall reliability of scores obtained. However, in spite of these drawbacks, it nevertheless appears that the GDC can be an extremely useful screening device where it is desirable to identify strengths and weaknesses in different developmental areas so that early



remediation may be applied. Used by a sensitive and experienced tester, aware of the possible pitfalls inherent in the testing of infants, the GDC should fulfil its stated purpose of "the early detection of developmental deviations" (Grover, 1978, p.3). For a study such as this, however, it seems that only Chart 2 is able to be administered and scored as objectively as is desired - the material itself is attractive enough to tempt all but the most recalcitrant of subjects, and the criteria for success are easily observable.

#### 4.3 IMPLICATIONS FOR FUTURE RESEARCH

Citing previous studies of the effects of early intervention programmes, Streissguth and Bee (1972) suggest that they have provided further evidence that the social interactions the infant experiences do make a difference in his intellectual development. But what has not yet been identified is which specific interactions or adult behaviours are crucial. Proposing a research design in which both mother-child interaction and child's cognitive development are assessed before, during and after intervention, the authors state "we should be able to see precisely which aspects of the mother's behaviour are altered, and how these in turn are related to changes in the child's development" (p.179). The lack of a general theory that links environmental factors and the child's development, coupled with the pressure for immediate action, has led to the situation where "correlation would have to serve the role that should have been filled by causal relation" (Blank, 1971, p.289). As Sroufe (1970) writes, causal relationships are often implied on the basis of correlational data, while the supposed

causal chain between early child-rearing, development of cognitive functioning and competence, and later school performance, is at best tenuous (Bruner, 1973).

The implications of this for future research are immense. In the wider field, some attempt to establish a causal chain between early experience and later performance is urgently needed. This would involve longitudinal studies of some magnitude with detailed investigation and follow-up of all aspects of the child's development and mother-child interaction.

In the narrower, more immediate sphere, what are the implications for home-based early intervention programmes in South Africa? Returning to the original design which had proved impossible to implement for this present research, a pre- and post-testing of children in the H.E.L.P. would be desirable. Concurrently, if a control group could be found (possibly amongst the children on the waiting list for the ELC) and thereafter maintained during the subsequent months of intervention, a useful comparison could be made.

It is also felt that a follow-up study of the subjects of the present study should be made. With the test results of the GDC available as a guide to their levels of ability at time of testing, further annual testing of the H.E.L.P. children could indicate the results of their future experience - be this admission to the ELC, a second year in the H.E.L.P., attendance at the Follow-through Toy Lending Library, or none of these. Further assessment during their school years could also follow, with an initial comparison

of ex-H.E.L.P. children, ex-Crèche children, and their school-mates, to see if any significant effect of the two Programmes was discernible at the commencement of their school career, and thereafter to determine if such an effect was maintained over time.

An important aspect which has scarcely been touched upon in the present study is that of changes in maternal attitude and mother-child interaction. A scale to measure maternal attitude (such as the Schaefer and Aaronson Maternal Behaviour Inventory Ratings) could be administered to all mothers (or caretakers) of H.E.L.P. children with subsequent re-testing after intervention. But here one is on tricky ground with the inevitable danger of imposing middle-class interaction patterns as "The Model" to emulate. It is safer to propose an increased cognitive score as a goal for improved child functioning because the link from there to future school performance seems incontrovertible and fairly uncontroversial in desirability. The change of mother's attitude and child-rearing patterns is far more complex and fraught with value-judgements and philosophical implications. For apart from such easily acceptable principles as increasing the mother's observation and understanding of her child's development, and acceptance and encouragement of his need to explore, other aspects of middle-class child-care might not necessarily be applicable or even desirable in a lower-class milieu. Account must surely be taken of what the mother herself wants, so that she is worked with and not compensated for (Bruner, 1973). Thus it is suggested that before attempting an evaluation of whether they have been achieved, goals for the mother need to be most carefully scrutinised and considered. This again links up with the necessity of identifying those factors in the environment

which lead causally to aspects of child development. The chain may be conceptualised thus:- identification of environmental factors and their specific effect on aspects of development → consideration and formulation of a desirable (to both mother and researcher) model of functioning → development of a programme based on clearly stated goals for both mother and child → assessment of the efficacy of such a programme, both short-term and long-term.

What of the role of the GDC in such future research? As an assessment instrument for children between the ages of 10-36 months, it would appear to be superior to any other available instrument, in spite of some of the administration and scoring difficulties mentioned. Its use by skilled testers does, of course, limit its wider applicability, but in a setting such as the EIC it could become a useful instrument for the early detection of developmental lags. Thus children entering both the Crèche and the H.E.L.P. could be screened with the express purpose of alerting the teaching staff to any areas of functioning less advanced than others, or to general low (or high, for that matter) level of ability. Thus if, for instance, it was found that a child with average potential on the Communication and Interaction with Objects Charts was scoring low on the Body Management and Socialisation Charts, further investigation might reveal a home environment of extreme over-protection and lack of opportunity to explore, which could then, hopefully, be remediated.

In conclusion, then, the present study suggests two trends to be considered in future implementation and assessment of the H.E.L.P.

Firstly, the goals of the Programme must be clearly and unambiguously stated for both mother and child. And, secondly, a carefully designed pre- and post-testing research study should be embarked upon as soon as possible. Concurrently follow-up testing of the subjects of this study should be commenced, using an assessment instrument with a higher ceiling than the GDC (eg. the Merrill-Palmer) as the subjects pass the 36 month level.

5. CONCLUSION

Can one then accept that on the basis of this study the H.E.L.P. can significantly increase skills only in a child's interaction with objects; and that the Crèche Programme significantly affects only socialisation and expressive communication? It would seem that to place too much reliance on the quantified results would lead to an unjustifiably pessimistic assessment of the two intervention programmes. Further research using a more tightly designed procedure might well reveal a different picture. But in the meantime what concrete evidence do we have? Certainly there is cause for believing that the H.E.L.P. does increase a child's fine motor dexterity as was shown by the Chart on which scoring was most rigidly and objectively adhered to. The lack of significant results in either communication Chart must be used as an incentive to look critically again at the verbal component of the programme and structure it more carefully. The whole area of socialisation, although implicit in the underlying aims of the H.E.L.P., has perhaps not hitherto been spelled out and this too could be incorporated in the future. Body management skills seem less susceptible to retardation in normal children and the usefulness of this Chart would probably be limited to those children with specific physical handicaps.

Thus one is forced again to consider the efficacy of the programme not only in quantitative but in qualitative terms. The criteria here are necessarily subjective - the increased enthusiasm of the mothers as evidenced by greater commitment to programme implementation both during and between visits; the Home Visitors' assessment of improved functioning by the children (see Appendix D); the reports of teachers at the EIC that when H.E.L.P. "graduates" are

admitted to the nursery school (as happens when such a child is accepted from the waiting list because a place is available, and not because participating in the H.E.L.P. guarantees later placement in the ELC) they adapt and function at an initially higher level than do other children; all these would seem to provide a more meaningful evaluation than do the dry figures of a statistical analysis. To convert a child's excitement as "his" Home Visitor arrives into a numerical statement gives little idea of the richness of the Programme's effect on the lives of its participants. A mother's experience of pride as she watches and encourages her child's newly emerging skill cannot be converted into correlations and tests of significance. Every Home Visitor is motivated by a belief in the efficacy of the programme, a belief built up over the past years when tangible and impressive results have been observed. Horowitz and Paden (1973) have cautioned against using absolute values to define success in this field, for "evaluation of success is always a relative measure based upon expectation, cultural norms and finally upon the measurement used for making the judgement" (p.340). Within this framework qualitative evaluation must augment quantitative evaluation before a complete picture may be achieved.

What of the long-term effects of intervention programmes? Can the improvement continue after the intervention ceases? Even when parents are actively involved as in the H.E.L.P., can early intervention successfully withstand the massive assault of the environment? Early intervention may well be a necessary condition for improving the educability of disadvantaged children, but it is certainly not a sufficient condition (Gray, 1969). This leads inevitably to a discussion outside the scope of this study. We



echo the words of Lambie et al (1974): "Although this project did not have the resources or authority to effect major changes in social structure at the local (much less the national) level, the need for such changes was deeply felt" (p.23). For, as Bronfenbrenner (1974) writes, until society is willing to make conditions of life viable and humane for all its families, so that adequate health care, nutrition, housing and employment are available to all, "more direct forms of intervention, be they home visitors, pre-school programs, or both, can have little impact on the most deprived families, whose children stand in greatest need of help" (p.102). Are we then to wait, to down tools, as it were, until this ideal state of apparent Utopia emerges? Bronfenbrenner himself argues against this, and, offering the premise that some imperfect knowledge carefully considered is better than none, he suggests that the task appears worth undertaking. Within such a paradigm programmes such as the H.E.L.P., too, appear worth undertaking.

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APPENDICES

APPENDIX A.

Example of specific lesson plans used in Weikart and  
Lambie Study (Haith, 1972).

LESSON PLAN	MOTHER	CHILD (11 months of age)
<b>GOAL</b> Terminal Behavior for Acceptable Performance	Mother's awareness of baby's interest in finding lost objects	(visual pursuit and performance of objects) Baby follows object thru complete disappearance
<b>CONDITIONS</b> (activity)	1. Hiding toy under one of two screens to stimulate following a hidden object 2. Hiding toy under one of two screens alternately to stimulate following and finding a hidden object without returning to original position of screen	
<b>TECHNIQUE</b>	Verbalize purpose of activity providing mother with possible responses from baby	1. Place 2 cans on table—hide favorite toy under one stimulating looking under to find it. 2. Hide toy first under 1 can then alternate with other can to stimulate finding toy without returning to original position
<b>ACCEPTABLE PERFORMANCE</b> (specifically)	Observing activity, acknowledging Teacher's comments on baby's performance	1 & 2. Will immediately follow and pick up appropriate can retrieving toy
<b>ACTUAL PERFORMANCE</b>	Mother surprised when baby lifted each can until he found toy—asked Teacher how she thought up these activities	1. Baby immediately began knocking down and grabbing can but not aware at first that toy was under it. After 2nd attempt, immediately grabbed for can to retrieve toy—repeated this several times. 2. Baby immediately grabbed for appropriate can, retrieving toy
<b>TEACHER INTERVENTION</b>		
<b>TRENDS AND RECOMMENDATIONS</b>	Mother interested and involved, will see if she relates any similar activities during next session	Teacher actually watched baby increase skill in retrieving toy from appropriate can—will provide more experience in this area

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LESSON PLAN	MOTHER	CHILD (11 months of age)
<b>GOAL</b> Terminal Behavior for Acceptable Performance	To realize need to stimulate baby in new developmental areas	To develop imitation of sound patterns and to use direct action to maintain interesting inputs (development of limitation and causality)
<b>CONDITIONS</b> (activity)	1. Repeat infant's familiar sound patterns while he's looking in mirror 2. Repeat infant's familiar sound patterns into a container	
<b>TECHNIQUE</b>	1. Discuss purpose of new activity area 2. Join in activity to modify language, if necessary	1. Hold mirror in front of baby—repeat sounds baby makes—if silent, make familiar sounds to induce imitation of same from baby. 2. Holding can against mouth. Teacher vocalizes familiar sounds then hands can to baby for imitation.
<b>ACCEPTABLE PERFORMANCE</b> (specifically)	Mother performs language activity	1 & 2. Baby imitates sounds and/or returns can or mirror to Teacher to repeat activity
<b>ACTUAL PERFORMANCE</b>	1. Teacher had left mirror on kitchen table after going into living room—mother noticed mirror commenting, "We didn't show him this" and brought mirror in showing it to baby—she tried to encourage baby to look at self saying, "there's the baby see the baby;" also told how he became intrigued with a friend's full length mirror talking and playing with his image. 2. Mother observed activity quite excitedly as baby directed his responses to teacher.	1. Grabbed mirror excitedly, pushed face toward it smiling—non-verbal at first then began vocalizing for few seconds but more excited breathing rather than vocalizing—kept grabbing mirror pushing it away then close again. 2. Pushed can against face without producing sounds—handed can to teacher for continuation of activity—repeated this several times.
<b>TEACHER INTERVENTION</b>	Teacher joined in mirror activity producing familiar baby sounds rather than words mother was using—mother picked up teacher's style and continued activity	

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