A Two-Part Approach to the Education of Mothers of Potentially Environmentally Disadvantaged Children Regarding a Stimulating Early Childhood Environment

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A TWO-PART APPROACH TO THE EDUCATION OF MOTHERS
OF POTENTIALLY ENVIRONMENTALLY DISADVANTAGED
CHILDREN REGARDING A STIMULATING EARLY
CHILDHOOD ENVIRONMENT

by

Barbara Schaller Kuczen

A Dissertation Submitted to the Faculty of the Graduate School
of Loyola University in Partial Fulfillment of
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Barbara Schaller Kuczen was born on September 28, 1945 in Chicago, Illinois.

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CHAPTER I

INTRODUCTION

Parental involvement in the early training of their children is the most basic form of education. Schools are absent in the cultures of primitive peoples. The young are not separated from their elders for the purpose of education. Rather, training is merely one aspect of child care. Methods, goals, and quality of instruction and care vary according to tribes. However, one commonality exists -- there is some type of early childhood education.

The more advanced modern-day civilization in the United States of America resembles primitive societies in several features. First, all young children receive certain basic care and instruction, which are usually initiated in a home situation. Second, similar to primitive cultures, the methods goals, and quality of early childhood care and instruction vary within the society. Unlike primitive cultures, formal training is available beyond the early stages of infancy. However, participation in such training is not widespread. At approximately five or six years of age, American children enter a formal school setting to undertake further learning. Upon entrance, large discrepancies are found among
the children regarding their readiness for further learning and self-
fulfillment. These discrepancies are attributable, in great part, to the
varying qualities of the earliest care and training. ¹

It is appalling to note that in a civilization as advanced as that of
the United States, earliest childhood care and training render a goodly
proportion of children less well-equipped for life than similar early
training in the most primitive of cultures. Yet, as early as the fourth
century, B.C., Plato stressed the importance of early childhood. ²

Modern-day research and writing in the area of early childhood develop-
ment is not lacking. Detailed descriptions of basic needs, growth
patterns, reasoning abilities, perceptions, and prerequisites for learning
have been long in existence. However, the knowledge relating to early
childhood has not been widely applied. Extending education downward to
include kindergarten, and more recently, Headstart, is a forward step.
However, recent research indicates that a stimulating environment must
begin at birth. ³ Delaying that type of environment until kindergarten, or

¹ Benjamin S. Bloom; Allison Davis; and Robert Hess, Compensatory
Education for Cultural Deprivation (New York: Holt, Rinehart, and

² Plato, Laws: 643.

³ Benjamin S. Bloom, Stability and Change in Human Characteristics
even Headstart, is too late. Research also indicates that although formal training is important, there can be no substitute for the vital role of the parents. Therefore, if children are to receive the type of early childhood care and education necessary for them to later realize their maximum potential, information relevant to the most beneficial type of preschool environment must be transmitted to parents.

Statement of the Problem

The objective of this study is the development, implementation, and evaluation of an effective approach for combating the losses to young children which occur as the result of a preschool environment which is lacking in stimulation.

Benjamin S. Bloom, in his book entitled Stability and Change in Human Characteristics, cites research which strongly indicates that intelligence develops very rapidly during the child's early years. Bloom also states that research indicates environmental conditions play a highly significant role in this early development. In fact, it

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1 Bloom, Hess, and Davis, *Compensatory Education*, p. 69.


3 Ibid.
appears that environment may influence intelligence by as many as twenty intelligence quotient points. The greatest consequences of environment occur during the child's first four years of life, when environment can cause a loss of as many as ten intelligence quotient points. The remaining loss occurs during the next ten years of life. Bloom expects that variations in environment occurring after the child reaches eight years of age will have little effect, while similar variations occurring during the first four years of life can be expected to produce marked effects on intelligence.²

Admitting the inadequacy and inaccuracy of existing measures of intelligence, Dr. Bloom's analysis clearly points to the fact that children developing in an environment which is lacking in proper stimulation will suffer some definite loss of intellectual ability, particularly during the preschool years. Since parents, especially mothers, are the individuals most accountable for the early environment of young children, this study shall attempt the development of a means for effectively educating mothers of preschool children. Upon examination, the problem of this study becomes fourfold.

First, the accumulation of knowledge pertinent to early childhood

¹Ibid., p. 71.
²Ibid., p. 72.
growth, development, care, and training must be carefully studied. This investigation will determine what portion of existing information is most applicable to parents. Research and writing in the field has rapidly increased in the past ten years. The significance of this material cannot be denied; however, a large amount of this information is beyond the scope or interest of parents.

Secondly, it must be determined that mothers commonly classified as culturally disadvantaged, in terms of preparation for academic and self-fulfillment, do in fact lack the information assumed helpful in structuring a stimulating preschool environment. The early developmental records of these culturally disadvantaged children must be compared with similar records of children experiencing preschool environmental conditions generally considered favorable for later academic- and self-fulfillment.

Thirdly, effective means for communicating to mothers that information deemed most crucial in early childhood care and training must be developed. Programs and approaches designed to meaningfully involve parents in the early childhood educational process are not a new phenomenon. However, these programs and approaches are generally structured in nature, and require one or more of the following activities: class sessions, lectures, group-work, mothers' clubs, home visits, or participation through an agency in which the child attends sessions. Often
those mothers most urgently needing assistance and information do not become active in any of the activities listed above. The causes for their lack of participation are numerous -- ranging from embarrassment to lack of time. Frequently, assistance is offered too late for maximum benefits to accrue. Therefore, the method developed for effectively educating mothers of potentially environmentally disadvantaged children must be economical in terms of time and money and available soon after the child's birth. Volumes currently in print deal largely with later preschool years. These books are written at reading levels too difficult for many of the most needy mothers. While existing approaches for the education of parents tend to require scheduling, professional supervision, and considerable expenditures of time and money, the materials resulting from this study shall be designed for quick, independent use.

The final phase of the problem is the actual use of the approaches and materials developed. Mothers of potentially environmentally disadvantaged children will be provided with materials resulting from the study. The effectiveness of these materials in enlightening mothers of preschool children will be statistically determined.

In summary, the main objective of this study is the development, implementation, and evaluation of an effective, economical, independently utilized approach to minimize losses suffered by children as a result of a preschool environment lacking in stimulation due to inadequacies in
parent knowledge regarding early childhood. The four main aspects of the problem are:

1. Determining the knowledge which is most vital to parents of young children
2. Determining what large groups of mothers do not possess the knowledge
3. Developing an approach for communicating the knowledge
4. Evaluating the effectiveness of the approach

Significance of the Problem

Abraham Harold Maslow has stated that: "The needs to know and to understand are seen in late infancy and childhood, perhaps even more strongly than in adulthood. Furthermore, this seems to be a spontaneous product of maturation, rather than of learning, however defined. Children do not have to be taught to be curious. But they may be taught, as by institutionalization, not to be curious." The effect of institutionalization to which Maslow refers is the result of an environment lacking in stimulation. Many children living within a family unit suffer a similar loss of curiosity due to the similar lack of a stimulating environment. This problem, which is the subject of this study, is indeed significant.

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This loss of natural curiosity and the simultaneous severe loss of intellectual ability, to which Bloom refers, render children unable to fully realize their potential capabilities. These children do not choose to live a life of reduced effectiveness. The choice is unwittingly made for them by parents who do not know how to best provide for the total development of young children.

The democratic belief in the value of each individual demands that there be concern for these children. All men are created equal. At birth, the children born into environmentally disadvantaged circumstances possess innate abilities identical to those of more environmentally privileged children. However, these disadvantaged children are not given the opportunity to fully develop these abilities. Through no fault of their own, they must tackle the endeavors of life less equal to the task than others of more fortunate environmental placement. All children have the right to an equal chance for maximizing their individual human potential. The significant problem with which this study deals involves the elimination of the unequal environmental conditions into which equal individuals are born.

1 Bloom, Stability and Change in Human Characteristics, p. 72.
Definition of Terms

Many of the terms used frequently throughout this paper are subject to a variety of slightly different interpretations. Therefore, the following definitions are specifically stated. Any other terms not included below which would be subject to several interpretations are defined at the time used.

Development -- "The result of all kinds of growth changes as they merge to form a whole organism."¹

Developmental task -- "A task which arises at or about a certain period in the life of the individual, successful achievement of which leads to his happiness and to success with later tasks, which failure leads to unhappiness in the individual, disapproval by the society, and difficulty with later tasks."²

Education -- "Cumulation of experience, the meanings, habits, echoes of the past which are available and operative in the present."³


Environmentally disadvantaged -- (synonymous terms - culturally disadvantaged, under-privileged, socially disadvantaged, culturally deprived) Children who have not been provided with an adequately stimulating environment which produces skills in physical coordination, hearing, seeing, thinking, and communication which subsequently lead to maximum self-fulfillment.

Growth -- "Any organismic phenomenon that is characterized by change."¹

Intelligence -- "The aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment."²

Learning -- "Modification of behavior because of experience in an environment."³

Maturation -- "Achievement of functional capacity."⁴

¹Beauchamp, Planning Elementary School Curriculum, p. 92.
³Beauchamp, Planning Elementary School Curriculum, p. 113.
⁴Ibid., p. 93.
Needs -- "Any beneficial object or condition of which an individual for one reason or another may be deprived, whether or not he fully realizes the exact nature or importance of his deprivation, and when its absence produces desire and striving or sets up tensions which demand release."  

Needs can be organized according to a hierarchy, with the most urgent needs at the base, and the deferrable needs occurring at higher levels. The lack of satisfaction of lower order needs can interfere with the realization of higher needs. The most basic needs are physiological needs, followed in order of priority by safety needs, love and belonging needs, esteem needs, and self-actualization needs.  

Objective -- Desired change in the learner's behavior as a result of instruction, stated unambiguously in terms of performance of knowledge to be demonstrated at the termination of the learning situation. 

Pattern -- "Amount of growth that takes place in a specific individual within a given period of time." 

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3 Beauchamp, Planning Elementary School Curriculum, p. 94.
Programmed instruction -- "The selection and arrangement of educational content based upon what is known about human learning theory. It is the process of constructing sequences of instructional material in a way that maximizes the rate and depth of learning, fosters understanding and the ability to transfer knowledge to new situations, facilitates retention, and enhances the motivation of the student."¹

Readiness -- The point at which an individual has attained the level of maturation and acquired the experiential background sufficient to undertake the learning of a new task.

Sequence -- "The order of growth events that is common to most children."²


²Beauchamp, Planning Elementary School Curriculum, p. 93.
Organization of the Remainder of the Study

Chapter one has provided introductory material explaining the problem involved in this study. The significance of the problem was noted, and terminology subject to varying interpretations was precisely defined.

Chapter two presents an analysis of related literature and research. This analysis is conducted in two parts. The first section includes a review of the literature related to early childhood growth and development and the effects of environmental disadvantage during this period. The second section includes a review of literature related to the development of self-instructional materials. The availability of self-instructional materials appropriate for solving the problem is determined.

A comprehensive description of the considerations and activities culminating in the development of self-instructional approaches for solving the problem of early environmental disadvantage comprises the third chapter.

The fourth chapter deals with the pilot study, selection and description of participants, measuring instrument, and collection of data.

A complete statistical analysis of the data collected follows in chapter three. The statistical findings are also carefully interpreted.

Finally, chapter six includes a summary, list of conclusions, and a statement of recommendations based upon the total endeavor.
CHAPTER II
REVIEW OF RELATED LITERATURE

Early Childhood Development

Introduction

This research project relates directly to two major areas. The first area involves the effect of environment on early childhood growth and development, and the second concerns the development, implementation, and evaluation of self-instructional learning materials. Therefore, the review of related literature is conducted in two phases. The first section deals with literature in the field of early childhood growth and development and the effects of environment during early childhood. Self-instructional techniques and materials are considered in the second section, with emphasis upon their relation to improving early environment.

The review of related literature is an attempt to develop expertise in the subject-matter which is relevant to the solution of the problem under consideration. Familiarity with historical perspectives, background information, current trends, and research findings is sought as a result of thorough examination of a wide range of reference materials.

Historical Perspective -- Philosophical Background

The importance of parental influence during early childhood is not a recent revelation. As early as the ninth century B.C., the ancient Hebrews recognized the significant role of the parent. The Old Testament
states that the family is the chief educational institution, and the proper upbringing of children is the highest function in life. The prophet Isaiah suggested that education should be begun as soon as the child is weaned.\textsuperscript{1} Preschool education under the direction of parents was a common situation among the ancient Hebrews.

The Spartans also regarded early childhood as a crucial period. They felt that the environment and training during these years was so critical that they did not trust the family to participate in early childhood responsibilities beyond the performance of minimal duties. Infant training was begun at birth.\textsuperscript{2}

Like the Spartans, Plato realized that the earliest years were the most formative years. Plato similarly viewed the family role in education with skepticism. Due to the extreme consequences of inadequate education during these years, Plato advocated that it should be state controlled. In the \textit{Laws}, which he wrote during his later years, Plato writes that "the most important part of education is right training in the nursery."\textsuperscript{3}

\begin{footnotes}
\item \textsuperscript{1}Isaiah, 28:9.
\item \textsuperscript{2}Mehdi Nakosteen, \textit{The History and Philosophy of Education} (New York: The Ronald Press, 1965), p. 75.
\item \textsuperscript{3}Plato, \textit{Laws}: 643.
\end{footnotes}
Aristotle did not agree with Plato. He believed that infants should receive home care and training. However, Aristotle's conception of the content of early education is very limited and consists principally of allowing the young child to imitate others.

The ancient Romans had few schools. The education of young children was almost solely the task of the mother and father. During the first century, A.D., Quintilian wrote:

In parents I should wish that there should be as much learning as possible. Nor do I speak, indeed, merely of fathers; for we have heard that Cornelia, the mother of the Grachii,... contributed greatly to their eloquence.... Nor let those parents who have not had the fortune to get learning themselves, bestow the less care on the instruction of their children, but let them on this very account, be more solicitous as to other particulars.

Quintilian perceived the period of early home education as the prime determinant of future success or failure in subsequent learning.

The early Christians continued the tradition of family training which had been a cardinal feature of the earlier Jewish philosophy. The Scriptures instruct:

1Nakosteen, The History and Philosophy of Education, p. 104.

2Ibid., p. 578.

3Quintilian, Institutes of Oratory (London: Bohn, 1856), Bk. I, Chapter I, p. 6.

He, therefore, that neglects to admonish and instruct his own son, hates his own child. Do you, therefore, teach your child the word of the Lord. Bring them under with cutting stripes, and make them subject from their infancy, teaching them the Holy Scriptures...and delivering to them every sacred writing.¹

According to the Christians, training was to begin in the home during early infancy. The parents were deemed the primary educators and charged with the moral obligation to instruct their children in religious matters.

In 1628, John Amos Comenius presented his plan for sound early childhood education within the home surroundings. Comenius felt that the early home environment provided the foundation for later education. He outlined steps for the establishment of Mother Schools, or Schools of Infancy. These "schools" were to be initiated in every home upon the birth of a child. The parents would operate the "schools" during the first six years of the child's life, during which time the child would receive instruction in the use of his senses, use of his hands, development of language, and development of memory. Mehdi Nakosteen reports that Comenius recommended methodology and techniques which "foster learning by experience, whether it be experience of observing, touching, and smelling in science lessons, writing, reading, making things in art

subjects, or speaking about interesting things in language lessons. ¹

Jean Jacques Rousseau delved deeply into the topic of early childhood education. His revolutionary book, Emile, appeared in the mid-1700's. This masterpiece advanced an educational program based upon the basic premise that children are, by nature, good. Children are corrupted by society. Therefore, early education should allow children to develop naturally, with a minimum of social inhibitions and restrictions. Early training should be founded upon the natural state of children, with parents acting as catalysts in the process of self-education. The children should learn by exploring, experiencing, and questioning. However, this educational process should ultimately lead to the ability to assume a role in society. Between the ages of one and five, the home is the center of learning. The father assumes the teaching function, while the mother acts as nurse. ²

The books, Leonard and Gertrude and How Gertrude Teaches her Children, by Johann Heinrich Pestalozzi are another milestone in the literature relating to early childhood and home influences. In 1781, Pestalozzi began publishing writings that stressed the highly prominent

² Ibid., p. 311.
position of the home in first educational experiences. He sensed that mothers, if properly trained, possess the greatest potential as teachers. Mothers, alone, have the distinct capability of coupling maternal love with instruction. Pestalozzi regarded this combination with awe. The concept of developmental learning — providing the foundation for systematic, sequential, step-by-step learning by realizing that each new educational experience depends upon the mastery of the previous step — was central in Pestalozzi's thinking. Pestalozzi stressed that the child should be studied to determine his needs and abilities, and educational situations should be structured according to the developmental stages of the child.¹

The educational doctrines of John Locke deal indirectly with the importance of early childhood education. Locke repudiated the theory of innate ideas and inherited depravity previously expounded. He wrote that the child's mind is a "tabula rasa" (blank slate) at birth. Through education, the child progresses from ignorance to a state of knowledge.² Locke hoped that educators would incorporate fun and enjoyment into every learning setting. He recognized the importance of play in the education of young children. Locke also realized that it was important

¹Ibid., pp. 325-326.
²Rusk, The Doctrines of the Great Educators, p. 131.
to carefully study children to determine developmental patterns and needs.¹

The work of Friedrich Froebel is often cited as the most notable contribution to early childhood. Froebel spent his student years under the tutelage of Pestalozzi. Similar to several of the other philosophers and educationalists previously reviewed, Froebel maintained that children develop in fixed patterns. This continuous progress must be nurtured and maintained.² Froebel divided the development of children into stages quite reminiscent of those designated by Rousseau in his book, *Emile.*

The major undertaking during infancy is sensory development. Froebel concurred with Locke in the significance of play as a learning endeavor in the childhood years. However, Froebel stressed that play activity must be structured in terms of desired developmental learning.³ Froebel is credited with establishing the first kindergarten. The "children's garden" was founded in Germany in 1837.⁴ The kindergarten was an attempt to maximize the early childhood years by intervening in the former preschool

¹Ibid., pp. 143-146.

²Ibid., pp. 261-274.


⁴Ibid.
environment in order to promote the most advantageous learning experiences.

Mrs. Carl Schurz, who was one of Froebel's students, founded the first kindergarten in the United States. In 1855, she opened her kindergarten in Watertown, Wisconsin. Mrs. Schurz inspired many others with Froebel's philosophy and educational pedagogy. Among those influenced by Mrs. Schurz was Elizabeth Peabody. Miss Peabody originated a kindergarten in Boston in 1860 and was responsible for kindling the kindergarten movement in Chicago as a result of speeches she delivered there. 1 The first kindergarten in Chicago was established by Mrs. Eliphalet Wickles Blatchford in 1867. Until the devastation of the Chicago Fire, the kindergarten was located in her home at 375 North LaSalle Street. 2

The Italian physician and educator, Maria Montessori, cannot be overlooked in reviewing the literature of the history of child development. Madame Montessori graduated from medical school in 1894. Initially she worked with "defective children" under the direction of Edward Sequin. Dr. Montessori was fascinated by Sequin's methods for teaching this type

of child. In 1898, she founded the Orthophrenic School in Rome. Employing the methodology and techniques she had gained as a result of her work with Sequin, Montessori enjoyed great success in teaching "defective children" to read and write. She made some slight modification and adaptation of the methods and was convinced that her impressive achievements with mentally handicapped children were but a preview of even greater gains that were possible by utilizing the same methods with normal children. In 1907, Maria Montessori established the Casa dei Bambini, which was the forerunner of a number of infant schools in Italian tenement areas. The Montessori system might be considered more striking in some aspects; however it bears notable resemblance to the system designed by Froebel. Many of Dr. Montessori's ideas have been implemented in Montessori schools throughout the world. The attempt to intervene in the environment of disadvantaged children in hopes of enriching their preschool years for later academic learning is common to current intervention programs. In fact, many of Maria Montessori's ideas and methods are employed in these programs.¹

John Dewey viewed all activity in terms of relative means and ends. He regarded life as a series of events, or ends, providing the means for

another event, or end. He believed that children should be educated to cope with future, rather than current, situations. Dewey's philosophy is prevalent in the thinking of many individuals dedicated to young children. The school should be based upon life itself. Children should learn through an activity program, in which they are given the opportunity to interact with the environment, which has been planned to facilitate certain learning outcomes.¹ Current early childhood specialists would generally accept Dewey's description of a school as their description of ideal preschool learning experiences.

Scientific Background

Child development as a science can be traced to fairly recent times. The earliest studies, which are dated in the 1760's, deal merely with increments in size. These studies were conducted by Montbeillard, Quetelet, Porter, and Bowditch.² The work of Binet, beginning in 1908, sparked interest in the study of mental growth. G. Stanley Hall and Earl Barnes conducted early investigations involving the developmental aspects of child psychology.³

¹ Ibid., pp. 307-318.
³ Ibid., p. 137.
During the period extending from 1917 to 1928, the Iowa Child Welfare Research Station, under the directorship of Bird T. Baldwin, conducted systematic studies of the physical and mental growth of young children, and the corresponding inter-relationships and inter-dependencies involved in this growth.\(^1\) Baldwin's work culminated in the development of a system for evaluating physical growth and maturity, based upon the examination of x-rays of the wrist, which gave indication of the ossification in the carpal bones. This system was the predecessor of later work by scientists such as Willard Olson.\(^2\)

The 1920's witnessed great advances in the field of child development. In 1921, Terman conducted follow-up investigation of the one thousand gifted children who had been previously studied. In 1925, the National Research Council instituted the Committee on Child Development. A series of White House Conferences on Child Health and Protection were begun. In 1925, the significant findings of research conducted by Gessell at the Yale Institute of Human Development were first published. Gessell prepared an extremely complete anatomy of child growth and development. Detailed descriptions of child development characteristics were presented

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\(^1\)Ibid., p. 137.
\(^2\)Ibid.
\(^3\)Ibid.
with accompanying photographs and illustrations. 1 Antioch College of Ohio founded the Fels Institute in 1929. The institute conducts longitudinal studies of child growth and development by following children from the time of the mother's pregnancy until school age. 2

During the 1930's, centers dedicated to the study of children were established throughout the country. 3 Individuals such as Shirley and Boyd, McGraw, Todd, Washburn, Wetzels, and Stuart began the professional study of young children from a variety of points-of-view, ranging from the anatomical to the psychological.

The greatest volume of early research findings in the area of early childhood growth and development was accumulated and disseminated through the efforts of the Society for Research in Child Development, which was founded in 1935. 4 Periodicals have also proven an important vehicle for transmitting these important findings. Many new journals which are concerned primarily with child development have appeared as a result of the recent early childhood movement. A listing of some of these journals is included in appendix D. Organizations dedicated to young children have also grown in the past fifty years. Many of these

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1Ibid., p. 137.
2Ibid., p. 137.
3Ibid., p. 138.
4Ibid.
organizations publish pamphlets dealing with early childhood. A listing of these organizations is found in appendix E.

Description -- Heredity and Environment

An examination of the literature under consideration reveals many definitions for the term "intelligence." These definitions vary in their amount of detail and in clarity. One of the commonly accepted definitions merely states that intelligence is that which intelligence tests measure.¹

In view of the well-documented inadequacies of intelligence testing, a statement which defines intelligence in terms of such testing has little utility.² The definition which was presented in the introductory chapter of this study was formulated by David Wechsler. He states that "intelligence is the global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment."³ The primary


concern of this study is the maximizing of this capacity.

The foremost influence upon intellectual ability, as defined by Wechsler, has been debated. In 1859, Darwin's evolutionary theory supported the position that intelligence is fixed by nature. According to Darwin, intelligence is determined by the progenitors. Other scientists following in Darwin's footsteps accepted the notion of intelligence fixed by nature. Sir Francis Galton believed human characteristics were dictated by heredity. Numerous college students studying under G. Stanley Hall also became indoctrinated into the idea of fixed intelligence. Hall was a staunch supporter of the theories of evolution.

A definite relationship between heredity and intelligence was established through research efforts conducted by C. L. Burt which involved children of varying degrees of genetic similarity. Identical


twins exhibited the closest genetic structure. The study compared the intelligence of identical twins, non-twin siblings, and unrelated children. The correlation coefficients for intelligence between identical twins reared together was .925. Non-twin siblings reared together produced a correlation coefficient for intelligence of .538. Lastly, the correlation coefficient for the intelligence of unrelated children reared together was .269. Burt reasoned that if the correlation coefficients for intelligence between identical twins reared apart was greater than the coefficients for non-twin siblings or unrelated children reared together, heredity was clearly isolated as the key factor in intelligence. Burt’s investigation yielded a correlation coefficient of .876 for the compared intelligence of identical twins raised apart. This coefficient clearly exceeds the coefficient of .538 reported for non-twin siblings reared together and the coefficient of .269 for unrelated children reared together. Therefore, the role of heredity appears vividly defined. However, the fact that identical twins reared together did demonstrate a closer resemblance in intelligence presents some interesting questions.

Newman, Freeman, and Holzinger conducted a study quite similar to that undertaken by Burt. They found that identical twins correlate at approximately the .90 level in intelligence; while fraternal twins correlate at approximately the .65 level in intelligence; and non-twin siblings
correlate at approximately the .50 level. Upon first perusal, this data appears to corroborate Burt's findings regarding the hereditary determination of intelligence. In actuality, these correlation coefficients strongly suggest the existence of factors in addition to heredity. It is a biological fact that identical twins are monozygotic, indicating that they have developed from one fertilized zygote. After fertilization, the zygote splits into two separate cells which will produce two separate organisms. However, since both organisms have been produced from a single zygote and sperm, they will possess identical sex and heredity. The high coefficient of correlation for intelligence between identical twins is, therefore, quite understandable. However, in the Newman, Freeman, and Holzinger study previously described, the correlation coefficient for intelligence between fraternal twins was .65; while the coefficient for non-twin siblings was only .50. There can be no genetic explanation for this phenomenon. Fraternal twins are dizygotic. They develop as a result of the fertilization of two separate eggs by separate sperm cells. Fraternal twins inherit no greater genetic similarity to one another than non-twin siblings. In fact, fraternal twins

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2Ibid., p. 251.
may even be of different sexes. The more significant correlation coefficient discovered between fraternal twins suggests the importance of environment. Each fraternal twin grows and develops in an environment which largely resembles and corresponds to the environment surrounding the other twin. The early environments of non-twin siblings born some years apart does not usually produce such marked similarities.

Anastasi reports that the intelligence quotients of identical twins reared apart during their first three years of life vary in proportion to the educational advantage in the distinct environments. If identical twins are separated, but placed in similar environments, their compared intelligence quotients will differ only slightly. However, if the conditions prevailing in the environments differ widely, the compared intelligence quotients will also differ widely. Sontag conducted research which revealed that environment can effect intelligence by as many as twenty intelligence points. The validity of the concept of intelligence

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quotients might be debated. However, research proves that intelligence tests do provide a valid predictor of later academic success. Despite skepticism which is associated with intelligence quotients, a loss as substantial as twenty points certainly merits concern.

Benjamin Bloom has synthesized and interpreted research findings from over one thousand longitudinal studies dealing with the growth and development of human characteristics. He reports some estimates of the relative importance of heredity in the matter of intelligence. For example, Woodworth regards 60% of intelligence as attributable to heredity; Newman, Freeman, and Holzinger estimate 65% to 80% attributable to heredity; Burks believes that 66% is attributable to heredity; Leahy estimates 78%; and Burt feels that 77% to 88% of intelligence is determined by heredity. The crucial element in the above estimates is the fact that all these researchers do acknowledge the role of environment in intellectual development. If an environment was so lacking as to provide nothing, or very little, in the way of support for intellectual growth, then the percentages listed above could be converted into hypothetical intelligence quotient losses which

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closely approximate the findings of Dr. Sontag, which were reported earlier.

Bloom further writes that:\(^1\)

Intelligence is a developmental concept, just as is height, weight, or strength. There is increased stability in intelligence measurements with time. However, we should be quick to point out that by about age 4, 50% of the variation in intelligence at age 17 is accounted for. This would suggest the very rapid growth of intelligence in the early years and the possible great influences of the early environment on this development.

We would expect the variations in the environment to have relatively little effect on the I.Q. after the age of 8, but we would expect such variations to have marked effect on the I.Q. before that age, with the greatest effect likely to take place between the ages of about 1 to 5.

The early belief in fixed intelligence caused the improvement of intelligence to be viewed solely as an eugenic matter. The value, importance, and necessity of improving early childhood environments was not recognized. Research findings have rendered the notions of fixed intelligence obsolete.\(^2\) Scientists accept the fact that heredity and environment interact in the determination of intelligence. An environment lacking in the types of materials and experiences conducive to intellectual growth can produce devastating results in terms of the child's realization of his fullest innate capabilities. Abandoning the

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\(^1\)Ibid., p. 68.

\(^2\)Ibid., p. 71.
notion of fixed intelligence and accepting the vital role of environment has resulted in the formulation of numerous intervention attempts which seek to enrich the early childhood environments of those children born into homes which previously did not provide for maximization of potential.

**Health and Nutritional Factors**

Poor health and nutritional conditions have been isolated as one of the key environmental factors in the intellectual development of the young child. Research conducted with lower-order animals, as well as with humans, indicates that nutrition is highly significant in infancy and early childhood. Philip E. Vernon reports that:

> Apparently the infant brain is particularly vulnerable to dietary deficiencies during later pregnancy and early feeding, say from three months before to six months after birth. The damage occurring then to the brain cells from lack of protein, proper vitamins, and other crucial elements may be irreversible; it cannot be made up even if the older infant or child is relatively well fed.

Vernon cites research conducted by M. Stoch, who attempted to determine the extent of the deficit caused by malnutrition. Stoch conducted a longitudinal study of South African children who were the victims of severe malnutrition during the first two years of life. He compared the group with a comparable group of children who had enjoyed adequate

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2 Ibid., p. 37.
nourishment. He found that the group suffering from malnutrition scored 15.7 intelligence quotient points below the control group on the South African version of the W.I.S.C. Full Scale.

Vernon also reports on the research findings of Harrell, Woodyard, and Gates.\(^1\) Low-income mothers were provided with a supplementary diet during pregnancy. The children of these mothers scored a mean difference of five points higher on intelligence tests administered at three to four years of age than did children of mothers who did not receive the benefits of a supplementary diet.

C.L. Burt discovered that children who are retarded in school or score below average on intelligence tests also exhibit a greater than average proportion of susceptibility to minor illness, disease, sensory problems, and other physical defects.\(^2\)

Research previously cited indicates that there is a definite relationship between nutrition and intelligence and general health and intelligence.

**Sensory-Perceptual-Motor Factors**

Jean Piaget has formulated an interesting theory of the developmental

\(^1\)Ibid., p. 36.

\(^2\)Ibid., p. 36.
process from early childhood to adolescence. Piaget's ideas are based upon his extensive observation of a number of children. His theory of development suggests that in the earliest stages of growth and development children must experience a wide range of sensory stimulation which provides the foundation for the child's perceptions of the world of objects. The later stages of conceptual development rely upon this initial perceptual learning. Basically, Piaget calls the first stage of intellectual growth the sensory-motor stage. During the period extending from birth until approximately two years of age, the child reacts to his environment through the use of his senses. By effectively employing his senses, the child learns the properties of the objects in his immediate environment.

Experiments have been conducted with animals and these experiments attempt to establish a relationship between early sensory-motor stimulation, advocated by Piaget, and later intellectual development. For example, Levine found that merely handling baby rats increased the rats' later responsiveness to their immediate environment. Other experiments indicate that the greater the variety of stimulation and freedom present in the early environment, the greater the intelligence and problem-solving ability.  


2Vernon, Intelligence and Cultural Environment, p. 39.
Research conducted with infants developing in primitive cultures and with infants developing under institutionalized conditions supports the conclusion that sensory-perceptual-motor stimulation is necessary in the preschool environment. Spitz, Goldfarb, and Dennis found that children reared in institutions characterized by few physical, adult contacts and slight sensory-perceptual-motor stimulation were severely retarded. ¹ Skeels closely followed the progress of orphans growing-up in differing environments. ² At eighteen months of age, twelve children, selected from a group of twenty-four children, were transferred from an environment extremely lacking in stimulation to an institution providing considerably more care and stimulation. After twenty-five years, the twelve children who remained in the environment of little stimulation were still institutionalized, or working in low-grade occupations. The twelve children who had been moved into a stimulating environment were normal adults, employed in self-supporting occupations.

Jean Piaget's emphasis upon the pre-operational stage of sensory-motor activity as the foundation for later learning appears justified. The sensory-perceptual-motor experiences occurring from birth through

¹Ibid., p. 39.
²Ibid., p. 40.
early childhood have been proven significant in the total development and ultimate self-fulfillment of the child.¹

Language Factors

Language is often regarded as a prime component in intellectual development. Children need language in thinking and problem-solving activities. Two Russian psychologists have pointed out that children need inner-speech for self-direction.² In verbalizing a situation through the use of inner-speech, planning is facilitated because prolonged trial and error can often be avoided. Children develop their self-concept as a result of internalizing other individual's reactions to them. Many of these reactions are communicated to children through the medium of speech. Therefore, the development of a self-concept is at least partially dependent upon language.

Basil Bernstein states that lower-class children demonstrate language patterns which exist predominantly to communicate immediate needs.³ The lower-class language is very informal. Middle-class

¹Ibid., p. 40.
²Ibid., p. 47.
children possess both informal and formal language. The formal language often deals with concept relationships. Lower-class children exhibit greater difficulties than middle-class children in solving problems which require abstract language. 1

There can be no doubt that language and thinking differ according to purpose. Middle-class children have informal linguistic patterns quite similar to lower-class children. This informal language is effective for expressing their immediate needs and communicating about immediate situations. However, middle-class children also possess more formalized language patterns which appear to be necessary for certain higher level thinking and advanced problem-solving. Middle-class children are able to shift into this type of language when consequences dictate its use. Lower-class children possess informal language but appear somewhat deficit in the formal language required for abstract thinking. 2

Current Studies

William Fowler has reported that seemingly minimal preschool experiences, if carefully planned and organized, can remarkably provide...

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2 Ibid., p. 171.
cognitive stimulation which proves extremely effective in assisting children develop their fullest innate capabilities.\(^1\) This section deals with a review of some of the current intervention programs which are being conducted to help eliminate the intellectual losses resulting from educationally disadvantaged preschool environments.

Recent years have witnessed voluminous increases in the quantity of literature published in the field of environment and preschool development. An examination of the titles of books, articles, monographs, dissertations, research projects, and studies indicates that intervention programs aimed at improving the early childhood environments of potentially educationally disadvantaged children have notably multiplied in the past five years. These programs and studies are of a wide variety of organizational patterns. The research findings and studies reported on the following pages represent a small sampling of the vast amount of material presently available. The studies cited have been selected as indicative of the various types of activities related to the topic which are currently in operation. The literature mentioned is by no means all-inclusive, but rather, it provides an overview of recent endeavors.

Leeper, Dales, Skipper, and Witherspoon have prepared a listing

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of the most recent trends in intervention:¹

1. Extending public schools downward to include kindergarten, nursery school, and child development centers

2. Changing patterns of school organization and adapting programs for specific purposes needing specialized programs, such as those for culturally deprived or exceptional children

3. Changing emphasis in day care programs to educational programs as well as day care

4. Changing curriculum for preschool children by differentiating goals, activities, and materials to provide for individual differences within the group

5. Changing the role of the teacher to that of a guide of child development as opposed to a director of activities

6. Increasing the number of church-related schools for preschool children

7. Expanding cooperative programs for preschool children

8. Expanding provision of summer programs, especially through Head Start

9. Changing parent participation to parent involvement and replacing formal parent education with cooperative teacher-parent team approaches

10. Replacing nursery schools and kindergartens with child development centers which provide the comprehensive programs made possible by funds available from the Federal government and foundations

Many intervention programs attack health and nutritional problems.

The importance of nutrition and health care as partial determinants of intellectual ability was discussed in a previous section. Recently Tulane University began the first segment of a detailed study designed to ascertain the effects of nutritional deficiencies upon psychological development.¹ The Tulane Nutrition Study has been carefully structured to include the correlation between results of a battery of eight psychological tests and two hematological measures. While no generalizations have yet been made, the final outcomes are anticipated with great interest.

A recent issue of Children reports a number of the most recent research findings and studies dealing with nutrition.² For example, the journal reports that a study of nutritional status conducted during 1967 and 1968 in Mississippi revealed that "a higher percentage of children whose families were among the low-income group had "low" dietary intakes of calories, protein, calcium, vitamin C, and vitamin A and "low" laboratory values for hemoglobin, and serum iron, albumin, vitamin A, and vitamin C."³ Children also cites data collected by the Children's

¹Paper presented at the meeting of the American Association for the Advancement of Science, Boston, December 29, 1970.


³Ibid., p. 67.
Bureau. Seventeen thousand children residing in low-income areas were studied. These children ranged in age from birth to thirteen years. The information collected was compared with the Harvard Growth Data and revealed that 7% of the two to six year old children were severely stunted in height or weight. The concentration of hemoglobin in the blood of children in the one to two year old bracket was found lacking in 28% of the cases.\(^1\) Testimony by Arnold E. Schaefer before the Senate Select Committee on Nutrition and Related Human Needs on January 22, 1969 contained description of undernourished children in low-income areas in Texas, Louisiana, New York, and Kentucky.\(^2\) Children mentions a Brandeis University investigation which disclosed that 3.9% of abused children also suffer from malnutrition.\(^3\)

The efforts to fill the gaps in health and nutritional knowledge have been noted by various public and private agencies. Recent research findings have lent impetus to increased federal, local, and private activities in the area of combating health and nutritional problems. In a January 10, 1969 statement before a Senate committee, the secretary

\(^1\)Ibid., p. 68.

\(^2\)Ibid.

\(^3\)Ibid.
of Health, Education, and Welfare pointed out that 45% of the families receiving public assistance for dependent children were also receiving food stamps or donated food. An inquiry made by the Children's Bureau produced a majority of replies from state and local agencies expressing the view that additional food is needed for infants, children, pregnant women, and lactating mothers. These agencies also manifested their desire to assist in every way possible in the provision of this additional food service. Beginning in 1968, the number of nutritionists involved with poor families through maternal and child health programs began a rapid increase. There are few intervention programs in existence which do not focus on some type of nutrition program or nutrition education.

Another of the topics highlighted in the previous section was sensory-perceptual-motor factors as they relate to intellectual development. An unpublished doctoral dissertation written by M. V. Covington examines the differences in visual perception ability in kindergarten children. Covington discovered that lower-status children scored significantly below upper-status children in the ability to match an abstract form to an identical form contained in a grouping of three forms. This ability

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1Ibid.  
2Ibid.
is required for successfully performing many types of learning activities, including learning to read. In a study reported by W. Harold Bexton, Woodburn Heron, and Thomas Scott, twenty-two subjects were deprived of sensory stimulation for short periods of time (two or three days.) Physical deterioration, reduced effectiveness in intelligence-test performance, and hallucinatory activity were evidenced. It was concluded that the maintenance of normal, intelligent, efficient behavior is dependent upon an environment containing a wide variety of sensory stimulation.

The relationship between language and intellectual ability was analyzed in the description of literature. One writer recently expressed the belief that at least half of every intelligence test is a test of language ability. Carl Bereiter and Siegfried Engelmann state that:

With no known exceptions, studies of three- to five-year old children from lower socio-economic backgrounds have shown them to be retarded or below average in every intellectual ability.

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Indeed, in practically every aspect of language development that has been evaluated quantitatively, young disadvantaged children have been found to function at the level of average children who are a year or more younger.

Fifty Navajo Indians, fifty-five Pueblo Indians, and fifty rural Spanish Americans -- all at the first grade level -- were studied to determine if a relationship exists between language ability and home language influences.¹ The significance of the mother as a language model was also examined. Test results suggested that the mother and the home both played a principal part in the language ability of the child. Language was linked with the socioeconomic status of the child, ethnic background, and quality of language models. The study declared that programs designed to remedy poverty conditions should also teach mothers how to educate their children within the home setting.

Ortar and Carmon conducted research in Israel to determine the correlation between the mother's quality of speech, her socioeconomic status, and the intellectual level of the mother's children.² Data


was collected during home visits. A consideration of the final results reveals that there is significant correlation between the mother's speech and the child's intellectual ability. There is also some indication that mothers are able to modify and improve their language.

Efforts to improve health and nutritional conditions, increase sensory-perceptual-motor stimulation, and enrich the quality of language models in the early childhood environment of potentially educationally disadvantaged children have taken a multitude of forms. Kindergartens; nursery schools; child development centers; schools for disadvantaged children; schools for exceptional children; Headstart Centers; laboratory schools; cooperative nursery schools; day nursery schools; state, city, or privately operated child care centers; day care centers; Montessori schools; play schools; home visits; parent classes; newspaper and magazine articles; books; home kits; and mothers' clubs are some of the types of intervention programs and attempts being undertaken. The remaining literature reviewed in this section will investigate some of the more common activities.

Women's Liberation groups, as well as other groups of concerned mothers, support the increase of day care centers. The Office of Education conducted an analysis of day care standards and costs. It was found that there are basically three types of day care situations: care in a center for the full day; care in a foster home for the full day; care
in a center for a part of the day or for a part of the year. The standards for day care are:

**Minimum** - Maintains the health and safety of the child, but provides relatively little for his developmental needs

**Acceptable** - Provides a basic program of developmental activities, as well as minimum care

**Desirable** - Includes the full range of general and specialized developmental activities suitable for individualized development

The costs for day care vary throughout the country and are determined by a wide scope of variables. The government survey reflects the need to consider the type of day care to be sought. The mere establishment of a day care center might not meet the needs of the children and community if quality standards are not carefully evaluated.

The University of North Carolina at Chapel Hill has established the Frank Porter Graham Child Development Center. This center seeks to

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discover the ingredients of a self-maximizing preschool environment. Children are admitted as infants, some under one month of age. The care of the children is organized into cottage units. Physical needs, as well as educational needs, are satisfied in the program. A longitudinal study of the children enrolled with the center is currently underway. Intellectual skills, language development, physical growth, health, disease patterns, social behavior, and personality traits will be examined. Those involved with the Frank Porter Graham Child Development Center believe that the disadvantaged children have made very satisfactory progress in the center.

While the Frank Porter Graham Child Development Center attempts to support and perform certain family functions, such as day care, health care, and education, many other centers are involving the parents in the children's program in hopes of providing the parents with information they can utilize within the home. The Juniper Gardens Cooperative Preschool is a Headstart project which is staffed by mothers of the Children in attendance. In the initial encounters with children, the mothers proved ineffective, due to the fact that they often responded negatively and did not offer reinforcing comments. The mothers soon rectified their behavior
and became effective teachers through the use of sound teaching techniques.

John Meier has reported on recent literature relevant to early childhood environmental conditions. Meier advocates a multiphasic educational program for infants considered high risks for future educational success. Enriched day care centers should be available for these children, with supplementary training of the mothers in techniques for creating a stimulating home.

The Reading Teacher describes a mothers' story-telling program which was designed to provide mothers with a positive school experience. The mothers would also improve their verbal functioning via participation. The mothers were assisted in building vehicles for verbal interaction with their own children by participating in story-telling sessions at the Get Set classes in which their children were enrolled.

Parent-child centers have been established throughout the country.


Harrison and Thogerson report on a parent-child center which was designed to focus on the children's language development and on the mothers' development in child rearing, cooking, and sewing skills. The children participated in a program in which they were surrounded by stimulating experiences which foster cognitive, perceptual, and language growth. The mothers met twice a week for six weeks. Preschool teachers instructed them on how they could improve their home environment. Group discussions were encouraged. The evaluative measures indicated that the program was effective.

Many parent and child centers are federally funded. The Office of Economic Opportunity administers some of the projects. Thirty-six communities were selected to participate in the federal Parent-Child Center project (P.C.C.) The funds were granted to local community action committees, with representatives from various local health and social agencies and from residents in the communities being served. The centers offer a variety of services:


3 Ibid., p. 65.
General education classes at convenient hours.

Workshops in nutrition, cooking, sewing, and carpentry.

Classes in health, safety, and first aid.

Instruction in the homes or in the center, or both, in ways of stimulating development in infants and very young children. The emphasis is on sensory stimulation and language development. In one center video tapes are made of parents working with their children. When he replayed the tape, one father discovered he was echoing his child's baby talk.

A "crisis fund" that can be drawn on in extreme emergencies.

Demonstrations of home improvements and effective care of a house through a model home.

A workshop where the men in the family can produce salable arts and crafts traditional in their ethnic group.

Assistance to fathers' efforts to cultivate crops to augment family food supplies.

Bathing and laundry facilities in the center for families whose homes have no running hot water.

Assistance with personal and everyday problems, sometimes through professional social workers, but more often through neighborhood residents chosen for their ability to get along with people and to learn how to make referrals to health, welfare, and other services available in the community.

Mothers' training programs are another expanding intervention technique. In a study conducted at the University of Illinois Institute of Research for Exceptional Children, twenty mothers of potentially disadvantaged children met in groups of ten each once a week to learn
how to educate their children. Regular home visits were made so that staff members could observe the mothers in the implementation phase of the instruction. The project sought to:

- Train mothers to use educational toys and materials to stimulate their children's learning in sensory-motor, concept, and language development
- Offer opportunities for discussion of child-rearing problems
- Foster attitude change through sharing ideas
- Help the mothers develop self-confidence and responsibility

The final results indicated that this type of training program was successful in assisting the mothers of potentially disadvantaged children.

A second study compared the effectiveness of Headstart programs which did not involve mothers with the effectiveness of Headstart programs which did involve mothers. The results disclosed that the greatest benefits accrue from those programs in which child participation is coupled with home visits designed to inform mothers of methods they can employ in home-teaching their children.

In September, 1965, the National Institute of Mental Health sponsored a home tutoring project. The objective of the tutoring program was to

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promote the intellectual development of very young children in the lower socioeconomic status by exposing these children to a wide range of stimuli. The tutors were college students who had some experience in working with young children. Parental participation was encouraged in the tutoring. The interpretation of final test scores warranted the conclusion that the home tutoring project did stimulate more rapid mental growth than would have occurred in the absence of such a program.¹

The University of Florida structured a parent-education program in which the teachers were women from disadvantaged neighborhoods. The criteria for selection of teachers was: high school graduation; unemployed or low level employment; experience with children and infants.² The children and mothers who participated in the program were selected from patients classified as "indigent" upon entrance into the hospital for maternity care. The mothers received instruction in stimulation exercises from the birth of the child until the child reached two years old. This instruction was conducted through weekly home visits and was evaluated as successful in educating mothers.³


³Ibid.
The Ypsilanti Preschool Curriculum Demonstration Project is an example of a school for disadvantaged children. The children are organized into classes of sixteen members, staffed by a team of two teachers. The classes meet for half a day, five days per week. However, the children’s classes are only one component of the total program. A second vital component is the education of mothers regarding the stimulation of cognitive development in their children. Each participating family is visited biweekly by the child's classroom teacher. During these visits, the parents are instructed in educational methodology suitable for home implementation. ¹

The Ancona Montessori Research Project for Culturally Disadvantaged Children attempts to assist students quite similar to those students serviced by the Ypsilanti Project. The Ancona Montessori Preschool utilizes modified Montessori methodology and teaching techniques. Results from a variety of tests indicate that neither first or second year students increased significantly in intelligence scores. However, the data supports the theory that children enrolled in Montessori school will demonstrate better school achievement than children with a history of public school enrollment. The project also serves as an example of

¹David P. Weikart and Ronald Wiegerink, Proposal -- Ypsilanti Preschool Curriculum Demonstration Project, (Unpublished - funded February 15, 1968 under Title III of the Elementary and Secondary Education Act)
the kinds of provisions that can be made to deal effectively with the
disadvantaged preschool child.  

Several books have been written with the objective of educating
parents to better fulfill their role in the educational and developmental
processes of their children. Jean Schick Grossman discusses early
childhood care and training in a pamphlet entitled You Don't Have to be
Perfect... Even if you are a Parent. However, the content of this
pamphlet deals predominantly with discipline and routine. Specific
teaching techniques are not mentioned. Reading readiness at the preschool
level is one topic in the book, You and Your Child's Reading: A Practical
Guide for Parents. Many extremely valuable learning experiences
suitable for home implementation during the preschool years are included
in this book. The one major disadvantage of this effort is that the material
is presented at a reading level approximating that of a college textbook.

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1 Susan S. Stodolsky and Judith Jensen, Ancona Montessori Research
Project for Culturally Disadvantaged Children, Office of Economic

2 Jean Schick Grossman, You Don't Have to be Perfect... Even if you
are a Parent, The National Association for Mental Health, New York, 1957.

3 Charlotte Mergentime, You and Your Child's Reading: A Practical
The mothers most in need of the information contained in the book, *You and Your Child's Reading*, are oftentimes handicapped in their reading skills. Therefore, serious doubt arises as to whether they would, or could, master the contents of this literature. The National School Public Relations Association has published a guide for educators entitled *Working with Parents*.¹ This handbook offers some very useful public relations information but does not venture into the area of enlisting parents into the educational team. The books and pamphlets reviewed above are representative of the vast majority of literature which seeks to reach parents. Very often the material contained in such work is of an extremely general nature. If the information becomes more specific, in terms of definite learning activities, it also tends to be written in a technical manner, which is too difficult for the parents in most need of the information. The largest proportion of literature involving the improvement of the preschool environment in potentially educationally disadvantaged homes is not written with parents in mind. This material is designed to enlighten educators regarding reading disability.

Intervention programs and attempts similar to those previously discussed have definitely increased in recent years. A 1968 estimate

reported that one-third of the three to five year old population was enrolled in programs. ¹ This figure has no doubt increased in the past three years. However, the most accurate statistic will no doubt fall far short of 100% enrollment. In addition, there are very few projects which direct attention to children below the age of two. Research previously cited indicates that stimulation and health and nutritional care must be begun at birth. ² Therefore, while the current attempts are extremely valuable and important steps in the direction of eliminating early environmental disadvantagement, these programs are failing to reach a significant portion of the childhood population. The children who are not enrolled in intervention programs and the parents who do not participate in training programs are frequently those in the most dire need.


²Bloom, Stability and Change in Human Characteristics, p. 71.
Self-Instructional Learning

This section contains a review of literature related to self-instructional techniques and materials. The information presented in this section has been selected based upon its later relevance in solving the problem of early childhood environmental disadvantagement.

Historical Perspective

The history of programmed learning and self-instructional learning is closely related to the history of teaching machines. It is difficult to consider any one topic in isolation. Therefore, the term self-instructional will be used to refer to both programmed learning and teaching machines.

The basic principles of self-instruction date back as far as 400 B.C. Socrates, the ancient Greek philosopher, developed a highly refined method of questioning which is the basis of modern self-instruction.\(^1\) The Socratic method of questioning which is the tool of many modern-day educators, was designed in such fashion that by responding to carefully constructed questions, one after another, the student was guided into self-discovery of basic concepts. Self-instruction utilizes a technique quite similar to that employed by Socrates. Subject-matter is broken

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\(^1\) Nakosteen, *The History and Philosophy of Education*, p. 139.
down into logical, small units. The student is presented with these small pieces of information in a step-by-step sequence. Knowledge of correctness of response and reinforcement follow each segment of learning. The concept of breaking down a body of knowledge into logical, meaningful units, or steps, (called frames in self-instructional terminology) is at least as ancient as Plato. Plato expounded at length the advantages of this teaching technique.¹

Interest in self-instruction can be traced back to behavioral and experimental psychology. The areas of operant conditioning and field theory were particularly significant in the growth and development of self-instruction. Pavlov's research regarding the magnitude of response to physical environment, Thorndike's law of effect, and Watson's behaviorism also contributed to the birth of self-instruction.² Skinner's reinforcement theory appears to have lent major impetus to the self-instruction movement.

Patents of self-instructional devices were recorded in 1866, when a teaching machine was developed by Halcyon Skinner.³ In 1926, Dr. Sidney

¹Ibid., p. 576.


Pressey invented a device which presented multiple choice items, one-by-one. The machine kept a record of errors and did not permit the student to proceed until the correct response had been entered. This machine, and later adaptations of it, were used by Pressey in his classes at Ohio State University.¹ One of the key advantages of Pressey's machine is that it provides the student with immediate knowledge of the correctness of his response. Many of Pressey's students continued to exhibit productivity in the field of self-instruction.

In the years following Pressey's notable contributions, the entire field of self-instruction received little attention. In 1942, the shortage of trained personnel and the limited time available to train new personnel, caused the military services to attempt mechanization of instruction on a limited scale, in order to meet the demands of the war.² However, in the mid-1950's vigorous interest in self-instruction was renewed. In 1954, Burrhus F. Skinner of Harvard University reported on the results of experiments he had conducted with pigeons and lower-order animals. He stated that his findings could be applied to learning, and ultimately to the

¹Ibid., p. 3.
use of teaching machines with human subjects. The first device to be developed by Skinner was called the slider machine. The question appears in a window, and the student responds by moving sliders containing letters or numbers to form the answer. The disk-type machine was also developed by Skinner. It contains a large disk on which material and questions are printed. The student records his answer on a paper tape, after which the correct response is visible. If the correct answer is recorded, another question is exposed. In 1956, Skinner combined a teaching machine and an electronic typewriter computer to produce the typewriter-input computing machine. The computer introduces material to the student, who responds via the typewriter. The computer evaluates the response and informs the student of his progress.

Based upon Skinner's experimentation with reinforcement and constructed response programs, other pioneers began to build the science of self-instruction. One of these pioneers was Norman A. Crowder. In

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2 Ibid., p. 20.

3 Ibid.

4 Ibid., p. 21.
1955, Crowder became involved in what he termed "automatic tutoring by intrinsic programming."¹ Crowder favored multiple choice questions in which a small amount of material is presented. The student responds to the question. If his response is correct, he is allowed to go on to new material. If he responds incorrectly, he is given additional review material to facilitate mastery.²

Fry writes that "a book, properly bound, may become a teaching machine containing a program."³ The first programmed books were The Analysis of Behavior, by Holland and Skinner, and English 2600, by Blumenthal.⁴

Description

A review of literature regarding programmed instruction and teaching machines (self-instructional materials and techniques,) must begin with Douglas Porter's, "A Critical Review of a Portion of the Literature on Teaching Devices." Although incomplete by current standards, Porter's study, which appeared in 1957, was the first major review of self-instruct-

¹Fryep, Prospectives in Programming, p. 4.
²Ibid.
³Fry, Teaching Machines and Programmed Instruction, p. 19.
⁴Ibid., p. 23.
tion and related experiments. An extremely complete annotated bibliography of writings related to self-instruction was prepared by Fry, Bryan, and Rigney in 1960. Several source books, containing brief articles and reports, have been published by the Department of Audiovisual Instruction of the National Education Association. The first of these books appeared in 1960. Dr. Carl Hendershot's extensive listing, Programmed Learning - A Bibliography of Programs and Presentation Devices, was commended by the National Society for Programmed Instruction in 1967. This bibliography is annotated to assist the reader in identifying the program which best suits his educational need. The


5Carl Hendershot, Programmed Learning Bibliography, 1967-68.
Automated Education Center publishes another listing of self-instructional materials entitled, Programmed Texts in Print.

Edward B. Fry has compiled a listing of key characteristics of self-instruction with which most writers in the field will agree. The listing follows:

1. The subject matter is broken up into small units called frames. In actual practice, these frames usually vary in size from several sentences to several small paragraphs.

2. At least part of the frame requires some type of response from the student. He must answer a question or fill in a blank. Active participation on the part of the student is required. Generally, it is desired that the activity also demonstrate understanding of the material.

3. The student is provided immediate feedback reinforcement. He is told the correctness of his answer, which has the advantage of immediately reinforcing the activity or immediately correcting a mistake. Since many programs are written in such a way that the student is right a high percentage of the time, the act of telling the student that he is correct becomes a reward or reinforcement. Thus programs have a much higher amount of reward or reinforcement than most ordinary teaching situations.

4. The units are arranged in careful sequence. Because the subject matter is broken into small bits, the author must think carefully about the learning steps involved. The result is a much better sequence of presentation. Careful sequence also embodies the notion of shaping or gradually leading the student toward the desired goals by rewarding him for activity that more and more closely approximates those goals.

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1 Programmed Texts in Print, Automated Education Center, 1969.
2 Fry, Teaching Machines and Programmed Instruction, p. 2-3.
5. Programs are aimed at specific goals. This has the desirable effect of making those involved in training evaluate their goals much more carefully and specifically.

6. Revisions are based on student responses. Because the student's behavior can be recorded for each frame, a knowledge of his understanding of each part of the lesson can be easily obtained. Thus if a student is making many errors on one section, the program obviously is not teaching well and must be revised. Here, then, is another cardinal principle of programming; namely, that the student is the final authority in determining whether or not the program is good. In traditional curriculum materials an "expert" often determines the final presentation, but in programming, the approach is more student-centered. Programs are also more carefully aimed at a particular ability level of student based on experimentation, not on opinion.

7. The student is usually free to vary his own rate of learning. A student may work through a program rapidly or slowly. He is completely independent of others in the class. Traditional methods such as lectures or motion pictures force every student to proceed at the same rate, which might be too fast for some and too slow for others.

According to Taber, Glaser, and Schaefer, the very first consideration in self-instruction is "what the student learns."¹ This concern takes the form of educational objectives. Curriculum can be defined as the organization and systematic planning procedures in accomplishing the goals of education. The goals of education are changes in behavior. Instruction is the structuring of the environment in terms of the desired

behavior changes. In order to plan for instruction, the behavior changes sought are carefully stated in the form of behavioral objectives. The formulation of sound behavioral objectives is the first step in the development and assessment of self-instructional materials.

Objectives might be considered as existing on a sort of continuum. At one end of the continuum lie the general objectives, which state in very broad terms, the major goal of an endeavor. At the opposite end of the continuum are found highly specific planning objectives, which often detail the means for evaluating successful performance.

Robert F. Mager has considered the question of what type of objectives are most appropriate for programmed instruction. In his book, Preparing Instructional Objectives, he details the steps and criteria involved in good objectives. Mager writes that "basically a meaningfully stated objective is one that succeeds in communicating to the reader the writer's instructional intent." Mager further writes that "the best statement is the one that excludes the greatest number of possible alternatives to your goal." His book provides listings of words that are

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2 Ibid., p. 10.

3 Ibid.
open to many interpretations, as well as listings of words that can be more effectively utilized in the preparation of objectives, because they are open to fewer interpretations.¹ Mager feels that the most important characteristic of a useful objective is that it "identifies the kind of performance that will be accepted at the termination of instruction."² A properly stated objective must answer the question, "What will the learner be doing when he is demonstrating that he has achieved the objective?"³ "To enjoy music," is an example of an objective that is stated in terms open to a wide range of interpretation. "To be able to identify William Tell Overture after listening to a recording of it," is an example of an objective stated in terms which are more precise and limited in range of interpretation.

Mager suggests several other questions which the writer should keep in mind while preparing instructional objectives. These questions help identify the important aspects of the "terminal behavior:"⁴

1. What will the learner be provided?

2. What will the learner be denied?

¹Ibid., p. 11.
²Ibid., p. 13.
³Ibid.
⁴Ibid., p. 27.
3. What are the conditions under which you will expect the terminal behavior to occur?

4. Are there any skills that you are specifically NOT trying to develop? Does the objective exclude such skills?

In other words, the correct statement of an instructional objective includes the desired terminal behavior defined by "identifying and naming the observable act that will be accepted as evidence that the learner has achieved the objective."¹ It also includes some description of the "conditions (givens, restrictions) necessary to exclude acts that will not be accepted as evidence that the learner has achieved the objective."²

A third characteristic of a properly stated objective, according to Mager, is some indication of the criterion for success in the performance of the objective. There must be some description of the minimum level of acceptable performance. The following is an example of an objective which includes all of the characteristics that Mager deems necessary in a properly stated objective: "Given a human skeleton, the student must be able to correctly identify by labeling at least forty of the following bones; there will be no penalty for guessing (list of bones inserted here.)³ This

¹Ibid., p. 43.
²Ibid.
³Ibid., p. 49.
objective includes the anticipated behavior, the conditions under which this behavior will be demonstrated, and the criteria for success.

Perhaps the most significant recent contribution to the field of behaviorally stated objectives is the publication of the *Taxonomy of Educational Objectives*.¹ This taxonomy is divided into three parts, or domains -- the cognitive, the affective, and the psychomotor. The domains are organized into levels and sublevels, in a hierarchy. Briefly, the cognitive domain includes the following major areas: knowledge, comprehension, application, analysis, synthesis, and evaluation.² The affective domain includes the following road areas: receiving, responding, valuing, organizing, and characterizing by value or value complex.³ Psychomotor skills are those skills frequently termed motor skills, or sensory-perceptual-motor skills. Some writers have divided the psychomotor domain into the following areas: gross bodily movements, finely coordinated


²Ibid.


bodily movements, non-verbal communication behaviors, and speech behaviors. This taxonomy can prove extremely useful to educators in the process of formulating objectives. The types of behavior involved in the various phases of education, organized in a hierarchy, enable the educator to view the learning process as a "whole." The logical order for certain types of behavior changes is suggested by this taxonomy.

Self-instructional techniques and materials seek to fulfill behavioral objectives which have been carefully determined. There are several different types of self-instructional programs. The two most common types are the linear and the branched programs. In linear programming, every student works straight through every frame. In branched programming, the student's response to a frame determines whether he will repeat previous material, be introduced to supplementary material, go directly to the next unit of material, or skip some material. Based upon the student's response to the question, he is referred to his next step in the program. Branched programs vary in complexity from the simple branched programs to multi-track programs.

There are two basic types of responses to questions. The first type are termed constructed response items, which means that the student

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1 Taber, Glaser, and Schaefer, Learning and Programmed Instruction, p. 130.

2 Ibid.
is required to write a response. The second type of response employs multiple choice answers, from which the student selects the best answer.

A thorough review of the literature indicates that the following considerations are of utmost importance in the construction and inspection of self-instructional materials:

1. Formulation of objectives
2. Organization of subject matter
3. Format for presenting subject matter
4. Readability of the frame
5. Length of the frame
6. Type of response
7. Type of program
8. Utilization of reinforcement
9. Method of evaluation

**Current Studies**

Programmed Texts in Print contains no mention of any self-instructional materials designed to provide parents of potentially educationally disadvantaged children with the information necessary for the structuring

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1 Fry, *Teaching Machines and Programmed Instruction*, p. 3.

2 Ibid.
of a stimulating early childhood home environment. There are programs available which attempt to teach the preschool-aged child certain types of learnings. For example, the Edna A. Hill Preschool Laboratories at the University of Kansas are utilizing programmed techniques to teach children between the ages of two and five basic self-help skills, such as tying a shoe. ¹

The research, projects, programs, and printed material that currently attack the problem of early childhood environmental disadvantage are of two basic types. The first type attempts to work directly with the child. Parental involvement is minimal. The second type seeks to provide the parents, particularly the mother, with facts, knowledge, and techniques mandatory in providing the optimum preschool environment. Most of the mother-related approaches are rather formal in nature, and involve a certain amount of professional supervision. They require scheduling and a fixed time commitment on the part of the mothers and the professional staff. No other investigations, programs, projects, or literature reviewed have approached the problem through training parents by the use of self-instructional materials and techniques.

Chapter Summary

A thorough and exhaustive review of the literature relating to early childhood growth and development, environmental conditions which affect early intellectual growth, and self-instruction has resulted in an acute awareness of the importance of the environment in the intellectual development of children from infancy through the early childhood years. Deficits in this environment can mean a devastating loss in intellectual ability, amounting to as many as ten intelligence quotient points. The efforts that are currently being directed toward the solution of this problem are indeed worthwhile. However, they are not widespread and often do not reach those children and mothers who demonstrate the greatest need.

David P. Ausubel has written that the "most important consequence of culturally disadvantaged retardation is slower and less complete transition from concrete to abstract modes of thought and understanding."¹ He further writes that "it is essential, therefore, that the initial selection of learning materials take account of pupils' existing state of knowledge and sophistication in the various subject-matter areas, no matter how primitive this happens to be."² Ausubel states that once the existing


²Ibid., p. 160.
state, or level of readiness, is ascertained, materials should be sequentially organized. Mastery of each individual step should be accomplished before new learning is introduced. Ausubel writes: ¹

The careful sequential arrangement and gradation of difficulty characteristic of programmed instruction maintains readiness by insuring that each attained increment in learning serves as an appropriate foundation or anchoring post for the learning and retention of subsequent items in the ordered sequence. In addition, competent programming of materials presupposes maximum attention to such matters as lucidity, organization, and the explanatory and integrative power of substantive content. The programmed instruction format also promotes readiness by making it possible to insure that the presentation of new material is always deferred until that degree of consolidation or overlearning required for efficient sequential learning is attained.

Parents, particularly mothers, are the individuals most responsible for the early environmental conditions surrounding their children. Most of these mothers have themselves been the product of an educationally disadvantaged environment. Therefore, the programmed learning approach discussed by Ausubel appears a logical device for effectively transmitting the knowledge required by parents for the structuring of a stimulating preschool environment.

An investigation of the pertinent literature revealed no self-instructional program designed specifically to meet the needs and abilities of the parents of potentially educationally disadvantaged children.

¹Ibid.
CHAPTER III
DEVELOPMENT OF APPROACHES

Introduction

The review of related literature indicates that a certain segment of America's children are failing to realize their fullest innate potential in terms of personal, intellectual, and academic fulfillment. These children are born with capacities for intellectual growth. If these capacities are not nurtured within a stimulating environment, they will not develop fully. The first four years of life have been identified as the most crucial period for environmental stimulation.¹

The review of related literature also highlighted several noteworthy facts that must be considered when attempting to design approaches for the solution of early environmental disadvantage. First, stimulation and proper care should begin at birth. It is a fact that the brain is especially susceptible to the effects of malnutrition during the three to six month period.² It is also a fact that children suffering from malnutrition and poor health conditions score lower on tests of intellectual ability and exhibit greater proneness to minor illness, disease, sensory problems, and other physical defects.³ Therefore, health and nutrition information

¹Bloom, Stability and Change in Human Characteristics, p. 71.
²Vernon, Intelligence and Cultural Environment, p. 37.
³Ibid., pp. 36-37.
must be included in any approach for alleviating educational disadvantage. Secondly, research reviewed stresses the significance of sensory-perceptual-motor activity during the preschool period. An effective approach for solving the problem must necessarily contain suggestions for activities in these areas. Language ability is often mentioned as a key difficulty of lower socioeconomic children. Materials and techniques seeking to assist these children must provide training leading to improved communication skills. A recent study previously cited discloses that parents are capable of upgrading their language patterns, and resultant language model.

An extremely important outcome of the examination of pertinent literature is the realization of the number of different types of solutions to the early childhood environment problem which are being attempted. Programs exist which concentrate on working directly with the child, working with the child and parents, and working directly with the parents. However, study of research findings and project reports indicates that the quality of the attempts varies greatly from program to program. In

\[\text{Ibid., p. 39.}\]
\[\text{Ortar and Carmon, An Analysis of Mothers' Speech as a Factor in the Development of Children's Intelligence, p. 116.}\]
the development of new approaches, care must be exercised to maintain high standards of quality.

Negative parental responses to children's learning efforts were also considered in the review of literature. The findings demonstrate the need for informing parents regarding basic principles of learning theory. Approaches developed to assist parents in the preschool development of their children must make clear the value of reward and reinforcement.

Lastly, the review of literature spotlighted the need for an effective means for educating parents of potentially disadvantaged children. The many current programs and published literature do not reach a large proportion of parents needing assistance. Most of the programs examined demand professional supervision and considerable time commitments if the parents are to become involved. The literature examined is either of a nature too general to be of practical value or written at a level too difficult to be handled by the parents suffering from reading handicaps. The knowledge gained as a result of surveying literature in the field of self-instruction suggested that this type of technique might prove extremely useful in training mothers of potentially educationally disadvantaged children. The use of self-instructional materials would not require professional supervision, specially designated time allotments, or great

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expenditures of time or money. Yet, if the material is properly selected and organized, with reading level adjusted in terms of the abilities of parents involved, effective approaches are possible.

The purpose of this study is the development, implementation, and evaluation of self-instructional approaches for training mothers of potentially educationally disadvantaged children. The remainder of this chapter outlines the development of two approaches. The first approach is a kit of sample materials which should be in the home of every preschool child. The second approach is a programmed learning booklet, containing suggestions for creating a stimulating preschool home environment.

Survey of the Characteristics, Abilities, and Needs of Potentially Environmentally Disadvantaged Children

Robert Havighurst has written that socially disadvantaged children lack certain family-related activities which are necessary for a good start in life:

1. A family environment which sets an example of reading; provides a variety of toys and play materials with colors, sizes, and objects that challenge his ingenuity with his hands and mind.

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2. A family conversational experience which answers his questions and encourages him to ask questions; extends his vocabulary with new words and with adjectives and adverbs; gives him a right and a need to stand up for and to explain his point of view on the world.

In his book, *Who are the Socially Disadvantaged Learners*, Havighurst lists the following social characteristics:

1. They are at the bottom of the American society in terms of income.

2. They have a rural background.

3. They suffer from social and economic discriminations at the hands of the majority of the society.

4. They are widely distributed in the United States, but are most visible in the big cities.

In racial and ethnic terms, the disadvantaged are comprised of approximately equal numbers of whites and non-whites, according to Havighurst. They consist mainly of the following:

1. Negroes from the rural south who have migrated recently to the northern industrial cities.

2. Puerto Ricans who have migrated to a few northern industrial cities.

3. Mexicans with a rural background who have migrated into the west and middle west.

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1Ibid.

2Ibid.
4. European immigrants with a rural background from east and southern Europe.

Havighurst estimates that approximately fifteen percent of the child population is disadvantaged. However, in large metropolitan areas, the percentage climbs to somewhere in the vicinity of thirty percent.\(^1\)

Frank Riessman has considered the problem of cultural disadvantage. In his book, *The Culturally Deprived Child*, Riessman lists the following reasons for poor school achievement:\(^2\)

1. Lack of an educational background in the home.
2. Few books in the home.
3. Insufficient language and reading skill.
4. Inadequate motivation to pursue a long-range educational career.
5. Poor estimate of self.
6. Antagonism toward the school, the teacher, etc.
7. Poor health, improper diet, frequent moving, television-ridden home.

Riessman believes that the disadvantaged child possesses the following strengths and weaknesses:\(^3\)

\(^1\)Ibid.


\(^3\)Ibid.
Weaknesses

1. Narrowness of tradition
2. Pragmatism
3. Anti-intellectual
4. Alienation
5. Limited development of individualism
6. Limited development of self-expression
7. Limited development of creativity
8. Frustrations of alienation
9. Political apathy
10. Suggestability
11. Naivete
12. Boring occupational tasks
13. Broken homes
14. Over-crowded homes
15. Limited educational background

Strengths

1. Cooperativeness
2. Mutual aid
3. Extended families
4. Avoidance of the strain that accompanies competition and individualism
5. Equalitarianism
6. Informality
7. Warm humor
8. Freedom from self-blame
9. Freedom from parental over-protection
10. Enjoyment of other's company
11. Lessened sibling rivalry
12. Security found in the extended family.

Riessman also characterizes the disadvantaged child by such phrases as: quest for excitement, alienation, stubbornness, desire for strong leadership, early marriage, permissive attitudes toward sex and love, corporal punishment, and parent-substitutes in the home.¹

The above-listed characteristics give rise to a concept which Frank Riessman has termed "cognitive style" or "learning style." In an article entitled, "The Strategy of Style," Riessman reviews various types of learning styles.² These learning styles are established early in the child's life and not subject to ready change or modification. Riessman defines strategy of style as "the strategy of producing basic change in

¹Ibid.

people through understanding and utilizing their styles. The author believes that the typical style of the disadvantaged student contains the following elements:

1. Physical and visual, rather than aural.
2. Content-centered, rather than form-centered.
3. Externally oriented, rather than introspective.
4. Problem-centered, rather than abstract-centered.
5. Inductive, rather than deductive.

Riessman also suggests that a large percentage of disadvantaged children are weak in auditory discrimination. Auditory discrimination is a highly important skill if the child is to accurately receive the input information necessary for reading and other academic skills. It is through auditory discrimination that the child learns the language and develops necessary experiential background for learning. Auditory discrimination is the basis for most word attack skills, including phonetic analysis.

1 Ibid.
2 Ibid., p. 328.
3 Ibid., p. 332.
Martin P. Deutsch has systematically studied the characteristics of the disadvantaged child and the disadvantaged environment. Based upon his observation, Deutsch has abstracted implications which are vital in the development of approaches to remedy the conditions which lead to educational disadvantage.\(^1\) Deutsch states that visually the urban slum and overcrowded housing facilities provide the child with sparse stimuli. He says that "there are usually few if any pictures on the wall, and the objects in the household, be they toys, furniture, or utensils, tend to be sparse, repetitious, and lacking in form and color variations. The sparsity of objects and lack of diversity of home artifacts which are available and meaningful to the child, in addition to the unavailability of individualized training, gives the child few opportunities to manipulate and organize the visual properties of his environment and thus perceptually to organize and discriminate nuances of that environment."\(^2\) Figure-ground relationships and spatial organization of the visual field are two areas in which Deutsch feels disadvantaged children will experience particular difficulties.\(^3\)


\(^2\) Ibid.

\(^3\) Ibid.
Tactile development is similarly handicapped, due to the shortage of manipulative objects in the disadvantaged home. The manipulative objects that are available usually do not represent a wide variety of shapes, forms, and colors. Children in more advantaged homes receive many different types of playthings, which include blocks, puzzles, games, and toys in multiformity. The parents of potentially educationally disadvantaged children must realize the need for a host of manipulative objects of different sizes, shapes, colors, and forms.

Dr. Deutsch also points out that the lower-class home is not verbally oriented. The environment does include a great deal of noise, but this noise has little, if any, instructional value. In fact, young children learn quickly to cease directing their attention to the environment. As a result, they diminish the effects of the slight stimulation which they are receiving. Coupled closely to the phenomenon of child-diminished response to stimuli is a general reduction in overall responsiveness. The lack of interesting stimuli, demanded child response, and parental reinforcement of responses contributes to the development of a child who often

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1 Ibid.
2 Ibid., p. 171.
3 Ibid.
4 Ibid.
finds it difficult to respond to a structured primary school situation. Parents must be aware of the importance of frequent reinforcement of the child's response to an exciting environment.

Children must learn to use their memory. Parents help children develop this skill by asking them pertinent questions which link the past and present. Disadvantaged children repeatedly demonstrate a tendency to be present-oriented, rather than oriented in terms of past-present relationships. They have difficulty with time judgments. Parents should realize that children learn to use their memory, and simultaneously develop time and sequence connections, through their communications with adults. Children must experience stimuli worth remembering and must receive subsequent assistance in the organization of these memories.

Potentially disadvantaged children are not given basic foundations for later learning. Reinforcement upon the completion of an activity is rare. Due to the trivial nature of tasks which young preschoolers are assigned, parents oftentimes do not react to an uncompleted task with disapproval. Therefore, when these children enter school they are not accustomed to following-through an activity to its successful completion.

\(^1\text{Ibid., p. 172.}\)

\(^2\text{Ibid.}\)

\(^3\text{Ibid.}\)
A great portion of the motivation for early school learning is reward of reinforcement of some type.\footnote{Ibid.} Potentially disadvantaged children have not learned to perform with this end in mind. Parents of these children should be educated regarding the key role of reinforcement, success, and selection of appropriate tasks in preparing the child to function in school-related learning activities.

It was previously stated that Dr. Deutsch viewed the whole area of parent-child interaction and communication in the disadvantaged home as being at a low level. Young disadvantaged children do not learn to seek answers from their parents. Questions and dialogue are not encouraged. As a result, these preschoolers are retarded in basic concept formation. Questions, answers, and conversation are crucial in early learning. These children also enter school with an image of adults which does not coincide with the image of the teacher as a helpful guide and resource person in the learning process.\footnote{Ibid., p. 173.} Any approach seeking to improve the efficiency of parents as educators must inform the parents of the significance of children's questions and discussions. Later problem-solving ability is highly dependent upon the preschoolers' growth in question formulation.

Language and symbolic representation are two key factors in nearly
every learning endeavor. The disadvantaged environment is often lacking in preparation for effectively understanding and communicating thoughts through written and spoken means. Martin P. Deutsch points out that children learn a great amount of language by imitating models in their environment. The quantity and quality of language models in the disadvantaged home is seriously deficient. 1 Also, the number of experiences and objects which prompt labeling and conversation is meager. Basil Bernstein reports that children in the lower socioeconomic homes use language almost entirely for the expression of concrete needs and immediate consequences. 2 Single words or short phrases are characteristic of the language pattern and style of potentially disadvantaged preschoolers. Syntactical organization, subject continuity, and grammar are seriously different from that encountered in school and in textbooks. 3 Parents interested in preparing their children for successful learning experiences must consciously aim at developing and improving language.

The lack of time, money, and knowledge associated with the disadvantaged home situation often results in the accumulation of a very limited

1Ibid., p. 174.


3Passow, Education in Depressed Areas, p. 177.
experiential background. Young disadvantaged children do not have the opportunity to visit a number of different places, meet a variety of different people, or experience a wide range of stimuli. They enter school unaware of the world beyond their immediate home surroundings. Farms, airports, and camels are words without meaning. The absence of printed material in the form of picture books, magazines, and games renders these children uninformed regarding the basic concept of symbolizing concepts and ideas through words, numbers, pictures, or art forms. Potentially disadvantaged children have not had experience in handling books. They do not know the organization of a book or the proper manner in which it is used. When they enter school and are asked to learn new words for reading purposes, they do not have any notion of what the reading process, and related symbolization, entails. The young potentially disadvantaged child might not even have had any experience with the thing, object, person, or place to which a word refers. For example, if a child has never visited a farm, he might have some difficulty learning to meaningfully read the words tractor, barn, and rooster. Parents should realize the place of books and excursions in expanding children's knowledge of the world, thereby providing the foundation for later learning.

Many disadvantaged children have a very poor self-image. In fact, some of these youngsters appear to lack a self-image entirely. Parents are extremely instrumental in the development of their children's self-
image. The child formulates his concept of himself as he sees himself reflected through the reactions of others to him. If the child is ignored, or constantly the recipient of negative reactions, his self-image must necessarily suffer. A child who does not respect or value himself can hardly be expected to respect others or value something as abstract as an education. Love, respect, and success must be programmed into the daily life style of every child.

This section has considered the distinct characteristics of the disadvantaged child. The implications of these characteristics for the development of approaches designed to remedy preschool environments culminating in educational disadvantage was noted. The following tables contain developmental aspects, developmental tasks, expected behaviors, and basic readiness skills which universally apply to children of all socioeconomic levels. The information dealing with the distinct characteristics of disadvantaged children and implications for intervention programs, as well as the basic growth patterns, needs, and expected learnings common to all children, are used as the basis for developing two approaches for equipping parents of potentially educationally disadvantaged children with the knowledge they require to structure a home environment which leads to the ultimate fullest possible realization of each child's innate potential. The first of these approaches is a kit of sample materials which should be a part of every preschool environment. The second is a
programmed learning book. Descriptions of the developmental steps which produced each approach are contained.
<table>
<thead>
<tr>
<th>Aspect of Development</th>
<th>TWO YEARS</th>
<th>THREE YEARS</th>
<th>FOUR YEARS</th>
<th>FIVE YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balances forward</td>
<td></td>
<td>Balance erect</td>
<td>Fall may break a tooth</td>
<td>Has more motor control</td>
</tr>
<tr>
<td>Can kick object</td>
<td></td>
<td>Alternates feet</td>
<td>Clims stairs</td>
<td>Able to sit longer</td>
</tr>
<tr>
<td>Steps in place</td>
<td></td>
<td>Stands on one foot</td>
<td>Learns to hop</td>
<td>Explores neighborhood</td>
</tr>
<tr>
<td>Pass, pokes</td>
<td></td>
<td>Developing coordination</td>
<td>Jumps, walks, and runs with music</td>
<td>Does simple errands</td>
</tr>
<tr>
<td>Runs, lugs</td>
<td></td>
<td>Climbs by retepping</td>
<td>Unbuttons buttons</td>
<td>Learns to lace shoes</td>
</tr>
<tr>
<td>Pushes, pulls</td>
<td></td>
<td>Likes to fit pieces</td>
<td>Rolls ball</td>
<td>Learns to use overhead ladder</td>
</tr>
<tr>
<td>Rotates forearm</td>
<td></td>
<td>Opens doors</td>
<td>Throws underhand</td>
<td>Learns left from right</td>
</tr>
<tr>
<td>Voluntary muscle control</td>
<td></td>
<td>Fills and empties</td>
<td>Toilets self during day</td>
<td>Uses bathroom by himself</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learns to toilet self</td>
<td>Talks and eats</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Likes water play</td>
<td>Talks and plays</td>
<td></td>
</tr>
<tr>
<td>SOCIAL</td>
<td></td>
<td>Learning to share</td>
<td>Shares toys</td>
<td></td>
</tr>
<tr>
<td>Must possess</td>
<td></td>
<td>Not able to share workspace</td>
<td>Continuing sensitivity to people</td>
<td>Has more cooperative play</td>
</tr>
<tr>
<td>Slow in relating to new adults</td>
<td></td>
<td>Brings possessions to share</td>
<td>Quotes parents as authorities</td>
<td>Likes to play house and baby</td>
</tr>
<tr>
<td>Does not cooperate in play</td>
<td></td>
<td>Tries to please and conform</td>
<td>Dislikes isolation from group</td>
<td>Gets along well in small group</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sensitive to people</td>
<td>Feels sympathetic</td>
<td>Conforms to adult ideas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Likes simple guessing</td>
<td>Likes birthday parties</td>
<td>Asks adult help as needed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enjoys dressing up</td>
<td>More cooperative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Plays with small group</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>May not take others into group</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE I - (continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EMOTIONAL</strong></td>
</tr>
<tr>
<td>Likes to touch</td>
</tr>
<tr>
<td>Likes people</td>
</tr>
<tr>
<td>Dependent on mother</td>
</tr>
<tr>
<td>Can be moved to new location</td>
</tr>
<tr>
<td>Watches others</td>
</tr>
<tr>
<td>Imitates</td>
</tr>
<tr>
<td>Understands: &quot;He needs it&quot;</td>
</tr>
<tr>
<td>Plays with baby</td>
</tr>
<tr>
<td>doll</td>
</tr>
<tr>
<td>Plays house</td>
</tr>
<tr>
<td>Shows self-control</td>
</tr>
<tr>
<td>Rests for ten minutes</td>
</tr>
<tr>
<td>Waits until it is time</td>
</tr>
<tr>
<td>Takes turns</td>
</tr>
<tr>
<td>Likes to take it home but often forgets to</td>
</tr>
<tr>
<td>Leaves mother for nursery school</td>
</tr>
<tr>
<td>Plays by himself</td>
</tr>
<tr>
<td>Goes out of bounds</td>
</tr>
<tr>
<td>Is learning limits</td>
</tr>
<tr>
<td>Likes to brag</td>
</tr>
<tr>
<td>Likes freehand drawing (not coloring books)</td>
</tr>
<tr>
<td>Likes to go on excursions</td>
</tr>
<tr>
<td>Runs ahead, but waits on corner</td>
</tr>
<tr>
<td>Interested in rules</td>
</tr>
<tr>
<td>Plans ahead with adults</td>
</tr>
<tr>
<td>Acts silly if tired</td>
</tr>
<tr>
<td>Makes up words and rhymes</td>
</tr>
<tr>
<td>Likes new words, big ones</td>
</tr>
<tr>
<td>Listens to stories longer</td>
</tr>
<tr>
<td>Runs a topic to the ground</td>
</tr>
<tr>
<td>Likes to have explanations</td>
</tr>
<tr>
<td>Does much dramatic play</td>
</tr>
<tr>
<td>Learns to distinguish fact and fancy</td>
</tr>
<tr>
<td>Interested in death</td>
</tr>
<tr>
<td>Changes title of his drawing as he draws</td>
</tr>
<tr>
<td>Acts silly if tired</td>
</tr>
<tr>
<td>Makes up words and rhymes</td>
</tr>
<tr>
<td>Likes new words, big ones</td>
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<tr>
<td>Listens to stories longer</td>
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<tr>
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</tr>
<tr>
<td>Makes up words and rhymes</td>
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<tr>
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<tr>
<td>Changes title of his drawing as he draws</td>
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<tr>
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<tr>
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<tr>
<td>Runs a topic to the ground</td>
</tr>
<tr>
<td>Does much dramatic play</td>
</tr>
<tr>
<td>Interested in death</td>
</tr>
<tr>
<td>Changes title of his drawing as he draws</td>
</tr>
<tr>
<td>Acts silly if tired</td>
</tr>
</tbody>
</table>
TABLE II

Developmental Tasks

<table>
<thead>
<tr>
<th>Behavior Category</th>
<th>Infancy (Birth 1 or 2)</th>
<th>Early Childhood (2–3 to 5–7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Achieving an appropriate dependence-independence pattern</td>
<td>Establishing one’s self as a very dependent being Beginning the establishment of self-awareness</td>
<td>Adjusting to less private attention; becoming independent physically (while remaining strongly dependent emotionally)</td>
</tr>
<tr>
<td>2. Achieving an appropriate giving-receiving pattern of affection</td>
<td>Developing a feeling for affection</td>
<td>Developing the ability to give affection Learning to share affection</td>
</tr>
<tr>
<td>3. Relating to changing social groups</td>
<td>Becoming aware of the alive as against the inanimate, and the familiar as against the unfamiliar Developing rudimentary social interaction</td>
<td>Beginning to develop the ability to interact with age-mates Adjusting in the family to expectations it has for the child as a member of the social unit Developing the ability to take directions and to be obedient in the presence of authority Developing the ability to be obedient in the absence of authority where conscience substitutes for authority Learning to identify with male and female adult roles Adjusting to expectations resulting from one’s improving muscular abilities Developing sex modesty</td>
</tr>
<tr>
<td>4. Developing a conscience</td>
<td>Beginning to adjust to the expectations of others</td>
<td>Developing the ability to be obedient in the absence of authority where conscience substitutes for authority</td>
</tr>
<tr>
<td>5. Learning one’s psycho-socio-biological sex role</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Accepting and adjusting to a changing body</td>
<td>Adjusting to adult feeding demands Adjusting to adult cleanliness demands Adjusting to adult attitudes toward genital manipulation</td>
<td>Accepting and adjusting to adult cleanliness demands Adjusting to adult attitudes toward genital manipulation Accepting and adjusting to adult attitudes toward genital manipulation</td>
</tr>
<tr>
<td>7. Managing a changing body and learning new motor patterns</td>
<td>Developing physiological equilibrium Developing eye-hand coordination Establishing satisfactory rhythms of rest and activity</td>
<td>Developing large-muscle control learning to coordinate large muscles and small muscles</td>
</tr>
<tr>
<td>8. Learning to understand and control the physical world</td>
<td>Exploring the physical world</td>
<td>MeETING adults’ expectations for restrictive exploration and manipulation of an expanding environment</td>
</tr>
<tr>
<td>9. Developing an appropriate symbol system and conceptual abilities</td>
<td>Developing preverbal communication Developing verbal communication Rudimentary concept formation</td>
<td>Improving one’s use of the symbol system Enormous elaboration of the concept pattern</td>
</tr>
<tr>
<td>10. Relating one’s self to the cosmos</td>
<td></td>
<td>Developing a genuine, though uncritical, notion about one’s place in the cosmos</td>
</tr>
</tbody>
</table>

### TABLE III

#### Behavior Expected in Preschool Children

<table>
<thead>
<tr>
<th>CURRICULUM AREA</th>
<th>At 3 Years</th>
<th>Expected Behavior</th>
<th>At 4 Years</th>
<th>Expected Behavior</th>
<th>At 5 Years</th>
<th>Expected Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and Safety</td>
<td>Judges how far to climb and return safely</td>
<td>Handles blunt scissors safely</td>
<td>Handles saw and hammer safely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urinates without help unless clothing is complex</td>
<td>Unzips, unsnaps, and unbuckles</td>
<td>Goes to bathroom by himself</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>Walks a board holding adult's hand</td>
<td>Walks along a walking board</td>
<td>Walks a narrow curb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>development</td>
<td>Stops or goes on the slide</td>
<td>Explores variations on the slide</td>
<td>Swings by himself</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Likes to swing</td>
<td>Learns to pump</td>
<td>Learns to skip</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Climbs a ladder</td>
<td>Goes down fireman's pole</td>
<td>Cuts on the line</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Learns to jump</td>
<td>Learns to hop</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>Enjoys his own birthday</td>
<td>Takes turns</td>
<td>Waits for his turn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>understanding</td>
<td>Enjoys simple house play and dressing up</td>
<td>Enjoy birthday and Christmas</td>
<td>Enjoys birthday and other holidays</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Learns to move with the group activities</td>
<td>Extends dramatic play—doctor, store people, delivery man</td>
<td>Extends dramatic play further</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>Knows where he came from</td>
<td>Knows death is part of life</td>
<td>Knows how he was conceived</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Knows where his food goes</td>
<td>Knows sounds, notes, and other things about animals</td>
<td>Knows what foods different animals eat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Names several animals</td>
<td>Makes his own observations</td>
<td>Reports what he observes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Observes what is pointed out</td>
<td>Uses landmarks</td>
<td>Draws and uses a simple map</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geography</td>
<td>Knows relation of rooms indoors</td>
<td>Can go around the block</td>
<td>Walks several blocks to school</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recognizes his own home</td>
<td>Recognizes his own neighborhood</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>Names a few numbers</td>
<td>Counts a few numbers</td>
<td>Counts to ten</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lives in the present</td>
<td>Deals with the past and the future</td>
<td>Thinks of uses of numbers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Uses a wider span of time in planning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>Learns sounds used in words</td>
<td>Increases his command of oral sounds</td>
<td>Has mastered most word sounds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>development</td>
<td>Uses simple sentences</td>
<td>Uses compound sentences</td>
<td>Prints own name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Learns new words</td>
<td>Increases his vocabulary</td>
<td>Uses adverbial clauses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stories</td>
<td>Likes short picture stories</td>
<td>Likes realistic picture stories (e.g., about home)</td>
<td>Likes realistic and imaginative stories with little drama and a happy ending</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does short pantomimes with adult</td>
<td>Pantomimes a simple story told by adult</td>
<td>Dramatizes simple stories</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art</td>
<td>Likes easel painting</td>
<td>Likes to use a brush or other tool</td>
<td>Makes designs and realistic portrayals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scribbles with crayons</td>
<td>Paints and draws with some design</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enjoys several art media</td>
<td>Enjoys a variety of media and several art tools</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td>Likes music</td>
<td>Creates dance movements to music</td>
<td>Follows simple dance suggestions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distinguishes &quot;indoors&quot; from &quot;outdoors&quot; voice</td>
<td>Enjoys action stories to music</td>
<td>Tells high from low, soft from loud, fast music from slow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learns short songs by rote</td>
<td>Learns songs by rote</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Creates song phrases</td>
<td>Creates song phrases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relating to others</td>
<td>Plays parallel to others</td>
<td>Plays with others or by himself</td>
<td>Increases his cooperative play</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Does dramatic play with others</td>
<td>Is more sensitive to the needs of others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expresses sympathy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Finds his own emotional outlet</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**TABLE IV**

**READINESS SKILLS**

**Physical Readiness**

**Eyes**
- Can he see clearly from any part of the classroom? 
- Does the child seem comfortable in the use of his eyes? (does not Squint, hold materials too close or too far)
- Are the results of clinical tests or an oculists examination favorable?

**Ears**
- Is it apparent through his responses to questions or directions that he is able to hear what is said to class?
- Does he respond to a low-voice test of 20 feet, and a whisper test of 15 inches?
- Do the results of his audiometer test indicate normal hearing ability?

**Speech**
- Does he articulate clearly?
- Does he speak without gross errors in pronunciation?
- Does he respond to suggestions for speech improvement?

**Motor Control**
- Does he have good control over large muscles?
- Does he have good motor control for turning pages of book?
- Is he able to make his hands and eyes work together in cutting, using tools, or bouncing a ball?

**General Health**
- Does he give an impression of good health?
- Does he seem well nourished?
- Does the school physical examination reveal good health?
- Is he able to work or play for reasonable periods without tiring?
- Are his health habits good?

**Sources:**

Eleanor M. Johnson, *Reading Skilltext -- Readiness for Reading, "We Can Read,"* (Columbus, Ohio: Charles E. Merrill Co., 1961).

TABLE IV (continued)

**Social Readiness**

**Sharing**
- Does he share materials without monopolizing their use? ....
- Does he offer help when another child needs it? ...........
- Does he await his turn in playing or in games? ...........
- Does he await his turn for help from the teacher? .......

**Self-Reliance**
- Does he work things through for himself without asking the teacher about the next step? .........................
- Does he find something to do when he finishes an assigned task? ...........................................................
- Does he take care of his clothing and materials? .......
- Does he take good care of materials assigned to him? ...

**Co-operation**
- Does he work well with a group, taking his share of responsibility and initiative? ..................................
- Does he cooperate in playing games with other children?...
- Can he direct his attention to a specific learning situation? .................................................................
- Does he listen rather than interrupt?..............................
- Is he courteous in getting attention?.........................
- Does he respect property of others?..........................

**Emotional Readiness**

**Adjustment to Task**
- Does the child see a task (such as drawing, preparing for activity, or cleaning up) through to completion?........
- Does he accept changes in school routine calmly?........
- Does he appear to be happy and well-adjusted in school work, as evidenced by relaxed attitudes, pride in work, and eagerness for a new task? .............................
- Does he follow adult leadership without showing resentment? or, does he have a good attitude toward teacher and her requirements? ................................
TABLE IV (continued)

**Emotional Readiness (cont'd)**

<table>
<thead>
<tr>
<th>Poise</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Does he have self-confidence in speech and actions?........</td>
<td></td>
</tr>
<tr>
<td>Does he accept a certain amount of opposition or</td>
<td></td>
</tr>
<tr>
<td>defeat without crying or sulking?.................................</td>
<td></td>
</tr>
<tr>
<td>Does he meet strangers without displaying unusual shyness?..</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Auditory Perception</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Does he hear oral directions? ....................................</td>
<td></td>
</tr>
<tr>
<td>Does he recognize sound differences: high, low, loud, soft;</td>
<td></td>
</tr>
<tr>
<td>long, short; timbre or quality? ..................................</td>
<td></td>
</tr>
<tr>
<td>Does he repeat spoken words correctly? ................................</td>
<td></td>
</tr>
<tr>
<td>Can he distinguish beginning consonant sounds? ........................</td>
<td></td>
</tr>
<tr>
<td>Can he hear likenesses and differences in word endings? ...</td>
<td></td>
</tr>
<tr>
<td>Can he hear likenesses and differences in medial parts of words?</td>
<td></td>
</tr>
<tr>
<td>Can he distinguish rhyming words?..................................</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Visual Discrimination</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Can he quickly find likenesses and differences in pictures,</td>
<td></td>
</tr>
<tr>
<td>geometric forms, and colors? ....................................</td>
<td></td>
</tr>
<tr>
<td>Can he match correctly in seatwork exercises? ..........................</td>
<td></td>
</tr>
<tr>
<td>Can he copy from a sheet--triangles, rectangles, squares, 4, 3, etc.</td>
<td></td>
</tr>
<tr>
<td>without making reversals? ........................................</td>
<td></td>
</tr>
<tr>
<td>Is he able to observe likenesses and differences in word forms?</td>
<td></td>
</tr>
<tr>
<td>.................................................................</td>
<td></td>
</tr>
<tr>
<td>Can he discriminate between colors, shapes, sizes? ....................</td>
<td></td>
</tr>
<tr>
<td>Can he complete patterns? .....................................</td>
<td></td>
</tr>
</tbody>
</table>
TABLE IV (continued)

**Mental Maturity**

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do the results of the child's mental test predict probable success in learning to read?</td>
<td></td>
</tr>
<tr>
<td>Can he make or draw something to illustrate an idea as well as most children of his age?</td>
<td></td>
</tr>
<tr>
<td>Is his memory span sufficient to allow memorization of a short poem or song?</td>
<td></td>
</tr>
<tr>
<td>Can he remember the central thought of a story with the important details?</td>
<td></td>
</tr>
<tr>
<td>Can he remember and follow directions?</td>
<td></td>
</tr>
<tr>
<td>Can he listen or work for five minutes without restlessness?</td>
<td></td>
</tr>
<tr>
<td>Does he grasp the fact that symbols may be associated with spoken language?</td>
<td></td>
</tr>
</tbody>
</table>

**Experience Readiness**

**Home Background**

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is English spoken in the home?</td>
<td></td>
</tr>
<tr>
<td>Do parents read to the child?</td>
<td></td>
</tr>
<tr>
<td>Does he have toys, books, pets, collections?</td>
<td></td>
</tr>
<tr>
<td>Has he traveled with the family?</td>
<td></td>
</tr>
</tbody>
</table>

**Other**

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does he have a reasonable background concerning pets, animals, birds, transportation, food, shelter, etc.?</td>
<td></td>
</tr>
<tr>
<td>Is he reasonably familiar with children's rhymes and stories?</td>
<td></td>
</tr>
<tr>
<td>Does he have appreciation for size and space?</td>
<td></td>
</tr>
</tbody>
</table>

**Language Facility**

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does he have some ability in using sentences?</td>
<td></td>
</tr>
<tr>
<td>Does he take part in class discussions and conversations?</td>
<td></td>
</tr>
<tr>
<td>Is he effective in expressing his needs in classroom situations?</td>
<td></td>
</tr>
<tr>
<td>Are the words used in the preprimers and the primer part of his listening and speaking vocabulary?</td>
<td></td>
</tr>
<tr>
<td>Does he understand the relationships inherent in such words as up and down, top and bottom, big and little?</td>
<td></td>
</tr>
</tbody>
</table>
TABLE IV (continued)

**Language Facility (cont'd)**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does he have a fairly good range of meaningful concepts—</td>
<td>that is: vocabulary? .................................................................</td>
</tr>
<tr>
<td>Does he attempt to use &quot;new&quot; words?</td>
<td>.................................................................</td>
</tr>
<tr>
<td>Does he listen to a story with evidence of enjoyment and does he recall</td>
<td>parts of it? ..............................................................................</td>
</tr>
<tr>
<td>Is he able to interpret an experience through dramatic play?</td>
<td>..............................................................................</td>
</tr>
</tbody>
</table>

**Thinking**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does his interpretation of pictures extend beyond mere</td>
<td>enumeration of details? ...................................................................</td>
</tr>
<tr>
<td>Can he study the pictures of a story and tell the story—</td>
<td>what it is about and how it develops? ...........................................</td>
</tr>
<tr>
<td>Does he understand characters in a story?</td>
<td>..............................................................................</td>
</tr>
<tr>
<td>Can he predict possible outcomes for a story?</td>
<td>..............................................................................</td>
</tr>
<tr>
<td>Can he tell a story without confusing the order of events?..</td>
<td>..............................................................................</td>
</tr>
<tr>
<td>Can he give reasons for his opinions about his own work or the work of</td>
<td>others? ..............................................................................</td>
</tr>
<tr>
<td>Does he use ideas in meeting problem situations?</td>
<td>..............................................................................</td>
</tr>
<tr>
<td>Does he have original ideas?</td>
<td>..............................................................................</td>
</tr>
<tr>
<td>Can he perceive cause and effect relationships?</td>
<td>..............................................................................</td>
</tr>
<tr>
<td>Does he have special ability?</td>
<td>..............................................................................</td>
</tr>
</tbody>
</table>

**Orientation to Reading**

**Mind-Set**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the child appear interested in books and reading—</td>
<td>by asking about, bringing from home, asking for story?..</td>
</tr>
<tr>
<td>Does he ask the meaning of words or signs?</td>
<td>..............................................................................</td>
</tr>
<tr>
<td>Is he interested in the shape of unusual words?</td>
<td>..............................................................................</td>
</tr>
</tbody>
</table>

**Letter Knowledge**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can he match letters?</td>
<td>..............................................................................</td>
</tr>
<tr>
<td>Can he identify letters, names?</td>
<td>..............................................................................</td>
</tr>
<tr>
<td>Can he give letter names?</td>
<td>..............................................................................</td>
</tr>
<tr>
<td>Can he give letter sounds?</td>
<td>..............................................................................</td>
</tr>
<tr>
<td>Can he match capitals and lower case letters?</td>
<td>..............................................................................</td>
</tr>
</tbody>
</table>
Orientation to Reading (cont'd)

Word Knowledge
Can he detect likenesses and differences in sounds and appearances of words? ........................................
Can he read name labels? ........................................

Handling Books
Does he turn pages properly—by taking hold of upper right hand corner of page? ........................................
Does he have clean hands before handling books? ........
Does he hold book properly—with hands at bottom or sides of pages? ........................................
Does he carry books closed? ...................................

Initial Habits
Has the child established the habit of looking at a succession of items from left to right? .........................
Has he established the habit of going from top to bottom of page? ........................................
Has he established the habit of going from left page to right page? ........................................
Has he established the habit of going from end of one sentence to beginning of next sentence? ..............
Can he match material on the board with like material in his book? ........................................

Classroom Habits
Is he developing independence in his work habits? ....
Is he neat and orderly in his work? ........................
Can he write his name in the proper place on a work paper? ........................
Is he regular in attendance? ........................
Development of Programmed Handbook

The review of the literature and study of the characteristics, needs, and abilities of educationally disadvantaged children indicates the vital role that the parents play in the development and intellectual growth of their children. This role is particularly important during the early childhood years. Lilian G. Katz has written that:

A most important implication of current research findings is that when the child is taught his ABC's, colors, shapes, and school-type tasks, something may be set off between the child and his parent that could make a profound difference in his development. It may be that having her child come home with a specific skill increases his mother's confidence in his future and that a mother's confidence in her child's future has continuing positive effects on his development.

Parents, especially mothers, must realize the importance of their responsibility in providing children with a stimulating preschool environment. They must realize that they are, perhaps, their child's most important teacher. Dr. Katz has asked the question, "What am I doing to increase the mothers' confidence in the future of their children?"

This question should also include a second part: "What am I doing to increase the mothers' confidence in her importance and capability as her child's first teacher?"

---


2Ibid.
The programmed learning handbook developed as the outgrowth of this project is an attempt to answer both questions. The handbook, entitled *Before School: A Handbook for Mothers*, is an attempt to solve the problem of early childhood environmental disadvantagement.

The first step in the development of the handbook was the acquiring of expertise in the fields of early childhood education, environmental effects on early childhood growth and development, and self-instructional learning materials and techniques. This step was detailed in Chapter II, 'Review of the Literature!' The second step was the determination of content which should be included in the handbook. This phase was described in the first section of the present chapter - "Survey of Early Childhood Characteristics, Abilities, and Needs." The next activity involved the establishment of broad, program objectives and specific behavioral objectives.

The program objectives are:

1. To provide mothers of potentially educationally disadvantaged children with knowledge and suggestions necessary for the structuring of a stimulating preschool home environment.

2. To increase the mother's confidence in her importance and capability as her child's first teacher.

3. To increase the mother's confidence in the future of her children.
The specific behavioral objectives are:

Upon completion of this program, the participants will be able to:

1. List and discuss things mothers should remember when teaching their children.

2. Suggest activities a child should engage in to develop good, strong muscles.

3. Differentiate between large and fine muscles by naming four activities for developing large muscle control and four for developing fine muscle control.

4. Recognize the value of playing with puzzles by listing four things puzzles can do to help children learn.

5. Suggest and conduct experiments with children in using each of the five senses.

6. Recognize that all people have a need for self-expression by naming four, or more, ways children may express themselves.

7. Become aware of the need for and recognize the value of certain childhood activities which foster creativity and aid in developing the child by listing several things to be done and advantages of each of the following:

   a. Make-believe games

   b. Scribbling and artwork

   c. Asking and answering questions

   d. Talking about things children see and hear

   e. Visiting the neighborhood community helpers

   f. Going on trips to museums, zoos, farms, etc.
g. Studying and reading pictures  

h. Putting objects into groups  
i. Distinguishing between likenessess and differences in people and things  
j. Guiding children in artwork  
k. Handling and caring for books  
l. Conducting everyday science experiments  
m. Teaching children about their names, addresses, phone numbers, height, weight, and health  
n. Allowing children to judge right from wrong, make decisions, care for pets, handle money, etc.  
o. Providing children with an atmosphere of safety, security, and love  

Following the determination of the problem, analysis of content material, judgment of the value of programmed instruction in attempting to solve the problem, and formulation of objectives, the feasibility of the project was again examined. Programmed learning did appear entirely appropriate for the purpose. The content material suggested in the objectives was realistic and consistent with the knowledge and information required by mothers. Behavior changes in the cognitive, affective, and psychomotor domains were contained in the listing of objectives. These behavior changes were sought at a variety of levels, extending from recognition and recall to memory and concept formation. The major consideration was the population for which the handbook was being
developed. The program-users were disadvantaged mothers, many of whom suffered from reading handicaps. Therefore, the content must necessarily be presented in a form conducive to easy comprehension. Vocabulary lists were secured, and the reading level of difficulty was kept between third and fifth grade. In the event that a mother might have some difficulty in reading the content material, the program was designed to contain explicative illustrations on each page. These illustrations were prepared for the purpose of providing pictorial context clues to the written material. A mother with an extremely low reading level will be able to decode some meaning from the program, even if she relied solely on the pictures.

The volume of material contained in each frame is small. The average frame is four lines in length. Each frame deals with limited concepts and demands some type of response. The constructed response and multiple choice response are utilized in this program. However, the constructed response is required far more frequently than the multiple choice, in order to encourage a more active participation on the part of the mothers.

The program contains set frames, in which the desired response is contained in the information section of the frame. The set frames are very easy, to guarantee success and reinforcement. If the material covered by the set frame is more difficult, several set frames are found.
Following the set frames, there is usually a practice frame. The practice frame enables the student to use the material he has previously learned in the set frame. The constructed responses, generally required by the set and practice frames, are short -- one or two word answers. If the material demands considerable reinforcement, several practice frames containing different constructed responses relating to a fixed segment of content are utilized in succession. Following many of the practice frames are terminal frames. The terminal frame serves as a review and self-test. When the constructed response is requested in the terminal frame, a more lengthy response is expected than is the case in the set or practice frames. However, the multiple choice response is used most often in the terminal frames. Not every segment of information introduced in the program follows the progression from set frame to practice frame, and finally to terminal frame. If the content is relatively simple, the terminal frame is omitted. In a few cases, material is introduced as a background for some higher level concept formation. This material is very simple and merely included for review, since the information is common knowledge. In this situation, the set frame is employed in isolation.

Within frames, cues are utilized to assist the mothers in successfully responding to the more difficult questions. In some of the frames, key words are printed in upper case characters for emphasis. Another
The form of cue applied is the placement of a number of blanks - equalling the number of letters in the correct response -- on which the student records his answer. If the material is extremely difficult, the beginning or the beginning and ending letters of the response are placed on the line. In a few instances, the response line is substituted with blanks numbering the amount of letters in the correct answer, and in addition, one or more of the blanks are completed for the mother.

It was assumed that all mothers would profit from working through each frame in the program. Therefore, straight, linear programming was used. In omitting branching or adjunct programming, confusion and complication in program use was avoided.

Prior to the testing of the program, comprehensive editing occurred. First, the copy was checked and re-checked for composition, grammar, usage, spelling, and language. The appropriateness of the illustrations, as well as their placement on the page was examined. The organization of the frames and response column was debated. Ultimately, the illustration was located at the top of each page, with the frames below. The response column was situated directly opposite the frames, to the right.

Next the total program was edited. The order of presentation of material was reviewed to determine if the program moved smoothly from idea to following idea. The major goals and objectives of the program were reappraised to ascertain that the program did indeed work toward
the fulfillment of those goals.

Lastly, the individual frames and responses were edited. The quantity of material contained in each frame was analyzed to determine that the proper amount of material had been included in every frame. The content of the material included was also studied to discover if all the pertinent information had been embodied, while at the same time, irrelevant material had been omitted. The reading level of each frame was checked to prevent the inclusion of material too difficult for mothers handicapped in reading to decode. However, the danger of oversimplification or presenting inaccuracies in attempting to hold down reading level was realized and the program was scrutinized for this pitfall. The desired responses were reviewed to uncover any irrelevant answers. An expert in programmed instruction reviewed the booklet and offered suggestions for improvement, which were incorporated into the work.

Upon completion of the entire editing process, the program was tested. The first method of testing was one-by-one testing. Ten mothers were involved in this phase. Each mother worked through the program in the presence of the programmer. Record was made of the items missed. Immediately following an incorrect response, the frame was discussed with the participant to determine the cause for the error. Frames that were repeatedly missed were revised in terms of the information secured in the discussions.
Following the revisions suggested by one-to-one testing, the program was tested with a group of eight disadvantaged mothers. The mothers completed a pre-test prior to working through the program. The mothers were told that the program was still in a developmental stage, and their answers would be instrumental in further revisions. The procedures for working with programmed materials were carefully explained. After the mothers completed the program, a post-test was administered. The mothers were also encouraged to give comments regarding the program. Based upon test results, observation of the mothers while they completed the program, and discussion, further revisions were made. The group test indicated that some concepts needed additional reinforcement in the form of additional frames. Some of the desired learnings were implied in the frames, without being explicitly stated. It was found that this material had to be stated in definite terms. The conversations with the participants also highlighted several areas in which the mothers lacked knowledge which had been missed or omitted in the program. The one overwhelming positive factor revealed through the group test was the value of the illustrations. The group test also indicated that the reading level was appropriate. Further revisions were made. The program was expanded to include elaboration of some points, clarification of others, and addition of content which had previously been missing. The illustrations were improved.
A second group testing situation, in which fourteen mothers participated, resulted in improved gains in pre- and post-test scores. However, two new problems were discovered. First, several of the mothers thought upon first examination of the handbook, that it was designed for children. This confusion resulted in the addition of the phrase, "A Handbook for Mothers," below the original title, *Before School*. The second difficulty resulted from the fact that the elaboration, clarification, and addition of new material had substantially increased the length of the program. The original program had contained one break in the middle of the booklet. In view of the additional frames, it was determined that one break forced the mothers to work for too long a period of time. Therefore, the booklet was divided into three parts, with two breaks, rather than one.

The group testing was undertaken through the Pilot Study, which will be described further in the following Chapter.

Field testing of the program with a larger population, to determine its effectiveness in transmitting to disadvantaged parents information regarding the structuring of a stimulating preschool environment, is discussed in Chapters IV and V.

**Development of Kit**

At a recent meeting of the American Educational Research Association, Eileen Earhart presented a paper dealing with curricula appropriate
for preschool children. In that paper, Miss Earhart stresses sensory exploration through object manipulation and variety of high-interest materials. ¹ A previously cited description by Robert Havighurst states that young children in socially disadvantaged homes lack:²

A family environment which sets an example of reading; provides a variety of toys and play materials with colors, sizes, and objects that challenge his ingenuity with his hands and his mind.

Therefore, the second self-instructional approach to remedying the effects of educational disadvantage in the preschool environment of young children deals with providing mothers with information regarding the types of materials which should be included in the home environment of every young child.

Literature was examined to determine the most vital materials for promoting early child growth and development. The following general classification of toys summarizes the thousands of toys on the market:³


²Havighurst, Who are the Socially Disadvantaged Learners, p. 6.

1. Infant toys, such as rattles, squeeze toys and bathtub toys.

2. Stuffed toys, such as plush covered and vinyl covered animals and dolls.

3. Preschool toys, such as blocks, push-pull and occupational toys.

4. Dolls and accessories, such as clothing and feeding sets.

5. Trucks and mechanicals.

6. Guns and holsters, including space guns and rifles.

7. Crafts for boys and girls, such as simple and advanced construction kits, model kits and homemaking equipment.


10. Electric trains and accessories.

11. Wheel goods, such as velocipedes, wagons, doll carriages, bikes, and scooters.

12. Junior sports goods, including boxing gloves, balls, archery, roller skates, sled, and pogo sticks.

13. Games, both indoor and outdoor, such as board games, quizzes, and magnetic dart games.

14. Structures, such as doll houses, play houses, airports, frontier sets and other large bulk items.

15. Miscellaneous, including play suits, backyard gym equipment, beach toys, sewing machines and typewriters.
The Toy Guidance Council, Inc. states that children need a "balanced diet" of toys. They list four areas of need common to all children:

1. **Every child needs playthings to encourage physical, active play.** Typical of these are push-pull toys, wheel toys, balls, sports and gym equipment. Such toys should help a child develop his muscles and manual dexterity; to perfect coordination between eye, hand, and mind.

2. **Every child needs playthings to encourage mental growth.** Blocks, construction kits, artists' equipment and hobby crafts are examples of this type of play. Through such toys a child learns how to express himself; to create and try out new ideas; to develop enterprise; to use his powers of observation.

3. **Every child needs playthings that encourage imitative, imaginative, and dramatic play.** Through such toys as dolls, housewares, trains, erector sets and costumes, he creates a world of make-believe and gathers experiences for use in his later life. This is essential if he is to gain greater insight into the world about him. Through imitating dramatically the realities of the day-to-day adult activities he witnesses, he learns how to do a real job in real life.

4. **Every child needs play materials to encourage social play.** Through shared activity with other children, he gains a basic understanding of how to get along with other people. He learns standards of fair play and how to practice good sportsmanship. In the process, he also learns the value of concentrating and thinking quickly and accurately. Such games as anagrams, bingo, basketball, and baseball provide this activity.

The "Before School Kit" attempts to educate parents regarding

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\(^1\text{Ibid.}, \text{ pp. 6-7.}\)
materials which should be in the home by actually providing the parents with samples of many of these materials. Hopefully, if parents receive free materials they will become interested in the whole area of manipulative toys, games, and supplies and assume the responsibility for providing the additional contingents.

Included in each kit is a single sheet of instructions, explaining that there are certain materials which should be in the home during the years before the child starts school. The sheet further explains that the Before School Kit contains samples of some of these materials. The materials in the kit will have to be replenished in the period before the child enters school. Additional types of toys and materials should also be purchased. A listing of some of these additional toys and materials is provided, including types from each classification previously cited.

Most of the materials in the kit can be classified under the heading of playtoys to encourage mental growth.

The idea for the Before School Kit was the result of the Pilot Study, described in Chapter IV. The mothers who received some actual materials through the Pilot Project became much more aware of the importance of toys and materials in the preschool environment. They were able to list a much greater number of objects that should be part of the early childhood environment after receiving samples of materials, as compared to the number of objects they could list prior to the
distribution of materials.

While the **Before School Kit** might not be considered a self-instructional learning technique in the strictest sense of the term, it was considered as such in this research project. In the absence of any professional guidance, mothers receiving a kit have an opportunity to learn a great deal about materials which should be in their homes. Permitting their children to use these materials offers mothers another opportunity to witness the learning process in action. Merely looking through the kit teaches the mothers some important concepts regarding the structuring of a stimulating preschool environment. This knowledge is gained individually and reinforced each time the mother purchases additional materials for the preschool child.
CHAPTER IV
DESIGN OF THE STUDY

This investigation was conducted from August, 1970 to December, 1970. The study was designed to determine the relative effectiveness of two approaches for combating the losses in intellectual development suffered by preschool children in educationally disadvantaged homes by educating parents. The first approach is the programmed learning booklet, Before School, A Handbook for Mothers. The second approach is the Before School Kit.

The measuring instruments employed are found in appendix B. The investigation sought to answer the following questions, by comparing the results of a pre-test, administered prior to the distribution of any materials, with the results of an identical post-test, administered after the parents received materials:

1. What is the relative effect on test performance of the Before School Kit, in terms of acquisition of knowledge relating to the structuring of a stimulating preschool environment?

2. What is the relative effect on test performance of the booklet, Before School, A Handbook for Mothers, in terms of acquisition of knowledge relating to the structuring of a stimulating preschool home environment?

3. What is the relative effect on test performance of a combination of both the Before School Kit and the booklet, Before School, A Handbook for Mothers,
in terms of acquisition of knowledge relating to the structuring of a stimulating preschool home environment?

4. Does the Before School Kit produce more, equal, or less effective learning than the booklet, Before School, A Handbook for Mothers?

5. Does the Before School Kit produce more, equal, or less effective learning than a combination of both the Before School Kit and the booklet, Before School, A Handbook for Mothers?

6. Does the booklet, Before School, A Handbook for Mothers, produce more, equal, or less effective learning than a combination of both the Before School Kit and the booklet?

7. Does the total sample population demonstrate an acquisition of knowledge relating to the structuring of a stimulating preschool home environment?

8. Did participation in the study increase the parents' awareness of their vital role in the educational process of their children?

9. Did participation in the study increase the parents' awareness of the materials which should be included in every preschooler's home environment?

In addition, the study attempted to determine the differences in knowledge relating to the structuring of a stimulating preschool environment between mothers of the lower socioeconomic status and mothers of the middle socioeconomic status. These differences are determined both prior and subsequent to the lower status mothers' participation in the study.
Pilot Study

The initial research effort was begun in May, 1969. A pilot project was established at the Opportunity Centers, 706 East 63rd Street, Chicago, Illinois. At that time, the Centers offered a wide range of activities, designed to meet needs in the surrounding disadvantaged community. Among the activities offered were: machine shop practice, industrial sewing, short order cooking classes, party cooking and catering classes, wiring and soldering classes, blue print reading classes, shop math class, small appliance repair instruction, civil service review, high school tutoring sessions, basic education classes, and a job clinic. A mothers' study group was organized at the Opportunity Centers. Mothers were recruited from the immediate community. Representatives from the Centers made a special attempt to attract mothers receiving welfare assistance. The pilot project met two afternoons each week for six weeks. The mothers attending all had children in the two to four year old range. Many of the mothers also had older children. The children attended the study experience with their mothers. The objective of the project was clearly defined, and all mothers realized that they were going to learn how to work and play with their own child in terms of maximizing the child's growth and development potential.

The sessions consisted of learning activities, in which each mother directed her own child, followed by a refreshment period, in which the
parents were encouraged to help their child develop communication skills. During some portion of the meeting, the children retired for a brief nap. The mothers utilized this opportunity to share problems and observations they had made.

The project leader served as a resource person. The main emphasis was upon the development of skills in structuring a stimulating preschool environment in the home and upon development of a sense of confidence and importance regarding the mothers' role. Each mother established a definite working relationship with her child. She gained confidence not only in her skill as a teacher, but also in her child's ability. The mothers were pleased to witness the growth of their children as a result of their efforts and guidance.

The pilot project provided the testing ground for the programmed learning booklet and materials kit. In fact, these approaches were developed as an outgrowth of certain phenomenon apparent in the pilot project.

The individuals who staffed the Opportunity Centers were dedicated to their work and extremely sensitive to the needs of various community members. Yet, the mothers who were willing to attend the study sessions were not, in the estimation of the staff, the members of the community in the greatest need of assistance. Many of the mothers who did not enroll were busy working and caring for a large family. This type of mother does not have the time, interest, money, or awareness which
prompts parents to enroll children in preschool classes or enroll in training sessions themselves. These same mothers must struggle to maintain bare existence for themselves and their large families. Many of the mothers of educationally disadvantaged children, both in the community surrounding the Opportunity Centers and throughout the country, are the head of the household. Therefore, they are too busy or too tired to provide their children with much more than food, clothing, and shelter. They are often the product of an environment similar to that which they provide their children. They have suffered intellectual losses which render them uninformed in many aspects of child care and training. The vital stimulation which every child needs in early childhood is overlooked in the face of necessity and lack of understanding.

The mothers are too busy to attend classes, meetings, or interviews. They have vocational responsibilities, as well as other children demanding care. The cost of baby-sitters is prohibitive. These mothers often realize that they lack certain knowledge. They also realize that their home situation is a poor one. Many of these mothers resent having their shortcomings remedied by a "superior" professional. They also resent intruders in their homes.

The mothers of educationally disadvantaged children do not consciously desire that their children be the victims of a poor home environment. They do not desire that their children suffer intellectual losses. However,
they are without the basic information necessary to combat these losses by improving the home environment. The mothers involved in the pilot study welcomed suggestions. They also expressed the belief that all disadvantaged mothers would welcome suggestions, if there was some manner in which these suggestions could be transmitted in a simple, effective fashion that would not interfere with a busy, hectic life or compromise human dignity. The approach must be easy to comprehend, inexpensive, and free from degradation and large time commitments.

In response to these expressed and observed needs, the two approaches were immediately developed. The mothers enthusiastically supported the efforts and encouraged their widespread use. They also participated in the testing and refinement of both approaches.

Selection of Participants

In implementing and evaluating the two approaches with a larger sample, the selection of participants was crucial. Mothers of potentially educationally disadvantaged children needed to be identified. A review of research findings indicates that children of the lower socioeconomic status score considerably lower on reading tests than children of middle and high socioeconomic status, even when intelligence is held constant.  

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A comparison of reading vocabulary and reading comprehension scores of white and Negro students in a southern state indicates that Negro students deviate from the national mean to a far greater extent than do white students. 1 Results of a study conducted in Washington, D.C., in which the Stanford Achievement Test scores for Negro students were compared with the national median rendered similar results. 2 This research suggests that mothers in the lower socioeconomic status produce children who are educationally disadvantaged.

The next step was the determination of some location in which a large number of mothers in the lower socioeconomic range could be contacted. Cook County Fantus Clinic was contacted. The personnel stated that the mothers utilizing Clinic services were definitely in the lower socioeconomic range. Most of them were welfare recipients. Every mother visiting the Clinic had a child below the age of two years. Approximately 90% of the mothers were Black.

In order to insure against the possibly faulty assumption that these mothers did not know as much about providing an early childhood environment rich in stimulating experiences as did mothers in the middle socioeconomic status, a second group of mothers was selected. The mothers

1 Ibid., p. 27.
2 Ibid., p. 28.
in the second group reside in the Riis Park area, which is located at 6100 West Fullerton, Chicago, Illinois. These mothers also have young children, but were entirely middle-class white. The results of a test, designed to assess the mothers' information regarding child care and training and administered to both groups, was compared to ascertain that lower socioeconomic mothers did, in fact, possess less knowledge in the area of early childhood environment than did mothers of higher socioeconomic status. The results of this comparison will be cited in the following chapter. In addition, the Report of the 1968-69 City-Wide Testing Program for Chicago Public Schools was secured. The results of the readiness tests administered to children attending schools in the Riis Park area were compared to the scores of children attending schools in the neighborhoods in which the Fantus Clinic mothers reside. The Riis Park area schools scored much higher on the readiness, as well as other achievement, tests -- indicating that the children of mothers residing in neighborhoods serviced by Fantus Clinic do suffer from educational disadvantage. 1

Description of Participants

There were 182 mothers involved in the Fantus Clinic segment of

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this study. Two additional mothers refused to participate. One hundred of these mothers were included in the final analysis. Sixteen mothers were disqualified on the basis of illiteracy; eighteen mothers were disqualified because they did not complete some portion of the pre- or post-test; and forty-eight mothers participated in only one of the two testing situations.

All mothers participating in the study had at least one child under two years of age. The Fantus Clinic mothers had families ranging in size from one to thirteen children. The children ranged in age from several weeks old to twenty years old.

Ninety percent of the mothers attending Fantus Clinic were Black and could be classified in the lower socioeconomic status. There was a smaller number of mothers from a wide variety of ethnic backgrounds. Spanish-speaking mothers, Appalachian mothers, Chinese mothers, and foreign-speaking mothers were involved. However, the 10% of non-Negro participants could also be classified in the lower socioeconomic status. The mothers ranged in age from thirteen years to fifty-four years. They ranged in educational training from the fourth grade to some college training.

The Fantus Clinic mothers resided in poorer sections of Chicago, generally considered "slums." The majority lived on the west, near-north, or near-south sides of the City. The population density in these
areas is usually quite high, while quality of housing facilities is low.

Any literate mother attending Fantus Clinic was eligible for inclusion in the study. No screening beyond the examination of the heading of the pre-test to determine literacy was conducted. The mothers visited the Clinic for routine check-ups and health care for their small children. The check-ups were routinely scheduled at approximately six week intervals, facilitating a continuing relationship with the study participants.

The Riis Park mothers, who functioned as the comparison group, numbered fifty-six. One mother refused to participate. Of the fifty-six mothers involved, two were disqualified due to the noncompletion of the test. The Riis Park mothers were administered only one test. They were not involved in the implementation or evaluation of the self-instructional materials. The Riis Park mothers served as the basis for comparing the knowledge possessed by mothers of higher socioeconomic status with knowledge possessed by mothers of lower socioeconomic status, in regard to early childhood growth and development and environmental effects thereupon.

All Riis Park mothers participating had at least one child under four years of age. The number of children in the families ranged from one to seven. The ages of the children ranged from early infancy to fourteen years.

One hundred percent of the Riis Park mothers were white. There
were no Negro, Chinese, or Spanish-speaking mothers. The mothers ranged in age from twenty-one to forty-six years. The maximum educational training ranged from ninth grade to college graduation.

Riis Park serves the North Austin, Cragin, Belmont-Central, Montclare, and Galewood sections of Chicago's northwest side. The average age of the homes in the area surrounding the Park is approximately thirty-five years. Most of the housing is single family dwellings. However, in the past ten years, a substantial number of new three and six flats have been constructed in the neighborhood. The population is very stable. While the area has ethnic sections, it is entirely white. Transportation into this section of the city is limited. There is no rapid transit servicing the district, and no expressway within convenient distance. Unemployment is low. The residents of the Riis Park area are basically blue-collar workers. Few mothers work full-time, although many hold part-time jobs. There are Catholic, Lutheran, and Greek Orthodox schools in the community. There are also several nursery schools and park playschools. Community action groups are minimal, with the exception of extreme organized resistance to busing several years ago.¹

¹Jane J. Mosier, private interview held following data collection at Riis Park, where she has been supervisor for six years, September, 1970.
Any literate mother reporting to Riis Park for playschool registration was eligible to participate in the study. No screening, beyond the determination of literacy, was conducted. No mothers were disqualified on the basis of illiteracy.

Measuring Instrument

A two-paged test, designed to measure knowledge related to the structuring of a stimulating preschool environment, was developed (see appendix B.) The first page of the instrument contains two sections. The top section requests certain demographic data, such as: mother's name, home address, number of children in the family, ages of children, age of mother, and highest grade mother completed in school. This top section also served as an indication of literacy. Since both approaches developed relied upon the mothers' ability to read, any mother who demonstrated illiteracy by failure to successfully complete the upper section of page one, was eliminated from the study. The second part of page one contains twenty statements, to which the mothers must respond by circling T, for true, or F, for false.

The second page of the test contains seven questions. The first question deals with the role of the parent in the educational process. The next five questions test recall and knowledge of various activity-related information. The last question is concerned with the materials and
toys which should be part of every preschool environment.

The twenty true-false questions were valued at one point each. The mothers were encouraged to mark each question. There was no penalty for guessing. The first item on the second page was regarded as vital, and therefore given a weight of five points. The next five items on page two were items requiring three answers each. Each correct response was worth one point. The final test item contains space for fifteen answers. Each correct answer, up to a maximum or fifteen, was valued at one point. The total possible number of points for the test is fifty-five.

The test was reproduced on paper stock of three different colors. The yellow tests were utilized as pre-tests for the disadvantaged mothers. The green tests were utilized as post-test for the disadvantaged mothers, and the white tests were used with the middle-class mothers. In other words, the same test was employed as a pre-test, post-test, and comparison test.

In the event that a mother did not attempt to finish a test, the test was disqualified, and the mother was eliminated from the study.

Collection of Data

The Fantus Clinic mothers meet from approximately noon until four o'clock each Tuesday. Upon their arrival at the Clinic, they must check-in and have their child weighed. After these procedures are
accomplished, the mothers have quite a long wait before they see a doctor. During this waiting period, mothers were approached and requested to participate in a study involving new techniques for helping parents help their children. It was explained that the mothers would first complete a short test. Following the completion of the test, they would receive materials. Upon their next visit to the Clinic, the mothers were given a post-test to determine the effectiveness of the materials they had been given in transmitting the desired knowledge. The final twenty-five mothers were told that they would receive materials the next time they attended the Clinic. On their second trip, they were administered the post-test and then given the materials. These mothers were the control group. Twenty-five mothers received the programmed learning book only, twenty-five mothers received the kit only, and twenty-five mothers received both the book and kit simultaneously. All mothers were told to attempt to answer all questions.

The atmosphere surrounding the study was very relaxed. The investigator assured the parents that the test results were not going to be analyzed from a personal standpoint, but rather in groups. They were also told that the results had nothing to do with their Clinic records. The investigator chatted with mothers and cared for children while the mothers completed the tests. The mothers appeared very willing to participate and quite delighted with their materials. Many requested
extras for friends. The hospital staff was also interested and supportive of the total endeavor.

The Riis Park mothers were administered the test prior to registration for the 1970-71 playschool season. The park supervisor explained that the tests were part of a study to determine the differences among mothers in knowledge related to child care and training. The mothers were told that the data would not be analyzed from a personal standpoint, but rather in a group. Since there was no follow-up of a second test, the mothers were told that they need not fill their name in the spot so designated. Any mother hesitant to participate was told to refrain from doing so. Three tests, out of a total of fifty-six, were returned unsigned. Only one mother refused to participate. The mothers were told to attempt to answer all questions. At the termination of the test-taking situation, the Park was presented with several boxes of supplies for use in the playschool program. The mothers were each given a copy of a booklet entitled, *Your Child Entering School*, which outlines the steps parents should take in preparing their children for school entry.¹ The mothers were pleased with the booklet, and many requested additional copies for friends. The Park mothers were most cooperative, as was the Park staff.

CHAPTER V
STATISTICAL ANALYSIS AND INTERPRETATION
OF DATA

Restatement of the Problem

The problem of combating severe intellectual losses, which are the result of a lack of stimulation in the early childhood years, has been attacked through the development and implementation of two self-instructional approaches for educating mothers of potentially disadvantaged children regarding preschool environment. The evaluation demands that the problem be restated in terms subject to statistical interpretation. The principle of the null hypothesis was employed, in which the basic questions which the investigation sought to answer were restated in terms of no significant difference between pre- and post-test means. (See appendix B for instrument.) In other words, the questions were transformed into statements which indicated no difference in pre- and post-test performance as a result of exposure to one, or both, of the materials. Unless the t-test of the difference between the means yielded a value great enough to reject the possibility of chance variations in mean performance, the materials were assumed to have no significant effect on mean difference between pre- and post-test scores. Values of the t-test were examined at the 1% and 5% levels of confidence. If the t was significant to reject
the null hypothesis at the 1% level, the approach was judged effective in transmitting the information. If the $t$ was significant to reject the null hypothesis at the 5% level, but not at the 1% level, the effectiveness of the approach in question was accepted with slight reservation. Similar treatment of the differences between mean scores of the middle and lower socioeconomic status mothers was conducted.

The following hypotheses will be accepted until statistical analysis warrants rejection:

1. There is no significant difference between pre- and post-test mean performance on the measuring instrument resulting from the distribution of the Before School Kit.

2. There is no significant difference between pre- and post-test mean performance on the measuring instrument resulting from the distribution of the booklet, Before School, A Handbook for Mothers.

3. There is no significant difference between pre- and post-test mean performance on the measuring instrument resulting from the distribution of both the Before School Kit and the booklet, Before School, A Handbook for Mothers.

4. There is no significant difference between pre- and post-test mean performance on the measuring instrument of those receiving no materials.

5. There is no significant difference between post-test mean performance of those receiving no materials and those receiving the Before School Kit.

6. There is no significant difference between post-test mean performance of those receiving no materials and those receiving the booklet, Before School, A Handbook for Mothers.
7. There is no significant difference between post-test mean performance of those receiving no materials and those receiving both the Before School Kit and the booklet, Before School, A Handbook for Mothers.

8. There is no significant difference between total pre- and post-test mean performance.

9. There is no significant difference between post-test mean performance of those receiving the Before School Kit and those receiving the booklet, Before School, A Handbook for Mothers.

10. There is no significant difference between post-test mean performance of those receiving the booklet, Before School, A Handbook for Mothers, and those receiving both the Before School Kit and the booklet.

11. There is no significant difference between post-test mean performance of those receiving the Before School Kit and those receiving both the Before School Kit and the booklet, Before School, A Handbook for Mothers.

12. There is no significant difference between pre- and post-test mean performance on the test item regarding the importance of the parent in the educational process.

13. There is no significant difference between pre- and post-test mean performance on the test item regarding items which should be included in every preschooler's home environment.

14. There is no significant difference between total mean performance of the mothers in the lower socioeconomic status (Fantus Clinic) and the mothers in the middle socioeconomic status (Riis Park).

To facilitate the analysis and interpretation of the data collected, the information was scored, tabulated, organized, and transferred to key-punch cards for later computer handling.
Results of the Statistical Tests

The first statistical analysis dealt with the effectiveness of the Before School Kit, and the following statistics apply:

TABLE V

Comparison of Pre- and Post-test Results - Kit Only

<table>
<thead>
<tr>
<th>Test</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Deviation</th>
<th>t</th>
<th>5%</th>
<th>1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-</td>
<td>25</td>
<td>28.32</td>
<td>28.00</td>
<td>none</td>
<td>7.265</td>
<td>-6.488</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Post-</td>
<td>25</td>
<td>34.88</td>
<td>36.00</td>
<td>38.00</td>
<td>4.600</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It can be observed that the null hypothesis -- namely, that there is no difference between pre- and post-test performance on the measuring instrument resulting from distribution of the Before School Kit must be rejected at both the 5% and 1% confidence levels. The kit did result in a significant change in mean performance.

Next, the data involving the booklet, Before School, A Handbook for Mothers, is considered:
TABLE VI
Comparison of Pre- and Post-test Results - Booklet Only

<table>
<thead>
<tr>
<th>Test</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Signif. 5%</th>
<th>Signif. 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-</td>
<td>25</td>
<td>25.76</td>
<td>27.00</td>
<td>none</td>
<td>8.476</td>
<td>-9.536</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Post-</td>
<td>25</td>
<td>38.76</td>
<td>40.00</td>
<td>40.00</td>
<td>6.426</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The second hypothesis regarding the lack of difference between pre- and post-test mean differences resulting from the distribution of the programmed learning textbook must also be rejected. The t score is significant at both the 5% and 1% levels, indicating that the booklet was effective in transmitting information to the mothers.

The third hypothesis -- that there is no difference between pre- and post-test mean performance on the measuring instrument resulting from the distribution of both the Before School Kit and the booklet, Before School, A Handbook for Mothers, is examined statistically below:
TABLE VII

Comparison of Pre- and Post-test Results -- Kit and Booklet

<table>
<thead>
<tr>
<th>Test</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>t</th>
<th>5%</th>
<th>1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-</td>
<td>25</td>
<td>25.84</td>
<td>27.00</td>
<td>None</td>
<td>8.382</td>
<td></td>
<td>-7.081</td>
<td>yes</td>
</tr>
<tr>
<td>Post-</td>
<td>25</td>
<td>38.52</td>
<td>40.00</td>
<td>40.00</td>
<td>6.434</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This hypothesis must also be rejected at both the 5% and 1% confidence intervals. The booklet did cause a significant mean difference when distributed alone, and when the booklet and kit were distributed together, this difference persisted. However, it is interesting to note that the post-test mean score resulting from the distribution of both the booklet and kit is slightly less than the post-test mean score resulting from distribution of the booklet alone.

Table VIII compares the pre-test and post-test performance of the control group in an effort to determine whether or not variations between pre- and post-test scores are due to chance.
TABLE VIII

Comparison of Pre- and Post-test Results -- Control Group

<table>
<thead>
<tr>
<th>Test</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Signif. 5%</th>
<th>Signif. 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-</td>
<td>25</td>
<td>26.20</td>
<td>24.00</td>
<td>24.00</td>
<td>8.095</td>
<td>.9878</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Post-</td>
<td>25</td>
<td>27.04</td>
<td>28.00</td>
<td>None</td>
<td>7.901</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The difference between the means for the control group was not significant at the 5% or 1% levels. Therefore, no improvement in test performance occurred merely as the result of chance variation.

The final, or post-test results, related to the distribution of the Before School Kit and the booklet, Before School, A Handbook for Mothers, as well as the combination approach, in which both were distributed concurrently, are compared with the post-test results of the control group in Tables IX, X, and XI:

TABLE IX

Comparison of Post-test Results -- Kit and Control

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Signif. 5%</th>
<th>Signif. 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit</td>
<td>25</td>
<td>34.88</td>
<td>36.00</td>
<td>38.00</td>
<td>4.600</td>
<td>4.199</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Control</td>
<td>25</td>
<td>27.04</td>
<td>28.00</td>
<td>None</td>
<td>7.901</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In all three cases, the null hypothesis of no difference between the means must be rejected at both confidence levels. There is a significant difference in the final performance of those receiving materials and those receiving none which cannot be attributed to chance variations.

The analysis of covariance for the total mean difference between the pre-tests for all four treatment groups and the post-tests for all four
treatment groups is found in tabular form on the bottom of the page.

Table XII provides a final $F$ ratio of 33.949, adjusted for covariates. The difference is significant. Chance variations have not caused the difference in adjusted means.

TABLE XII

Analysis of Covariance for Pre+ and Post-tests with Adjusted Means

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>Y.Y. (Due)</th>
<th>Sum of Squares (Due)</th>
<th>Source</th>
<th>D.F.</th>
<th>Mean-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (between)</td>
<td>3</td>
<td>2243.5986</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error (within)</td>
<td>96</td>
<td>4276.4014</td>
<td>2168.2762</td>
<td>2108.1252</td>
<td>90</td>
<td>23.4236</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>6520.0000</td>
<td>2026.2697</td>
<td>4493.7303</td>
<td>93</td>
<td></td>
</tr>
</tbody>
</table>

F (3, 90) = 33.949

A comparison of the post-test mean performance of those mothers receiving the kit and those mothers receiving the booklet follows in Table XIII:
The mean difference analyzed with a t-test indicates that the difference is significant at the .05 level. However, the t-value is not sufficient to reject the null hypothesis of no significant difference at the .01 level. Therefore, some hesitancy should be exercised in rejecting the null hypothesis. It appears that the kit and booklet are not equally effective in transmitting the knowledge. The booklet is significantly more effective at the 5% level, but not at the 1% level.

The difference between means obtained by comparing the post-test results of those receiving only the kit with those receiving both the kit and booklet follows in Table XIV:

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Signif. 5%</th>
<th>Signif. 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit</td>
<td>25</td>
<td>34.88</td>
<td>36.00</td>
<td>38.00</td>
<td>4.600</td>
<td>-2.440</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Book</td>
<td>25</td>
<td>38.76</td>
<td>40.00</td>
<td>40.00</td>
<td>6.426</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE XIV

Comparison of Post-test Results -- Kit only and Kit and Booklet Both

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Signif. 5%</th>
<th>Signif. 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit Only</td>
<td>25</td>
<td>34.88</td>
<td>36.00</td>
<td>38.00</td>
<td>4.600</td>
<td>-2.1907</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Both</td>
<td>25</td>
<td>38.52</td>
<td>40.00</td>
<td>40.00</td>
<td>6.716</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The difference in final post-test scores between the mothers receiving the kit only and the mothers receiving both the booklet and the kit is significant at the 5% level. However, as in the previous analysis, the difference is not significant at the 1% level. Therefore, care must be exercised in rejecting the null hypothesis of no difference.

Table XV contains a comparison of the post-test results arising from those mothers receiving the booklet, Before School, A Handbook for Mothers, in isolation and those mothers receiving both the booklet and the Before School Kit.
TABLE XV

Comparison of Post-test Results -- Booklet only and Kit and Booklet

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Signif. 5%</th>
<th>Signif. 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book Only</td>
<td>25</td>
<td>38.76</td>
<td>40.00</td>
<td>40.00</td>
<td>6.426</td>
<td>.12619</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>38.52</td>
<td>40.00</td>
<td>40.00</td>
<td>6.716</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The table above clearly indicates that the difference between means is not significant at the .05 or .01 levels. Therefore, we must accept the null hypothesis of no difference.

Tables XVI and XVII are found on the following pages. These tables represent an analysis of covariance for two of the test items isolated as particularly significant. The first table provides an analysis of pre- and post-test responses for the question dealing with the role of the parent in the educational process. The F ratio of 39.898 indicates that differences in pre- and post-test scores cannot be attributed to chance. The approaches were instrumental in helping parents realize their importance as teachers.

Similarly, Table XVII analyzes the effectiveness of the approaches in teaching parents about the materials which should be found in every preschooler's home. This question was the last item on the test. The
analysis of covariance, adjusting the means, yields an $F$ ratio of 17.901, which is significant at the 5% level. However, the null hypothesis cannot be rejected at the 1% level.

**TABLE XVI**

Analysis of Covariance for Parental Role Question

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>Y.Y.</th>
<th>Sum of Squares (Due)</th>
<th>Sum of Squares (About)</th>
<th>D.F.</th>
<th>Mean-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (between)</td>
<td>3</td>
<td>200.7500</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error (within)</td>
<td>96</td>
<td>184.0000</td>
<td>31.3657</td>
<td>152.6343</td>
<td>90</td>
<td>1.6959</td>
</tr>
<tr>
<td>Treatment and Error Total</td>
<td>99</td>
<td>384.7500</td>
<td>29.1245</td>
<td>355.6255</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>Difference for testing adjusted means</td>
<td>202.9912</td>
<td>3</td>
<td>67.6637</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$F (3, 90) = 39.898$
**TABLE XVII**

Analysis of Covariance for Materials Question

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>Y.Y.</th>
<th>Sum of Squares (Due)</th>
<th>Sum of Squares (About)</th>
<th>D.F.</th>
<th>Mean-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (between)</td>
<td>3</td>
<td></td>
<td>503.8700</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error (within)</td>
<td>96</td>
<td>1237.8400</td>
<td>267.7549</td>
<td>970.0852</td>
<td>90</td>
<td>10.7787</td>
</tr>
<tr>
<td>Treatment and Error</td>
<td>99</td>
<td>1741.7100</td>
<td>192.7621</td>
<td>1548.9479</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>578.8627</td>
<td>3</td>
<td>192.9542</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ F(3, 90) = 17.109 \]

The final table contains a comparison of the total pre-test results of the one hundred disadvantaged mothers with the test scores of the fifty-four advantaged mothers. The results follow:

**TABLE XVIII**

Comparison of Disadvantaged and Advantaged Mothers

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>t</th>
<th>Signif. 5%</th>
<th>Signif. 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disadvantaged</td>
<td>100</td>
<td>26.53</td>
<td></td>
<td>10.23789</td>
<td>yes</td>
</tr>
<tr>
<td>Advantaged</td>
<td>54</td>
<td>39.01</td>
<td></td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>
The t-value obtained indicates that the null hypothesis can be rejected at both the 5% and 1% levels. There is a significant difference in the scores of disadvantaged and advantaged mothers on the measuring instrument. Disadvantaged mothers do not know as much about structuring a stimulating preschool environment, as measured on the instrument, as do more advantaged, middle-class mothers.

Below is a summary of the demographic data and average score on the questions dealing with parental role and materials:

**TABLE XIX**

Demographic Data Summarized by Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Aver. Age of Mothers</th>
<th>Aver. Number of Children</th>
<th>Aver. age of youngest Child</th>
<th>Aver. age of Oldest Child</th>
<th>Mothers' Highest Grade of School Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit</td>
<td>22.520</td>
<td>2.2400</td>
<td>8 mths.</td>
<td>3.4</td>
<td>10.7200</td>
</tr>
<tr>
<td>Only</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Book</td>
<td>20.040</td>
<td>1.8400</td>
<td>.36 mths.</td>
<td>2.28</td>
<td>10.8800</td>
</tr>
<tr>
<td>Only</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both</td>
<td>24.600</td>
<td>3.400</td>
<td>.52 mths.</td>
<td>5.72</td>
<td>10.0400</td>
</tr>
<tr>
<td>Control</td>
<td>23.440</td>
<td>2.480</td>
<td>.20 mths.</td>
<td>4.44</td>
<td>10.9200</td>
</tr>
</tbody>
</table>

Below is a summary of the demographic data and average score on the questions dealing with parental role and materials:

**TABLE XIX**

Demographic Data Summarized by Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Aver. Age of Mothers</th>
<th>Aver. Number of Children</th>
<th>Aver. age of youngest Child</th>
<th>Aver. age of Oldest Child</th>
<th>Mothers' Highest Grade of School Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit</td>
<td>22.520</td>
<td>2.2400</td>
<td>8 mths.</td>
<td>3.4</td>
<td>10.7200</td>
</tr>
<tr>
<td>Only</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Book</td>
<td>20.040</td>
<td>1.8400</td>
<td>.36 mths.</td>
<td>2.28</td>
<td>10.8800</td>
</tr>
<tr>
<td>Only</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both</td>
<td>24.600</td>
<td>3.400</td>
<td>.52 mths.</td>
<td>5.72</td>
<td>10.0400</td>
</tr>
<tr>
<td>Control</td>
<td>23.440</td>
<td>2.480</td>
<td>.20 mths.</td>
<td>4.44</td>
<td>10.9200</td>
</tr>
</tbody>
</table>
TABLE XX

Average Group Scores -- Parental Role and Materials Questions

<table>
<thead>
<tr>
<th>Group</th>
<th>Parental Role Question (Maximum = 5.000)</th>
<th>Materials Question (Maximum = 15.000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit only</td>
<td>4.800</td>
<td>10.0800</td>
</tr>
<tr>
<td>Book only</td>
<td>4.800</td>
<td>7.6000</td>
</tr>
<tr>
<td>Both</td>
<td>5.000</td>
<td>9.2000</td>
</tr>
<tr>
<td>Control</td>
<td>1.6000</td>
<td>4.2000</td>
</tr>
</tbody>
</table>

Generalization of Findings

The analysis of variance and covariance contained in the previous section, as well as other statistics, indicate that the programmed learning and self-instructional approaches were successful in communicating the desired information to the mothers. Both the book and kit were significantly effective in teaching the parent ways in which the early childhood environment can be made stimulating. However, the booklet was somewhat more effective than the kit.

It is interesting to note that the combination approach, in which the kit and booklet were used jointly, was found significantly more effective than the kit alone at the .05 level, but not at the .01 level. The combination approach was not found to be significantly more effective than the
than the booklet employed in isolation at either level. While both the kit and booklet were effective when used alone, utilized together they did not increase learning as much as might be expected upon first glancing at their individual effectiveness.

The analysis of variance indicates that the book was more effective than no approach, the kit, or a combination approach.

The comparison of pre-test scores for the one hundred disadvantaged mothers and the fifty-four advantaged mothers substantiated the fact that disadvantaged mothers do not possess knowledge in child care and training equal to that of their middle-class counterparts. The mothers selected as disadvantaged and lacking in the information necessary to structure a stimulating preschool environment exhibited those characteristics when compared with parents of children who typically score above the children of the mothers participating in the study.

The kit alone and book alone were of equal effectiveness in conveying to mothers the fact that they are their children's most important teacher. The combination approach of both kit and booklet was more effective than either approach used in isolation in transmitting this bit of information. Mothers who did not receive any materials scores significantly below the other mothers on this question, indicating their lack of knowledge regarding the key role of parents in children's educational development.

In regard to the final test question, dealing with materials which
should be included in the early childhood environment of all preschoolers, the kit was the most effective in transmitting the knowledge. The combination approach followed closely. The booklet trailed in this area. Mothers who did not receive any materials scored significantly below all three experimental groups.

It is interesting to consider that the kit, distributed in isolation, proved the most effective in transmitting information relevant to materials for the preschool environment. Since the kit concentrates on this area, the superiority of the kit, when compared to the booklet, which covers many areas, is quite understandable. However, the combination approach, in which both the book and kit were distributed, also proved less effective than the kit employed in isolation. This outcome is puzzling, since it might be expected that the booklet would reinforce and expand the information provided by the kit. A possible explanation is that the distribution of two materials caused the mothers to divide their attention, perhaps concentrating more heavily upon the booklet, which they perceived as more adult-directed and interesting than the kit, containing children's materials.
CHAPTER VI

CONCLUSION, RECOMMENDATIONS, AND SUMMARY

Conclusion

The problem of early childhood environmental disadvantage is extremely serious. Research findings have indicated that children, if not adequately stimulated, suffer losses of as many as ten intelligence quotient points during the first four years of life. The concept of developmental learning, as well as various approaches for providing this learning, have been dealt with in published and unpublished writings. Programs and approaches involving parents in the preschool education of their children have also been designed and implemented. However, these programs and approaches are generally structured in nature, consisting of parent education classes, lectures, group-work, mothers' clubs, home visits, or participation through an agency in which the child attends sessions or classes. The mothers who most desperately need assistance, unfortunately, are often not those who avail themselves of the programs. Also, many of these programs come too late for full benefits to accrue. Therefore, some economical, simple approach, suitable for widespread use with mothers of potentially environmentally disadvantaged children is needed. Books have been prepared with this end in mind. However, these books generally deal with the later preschool years and are written at a reading level too difficult for many needy mothers. An examination of the
literature reveals no approach designed solely with the disadvantaged mother in mind - and yet appropriate for wide dissemination at low cost.

In an effort to meet this need, a two-fold approach was developed. A kit of sample materials, containing a listing of additional toys and materials which should be in every early childhood environment, was formulated. The Before School Kit was designed to be placed in the hands of disadvantaged mothers with little, or no explanation. The second approach is a programmed learning handbook, written at a low reading level and generously illustrated with entertaining pictures which provide the slow-reader with context clues to meaning. This booklet was also designed to be used without professional direction by the disadvantaged mother during free moments.

The materials developed were tested in a variety of ways. First, the approaches were scrutinized by the investigator as one participant worked with them. Revisions were made, based upon this series of individual scrutiny. The revised program was tested with a group during the Pilot Study. The Pilot Study not only contributed to the further revision of the approaches, but also shed valuable light on the entire subject of early childhood environmental disadvantage. Lastly, the approaches were tested with a sample of one hundred disadvantaged mothers at Cook County Fantus Clinic. These mothers were divided into four groups, and each group received a different combination of material.
The results of the large group investigation disclosed that the kit and book were both significantly effective in educating mothers regarding the structuring of a stimulating preschool environment. The kit was, however, more effective in informing mothers of the materials which should be found in the home of every preschool child. The book and kit were of equal effectiveness in communicating the valuable role parents play in the education of their young children. A combination approach, in which both the kit and book were distributed, proved to be rather disappointing in terms of results. The combination approach was not significantly more effective than the book in accomplishing the transmittal of knowledge. The book was found more effective than the kit in overall effectiveness.

The Fantus Clinic disadvantaged mothers were compared with a group of Riis Park advantaged mothers. The results of this comparison supported the proposition that disadvantaged mothers do not know the same kinds of things about raising children which the mothers of children, proven more successful in school, do know. The mothers identified as disadvantaged in terms of early childhood environment demonstrated less knowledge of preschool home teaching techniques than did a similar group of middle-class mothers. However, at the termination of the project the mean score for the disadvantaged mothers was well above the mean scored by the advantaged mothers. This fact is of vital importance. Disadvan-
taged mothers are interested in improving their maternal skills. They are also capable of doing so with a great measure of success and efficiency, given the proper set of conditions. This fact must be communicated to far more parents of disadvantaged children. The failure syndrome has become engrained in the life-style of disadvantaged parents and children. Parents and children expect very little from life, and from themselves. They set low vocational goals. Oftentimes parents do not expect their children to do well academically, and they would scoff at the notion that they were instrumental in educating children. Education takes place in the school, as far as they are concerned.

Parents must realize that all children are born with certain innate abilities. The development of these abilities depends in large part upon the quantity and quality of stimuli in the child's early environment. A good environment leads to full development of innate capacities. Disadvantaged parents must learn to have confidence in these innate capacities. They must also learn to assume responsibility for providing a good home environment. With proper education and information, these parents can assume their full responsibilities with confidence.

Recommendations

While approaches and projects currently seek to solve the problem of environmental disadvantage by attempting to work with the disadvantaged child, or by extending the parent professional supervision and
guidance on a fixed schedule, the approaches developed as a result of this study have been designed solely with parents in mind -- busy parents who cannot spend time in formalized programs. The value of child-directed approaches, supervision of professional staff, fixed meeting times, and home visits is not questioned. What is questioned is the availability of these services to the vast number of disadvantaged children and parents.

The Before School Kit and Before School, A Handbook for Mothers, are capable of being massed-produced at a nominal cost. They are also suitable for distribution on a wide scale, with a minimum of professional guidance. Hopefully, of course, these materials could be followed-up with repeated professional conferences. However, follow-up is very likely to be unavailable. These materials have demonstrated their effectiveness in independent learning situations in the absence of supervision or follow-up.

The two approaches developed in this study should be made available to parents of disadvantaged children. Public agencies could distribute them. A better solution might be the distribution of the materials through hospitals, as was done in this research study. Mothers could be given a copy of the booklet and a kit as a gift upon discharge from the maternity ward. Stimulation must begin at birth. The cost of this project would necessarily be subsidized through state, local, and federal funding.
An alternative approach might be the publishing of excerpts of this material in magazines commonly purchased by the disadvantaged housewife. *Jet* or *Family Circle* are two examples. If the material was appealingly laid-out, it would no doubt attract some attention. However, this campaign would probably reach more of the mothers who need less help than those who need help the most.

**Suggestions for Further Study**

The possibilities for study related to this project are many. For example, the approaches developed in this study were designed to rely upon reading skill; however, many of the mothers in the most devastating situation cannot read. Therefore, one suggestion for further study would be the development of a program similar to this one which does not require reading skill. The material might be programmed onto tapes or records.

This study dealt with environmental disadvantage as if affects children in early childhood. The research indicates that the decline in intellectual ability continues into later childhood, although at a somewhat slower pace. There is a need for a program similar to this one which assists parents in providing older children with stimulating experiences conducive to intellectual growth.

Non-English speaking children suffer many of the handicaps of disadvantaged children, previously described. Another valuable effort
would be the development of materials for use with non-English speaking parents.

It would no doubt prove interesting to enlarge and follow-up this study. A group of educators might be tested to determine the extent of their knowledge regarding provision of a stimulating early childhood environment. The mothers involved in this study might be re-tested a year later to determine the amount of retention.

One serious limitation of this investigation is the lack of data regarding the effectiveness of the approaches in actually improving the disadvantaged child's readiness for learning. The assumption made is that by providing parents with certain types of information, conditions will be improved for the young learner. The children might be examined in a future study to determine if their progression through school was influenced by parental participation in the current study.

The Riis Park mothers could have been given materials to ascertain the extent of potential growth they offer to the middle-class mother.

An examination of the home situation designed to ascertain the actual use of the materials by mothers would be another important study. Are the mothers who received kits encouraging their children to use the materials enclosed? Have the kits been expanded and replenished by parents? To what extent have the ideas and suggestions in the booklet been actually implemented in the preschool home environment?
Lastly, it would be interesting to study the multiplier effects and diffusion of outcomes related to participation in this study. How many mothers shared their new knowledge with other mothers? How will participation in the program influence mothers' interactions with older children or children who will be born in future years?

These brief topics represent but a few of the many worthwhile, additional activities which might be undertaken in further study.

Summary

The major objective of this study, as originally stated, was the development, implementation, and evaluation of an effective approach for combating intellectual losses to young children which result from a pre-school environment lacking in stimulation. The first step in the study was a review of the literature to determine the knowledge which is most vital to parents of young children. Next, it was necessary to determine what large groups of mothers do not possess the knowledge. Based upon the information gained in these first phases of the project, a two-part approach was developed.

The approach consists of a kit of sample materials and a supplementary listing of objects which should be part of every early childhood environment and a liberally illustrated, low reading level, programmed learning booklet. The booklet suggests techniques and methods for parental stimulation of young children. In view of the large number of existing
programs and approaches which attempt to remedy environmental disadvantage through structured, supervised, intervention, this approach was designed for use by parents independently and leisurely.

Subsequent to careful testing and revision in the developmental stage, the approach was implemented with one-hundred low-income mothers, who utilize the services provided their young children at the Fantus Clinic of Cook County Hospital, Chicago. The mothers were divided into four groups. Group one received the booklet only; group two received the kit only; group three received the booklet and kit; and group four received no materials. Each group was administered a pre-test prior to receiving any materials. After participation in the study, an identical post-test was administered.

A second group of fifty-six mothers of preschool children, residing in the Riis Park area, was selected for later comparison with the Fantus Clinic mothers. A review of the literature revealed that children of low socioeconomic status score lower academically that children of middle and high socioeconomic status. The purpose of the comparison was to determine that low socioeconomic mothers do not, in fact, know as much about the provision of a stimulating early childhood environment as do mothers in the middle socioeconomic level. The Riis Park mothers completed the evaluative instrument employed as the pre- and post-test in judging the effectiveness of the approach with disadvantaged mothers.

The results of statistical analysis indicate the following:
1. The disadvantaged mothers, when compared with the group of middle-class mothers, did not possess the knowledge that mothers of children proven more successful in school, do possess.

2. Both the booklet and kit were significantly effective, at the 5% and 1% levels of confidence, in educating the disadvantaged mothers.

3. The kit was more effective in informing mothers regarding materials which should be in the home.

4. The booklet and kit were of equal effectiveness in communicating the vital role of parents in the education of their young.

5. The approach in which both the booklet and kit were distributed together was not significantly more effective than the booklet distributed alone in transmitting general information.

6. The booklet was found more effective than the kit at the 5% level, but not at the 1% level.

7. After distribution of materials, the mean score for low-income mothers as measured by the testing instrument was significantly above the mean score of middle-income mothers.

These results indicate that the major objective of the study was fulfilled. An effective approach for combating intellectual losses resulting from a lack of stimulation in preschool years was developed. Hopefully, this approach will benefit many young children in future years.
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D. Unpublished Material


APPENDIXES
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Those faculty members of the School of Education of Loyola University, Chicago—particularly Sister Mary Stephenette, Mr. Carter Frieberg, and Dr. Barney Berlin—who rendered invaluable professional guidance, as well as personal warmth and encouragement;

Janice Rajecki, the talented artist who provided most of the illustrations for the Handbook;

All those many children and parents who inspired the writing of the Handbook;

My family and friends, who willingly offered their services in any capacity and believed in the Handbook from the time it was only an idea.
This book is different. It is called a programmed learning book. You are going to find out how you can help your child learn many important things before he goes to school. The information is found in large boxes. These boxes tell you something and ask you something. The answer to the question in the large box is found right next to the large box, in a smaller box. Here is the way it works.

Put your black marker over the little boxes. Read the question in the large box and write your answer on the line. After you answer the question in the large box, move the marker down until you see the answer in the little box. You check your own answer. Then go on to the next big box. Try these:

<table>
<thead>
<tr>
<th>This country is called the</th>
<th>United States of America</th>
</tr>
</thead>
<tbody>
<tr>
<td>of ____________________</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The colors in the flag are:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>r _______________</td>
<td></td>
</tr>
<tr>
<td>w _______________</td>
<td></td>
</tr>
<tr>
<td>b _______________</td>
<td>red, white, blue</td>
</tr>
</tbody>
</table>
1. As a parent, you are your child's most important teacher. You can teach your child many things before he goes to school.
2. The learning which takes place from the time a child is born until the child starts school is important for later school learning. If early learning is poor, later learning may be poor.
3. You can help your child get off to a good start in school. You can be your child’s first teacher.
4. This book has some ideas for you. It suggests things to do (activities) that can help your child get ready for school. These activities will help your child get off to a good start when he goes to school.
5. BUT, before you try any of these activities, there are a few important things you must remember.
6. First, you must never force your child. All learning should be easy. If your child has trouble with any of these ideas, you should ___ force him to do them.

not
7. If this book says that it is a good idea to teach your child colors, but your child is having trouble learning colors, you should not ________ him to learn them.

force
| 8. Your child might have trouble with some of these ideas because he is still too young. You should wait until your child is **older** to use some of these ideas. | older |
9. Second, learning should be fun. If your child does not like to do some of these activities, you should not force him to do them.
10. If your child does not like to sing, you should not _______ him to sing. force
11. Third, you must be sure your child has success while learning. If a child has success, he will like to learn.
12. You can give your child success by saying things like:
   Good work!
   Wonderful!
   You're doing fine.
   Great job.
   That's right.
   Saying these kinds of things helps your child to learn because he feels s__________.

success
13. Check which of the following you think are good things to say to give your child feelings of success:

____ I'm proud of you.
____ Nice work.
____ You must try harder.
____ Very pretty.
____ No good.

You should have checked:

I'm proud of you.
Nice work.
Very pretty.
14. If you ask your child to do things that are too hard, the child will not feel success.
15. Fourth, if your child gets tired of doing an activity, you should not make the child continue doing that activity.
16. If he is tired of doing an activity, but still has not finished doing it, you should: (check one)

____ Make him continue.
____ Let him stop.

You should have checked:

Let him stop
17. Fifth, you must try not to get mad at your child if he makes mistakes or has trouble learning. Children do not make mistakes on purpose; and they do not have trouble learning on purpose.

| 18. If you do get mad at your child, the child will not feel success and may not like to learn. | purpose |
| learn |
19. What are the five important things to remember when teaching your child? (You may look back.)

<table>
<thead>
<tr>
<th></th>
<th>You should have written something about each idea below:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Never forcing your child.</td>
</tr>
<tr>
<td>3.</td>
<td>Making sure your child has success.</td>
</tr>
<tr>
<td>4.</td>
<td>Letting your child stop when tired.</td>
</tr>
<tr>
<td>5.</td>
<td>Not getting mad.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
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<tr>
<td>20.</td>
<td>All children must build good, strong muscles. They must also learn how to use these muscles. There are many things that your child can do to develop his muscles.</td>
</tr>
<tr>
<td>21.</td>
<td>Let your child play with buttons, old spools from thread, sand, and blocks. These things help a child develop muscles.</td>
</tr>
</tbody>
</table>
22. Different muscles are used when a person does different things. When a child moves his arm, he is not using the same muscles he uses when he writes.
23. The first muscles the child must learn to use are his large muscles. Parents should give the child many things to do in which the _________ muscles are used.

<table>
<thead>
<tr>
<th>23. Moving your arms, your legs, your head, jumping, etc. are all things your child does which use _________ muscles.</th>
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</thead>
<tbody>
<tr>
<td>large</td>
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</tbody>
</table>

large
25. Writing, tying shoes, sewing, etc., are all activities which use fine muscles. Before your child learns to use his fine muscles well, he must first learn to use his _______ muscles well.
| 26. If the child builds good, strong, large muscles and learns to use them well, he will have little trouble learning to use his _______ muscles well. | fine |
27. Playing is an important way in which children build good large muscles.

28. Play and exercise are: (check one of the following)

   _____ An important part of growing up.
   _____ Not an important part of growing up.

   You should have checked:
   An important part of growing up
29. Running, jumping, skipping, hopping, catching, and throwing are all activities which build good ________ muscles.

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<tr>
<td>29</td>
<td>large</td>
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</tbody>
</table>

30. Throwing bean bags at a target or into a pot or waste-basket is helpful for building large ________.

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<tbody>
<tr>
<td>30</td>
<td>muscles</td>
</tr>
</tbody>
</table>
31. Let your child play with easy puzzles. Puzzles help your child learn how to solve problems. They also help your child to use his fine muscles.
32. Your child can also learn about shapes and colors by playing with puzzles.
33. List four things puzzles can help your child learn:

1. ____________________________
2. ____________________________
3. ____________________________
4. ____________________________

You should have written something about each idea below:

1. Learning to solve problems.
2. Learning to use fine muscles.
3. Learning shapes.
4. Learning colors.

34. If the puzzles are too hard, the child will learn very little and will not feel success. The child's first puzzle should have only a few pieces. You can make them by cutting a simple picture into two or three pieces.
35. Stringing beads or stringing macaroni also helps your child develop his fine _________.

<table>
<thead>
<tr>
<th align="left">35. Stringing beads or stringing macaroni also helps your child develop his fine _________</th>
<th align="left">muscles</th>
</tr>
</thead>
</table>

36. 'Every child should have many chances to play with clay. Playing with ______ helps in fine muscle learning.'

<table>
<thead>
<tr>
<th align="left">36. 'Every child should have many chances to play with clay. Playing with ______ helps in fine muscle learning.'</th>
<th align="left">clay</th>
</tr>
</thead>
</table>
37. Finger painting is another activity which helps your child develop his _______ muscles.

fine
Finger plays are fun. Finger plays are little rhymes and jingles which the child acts out with his fingers.

The following is an example of a finger play.

<table>
<thead>
<tr>
<th>Words</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Here is the church.</td>
<td>Hands in position above.</td>
</tr>
<tr>
<td>Here is the steeple.</td>
<td>Put up second finger of each hand to form steeple.</td>
</tr>
<tr>
<td>Open the door.</td>
<td>Open thumbs to side.</td>
</tr>
<tr>
<td>And here are the people.</td>
<td>Turn both wrists forward, with fingers facing up.</td>
</tr>
<tr>
<td></td>
<td>Wiggle fingers, imitating people in church.</td>
</tr>
</tbody>
</table>

CHURCH AND THE STEEPLE

Your child joins his hands and interlocks his fingers. This is done by first placing hands back to back and lacing the fingers, then closing hands together to form a fist, or the "church," with thumbs placed together.

Page 32
40. Coloring, cutting, pasting, and tracing are all good activities which help a child to use his fine muscles well. Name two other activities which lead to fine muscle learning:

1. ____________________________

2. ____________________________

You could have listed any two of the following, or added ideas of your own:

1. Playing with puzzles.
2. Stringing beads.
3. Stringing macaroni.
4. Finger painting.
5. Playing with clay.
41. You can help your child learn to balance by asking him to try to stand on one foot, or hop on one foot. Another game for balance is "tight-rope walker." Put a piece of masking tape on the floor and let your child pretend that the tape is a tight-rope.
42. Smelling, seeing, hearing, tasting, and feeling are all senses. It is important that your child learn to use his senses well, because the child must learn all about the world through the use of his _________. senses
43. It takes practice to learn to use and understand your senses. You can help your child by giving him many chances to use his senses and by asking him questions about things he learns through his senses.

44. Let your child smell many different odors. Ask him questions about the things he smells.
45. You can help your child to really see. Show him interesting things and ask him questions about the things he has seen.
46. Tell your child to look at things carefully. You can help your child remember what he has seen by playing some games.
47. Tell your child to look at some thing or picture for a short time. Then ask him to tell you as much as he can remember about the thing or picture.
48. Play the remember box game. Put several things in a box and show the open box to your child for a short time. Then put the cover back on the box and ask the child to \underline{remember} as many of the things as he can.
49. As your child gets better at the remember box game, you can add more and more things to the box.
50. Good listening and hearing also take practice. Ask your child about things he has heard.
51. If your child listens to a story, ask him questions about the __________.

52. Your child must learn to remember what he has heard and tell about it in the right order. You can help your child by having him tell a story he has heard, making certain every part of the story is in the right __________.

53. There is another way to help your child remember what he has heard in the right order. Cut the pictures out of an inexpensive book and paste them on cardboard. Then after the child has heard the story, ask him to put the pictures in the __________ order.
54. Listening games can help make your child a better listener.

55. Play the "Clap Game." You clap a beat, and then your child must clap the same beat.
56. Sound games are a fun way to help your child use his ears well. You make a sound — like ringing a bell — and your child must tell what made the ______. He does not look when you make the ______. 
57. Children also like to make sounds. Play "Sound Like," a game in which you tell your child to make different kinds of ________. Tell him to sound like a cow; sound like a lion; sound like a train; sound like a doorbell; sound like a school-bell; sound like a fire engine, etc.
58. Following directions is an important part of listening. Give your child some simple directions and help him learn to follow these ________ in the right order.

59. When your child begins learning to read, it will be important for him to recognize rhyming words. If you teach your child simple nursery rhymes, songs, and poems, you can help him to recognize ________ing words.

60. The television, phonograph, or radio also help the child to hear and ________ well.
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<table>
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<tr>
<td>61.</td>
<td>Listening carefully and politely while others are speaking is another important skill your child must learn.</td>
</tr>
<tr>
<td>62.</td>
<td>Even when your child is very young, talk to him often. In the beginning the child will not know what you are saying, but children learn to speak by listening to others speak.</td>
</tr>
</tbody>
</table>
63. Children like to eat. Help your child use and understand his sense of taste by giving him many different kinds of foods to taste.
64. You can ask _______ like:
   Is it sweet?
   Is it sour?
   Is it bitter?
   Does it taste like chocolate?
65. Play taste games. Do not let your child see what food he is tasting. Then, he must guess what _______ it was.
66. Your child must learn to use his sense of touch. Help him to learn the difference between hard and soft, smooth and rough, and hot and _______.

cold
67. Make a mystery box. Cut a small, circular hole in the side of a shoe box. Then put something into the shoe box and put a rubber band around the box. Your child must put his hand into the box and guess what is in the box.
68. Giving your child small pieces of different kinds of materials helps your child learn to use his sense of ________.

touch
TAKE A BREAK. Go play with your children, talk to a friend, get a cup of coffee, or do anything you’d like to do. When you feel like finding out more about how you can help your child learn before school starts, COME BACK.
69. All people have a need to express themselves, or "get it off their chests." Adults, as well as children, have this need.

<table>
<thead>
<tr>
<th>69.</th>
<th>All people have a need to express themselves, or &quot;get it off their chests.&quot; Adults, as well as children, have this need.</th>
<th>need</th>
</tr>
</thead>
</table>

70. Adults express themselves in many ways. Singing, dancing, painting, writing, acting, and talking are all ways adults express themselves.

<table>
<thead>
<tr>
<th>70.</th>
<th>Adults express themselves in many ways. Singing, dancing, painting, writing, acting, and talking are all ways adults express themselves.</th>
<th>express</th>
</tr>
</thead>
</table>

71. Young children have trouble expressing themselves in writing and talking. They have not yet learned to use writing and talking well in expressing themselves.

<table>
<thead>
<tr>
<th>71.</th>
<th>Young children have trouble expressing themselves in writing and talking. They have not yet learned to use writing and talking well in expressing themselves.</th>
<th>writing, talking</th>
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<tr>
<td><strong>72.</strong> Because young children have this need to express themselves, we must give them many opportunities to express themselves besides writing and ______.</td>
<td>talking</td>
<td></td>
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<tr>
<td><strong>73.</strong> One way children express themselves is through play. The child uses his imagination when he is ______.</td>
<td>playing</td>
<td></td>
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<tr>
<td><strong>74.</strong> The child &quot;makes-believe.&quot; He might pretend to be anything or anyone when he ______. ______.</td>
<td>makes-believe</td>
<td></td>
</tr>
<tr>
<td><strong>75.</strong> Parents should give children many chances to play make-believe. They should also give the child many chances to sing and dance. Singing and dancing are ways in which the child ______. ______. himself.</td>
<td>expresses</td>
<td></td>
</tr>
</tbody>
</table>
76. Besides playing, singing, and dancing, children can also express themselves in artwork. Parents should:
(check one of the following)

_____ Let children draw, paint, and play with clay.

_____ Not let children draw, paint, and play with clay.

You should have checked:

Let children draw, paint, and play with clay.
77. Name four ways children express themselves:

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<td>4.</td>
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</table>

You could have listed any of the following:

1. Writing
2. Talking
3. Singing
4. Dancing
5. Playing
6. Drawing
7. Painting
8. Playing with clay
78. Most children scribble between the ages of two and four. Sometimes children scribble until they are as old as six. You should not try to stop the young child from scribbling.

79. Many children will tell stories about their scribble-pictures. You should encourage your child to tell about his scribble-pictures.
Very often, young children leave off parts of their artwork. They may forget the nose on a face, or the windows in a house, or any part of their picture. Parents should not correct this artwork. The child should be free to create. In young children's art, there is no right and wrong.
81. Your child must understand that you are interested in HIS artwork. Sometimes the child will ask a parent to draw or make something for him because he doesn’t know how. The child might ask the _______ to draw a horse for him.

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<th>parent</th>
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<td>81.</td>
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<td><strong>Your child must</strong></td>
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<td><strong>understand</strong></td>
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<td><strong>that you are</strong></td>
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<td><strong>interested</strong></td>
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<td><strong>in HIS</strong></td>
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<td><strong>artwork.</strong></td>
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<td><strong>Sometimes</strong></td>
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<td><strong>the child</strong></td>
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<td><strong>will ask a</strong></td>
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<td><strong>parent</strong></td>
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<td><strong>to draw</strong></td>
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<td><strong>or make</strong></td>
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<td><strong>something</strong></td>
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<td><strong>him because</strong></td>
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<td><strong>he doesn’t</strong></td>
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<td><strong>know how.</strong></td>
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<td><strong>The child</strong></td>
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<td><strong>might ask the</strong></td>
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<td><strong>to draw</strong></td>
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<tr>
<td><strong>a horse</strong></td>
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<td><strong>for</strong></td>
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<tr>
<td><strong>him.</strong></td>
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82. The parent should tell the child that if he draws the horse for the child, it will be his horse and not the child's horse. You want the child to draw _______ horse.

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<th>his</th>
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<tr>
<td>82.</td>
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<td><strong>The parent</strong></td>
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<td><strong>should</strong></td>
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<td><strong>tell the</strong></td>
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<td><strong>child that</strong></td>
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<td><strong>if he</strong></td>
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<td><strong>draws the</strong></td>
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<td><strong>horse for</strong></td>
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<td><strong>the child, it</strong></td>
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<td><strong>will be</strong></td>
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<td><strong>his horse and</strong></td>
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<td><strong>not the</strong></td>
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<td><strong>child's horse.</strong></td>
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<td><strong>You want the</strong></td>
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<td><strong>child to draw</strong></td>
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<td><strong>________</strong></td>
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<tr>
<td><strong>horse.</strong></td>
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</table>

83. Next, the parent should ask the child questions about horses which will help him to draw one. (How many legs does a horse have? Where is the tail?) The parent should praise the child’s d________ ing—no matter how it looks.

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<th>drawing</th>
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<td>83.</td>
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<td><strong>Next, the</strong></td>
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<td><strong>parent should</strong></td>
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<td><strong>ask the</strong></td>
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<td><strong>child questions</strong></td>
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<td><strong>about horses</strong></td>
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<td><strong>which will</strong></td>
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<td><strong>help him to</strong></td>
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<td><strong>draw one.</strong></td>
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<td><strong>(How many</strong></td>
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<td><strong>legs does a</strong></td>
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<td><strong>horse have?</strong></td>
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<td><strong>Where is the</strong></td>
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<td><strong>tail?) The</strong></td>
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<td><strong>parent should</strong></td>
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<td><strong>praise the</strong></td>
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<td><strong>how it looks.</strong></td>
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<td><strong>child questions</strong></td>
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<td><strong>help him to</strong></td>
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<td><strong>legs does a</strong></td>
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<tr>
<td>84. Your child should talk about things he does. Ask him to <strong>tell</strong> about things that happen to him.</td>
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<tr>
<td>85. When he tells about things that have happened, help him to tell things in the right order. He should tell the first part first and the last part <strong>last</strong>.</td>
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<tr>
<td>86. You can also show your child pictures and ask him to talk about these <strong>pictures</strong>.</td>
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</tbody>
</table>
87. Encourage your child to talk to you and to talk to others. He will learn the names of people, places, and things by listening and talking. He will learn many new words by __________ and __________.

88. Encourage your child to ask questions. Children learn much by asking questions. Always give your child an honest __________ to his questions.
89. Talking with your child about what is going on in the news, about a television program he has seen, about a picture, or about a place he has visited is:
(check one of the following)

_____ A good idea.
_____ A bad idea.

You should have checked:

A good idea
90. Your child should know the differences between right and left, in and out, over and under, and up and down.
91. A large box (the kind in which a television or refrigerator might be shipped) can be used. Give your child directions, such as, "get in the box," "stand to the right of the box," "hold your doll over the box," or "get under the ______."
92. Size words such as big and little or large and ______ can be learned by picking the biggest or smallest out of a group of things or pictures of things of different sizes.

<table>
<thead>
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<th>small</th>
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93. Asking your child to pick the biggest or smallest one out of a group helps him learn about big and little.

<table>
<thead>
<tr>
<th>little</th>
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</table>
94. You should also help your child learn about near and far, front and back, high and low, and on and **off**.

95. Talking to your child about these words is important. If you are going to the store, you might say things like: "We are going to a little store." "It is near." "I am getting in the car." "You sit on the seat." "I will turn on the car." "We are turning left." "The traffic light is red." "The trunk is in the **back** of the car."
96. Putting things into the right group, or class, is also important. If you showed your child a picture of a cow, a horse, a dog, and a lion, the child could tell you that all are pictures of animals. Animals is the class, or __________.

97. Show your child a group of pictures and ask him to tell you which one doesn’t belong. Ask him to tell you why it doesn’t ________, too.

98. Give your child things that can be sorted, or placed, into several different groups. Then ask him to sort them and tell you why he put them into different _________.

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<tr>
<td>96. Putting things into the right group, or class, is also important. If you showed your child a picture of a cow, a horse, a dog, and a lion, the child could tell you that all are pictures of animals. Animals is the class, or _______.</td>
<td>group</td>
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<tr>
<td>97. Show your child a group of pictures and ask him to tell you which one doesn’t belong. Ask him to tell you why it doesn’t ________, too.</td>
<td>belong</td>
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<tr>
<td>98. Give your child things that can be sorted, or placed, into several different groups. Then ask him to sort them and tell you why he put them into different _______.</td>
<td>groups</td>
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</tbody>
</table>
99. It is very important that your child learn to recognize things that are alike and things that are different. Show your child a group of things which all are alike, except for one. Ask the child to point out which one is different and tell you why it is different.

100. Show your child real things and ask him to tell you about likenesses and differences.
101. It is very important that you take your child places. The city, planetarium, aquarium, and circus are:

(check one of the following)

_____ Good places to take your child.
_____ Bad places to take your child.

You should have checked:

Good places to take your child
There are many zoos, museums, parks, movies, parades, and forest preserves that are good places to take your ________.
103. Right in your own neighborhood, you will find many places to visit. The library, fire-station, police-station, shopping center, and school are all places you can walk to and **visit**.

104. Many people work in your community. These people are called community helpers. Policemen, firemen, teachers, librarians, bus-drivers, doctors, and telephone operators are all **community helpers**.

105. Your child should get to know the community helpers. You can take your child to visit many community helpers. You can also tell him about the different jobs the **community helpers** do.
Most children do not get to know very many people before they start school. The people they do know usually live close to their own home. Yet, there are many different people in many different parts of the country and in many different parts of the world.
<table>
<thead>
<tr>
<th>107.</th>
<th>You can help your child learn about people all over the world in many ways. You can take trips with your child. You can show your child books, magazines, television programs, and movies about life in other parts of the world.</th>
</tr>
</thead>
<tbody>
<tr>
<td>108.</td>
<td>Help your child to understand that people are alike in many ways and different in many ways. Help him to respect and love all people.</td>
</tr>
</tbody>
</table>
You can help your child understand what reading is. People read many things. They read pictures, maps, numbers, words, and even other people. Words are not the only things we read.

<table>
<thead>
<tr>
<th>109. You can help your child understand what reading is. People read many things. They read pictures, maps, numbers, words, and even other people. Words are not the only things we read.</th>
<th>110. Reading is getting meaning from something. If we look at the picture above, we get meaning from it. We are reading the picture.</th>
</tr>
</thead>
<tbody>
<tr>
<td>109.</td>
<td>110.</td>
</tr>
<tr>
<td>People read many things. They read pictures, maps, numbers, words, and even other people. Words are not the only things we read.</td>
<td>Reading is getting meaning from something. If we look at the picture above, we get meaning from it. We are reading the picture.</td>
</tr>
</tbody>
</table>
111. Children must understand that all people have ideas and thoughts. We can tell others about our ideas and thoughts in many ways. We can draw a picture. When others look at the picture, they will know something about our ideas and _________.

<table>
<thead>
<tr>
<th>thoughts</th>
</tr>
</thead>
</table>

112. We can also tell others about our ideas and thoughts by speaking. When we say the word “dog,” we use the word as a symbol for the ________, or thought of a dog.

<table>
<thead>
<tr>
<th>idea</th>
</tr>
</thead>
</table>

113. The word “bird” is a _______ for the idea of a bird.

<table>
<thead>
<tr>
<th>symbol</th>
</tr>
</thead>
</table>
114. We can also tell others about our thoughts and ideas by writing them down. We use letters as symbols for the sounds in the words. When others ______ what we have written, they get meaning.

115. Name three ways we can tell others about our thoughts and ideas. (You may look back.)

1. __________________________
2. __________________________
3. __________________________

__________

You should have written something about:
1. Drawing a picture.
2. Speaking.
3. Writing.
116. Your child should first learn to read pictures. Show him a colorful, interesting picture and let him tell you all about it. He will be ___________ the picture.

117. You should also write your child’s name often. Write it on his artwork, on his books, or on his toys. Tell him that the letters spell a word that means him. DO NOT make your child learn to write his name. You only want him to understand that we use words as ________ for thoughts, ideas, people, things, places, etc.
118. Read to your child as often as you can. He will notice that there is meaning in the words and pictures in the ________.

119. Be sure there are many books, and magazines in your home. Let your child look at the b________ and m ____________ often.

120. It is important that you teach your child how to take care of books. Do not let your child tear or write in the _________.

| 118. Read to your child as often as you can. He will notice that there is meaning in the words and pictures in the _________. | book |
| 119. Be sure there are many books, and magazines in your home. Let your child look at the b________ and m ____________ often. | books, magazines |
| 120. It is important that you teach your child how to take care of books. Do not let your child tear or write in the _________. | books |
121. Show your child the front and back of the book. Help him to learn to turn the pages in the book the right way. Let him see that you look from the top of the page to the bottom of the ______.
122. Help your child understand what a number really is.

A number is a name, just as Tom is a _______.

<table>
<thead>
<tr>
<th>122.</th>
<th>Help your child understand what a number really is.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A number is a name, just as Tom is a _______.</td>
</tr>
<tr>
<td></td>
<td>name</td>
</tr>
</tbody>
</table>

123. Just as Tom is the name of a boy, four is the _______ of the amount.

<table>
<thead>
<tr>
<th>123.</th>
<th>Just as Tom is the name of a boy, four is the _______ of the amount.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Just as Tom is the name of a boy, four is the _______ of the amount.</td>
</tr>
<tr>
<td></td>
<td>name</td>
</tr>
</tbody>
</table>
124. The name (number) that stands for the amount below is ________.

<table>
<thead>
<tr>
<th></th>
<th>three</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
125. You can show your child that a number is a name for an amount by having your child count real things, not just saying the names of numbers when he is counting.

126. You can also show your child pictures for each number:

127. Songs and rhymes, like "Three Little Indians," or "One, Two, Buckle My Shoe," help your child learn about numbers.
TAKE A BREAK. Go play with your children, talk to a friend, get a cup of coffee, or do anything you’d like to do. When you feel like finding out more about how you can help your child learn before school starts.

COME BACK.
| 128. | You can teach your child his name, address, and telephone number by playing games. A toy telephone is a good way to teach your child his telephone number. |
| 129. | Playing mailman and giving your child old mail can teach your child his address. |
130. Teach your child about basic shapes before school starts. There are many shapes all around. If your television screen happens to be square, tell your child about it. Tell him that the doorknob is a [circle]. Point out other shapes.

131. Let your child look all around and find as many [shapes] as he can. Talk to him about color, too. Tell him the color of things that are all around him.
132. You can teach your child about science everyday. Talking to your child about why it rains, what makes day and night, and how plants grow teaches about science.

133. You can even do simple science experiments. Show your child what happens to water when you put it into the freezer or when you heat it. This experiment helps teach your child some simple science.
134. Let your child see how tall he grows. Put a piece of tape measure on the wall and mark his height on the tape every few weeks.

135. Weigh your child often. Do not teach him to read the scale, but tell him how much he weighs.

136. If you show your child what happens to a plant if it is kept in the dark, or mark his height on a tape, you are doing a simple science experiment.
137. You should have a thermometer in your house. Let your child look at the thermometer when you read it. Tell your child the temperature. You should not teach your child how to read the thermometer, but he will learn something about temperature and something about what the [ ] is used for.

138. You can help your child learn about clocks and calendars by having clocks and calendars in the house and by talking about [ ] and [ ] everyday.
139. If you let your child mark off each day on the calendar, you will help him learn about the calendar.

140. Telling your child that his birthday is one week from today, on May 29th, and showing him where today is and where his birthday is helps your child learn about the calendar.

141. Telling your child that his favorite television program comes on at 7:00 p.m. or that his sister will be home in an hour are good ways to teach your child about time.
142. Children like to help. They learn by helping. You can let your child help you with many small jobs. Drying the dishes, dusting, and setting the table are all ways that you can let your child help.

143. Your child can learn much if you let him help you cook. He will learn about foods, about measurement, and about heat and cold. Your child will enjoy helping you cook.

144. Many times your child will save things that you might think are junk. Your child does not think that these things are junk. They are very important and valuable to your child. You should: (Check one of the following.)

<table>
<thead>
<tr>
<th>Throw these things away so his room is neat.</th>
<th>You should have checked:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Let him save these things.</td>
<td>Let him save these things.</td>
</tr>
</tbody>
</table>
145. Holidays are very special days for children. Tell your child why we celebrate the different _________.

holidays

146. Let your child help get ready for holidays. Making decorations, helping you cook, trimming the Christmas tree, or helping carve a pumpkin are all ways that your child can ________ get ready for holidays.

help
147. Before your child starts school, he should know what to expect in _________.

148. You should tell your child that there will be other children in school. You should also tell your child about the things he will do in _________.

149. Give your child things to do in which he must think for himself and work quietly. Thinking and working quietly are things he will have to do in _________.

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>147.</td>
<td>Before your child starts school, he should know what to expect in _________.</td>
</tr>
<tr>
<td>148.</td>
<td>You should tell your child that there will be other children in school. You should also tell your child about the things he will do in _________.</td>
</tr>
<tr>
<td>149.</td>
<td>Give your child things to do in which he must think for himself and work quietly. Thinking and working quietly are things he will have to do in _________.</td>
</tr>
</tbody>
</table>
150. Give your child some responsibilities, or things he is expected to do. Asking a child to mail a letter or telling a child he must see that his toys are picked up are all responsibilities.
151. Children like to take care of themselves. Help your child learn to take _______ of his own body.  

<p>| | | | | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>151.</td>
<td>Children like to take care of themselves. Help your child learn to take _______ of his own body.</td>
<td>care</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

152. Teach your child the right way to take a bath and the right way to brush his _______.  

<p>| | | | | |</p>
<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>152.</td>
<td>Teach your child the right way to take a bath and the right way to brush his _______.</td>
<td>teeth</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

153. Ask your child to show you where the different parts of his body are. Asking him to point to his mouth or his knee helps him to learn his body p _______.  

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>153.</td>
<td>Ask your child to show you where the different parts of his body are. Asking him to point to his mouth or his knee helps him to learn his body p _______.</td>
<td>parts</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
154. You can also help your child learn how to dress and undress himself by giving him a chance to do these things for himself. If you never let your child try to dress and undress himself, he will never learn.

<table>
<thead>
<tr>
<th>155. You can show your child how to tie his ______.</th>
<th>learn</th>
</tr>
</thead>
<tbody>
<tr>
<td>________</td>
<td>shoes</td>
</tr>
</tbody>
</table>
156. Children love pets. Give your child a chance to learn about and care for a _______.

pet
157. If you have room, your child can learn much by caring for a g __________. He can plant, water, and weed it.
158. Your child should make some choices or decisions for himself. Which of the following is the best way to let a child make decisions: (Check one of the following.)

- Tell the child he is wearing his blue shirt today.
- Ask the child if he would rather wear his blue shirt or his red shirt.

You should have checked:
- Ask the child if he would rather wear his blue shirt or his red shirt.

159. Many times it is a good idea to give a child a small amount of money. The child decides what he will do with the ________ himself.

money

160. You can teach your child about saving if you give him a small bank. Let your child put coins in his ________.

bank
161. All children must learn to live and work in a world with other people. To learn to get along in a world with others, children must have many chances to work and play with other children.

<table>
<thead>
<tr>
<th>162. Playing with other children is an important part of growing up. Your child can learn to cooperate, share, and listen politely by ______ing with other children.</th>
</tr>
</thead>
<tbody>
<tr>
<td>playing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>163. It is important that your child know right from wrong. Telling your child “NO, do not do that,” or “STOP, that is wrong,” does not make you a mean parent. You must tell your child what things are ________ and what things are _________.</th>
</tr>
</thead>
<tbody>
<tr>
<td>right</td>
</tr>
</tbody>
</table>
164. Children need good food and lots of rest to grow up healthy and well. Be sure your child eats enough of all the right _______ and gets enough _______ at night.

<table>
<thead>
<tr>
<th></th>
<th>food</th>
<th>sleep</th>
</tr>
</thead>
<tbody>
<tr>
<td>164</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

165. Be sure your child is healthy. If he is always sick, he will not feel like playing and learning. Every child gets sick now and then, but something is wrong if your child is always _______.

<table>
<thead>
<tr>
<th></th>
<th>sick</th>
</tr>
</thead>
<tbody>
<tr>
<td>165</td>
<td></td>
</tr>
</tbody>
</table>

Page 103
166. Baby teeth are very important! Take your child to the dentist to be sure his ______ are healthy.

167. Good eyes and good ears are needed for a child to learn all he can. Be sure your child’s eyes and ______ are checked often by a doctor.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>168. You know that you love your child, and you must make sure that your child knows that you <strong>love</strong> him, too.</td>
<td></td>
</tr>
<tr>
<td>169. If your child knows that you love him, he will feel safe. He will be happy and comfortable in all his living and learning. Give your child the security of your <strong>love</strong>.</td>
<td></td>
</tr>
</tbody>
</table>
**DISADVANTAGED MOTHERS' PRE-TEST**

**Mother's name**

**Home address**

**Number of children in:**

**Ages of children**

---

**APPENDIX B:**

**MEASURING INSTRUMENTS**

Please circle the highest grade the mother finished in school:

kg. 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th college

---

Read the sentences below. Circle "T" if you think the sentence is true. Circle "F" if you think the sentence is false.

- **T** The learning that takes place before a child starts school is very important for the learning that will take place in school.
- **T** If a child is to enjoy learning, it is important that the child feel success when he is learning.
- **T** Before children start school, they can learn some things about science right in the home.
- **T** There are six senses.
- **T** Parents should teach children to print their names before the children start to school.
- **T** Words stand for, or are symbols for, thoughts.
- **T** Reading and writing are the only two ways that people symbolize their thoughts.
- **T** It takes practice for a child to learn to understand his senses.
- **T** If a preschool child gets tired of doing an activity, and has not finished doing it, parents should make the child continue until he has finished.
- **T** A number is a name for an amount.
- **T** It is not good for a child to play "make-believe" in the years before he starts to school.
- **T** Children should learn to read pictures before they learn to read words.
- **T** If a preschool child has parents to talk to and to play with for most of the day, the child does not need to be around other children.
- **T** A child's "baby teeth" are important.
- **T** Parents should teach their preschool children to read the bathroom scale and find out how much they weigh.
- **T** Most children scribble between the ages of two and four. Sometimes children scribble until they are as old as six.
- **T** Parents should not let children save many things in the years before they start to school, because saving a lot of "stuff" does not teach them to be neat.
- **T** Children can learn about things that are alike and things that are different even before they start to school.
- **T** A preschool child is too young to follow directions.
- **T** The preschool child does not need toys.
Please place an "X" on the line next to the person you think is a child's most important teacher:

- first grade teacher
- kindergarten teacher
- parent
- high school teacher

Please list three community helpers that parents can teach their children about before the children start school:

1. 
2. 
3. 

Please list three ways that a child can express himself in the years before the child starts to school:

1. 
2. 
3. 

Please list three ways a parent can give a preschool child jobs or responsibilities:

1. 
2. 
3. 

Please list three ways a parent can help a preschool child learn to use and understand his sense of sight well:

1. 
2. 
3. 

Please list three places that your preschool child should visit before he starts to school:

1. 
2. 
3. 

Books and paper are only two of the many things that should be in the home during the years before the child starts to school. List as many other things as you can:
Mother's name ___________________________ Mother's Age ______
Home address ____________________________
Number of children in the family ____________________________
Ages of children _______ _______ _______ _______ _______ _______

Please circle the highest grade the mother finished in school:
kg. 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th college

Read the sentences below. Circle "T" if you think the sentence is true. Circle "F" if you think the sentence is false.
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T  F  Before children start school, they can learn some things about science right in the home.
T  F  There are six senses.
T  F  Parents should teach children to print their names before the children start to school.
T  F  Words stand for, or are symbols for, thoughts.
T  F  Reading and writing are the only two ways that people symbolize their thoughts.
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1. 
2. 
3. 

Please list three places that your preschool child should visit before he starts to school:

1. 
2. 
3. 

Books and paper are only two of the many things that should be in the home during the years before the child starts to school. List as many other things as you can:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
ADVANTAGED MOTHERS' TEST - Riis Park

Mother's name ___________________________ Mother's Age ________

Home address ____________________________

Number of children in the family ______________________________

Ages of children __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __

Please circle the highest grade the mother finished in school:

kg. 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th college

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T  F  Before children start school, they can learn some things about science right in the home.

T  F  There are six senses.

T  F  Parents should teach children to print their names before the children start to school.

T  F  Words stand for, or are symbols for, thoughts.

T  F  Reading and writing are the only two ways that people symbolize their thoughts.

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2. 
3. 

Please list three ways a parent can help a preschool child learn to use and understand his sense of sight well:

1. 
2. 
3. 

Please list three places that your preschool child should visit before he starts to school:

1. 
2. 
3. 

Books and paper are only two of the many things that should be in the home during the years before the child starts to school. List as many other things as you can:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
If a child is to get off to a good start when he begins going to school, there should be many things in the home for him to work with and play with during the preschool years.

This "kit" contains SAMPLES of SOME of the things that should be in the home of the preschool child. The things in the "Before School Kit" will not last for all the before school years. The parent will have to buy more things as they are needed. The "Before School Kit" does not contain a sample of everything that should be in the home during the preschool years. A list of the things found in the "Before School Kit" and a list of other important things not found in the "Before School Kit" follows:

<table>
<thead>
<tr>
<th>Things found in the &quot;kit&quot;</th>
<th>Important things not found in the &quot;kit&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>crayons</td>
<td>rattles</td>
</tr>
<tr>
<td>scissors</td>
<td>bathtub toys</td>
</tr>
<tr>
<td>paste</td>
<td>stuffed toys</td>
</tr>
<tr>
<td>construction paper</td>
<td>blocks</td>
</tr>
<tr>
<td>(assorted colors)</td>
<td>push-pull toys</td>
</tr>
<tr>
<td>manila drawing paper</td>
<td>dolls - dollhouse</td>
</tr>
<tr>
<td>finger-paint paper</td>
<td>toy stoves, refrigerators, etc.</td>
</tr>
<tr>
<td>lined paper</td>
<td>trucks and cars</td>
</tr>
<tr>
<td>book</td>
<td>musical toys</td>
</tr>
<tr>
<td>ruler</td>
<td>trains</td>
</tr>
<tr>
<td>pencil</td>
<td>wagon</td>
</tr>
<tr>
<td>puzzle</td>
<td>tricycle</td>
</tr>
<tr>
<td>clay</td>
<td>doll buggies</td>
</tr>
<tr>
<td>finger-paint</td>
<td>sand boxes, pails, shovels, etc.</td>
</tr>
</tbody>
</table>

APPENDIX C:

Kit Instructions

records

rocking horse

inflatable, or "blow-up" toys
APPENDIX D

Early Childhood Journals

**Child Development** - University of Chicago Press for the Society for Research in Child Development

**Childhood Education** - Association for Childhood Education International

**Children** - Superintendent of Documents, Children's Bureau

**Merrill-Palmer Quarterly** - Merrill-Palmer Institute

**Young Children** - National Association for the Education of Young Children
APPENDIX E

Organizations Publishing Early Childhood Pamphlets

Association for Childhood Education International

Bank Street College of Education

Children's Bureau of the Department of Health, Education, and Welfare

Child Study Association of America

Child Welfare League of America

National Association for the Education of Young Children

National Council of Jewish Women

National Education Association

Government Printing Office
APPROVAL SHEET

The dissertation submitted by Barbara Schaller Kuczen has been read and approved by members of the Department of Curriculum - School of Education.

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Aug. 20, 1971
Date

Signature of Adviser