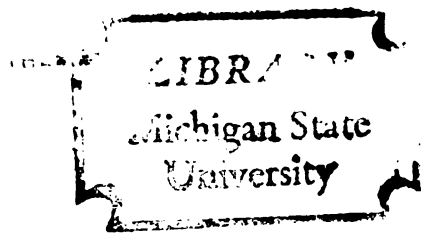


DEVELOPMENT, IMPLEMENTATION, AND EVALUATION
OF A "MOVING INTO DRAMA" KINDERGARTEN
PROGRAM TO DEVELOP BASIC LEARNING
SKILLS AND LANGUAGE

Thesis for the Degree of Ed. D.
MICHIGAN STATE UNIVERSITY
PATTY COON RICE
1971



This is to certify that the

thesis entitled

DEVELOPMENT, IMPLEMENTATION, AND EVALUATION
OF A "MOVING INTO DRAMA" KINDERGARTEN
PROGRAM TO DEVELOP BASIC LEARNING
SKILLS AND LANGUAGE

presented by

Patty Coon Rice

has been accepted towards fulfillment
of the requirements for

Ed.D. degree in Elementary
Education

A handwritten signature in cursive script, reading "Donald A. Nickerson".

Major professor

Date June 8, 1971

Aug 29 1973 *pd 549*

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9-72 *164*



DEVELOPMENT, THE
OF A
PROGRAM

- The purpose of this program is to develop and implement a series of activities designed to provide a comprehensive and integrated approach to the development of the child's physical, intellectual, and social skills. The program is designed to be a continuous and evolving process, with the following objectives:
1. To develop a series of activities designed to provide a comprehensive and integrated approach to the development of the child's physical, intellectual, and social skills.
 2. To implement the activities designed to provide a comprehensive and integrated approach to the development of the child's physical, intellectual, and social skills.
 3. To develop a series of activities designed to provide a comprehensive and integrated approach to the development of the child's physical, intellectual, and social skills.
 4. To implement the activities designed to provide a comprehensive and integrated approach to the development of the child's physical, intellectual, and social skills.

G-23113

The kindergarten program developed in this study provided for effective, social, and academic education in an environment carefully structured to provide opportunities for developing basic learning skills in the areas of motor development, visual and auditory perception, language development, and social interaction.

ABSTRACT

DEVELOPMENT, IMPLEMENTATION, AND EVALUATION
OF A "MOVING INTO DRAMA" KINDERGARTEN
PROGRAM TO DEVELOP BASIC LEARNING
SKILLS AND LANGUAGE

By
Patty Coon Rice

The purpose of this study was to provide a description of the development, implementation, and evaluation of a kindergarten program. The objectives of the study were:

1. To develop a kindergarten program based on the selected theories and research in child development. The growth of vocabulary, concepts and the basic 2. To implement the kindergarten program through an in-service education program.
 3. To provide simple diagnostic techniques that could be used effectively by classroom teachers to assess basic learning skills of children.
 4. To provide a standardized evaluation of the growth in basic learning skills and vocabulary concepts of the children participating in the kindergarten program.
- There will be no significant gain in the means of the pre- and post-test scores of children

The kindergarten program developed in this study provided for affective, social, and cognitive interaction in an environment carefully structured to provide opportunities for developing basic learning skills in the areas of motor development, visual and auditory skills, language development, and cognitive skills. Within this environment the child could select his own learning experiences. Emphasis was placed on the child's mastery of language throughout all activities. Opportunities for self expression also were provided through dramatic play and the "moving into drama" program. The "moving into drama" program progressed from perceptual motor activities presented in problem solving situations to expressive movement activities to creative dramatics and role playing.

In order to ascertain the effects of the kindergarten program on the growth of vocabulary concepts and the basic learning skills of the children during participation in the program, it was hypothesized that:

1. Individual children will exhibit no significant gain from pre- to post-tests in basic learning skills and vocabulary concepts as compared to the normative population. Growth made by individuals may not be evident by focusing en-

tirely upon statistical evaluations of the kindergarten whole group. Done by selecting two complete

2. There will be no significant gain in the means of the pre- and post-test scores of children

participating in the kindergarten program on the following:

- a. Metropolitan Readiness Test (MRT).
- b. Peabody Picture Vocabulary Test (PPVT).

3. There will be no significant difference between the means of the post-test scores on the Metropolitan Readiness Test of children participating in the kindergarten program and the normative population used for standardization of the Metropolitan Readiness Test.

4. There will be no significant difference between the means of the post-test scores on the Peabody Picture Vocabulary Test of children participating in the kindergarten program and the normative population used for standardization of the Peabody Picture Vocabulary Test.

5. There will be no significant differences between the mean raw scores made by two classrooms participating in the kindergarten program regardless of being taught by different teachers on the following:

- a. Metropolitan Readiness Test (MRT).
- b. Peabody Picture Vocabulary Test (PPVT).

Sampling of the children to participate in the kindergarten program was done by selecting two complete kindergarten classes, one morning ($n = 19$) and one afternoon

(n = 21), at the same school but taught by different teachers. The children were then placed in the classes on the basis of rating assigned from their performance on a diagnostic kindergarten test battery administered to all of the entering kindergarten children before school started. An attempt was made to have each of the two classes in the study have the same profile based on the ratings of the diagnostic test battery.

The findings of this study were as follows:

1. Individual children exhibited significant growth in basic skill areas that may have been submerged by focusing entirely upon statistical evaluations of the whole group.
2. Positive gains at the .05 level were made by children, participating in the kindergarten program during the time of the study, in basic learning skills as measured by the standardized readiness test. Furthermore, when comparing this gain to the norm it was beyond that which was expected and was significant at the .05 level.
3. Growth in basic learning skills was greatest in the areas of manipulation skills, visual skills, and auditory-language skills as measured by the subtests of the standardized readiness test.
4. Positive gains at the .05 level of significance were made, by the children participating in the

kindergarten program during the time of the study, in vocabulary concepts as measured by the picture vocabulary test. However, comparing this gain to the norm it was not significantly different from that which was expected.

6. No significant differences were found between the two classrooms participating in the kindergarten program in vocabulary concepts and basic learning skills even though they were taught by different teachers.

Conclusions and Recommendations

From the data, the following conclusions and implications are presented:

1. The kindergarten program developed in this study appears to be an effective means for providing for basic learning skills of individual children as well as the class as a whole.
2. In-service education appears to be an effective means of implementing a program and was effective in helping the teachers select appropriate methods and materials in planning for the individual needs of children.
3. The use of a diagnostic test battery to assess basic learning skills appears to be useful in

Patty Coon Rice

assisting the teacher in planning effectively
to meet the learning needs of individual
children.

DEVELOPMENT, IMPLEMENTATION, AND EVALUATION

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By

Patty Coon Rice

A THESIS

Submitted to
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It is also appropriate to
ment to the teachers, children, and
Director of Fitzgerald Public Schools
and the Macomb County

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I would like to express my appreciation to Delta Kappa Gamma for their assistance through the Carolyn Guss Scholarship which enabled me to study various early childhood programs throughout Europe. This knowledge provided a basis for the development of this study.

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CHAPTER I

INTRODUCTION TO THE STUDY

Introductory Statement

The current emphasis being placed on the development of new materials, methods, and curricula for early childhood education represents a growing interest in the field. The National Laboratory on Early Childhood Education was established on February 1, 1967. This was the first federally organized programmatic effort of research and development focused specifically on early childhood education. In 1968, the President of the United States publicly advocated earlier schooling for all.

This expanding interest in early childhood education stems from: (1) the need for new programs for culturally deprived children, (2) controversy concerning the optimal environment for the overall development of the child, and (3) controversial evidence from recent research pertaining to the processes of intellectual development in young children.

One of the most controversial issues prevalent among kindergarten teachers is whether or not the major function of early education is to facilitate the emotional

and social development of the child, with relatively little emphasis on cognitive development. This is evidenced by school programs that focus on socialization and an abundance of unsequenced play experiences. Barbara Biber feels that this is a misconception of a well rounded program for young children disseminated by journalists. However, there are kindergarten teachers who also may have misinterpreted child development curricula and feel that their responsibility is to "help the child adjust to the routine of the schools" with little concern for the continuing programs of the child leaving kindergarten. While defending the position of the "traditional" preschool education, Barbara Biber states, "It must be conceded that only in some pre-school situations was there as much invested in stimulating intellectual processes as in developing autonomous, expressive capacities and sustaining a climate of interpersonal equilibrium."¹ This approach fosters the belief that an early childhood program focusing on intellectual development may occur at the expense of the child's emotional and social development. However, Robinson refutes this belief by stating:

... it is difficult to see how pleasant experiences, stimulating within reasonable limits can be harmful either to mental health or to cognitive development.

¹Barbara Biber, "Challenges Ahead for Early Childhood Education," Young Children, XXIV, No. 4 (March, 1969), 204. (Hereinafter referred to as "Challenges Ahead.")

One need not deny that sound emotional development is important to contend that optimal intellectual growth is also important. The two are apparently intertwined, with development in the emotional sphere, in part a function of development in the intellectual realm, and vice versa.¹

Another controversial issue stems from the emphasis on planning the early childhood curriculum to meet the life interests of the child, opposed to the view that the kindergarten period is one of preparation or "readiness."

Hillerich's description of readiness includes two areas of living, " . . . The one area is time--time for growth and development; the second is experience or training."² The area of time for growth and development refers to such concepts as social or emotional maturity, mental age, and physical maturity. The area of experience or training would include activities from concrete experiences about which children verbalize to visual and auditory discrimination experiences. Related to this view is the assumption that the child is not "ready to think or deal with organized learning material until the primary grades."³ This view

¹H. B. Robinson and Nancy M. Robinson, "The Problem of Timing in Pre-school Education," in Early Education, Current Theory, Research and Action, ed. by R. D. Hess and R. M. Bear (Chicago: Aldine Publishing Co., 1968), pp. 44-45. (Hereinafter referred to as "Problem of Timing.")

²Robert L. Hillerich, "An Interpretation of Research in Reading Readiness," Elementary English, No. 40 (April, 1966), 359.

³Marquerita Rudolf and Dorothy H. Cohen, Kindergarten: A Year of Learning (New York: Appleton-Century-Croft, 1964), p. 380.

has been expressed by Rudolph and Cohen who state, " . . . children of kindergarten age are not quite ready for organized sequential, academic instructions in reading, writing, and arithmetic, largely as a matter of their overall development at age five . . . teachers of young children are morally bound to protect the rights of children of every generation to normal maturing."¹

In discussing the preschool child, Smart and Smart state:

Even today, many people still hold the view that the preschool years are a time when the child just plays, waiting to be old enough to start learning lessons which really count . . . Although nursery schools have been operating in the United States ever since 1921, the public has neither understood nor promoted their educational potential. Suddenly, however, new social trends drew attention to what could be accomplished during the preschool years. The problem of poverty and cultural deprivation has highlighted the growth possibilities which exist in all children during their first years of life. Tried and true methods of nursery school teaching are being learned by experimentation and implementation of results from new research. Efforts to help the deprived child are helping all children by revealing the nature of growth and learning during the preschool years.²

There is much recent evidence to support the concept that a child is never too young to be taught so long as he is taught in a way that respects his intelligence and fits his world. Recent research (Bruner, 1960, 1966;

¹Ibid.

²Mollie S. Smart and Russell C. Smart, Children, Development and Relationships (New York: Macmillan, 1969), p. 260. (Hereinafter referred to as Children.)

Caldwell, 1968; Hess and Bear, 1968; Ojemann, 1963; and Wann, 1962) indicates that the child's potential and desire to learn have been underestimated. Smart and Smart state:

The tremendous growth potential of young children demands a rich and varied environment in order to be realized. Supplements to the home, in the form of nursery school, kindergarten, church schools, and play groups provide places where children can reach out to interact with a nurturant world.¹

Thus, in view of the emphasis now being placed on early childhood education and the controversies among professionals in the area of early childhood education, Barbara Biber's admonition is well taken:

One of the basic challenges we face is that of coming to terms with the problem of goals for the educative process and for the school as an institution in the service of these goals. By coming to terms, I mean first recognizing that the school is a mighty force in influencing not only the excellence of intellect but in shaping the feelings, the attitudes, the values, the sense of self and the dreaming of what to be, the images of good and evil in the world about and the visions of what the life of man with man might be. By coming to terms, I also mean recognizing that there are choices to be made among quite contradictory points of view as to what constitutes optimal development and functioning for the individual and what changes in our society would be perceived as human progress in the larger sense.²

Rationale and Significance

Recent studies in early childhood education have made an analysis of child development and arrived at several

¹Smart and Smart, Children, p. 259.

²Biber, "Challenges Ahead," p. 197.

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basic theories. These theories relate to the growing body of knowledge regarding human intelligence: what processes are involved in intellectual functioning, how they develop, and how these are nurtured.

Piaget's theory of intellectual development indicates that although development is characterized by gradualness and continuity, there are tremendous qualitative changes in the way children think. These changes occur as the child develops more effective ways of representing information and acting upon that information from his environment. The development progresses in a sequence of related stages starting with the sensory motor period to the pre-logical concrete levels of thinking.¹

Current theory and research in neurophysiology as summarized by J. McV. Hunt² indicates that intelligence is not innate or fixed at birth--it emerges as the child interacts with his environment. The measurement of intelligence is in reality primarily the measurement of experience. Hunt also states that the young child has an "intrinsic motivation" to "act upon" his environment and continue to

¹Jean Piaget, The Origins of Intelligence in Children (New York: International University Press, 1952), pp. 354-389. Originally published in 1936. (Hereinafter referred to as Origins of Intelligence.)

²J. McV. Hunt, The Intelligence and Experience (New York: Ronald Press, 1961), p. 262. (Hereinafter referred to as Intelligence and Experience).

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learn. This theory stresses that:

the greater the complexity of the neurological structures in the associative areas of the brain, the higher is the intellectual capacity of the individual. The degree of their complexity is a function of the variety and appropriateness of stimuli present in the environment and available to the young, growing child.¹

Piaget's theory of intellectual development also supports the concept that a child's intellect emerges as the child interacts with his environment.

Bruner's theory on the development of thought and language places concept development as central to intellectual growth. His position is that the child makes his world meaningful by ordering and categorizing his experiences in his environment. The child does this by developing concepts and then symbols, beginning with pictorial or visual symbols progressing to verbal symbols, to represent those concepts. To simply add meaning to the complex world the child eventually develops a hierarchy of concepts ranging from concrete and highly specific concepts gradually progressing to abstract concepts.²

Montessori also believed that a child developed through sequential stages. Montessori added to this a technology which included organization of perceptual

¹ Ibid., p. 742.

² Jerome S. Bruner, J. Goodman, and G. Austin, A Study of Thinking (New York: John Wiley and Sons, 1956), p. 243. Information corresponding to that given in J. S. Bruner (1956, 1966).

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stimuli in the classroom so that singular properties could be observed without distraction from other elements. Use of her "didactic materials" provides a "prepared environment" which gives the child an opportunity to select materials consistent with his own developmental capabilities.¹

Olson's theory of child development points out that one can solve the problem of matching the child's stage of development with his environment by providing appropriate tasks. The environment should be prepared with materials and activities of varying degrees of difficulty. The child will then pick and select the appropriate materials.

How can the child and his environment be brought together at a level of difficulty which he can be successful? There are several helpful ideas. One is the principle of self-selection . . . There is a wisdom, of the body, of the mind, that leads children to seek appropriate experiences . . . The teacher's task is to provide that stimulating environment to "pace" the readiness of the child.²

The relationship between thought and language and the motor system has been expressed by Vygotsky and Luria.³

¹Maria Montessori, The Montessori Method (New York: Schocken, 1964), pp. 167-169. (Hereinafter referred to as Montessori Method.)

²Willard Olson, Child Development (2nd ed.; Boston: D. J. Heath and Co., 1959), p. 12.

³L. S. Vygotsky, Thought and Language (Cambridge: M. I. T. Press, 1962), p. 35. First published posthumously in Russia in 1934. A. R. Luria (1959) information corresponding to that given for Vygotsky.

Rose Bromwich summarizes this theoretical position by stating:

Language directs thought. Thought is internalized speech. When children fall behind in cognitive development, it is because the connection between the motor system and speech language system has failed to develop adequately.¹

Luria, in his book, does not state this connection between motor and speech as directly as this summary implies but, nevertheless, he stresses the importance of motor development and its relationship to the overall development of the child, specifically in the area of speech. In this respect Luria states:

The child's speech begins to participate by regulating motions and actions, then secures the transition to complex forms of meaningful play and ends by becoming the most important factor in the development of conscious behavior.²

This theory of the relationship between motor development and speech is further supported by the work of Kephart³ and others in research with the slow learner.

Cazden, based on the work of Bernstein, has identified two elements of language: (1) a restrictive code

¹Rose M. Bromwich, "Early Education--Current Concepts and Directions," Elementary English, XXXVI (October, 1969), 741-47.

²A. R. Luria and F. Yudovich, Speech and the Development of Mental Processes in the Child (London: Staples Press, 1959), p. 47.

³Newell Kephart, Slow Learner in the Classroom (Columbus, Ohio: Charles Merrill, 1960), p. 35. (Hereinafter referred to as Slow Learner.)

[illegible]

which is composed of simple sentences with condensed meanings and minimal vocabulary; as compared to (2) the elaborated code which is precise and highly rich in vocabulary with varied and complex sentence structure. Both Cazden and Bernstein feel that it is this elaborated code that deeply affects the development of higher cognitive processes. To develop this elaborated code many varied language experiences which allow ample opportunity for self-expression are helpful.¹ Similarly Bernstein states:

Language exists in relation to a desire to express and communicate; consequently, the mode of a language structure--the way in which words and sentences are related--induces a particular form of the structuring of feeling and so the very means of interaction and response to the environment.²

Cazden's theory states that along with self-expression an adult should engage in "verbal interaction with the child to train more complex sentences, expanding his sentences and adding explanations and interpretations."³

¹Courtney B. Cazden, "Subcultural Differences in Language," Merrill-Palmer Quarterly, XII (1966), 185-219. Basil Bernstein (1960, 1962, 1964) information corresponding to that given for Cazden (1966).

²Basil Bernstein, "Social Class and Linguistic Development: A Theory of Social Learning," in A. H. Halsey, Jean Floud and C. Arnold Anderson, eds., Education, Economy and Society (New York: The Free Press of Glencoe, 1964), p. 288.

³Courtney B. Cazden, "Some Implications of Research in Language Development for Preschool Education," in R. D. Hess and R. M. Bear, eds., Early Education, Current Theory, Research and Action (Chicago: Aldine Publishing, 1968), p. 131. (Hereinafter referred to as Language Development.)

In view of the current theories and research, the following assumptions provided a theoretical bases for the development of the kindergarten program in this study:

1. The expression of a child's intelligence is not fixed at birth but rather is essentially dependent on a set of developed skills,
2. children have an inherent motivation to explore and learn, however, manipulation of the environment can produce changes in this motivation to learn,
3. as the child matures his development results from his continuous interaction with his environment, particularly in his early years,
4. the child's intellect develops through a sequence of related changes that produce "qualitative" changes in his ability to function in his environment,
5. when the child is provided with an environment of rich and varied learning opportunities, he will select and develop his own learning pattern,
6. the child's mastery of language and concepts conveyed by language is especially vital to intellectual development.¹

¹ Martin Deutsch, Institute for Developmental Studies, A Program for Young Children (New York: New York

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Due to the current interest and awareness of recent research in the area of early childhood education an examination of the kindergarten programs in practice was appropriate. As a matter of convenience kindergarten practices of a geographically localized area were selected for study. Macomb County, Michigan, was selected as it represented a wide range of socio-economic levels. Macomb County is part of the tri-county Detroit metropolitan area. The extreme southern portion of the county is highly populated urban area, while the extreme northern portion of the county exemplifies typically rural communities.

This examination of the current kindergarten programs indicated that there was considerable variation among these programs and that educational goals were not clearly defined. Teachers and administrators expressed a need for a kindergarten program, based on the concepts of child growth and development, that would establish an environment which would provide for the individual learning needs of the children within their classrooms. The kindergarten goals needed to be broadened from the main concern with social adjustment to the school situation to providing for affective, social and cognitive interaction in a carefully planned environment that would be conducive to development

University (1968), p. 4. Similar information found in Piaget (1952); Hunt (1961); Lewin (1954); Hebb (1949); Montessori (1912, 1964); Sigel (1968); Olson (1959); Cazden (1968); Vygotsky (1934, 1962); and Luria (1969). (Hereinafter referred to as Program for Young Children.)

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- of the basic skills needed for learning as well as the social adjustment. Therefore, it would seem worthwhile to design a kindergarten program organized so that it:
1. provided an instructional program which accommodated the individual stages of development of the children,
 2. provided optimal opportunity for the child to skills, (3) interact to develop his abilities,
 3. used a planned sequence of activities based on a knowledge of the stages of developmental learning,
 4. utilized the intrinsic motivation to learn rather than extrinsic motivation,
 5. provided an environment which allowed for self-selection within a structured choice of learning experiences as well as child initiated experiences, and
 6. provided opportunity for self-knowledge and language development through self-expression and verbal interaction rather than rote-learning.

Statement of the Problem and

Objectives of the Study

The problem in this study was to develop, and to implement a kindergarten program based on the concepts of

child growth and development, that would establish an environment which would provide for the individual learning needs of the children. Included in this program were provisions for affective, social, and cognitive interaction in an environment conducive to learning. The kindergarten program developed provided learning activities in each of the developmental skill areas of: (1) general movement or gross motor skills, (2) manipulative skills or fine motor skills, (3) visual skills, (4) auditory skills, (5) speech and language, and (6) cognitive skills. A sequential program that provided for active interaction with the environment at the child's own level was developed and described. Evaluation of the growth of the children during the participation in the program was included.

The general objectives that formed the basis of this study were as follows:

1. To develop a kindergarten program based on the selected theories and research in child development.
2. To implement the kindergarten program through an in-service education program.
3. To provide simple diagnostic techniques that could be used effectively by classroom teachers to assess basic learning skills of kindergarten children.
4. To provide a standardized evaluation of the growth in basic learning skills and vocabulary

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concepts of the children participating in the kindergarten program.

Based on a thorough review of the literature and visitations to current Model Early Childhood Education Programs¹ in the United States and kindergartens in Europe,² the specific objectives for the kindergarten program were derived. The specific objectives that formed the basis for the early childhood education program developed in this study included the following:

1. To identify the basic learning skills and instructional needs of each individual child in the program.
2. To provide for the development of motor skills.
3. To develop visual and auditory perceptual skills.
4. To provide problem solving situations for the development of cognitive skills.
5. To provide situations for ample expression through movement, music, free dramatics, and creative dramatics.

¹Model Follow Through programs such as: Glen Nimnick, New Nursery School; David Wiekart, Cognitively Oriented Curriculum; Martin Deutsch, Institute for Developmental Studies; Carolyn Hughes, Portrait of a Preschool, etc.; are compensatory programs for disadvantaged children. The compensatory programs for disadvantaged children must be concerned with motivational and social aspects of development as well as intellectual growth as stated in "Motivational and Social Components in Compensatory Education Programs: Suggested Principles, Practices and Research Designs," by Urie Bronfenbrenner.

²For a list of the visitations made to gain information for developing the program in this study see Appendix C, p. 344.

[illegible]

6. To provide for growth in the child's language and vocabulary development through "moving into drama" activities.

7. To provide for the development of a positive self concept through the process of becoming competent in cognitive-perceptual-motor skills, problem solving, making choices in a self selective environment, and interactions as a self with the environment in dramatic play, expressive movement, creative drama, and role playing situations.

Even though basic learning skills were considered separately, the "developmental-dynamic concept of sequencing and interaction" was stressed throughout the program in this study. Breckenridge and Murphy stress the interrelationship of the processes of growth, maturation, and the influence of emotional tone. They portray a "developmental-dynamic concept which emphasizes sequence and interaction, or pattern of the individual over time, including variables within the individual and his external environment." Included in their "developmental-dynamic" concept is the concept of orderly trends or sequential patterns of development. They identify progressions in motor development, sensory development, language, thought, creativity, emotional development and social development. Yet their idea of a sequential order or pattern provides for a variation in pace and form

of growth and development from one person to another. Thus they recognize the uniqueness of each individual.¹

When developing the kindergarten program in this study, consideration was also given to the idea that there is a relationship between thought and language and the motor system, as was first expressed by Vygotsky.² This idea has gained support from research with the slow learner, mentally retarded, and perceptually handicapped done by Kephart.³ In the words of Montessori, "Methods which made growth possible to the mental personality of the idiot ought, therefore, to aid the development of young children and should be so adapted as to constitute a hygienic education of the entire personality of a normal human being."⁴

Statement of the Hypotheses

In order to ascertain the effects of the kindergarten program on the growth of vocabulary concepts and the basic learning skills of the children during participation in the program, it was hypothesized that:

¹Marian E. Breckenridge and Margaret N. Murphy, Growth and Development of the Young Child (Philadelphia: W. B. Saunders Company, 1963), pp. 20-21. (Hereinafter referred to as Growth and Development.)

²Vygotsky, Thought and Language, p. 22. Corresponding information in Luria (1959, 1961).

³Kephart, Slow Learner, p. 13. Corresponding information in Getman (1962) and Frostig (1964).

⁴Montessori, Montessori Method, p. 45.

1. Individual children will exhibit no significant gain from pre- to post-tests in basic learning skills and vocabulary concepts as compared to the normative population for the measuring instruments. Growth made by individuals may not be evident by focusing entirely upon statistical evaluations of the whole group.
2. There will be no significant gain in the means of the pre- and post-test scores of children participating in the kindergarten program on the following:
 - a. Metropolitan Readiness Test (MRT).
 - b. Peabody Picture Vocabulary Test (PPVT).
3. There will be no significant difference between the means of the post-test scores on the Metropolitan Readiness Test of children participating in the kindergarten program and the normative population used for standardization of the Metropolitan Readiness Test.
4. There will be no significant difference between the means of the post-test scores on the Peabody Picture Vocabulary Test of children participating in the kindergarten program and the normative population used for standardization of the Peabody Picture Vocabulary Test.
5. There will be no significant differences between the mean raw scores made by two classrooms

(continued)

participating in the kindergarten program regardless of being taught by different teachers on the following:

- a. Metropolitan Readiness Test (MRT).
- b. Peabody Picture Vocabulary Test (PPVT).

Definition of Terms

The terms used in describing this study are delimited by the following definitions:

1. Vocabulary concepts are defined for the purposes of this study as the verbal skill measured by the Peabody Picture Vocabulary Test. Vocabulary will be defined for purposes of this study as the ability to associate words with appropriate line drawing figures from the interpretation of the meaning of various words from the following categories: man-made objects, human actions (gerund), nature (i.e., plants, animals, flowers, birds), inanimate objects, adverbs, articles in a home, adjectives, musical instruments, occupations, scientific materials, parts of a house, and wearing apparel.¹

2. Basic learning skills in this study are defined as fundamental skills in the motor, perceptual, language, and cognitive areas which are interrelated. These skills

¹Lloyd M. Dunn, Peabody Picture Vocabulary Test (Manual) (Minneapolis: American Guidance Service, Inc., 1965), p. 26. Information corresponding in Hildreth, Metropolitan Reading Readiness Test, Word Meaning and Listening, 1965. (Hereinafter referred to as Peabody PVT.)

are of a hierarchial nature and are involved in developing reading readiness. Basic learning skills are the linguistic attainments, visual and auditory perception, and muscular coordination needed for beginning reading. More specifically for the purposes of this study these skills consist of the following six parts: copying, matching, recognizing the alphabet, word meaning, listening, and working with numbers.¹

3. Motor skills are defined as muscle techniques, primarily the function of the neuromuscular system, which control the movements of one's body.² These skills are used in maintaining posture and balance and body control. These skills are partially self-developing and partially self-learned. As a result they can be taught.

4. Perceptual skills are defined as the ability to interpret a sensation or sensory experience combined or integrated with previous experiences, which give added meaning to the experience.³

5. Perceptual-motor processes include input or sensory activities and output or muscular activities. A

¹Kephart, Slow Learner, p. 31.

²Leland Stott, Child Development: An Individual Longitudinal Approach (New York: Holt, Rinehart, Winston, Inc., 1967), p. 119. (Hereinafter referred to as Child Development.)

³Bryant Cratty, Developmental Sequences of Perceptual-Motor Tasks (Freeport, N.Y.: Educational Activities, Inc., 1967), p. 1.

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division of the two is impossible for anything that happens to one area automatically affects the other. Any total activity includes input, integration, output and feedback from the sensory (perceptual) and motor systems.¹ For purposes of this study perceptual-motor skills will be defined as those skills involved in copying and eye-hand coordination activities.

6. Cognitive skills are defined as "so-called higher level of function in relation to the environment in which the central nervous system presumably plays a more prominent role . . . Cognitive skills depend to a greater extent on the manipulation of ideational representations of objects and situations, rather than the objects and situations themselves."² For purposes of this study cognitive skills will be defined as those skills necessary for understanding numbers and number concepts.

7. Perceptual motor problem-solving for the purposes of this study is defined as the solving of problems in primarily the motoric modality. It involves gross motor and fine motor activities where children are actively participating in finding the solution to problems in areas of body image, spatial relations, and perceptual constancy.

¹Kephart, Slow Learner, p. 63.

²Stott, Child Development, pp. 156-57.

[illegible]

8. Expressive movement is defined as movement activities in which the children respond to music, stories, and ideas. In expressive movement every movement has a time element, takes place in space, and has a weight element which contributes to the development of body awareness. "Movement is a means of expression where the child's dawning perceptions of shape, pattern, and rhythm, and his love of imitation, fantasy, and imagery can be given full play."¹

9. Free dramatics in this study is defined as each child's original, imaginative, spontaneous interpretation of a character, object, or theme. This differs from creative dramatics in that children do not rehearse the dramatization. It is not a planned performance with costumes or props to be dramatized for an audience.

10. "Moving into drama" in this study is defined as a sequential program of activities beginning with: (1) basic perceptual motor activities leading to (2) perceptual motor problem-solving to (3) expressive movement and into (4) all forms of dramatic play, free dramatics, creative dramatics, and role-playing.

11. A self-selection environment is defined as a classroom organized to provide "each child maximum opportunity to plan, pursue, and evaluate his own learnings within broad curriculum guidelines established by the

¹Vera Gray and Rachel Percival, Music, Movement, and Mime (London: Oxford Press, 1962), p. 7.

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teacher." This environment recognizes that "no two children learn the same thing in the same way, at the same time; that each child has his own self-concept; his own learning style, goal, and purpose; his own level of social and intellectual maturity."¹

12. A diagnostic teacher is defined as a teacher who is competent in utilizing formal and informal assessment, available informational resources about each child, and observations of child behavior during the learning activity. The teacher is able to interpret this information to determine individual needs and to adapt the instructional procedures and goals to these evolving needs. She realizes that this is a continuous process in all learning activities.

Limitations of the Study

It was assumed that the effectiveness of a program could be evaluated by measuring its effect on the population for whom the program was designed. However, there is a general problem of reliability of assessment in any research dealing with young children. Accordingly there are many factors that limit the accurate evaluation of the program. Measures of intelligence as predictive devices are not highly reliable with a typical population of young

¹Zelpha Billings, "The Self-Selection Classroom," Elementary Education, AEKNE-NEA (Spring, 1970), 12.

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children. Therefore, the use of the standardized evaluation instruments employed in this study was limited to the interpretation of growth in vocabulary concepts and basic readiness skills. Pre- and post-tests, both of a diagnostic nature and standardized instruments, were administered to evaluate the growth of the children during the period of the study. However, due to the descriptive nature of the study no cause and effect statements are made.

Since the primary focus of this study was on the development of curriculum and procedures based on a review of relevant research and a study of other model programs in the area of early childhood education, this study is primarily descriptive. The basic approach was to begin with classroom activities that were theoretically substantiated and to modify the program as the teachers analyzed the implementation procedures in relation to the program objectives.

It was assumed that the in-service training procedures would reduce the variability between the teachers' effectiveness in implementing the program. However, it is recognized that influential differences due to previous experience, ages, personality, and competencies of the teachers may exist which were not under consideration in this study. The identification of teaching methodology other than the employment of the procedure outlined in the program treatment were not controlled or under consideration.

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This study is not concerned with measuring the effect of the approach on different socio-economic levels of the pupils. Although it is recognized that the sex, the physical development, and the personal experiences outside of the school may have an effect on the learning of the child, it would be beyond the scope of this study to control or consider the relationships of these aspects.

Summary

In this chapter the need, rationale, and significance of the kindergarten program has been reviewed. The problem and objectives of the study have been developed and hypotheses formulated. Terms pertinent to the study have been defined and the limitations of the study stated. The remaining chapters will provide a description of the following:

Chapter II will review the literature as a basis for the development of the kindergarten program.

Chapter III will describe the population, the development of the diagnostic test battery, the development of the instructional program, the training of the teachers for implementation of the program, and evaluation of the growth of the children during participation in the program.

Chapter IV will describe the results and analysis of the teachers' diagnostic procedures, the implementation procedures and the standardized instruments for evaluation

of growth in basic learning skills and vocabulary concepts.

Chapter V will present the summary and conclusions of the study.

REVIEW OF THE LITERATURE DEVELOPMENT OF THE CHILD

Introduction

Research in the past has been directed primarily and intensively on early childhood development. A number of theoretical approaches have been developed in the early years and have been applied to the study of development and behavior.

In October, 1953, there were 1,100,000 children aged five in the total population. In 1954, 1,150,000 per cent were enrolled in kindergarten, 1,100,000 in other grades, and 41.4 per cent were in the kindergarten. The Census Bureau has estimated that in 1960 there were 1,100,000 persons residing in the United States on November 1, 1960. Of these approximately 1,100,000 were children under the age of five years. The population for 1965 is an increase of 17 per cent over the 1960 figure.

¹U.S.A. Research Division, The Value of the Kindergarten, NSA (1964), p. 12.

CHAPTER II

REVIEW OF THE LITERATURE AS A BASIS FOR THE DEVELOPMENT OF THE KINDERGARTEN PROGRAM

Introductory Statement

Research in the past decade has focused extensively and intensively on early childhood because of the vast number of theoretical viewpoints concerning the experiences of the early years and their importance to later development and behavior.

In October, 1953, there were 3,251,000 children aged five in the total population. Of this number, 43.5 per cent were enrolled in kindergartens, 14.9 per cent in other grades, and 41.6 per cent were not in school.¹ The Census Bureau has estimated that there were about 196,580,000 persons residing in the United States as of November 1, 1966. Of these approximately twenty-one million were children under the age of five years. The prediction for 1985 is an increase of 17 per cent more children.

¹N.E.A. Research Division, The Value of the Kindergarten, NEA (1954), p. 12.

Nearly four million of the children under the age of six had working mothers.¹

With regard to the importance of the early years to later development, these figures indicate a need for the development of appropriate programs to provide for the education of these young children when they enter school. Programs are needed which attempt to integrate the various aspects of knowledge from research and child development to provide an effective learning environment in the kindergarten classroom.

The purpose of this review of the literature is to identify the historical development of various early childhood education approaches, to identify the philosophical and theoretical justification of current approaches to the problem of early childhood education, to identify various current "model" programs and to identify various methods of evaluation and implementation of these programs.

The Historical Development of Kindergartens for Early Childhood Education

The development of programs for the education of young children had its early beginnings in 1657 when Comenius, in The Great Didactic,² advocated the "Mother

¹U.S. Bureau of the Census, Population Estimates, Series P-25, No. 355 (Washington, D.C.: U.S. Government Printing Office, December, 1966).

²J. A. Comenius (Komensky), The Great Didactic (Amsterdam: de Geer Family, 1657).

School" in every home for every child for the first six years of life. The course of study advocated by Comenius in his School of Infancy contained "Simple lessons in objects, taught to know stones, plants and animals; the names and uses of the members of the body; to distinguish light and darkness and colors; the geography of the cradle, the room, the farm, the street, and the field; trained in moderation, purity and obedience, and taught to say the Lord's Prayer."¹

In the 18th century Rousseau gave new dignity and respect to childhood and to the understanding of the child. In 1762 Emile was published in which Rousseau stressed the need for allowing for natural development rather than preparation for life with education commencing at birth. His basic concept was that sense perception should be the only true foundation of human knowledge.²

The influence of Johann Heinrich Pestalozzi was particularly important during the 1800's. Pestalozzi viewed child growth and development as organismic rather than mechanistic. He disagreed with the mechanical reading exercises of his time and taught that the chief function of the teacher was to provide a good learning environment and

¹W. S. Monroe, ed., Comenius' School of Infancy (Boston: D. C. Heath, 1908), p. ix.

²J. J. Rousseau, Emile, trans. Barbara Foxley (London: J. M. Dent, 1911), p. 48.

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to lead the children into experiences. Foreshadowing modern developmental concepts, Pestalozzi wrote in 1808:

Instruction must be based on the learner's own observation, experience, intuition or perception.

What the learner experiences--observes--perceives must be connected with language.

Instruction must follow the path of development not the path of lecture-teaching learning . . .

This principle adapting instruction to mental development necessitated the subject matter being presented at the psychological moment in order, on the one hand, not to hold him back if ready, and on the other, not to load him and confuse him with anything for which he is not ready.¹

Influenced by the earlier work of Pestalozzi, Friedrich W. A. Froebel developed the idea of self-realization through social participation and the principle of learning by doing. Froebel became convinced that the early childhood years constituted the most needed area for educational reform. The development of the American kindergarten can be contributed to Froebel even though there has been a rejection of the "mystic symbolism" of Froebel's theories. Froebel's recognition of the educational value of play has been an important influence.²

The interest in early childhood education in the United States in the 1960's was stimulated by the problems created by cultural deprivation. The same cultural

¹J. H. Pestalozzi, How Gertrude Teaches Her Children (Syracuse, N.Y.: C. W. Bardeen, 1898), p. 26.

²F. W. A. Froebel, The Education of Man (New York: Appleton-Century-Crofts, 1903).

situation with underprivileged children in Rome in the early 1900's stimulated Maria Montessori to develop her "prepared environment" and "didactic materials" as an approach to early learning. Montessori recognized that the lack of experience in the early years in cognitive and sensory manipulations resulted later not only in incompetence but also in lack of self-esteem. The essence of the Montessori system is the idea of self-education. Montessori also stressed sense training. Her didactic materials included boxes of fabrics of different textures, sound boxes, buttoning frames, geometric insets, sandpaper letters, and color tablets, all designed to be self corrective and to learn by doing. Some criticism of Montessori has been that she tended to over-emphasize her didactic materials and minimized creative play, self expression, and imagination. Her main contributions lie in her emphasis on learning and the importance of the prepared environment to the learning process.¹

Montessori found a striking resemblance between the characteristics of the mentally deficient child and the characteristics of the normal child who has not fully completed his development. Thus, she considered that the methods which fostered mental growth for retarded children,

¹This is a summary of the methods of Maria Montessori as stated in Montessori, Montessori Method, pp. 150-167, passim.

who were without the inner force which causes self-direction, ought to aid the development of normal children who do possess this inner force.¹ Due to the rise of Freudian psychology which stressed innate ability, shortly after the American Montessori kindergartens began, they vanished. However, some of her ideas of sensory development were retained, with modifications, in many preschool programs. There has been a recent rediscovery and corresponding emphasis of the values in Montessori's ideas.

By 1945 thirty-two states had authorized state funds to support kindergartens. By 1959 all but eight states had public kindergartens connected to their school system. Nearly half of the 3.8 million five year olds in the United States were attending some kind of kindergarten.² The programs of these kindergartens varied from school to school, some expecting that the children would begin immediately the formal learnings of the elementary school, while others viewed the kindergarten year as a transition between the home and school with emphasis placed on readiness activities and social adjustment. The position of allowing for individual differences in rate of learning,

¹E. P. Culverwell, The Montessori Principles and Practices (London: G. Bell and Sons, Ltd., 1913), p. 19.

²Robert L. Ebel, ed., Encyclopedia of Educational Research (4th ed.; London: Macmillan Co., 1969), p. 323. (Hereinafter referred to as Educational Research.)

[illegible]

motivation, and for developing autonomy was advocated in some of the kindergartens in the United States. Witty and Kopel cautioned as early as 1935 that the kindergarten should never be conceived as a place where all children, or even most children, primarily receive preparation for reading per se. They emphasized rather, that kindergarten should be thought of as a situation in which children receive opportunities to learn basic attitudes and acquire new, varied, and vital experiences which would lead them to be exploratory, cooperative, relatively independent, and self-directive.¹

Today's kindergarten program tends to emphasize all aspects of child development.

Shaftel (1963), observing the revolutionary changes in the very nature of knowledge today, states that the kindergarten program also has to change. Kindergarten practices, she adds, which were really a great step forward for early childhood a few years ago, are now obsolete. She sees four major tasks for kindergarten teaching: helping the child develop feelings of competence and adequacy, fostering intellectual development (Wann and others, 1962), building feelings of mutual helpfulness and respect as functions of group living, and developing the skills for observation, communication, motor competency, and manipulation.²

¹Paul A. Witty and David Copel, "Preventing Reading Disability: The Reading Readiness Factor," Educational Administration and Supervision, XXII (September, 1936), 182.

²Ebel, ed., Encyclopedia of Educational Research, p. 325.

The Philosophical Background for Approaches
to the Problem of Early Childhood Education

Rate and Importance of Growth in Early Years

Research strongly supports the current emphasis being placed on the development of early childhood education programs. A number of researchers and commentators in the field claim that almost half of a human's intellectual growth occurs between birth and the age of six.¹ As early as 1930, Arnold Gesell recognized the importance of the early years. Gesell stated:

. . . The brain grows at a tremendous rate during the preschool age, reaching almost its mature bulk before the age of six . . . The mind develops with corresponding velocity. The infant learns to see, to hear, handle, walk, comprehend, and talk. He acquires an unaccountable number of habits fundamental to the complex art of living. Never again will his mind, his character, his spirit advance as rapidly as in this formative preschool period of growth. Never again will we have an equal chance to lay the foundations of mental health.²

Most early child development theorists concluded that learning during childhood tended to follow relatively predictable patterns, the rate of this development being

¹Benjamin Bloom, Stability and Change in Human Characteristics (New York: John Wiley and Sons, Inc., 1964). Similar information in Martin Deutsch (1965), and John Fischer (1965). (Hereinafter referred to as Human Characteristics.)

²Arnold Gesell, The Mental Growth of the Preschool Child (New York: The Macmillan Company, 1930), p. 11. (Hereinafter referred to as Mental Growth.)

determined by the more or less permanent intellectual level of the child.¹

However, recent child development specialists are paying increasing attention to the role of experience as an important factor in intellectual development. This has lead to the nationwide plea for kindergartens as a part of public school systems. Many child development specialists feel that the role of experience is extremely important in these early years and much of this critical period is beyond the reach of formal education. Hess and Kephart, describe critical periods early in the child's life and stress their influence on later development.²

Benjamin Bloom stresses the importance of the pre-school period and first few years of school on the development of learning patterns and the rate of growth during this period. In his analysis of data related to stability of achievement, he states that:

Since our estimates suggest that about 17% of the growth (in educational achievement) takes place between

¹W. Dennis, "The Effect of Restricted Practice upon the Reaching, Sitting, and Standing of Two Infants," J. Genet. Psychology, LXVII (1935), 17-32. Similar information in W. Dennis and Morsena G. Dennis (1940), and A. Gesell and Helen Thompson (1941).

²Hess and Kephart (1957) reported in Pauline Sears and Edith Dowley, "Research on Teaching in the Nursery School," Handbook of Research on Teaching, AERS (Chicago: Rand McNally, 1963), p. 814.

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ages 4 and 6, we could have far-reaching consequences on the child's general learning pattern.

The absolute scale of vocabulary development and the longitudinal studies of educational achievement indicate that approximately 50% of general achievement at grade 12 (age 18) has been reached by the end of grade 3 (age 9). This suggests the great importance of the first few years of school as well as the pre-school period in the development of learning patterns and general achievement. These are the years in which general learning patterns develop most rapidly, and failure to develop appropriate achievement and learning in these years is likely to lead to continued failure throughout the remainder of the individual's school career. The implications for more powerful and effective school environments in the primary school grades are obvious.¹

Even though some researchers have questioned the statement of Bloom's indicating the exact per cent of growth that takes place before the age of six, most agree with Gesell that the early years represent a tremendous period of growth and that it is the time to "lay the foundations of mental health."

In summarizing the effects of sensory motor stimulation on the rate of intellectual growth, Smart and Smart conclude:

The data assembled by a number of investigators have been summarized to show that rate of intellectual growth is influenced in infancy by the number of new objects and events experienced. The more varied the experience the more the child seeks new experiences.²

Awareness of this rapid rate of intellectual growth during the early years has stimulated development of many

¹Bloom, Human Characteristics, p. 110.

²Smart and Smart, Children, p. 125.

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programs in early childhood to foster intellectual development by preparing the learning environment to stress cognitive skills. In attempting to clarify the opposition of some early childhood educators to the current emphasis on cognitive development and its effect on personality,

Maccoby states:

There seems to be general agreement that efforts to teach intellectual content and skills to very young children are not likely to be injurious to their social-emotional development. No one has denied that motor mastery, emotional expressiveness and the acquisition of social skills through play are important, and no one has proposed omitting play periods from any preschool program. There has been the implication, however, that a shift from a fairly exclusive diet of free expressive play to programs with more formal teaching content will probably be beneficial.¹

Maccoby stresses, however, that "teaching is not meant to connote a formal classroom atmosphere," but "age-appropriate teaching," with structured verbal interactions between children and adults specifically designed to foster language development through the exposure to new materials and new experiences.²

The kindergarten program in this study was organized not only to provide for cognitive growth but also to provide opportunity for self-knowledge and language development

¹Eleanor E. Maccoby, "Early Learning and Personality: Summary and Commentary," in Robert D. Hess and Roberta Meyer Bear, Early Education: Current Theory, Research and Action (Chicago: Aldine Publishing Co., 1968), p. 191.

²Ibid.

through self-expression and verbal interaction. Much of the recent research in early childhood education implies the need for affective, social and cognitive interaction in an environment conducive to learning. The child's personality, developing as the child receives impressions from the world around him, includes those things he knows as well as his interpretations of himself and his surroundings.

In reviewing early learning and personality, Maccoby states that:

It is difficult to say just where "personality" leaves off and "cognition" begins. This has been evident especially when we referred to cognitive styles, such as the impulsivity-reflectivity dimensions and have noted their kinship with attributes (such as delay of gratification) which are traditionally thought of as being in the personality domain.¹

Breckenridge and Murphy point out that in attempting to know what the child is like one must become aware of details concerning his "physical growth, health, motor ability, language, concept formation, problem-solving abilities and thought, creativity, emotional and social behavior, concepts of self, of others, and of his world."² In addition they describe a uniqueness of interrelations of these attributes in each particular child's personality. Stress is placed on the triple relationship of biological,

¹Ibid.

²Breckendrige and Murphy, Growth and Development, p. 430.

psychological and exogenous systems which through sequence and interaction leads to a developmental-dynamic concept.¹

Due to this interrelatedness of systems, Combs and Snygg view "adequate self" development as a goal of education. They describe the adequate personality as being characterized by three factors: "(1) an essential positive view of self, (2) the capacity for acceptance of self and of others, and (3) the ability to identify broadly with his fellow man."² Since self-concept is a function of experience, Combs and Snygg advocate that what happens to students during the time spent in the educational system must be of vital importance in the development of the phenomenal self.³

Providing for the Development of Adequate Self-Image

Several studies reported in the Encyclopedia of Educational Research,⁴ 1960 edition, indicate that the concept of self is an important part of development. These

¹Ibid.

²Arthur W. Combs and Donald Snygg, Individual Behavior, A Perceptual Approach to Behavior (New York: Harper and Row, 1959), p. 378. (Hereinafter referred to as Individual Behavior.)

³Ibid.

⁴David H. Russell, "Concepts" in Cheslie W. Harris, ed., Encyclopedia of Educational Research (3rd ed.; New York: Macmillan Co., 1960), p. 327.

studies emphasize the importance of the child's view of himself to his actions and thought. The child's concept of who and what he is may color his thinking, his personality, and his social behavior. Several writers have traced the genetic development of the self-concept from sense of bodily identity in young children, to differentiation of self and others, through a period considerably influenced by language, to the emergence of the social self with awareness and possible conflicts regarding others.

To help the child become more aware of his own body in relation to others, some studies have attempted to provide for the development of the child's self-concept through role playing situations and dramatic play. The importance of the enacting of different roles with others in the developing self-concept of the child is stressed by Baller and Charles. They state that through the enacting of different roles the individual learns the responses that express the concept he has of himself. They have referred to these as the "different me's" consisting of:

1. The me that I see;
2. The me that others see;
3. The me that I think others see;
4. The me that I think others think I see;
5. The me that I'd like to be.¹

¹Warren Baller and Don C. Charles, The Psychology of Human Growth and Development (New York: Holt, Rinehart and Winston, Inc., 1961), p. 381.

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Breckenridge and Murphy indicate that situations which are related to the development of a healthy personality provide for the "child's use of large and small muscles, his sensory perceptions, language, cognition, and creativity, his motions, his awareness of himself, of people, and of the cosmos."¹ Motor activities are provided primarily for physical development but,

. . . also motor competency or lack of it affects the child's concept of self. For the child of early pre-school years, not being competent may make him hesitate to undertake an activity, but it is considered less likely to affect his self-esteem than in older children.²

Lawrence Frank also points out a relationship with motor competency, body image, and the development of a positive self-concept. Frank states:

Of major significance for the development of personality is the image of the body and the image of the self which begin to form in infancy and become the central core of the individual personality and of his private world and life space.³

A study by Wattenberg and Clifford suggests a relationship between self-concept and school achievement. The study included 128 kindergartens from two schools in Detroit. Follow-up tests were given two and one-half years

¹Breckenridge and Murphy, Growth and Development, p. 245.

²Ibid., p. 314.

³Lawrence Frank, The Importance of Infancy (New York: Random House, 1966), p. 148.

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later measuring intelligence, self-concept, ego strength, and reading ability. Data were gathered:

. . . to determine whether the association reported by other investigators linked low self concepts to reading difficulties or to unfortunate experiences in reading undermining self-concepts . . . Although statistical levels of confidence were at best marginal . . . in general, the measure of self concept and ratings of ego strength made at the beginning of kindergarten proved to be somewhat more predictive of reading achievement two and one-half years later than was the measure of mental ability . . . Moreover, it would appear that the self concept stands in a causal relationship to reading achievement . . .¹

Further research appears to indicate a relationship also among motivation, achievement, and self-concept. A study by Crandal has shown " . . . that achievement motivation and behavior are affected by experience during the period of development of the sense of initiative and even more in the years which follow."²

In summarizing the work of Hebb (1954), White (1964) and Erikson (1964) concerning motivation and learning, Celia Standler develops the thesis that the child's tendency to explore, investigate, manipulate, and in other

¹William W. Wattenberg and Clare Clifford, Relationship of the Self-Concept to Beginning Achievement in Reading, Cooperative Research Project No. 377 (Detroit, Mich.: Wayne State University, 1962), p. 2 [Mimeographed], in Evangeline Burgess, Values in Early Childhood Education (Washington, D.C.: National Education Association, 1965), p. 52. (Hereinafter referred to as Values.)

²V. J. Crandal, "Achievement Behavior in Young Children," Young Children, XX (1964), pp. 77-90.

ways to seek stimulation can be subsumed under the category of competence, and that the urge that makes for competence has motivating effects. Thus, through this motivation to explore, a strong and healthy self-concept is acquired as the child receives consistent recognition of accomplishment.¹

Promoting Motivation to Achieve
through Self-Selection

This motivation to explore is recognized by Piaget as he adeptly indicates an inter-relationship between affective and cognitive development through participating in the learning process within a "self-selection" environment.

In the foreword to Almy's book, Piaget states:

In the realm of education, this equilibration through self-regulation means that school children and students should be allowed a maximum of activity of their own, directed by means of materials which permit their activities to be cognitively useful. In the area of logico-mathematical structures, children have real understanding only of that which they invent themselves, and each time we try to teach them something too quickly we keep them from reinventing it themselves.²

In developing the concept of uniqueness of the individual Murphy and Murphy say that skilled guidance and understanding is required when considering which of the

¹Celia Burn Standler, Readings in Child Behavior and Development (New York: Harcourt, Brace and World, Inc., 1964), pp. 143-144.

²Jean Piaget, from his foreword to Millie Almy, Young Children's Thinking (New York: Teachers College Press, 1966).

child's potentials to accent at any given time. To foster the development of a positive self-concept and motivation, they suggest:

Let the child choose. Let us learn from his choices where his interests and talents lie in terms of what he is ready for, can use for growth at a given time, what his pace, potential depth, and range are. He may need support and help in sustaining an interest, in developing the techniques he needs in order to carry it through. But if it is his interest, goal, longing, there will be an optimal chance for fullest growth of his potential capacity . . . The amount of freedom a child can use depends in part on his ability to grasp and to organize situations for himself; the amount of structure or formal organization he needs depends in part on the level of complexity, confusion, or tension which would exist without adult directives and the child's capacity to handle the complexity of confusion constructively . . .¹

Many psychologists have expressed the concept that by nature man is impelled to seek new experiences. Smart and Smart describe behavior development as the "equilibration" that occurs as a person is demanded by his surroundings to solve problems and interact with new stimuli. They state that:

Much intellectual and perceptual activity is inexplicable in terms of survival, but seems to be done for its own sake. Such activities are called play, recreation, self-expression . . . Activity is intrinsic in living tissue. Brain cells are no exception. Even in sleep, brain waves continue to register in electroencephalograms. Studies (Hebb, 1955) on perceptual isolation in both humans and animals have shown that

¹G. Murphy and L. M. Murphy, "The Child as Potential," in E. Ginzberg, ed., The Nation's Children, Vol. II: Development and Education (New York: Columbia University Press, 1960), p. 24.

when stimulation is cut down below a certain level, subjects make great effort to get sensory variety.¹

By providing a variety of interesting and novel activities from which to select, the child is motivated to achieve and continues to build an adequate feeling of self. Smart and Smart report that:

When a person's schemas are adequate to deal with the situation in which he finds himself, he reacts automatically. When the schemas are not quite adequate to the situation, he uses what he has, changing them slightly into actions which do solve the problem . . . The change which takes place at the same time within the child is the development of a new behavior pattern or schema. A pleasant feeling of curiosity and satisfaction accompanies successful adjustments to demands for new behavior.²

Smart and Smart feel that if the situations encountered are somewhat similar to those in which the child has previously been successful, he will solve the problem and continue to explore. However:

A person feels uneasy when he encounters a situation in which his resources are very inadequate. In order to provoke uneasiness, the problem must be somewhat similar to those which a person can solve, but not similar enough for him to succeed with . . . If the situation is so far removed from a person's past experience that his schemas for dealing with it are extremely inadequate, then he will have no reaction to it . . . He will not select from the environment the stimuli which would pose the problem.³

¹Smart and Smart, Children, p. 11.

²Ibid., p. 12.

³Ibid.

Thus through a "self-selection" environment the child is motivated to continually interact and accommodate new behaviors. Smart and Smart continue:

. . . these minute changes in behavior as the individual becomes aware of incongruities between his schemas and his perception of his environment are the processes of learning . . . They occur as a result of interaction with the environment . . . Learning is defined as having occurred when there is a relatively permanent change in behavior as a result of practice.¹

Combs and Snygg stress the effects of the teacher's behavior and the educational system on the child's development of achievement motivation. They suggest some general techniques that would be used by schools to develop motivation and adequate self-concepts in the students.

1. Such schools should provide each pupil with every possible opportunity to think of himself as a responsible citizen and a contributing member of society . . . [This] implies an emphasis on cooperative activities which call for a wide variety of skills so that each student will have opportunities to gain a sense of self-enhancement and personal worth from his contribution to the group.
2. Such a school would provide its pupils with a wide variety of opportunities for success and appreciation through productive achievement.
3. It would provide its pupils with a maximum of challenge and a minimum of threat . . . It need not be feared that children, in a situation where they are able to move freely toward self-enhancement, will select activities which are "too easy" for them. Such activities do not lead to self-enhancement and are chosen only when the individual is under threat.²

¹Ibid., p. 13.

²Combs and Snygg, Individual Behavior, pp. 378-79.

Combs and Snygg state additional guidelines for making self-selection activities effective in providing for self-enhancement.

Other things being equal, more pupils will have opportunities for success and self-enhancement if:

1. The achievements are evaluated by standards appropriate to the age and experience of the pupil.
2. The activity is chosen and planned by the pupils themselves.
3. The contributions of different members of the same class are so different in type that no comparisons are possible.
4. The activity is appropriate to the abilities, maturation level, and goals of the students.¹

These works support the thesis of this study that affective, social, and cognitive interaction takes place in a self-selection environment. The environment, however, must be structured to provide opportunities for interaction and novelty to maintain the interest and curiosity which fosters the learning process.

New Concepts of Intelligence

As has been stated previously the kindergarten program in this study was developed on the basis of six theoretical assumptions:

1. The expression of a child's intelligence is not fixed at birth but rather is essentially dependent on a set of developed skills.
2. Children have inherent motivation to explore and learn, however, manipulation of the

¹Ibid., p. 379.

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environment can produce changes in this willingness and ability to learn.

3. The child's development results from his continuous interaction with his environment, particularly in his early years.
4. The child's intellect develops through a sequence of related changes that produce "qualitative" changes in his ability to function in his environment.
5. When the child is provided with an environment of rich and varied learning opportunities, he will select and develop his own learning pattern.
6. The child's mastery of language and concepts conveyed by language is especially vital to intellectual development.

These assumptions have been formulated from the work of psychologists, child developmentalists, and researchers in the area of early childhood education. The work of the following researchers contribute to the clarification and support of these assumptions.

New concepts of intelligence view IQ as not being fixed at birth, but expressed as the child interacts with his environment. Early concepts of intelligence, influenced by Freudian psychology, tended to stress genetic determination or innate ability fostering the growth in the

belief of fixed intelligence. However, in 1938, Skeels, Updegraff, Wellman, and Williams¹ demonstrated that the IQ of preschool aged orphaned children could be increased by providing them with a nursery school program. The early works of Piaget,² Skeels and Dye,³ Simpson,⁴ and Stoddard and Wellman,⁵ all reported an effect of environment and experience on the development of intelligence. Other psychologists and educators of that period such as McNemar⁶ and Goodenough⁷ criticized these works. They held fast to the fixed IQ concept.

¹H. M. Skeels, Ruth Updegraff, Beth Wellman, and H. M. Williams, "A Study of Environmental Stimulation," University of Iowa Studies, XV, No. 4 (1938), 141.

²Piaget, Origins of Intelligence, p. 358.

³H. M. Skeels and M. B. Dye, "A Study of the Effects of Differential Stimulation of Mentally Retarded Children," Proceedings of the American Association on Mental Deficiencies (1939), pp. 114-36.

⁴B. R. Simpson, "The Wandering IQ," Journal of Psychology, No. 7 (1939), 351-67.

⁵O. D. Stoddard and Beth Wellman, "Environment and the IQ," Yearbook, National Society of the Study of Education, Vol. I (1940), pp. 405-42.

⁶Q. McNemar, "Critical Examination of the University of Iowa Studies of Environmental Influence Upon the IQ," Psychology Bulletin, No. 37 (1940), 63-92.

⁷Florence Goodenough, "A Critique of Experiments on Raising the IQ," Educational Methods, No. 19 (1939), 73-79.

In the late 1950's and early 1960's interest in providing educationally enriched environments to increase the opportunities for intellectual development was re-kindled. Investigators such as Piaget,¹ Bloom,² Bruner,³ and Hunt⁴ illustrated that intellectual development was effected by the early experiences of the child. As a result experimental programs for early childhood education began to appear, programs such as David Weikart's Cognitively Oriented Preschool⁵ in Ypsilanti, Michigan; the Institute for Developmental Studies at New York Medical College, directed by Martin Deutsch,⁶ The Portrait of a Preschool at Tuscon, Arizona, directed by Marie Hughes;⁷ and the Early Childhood Curriculum--A Piaget Approach,

¹Piaget, Origins of Intelligence, p. 276.

²Bloom, Human Characteristics, p. 110.

³Jerome Bruner, On Knowing: Essays for the Left Hand (Cambridge, Mass.: Belknap Press, Harvard University, 1962), p. 82. (Hereinafter referred to as On Knowing.)

⁴Hunt, Intelligence and Experience, p. 363.

⁵David P. Weikart, Ypsilanti Preschool Curriculum Demonstration Project (Ypsilanti, Mich.: High-Scope Educational Research Foundation, 1968-1971), p. 2. (Hereinafter referred to as Preschool Demonstration Project.)

⁶Deutsch, Program for Young Children, p. 5.

⁷Marie Hughes, Portrait of a Preschool (Eric, EP 019 9999, 1966).

directed by Celia Lavatelli¹ were based on the concept that early experience did leave an effect on IQ.

Recent researchers such as Flavell,² Ojemann and Pritchett,³ and Deutsch,⁴ among others, have presented evidence to show that intellectual development can be accelerated or modified by manipulating the child's environment in specific ways. Robinson and Robinson summarized the role of experience as an important factor in intellectual development by stating:

. . . Neonates have been demonstrated to exhibit considerable learning potential (Lipsitt, 1963; Papousek, 1961; Wenger, 1943). Toddlers have been successfully taught to read (Fowler, 1962; Moore and Anderson, 1960). Despite the existence of some negative evidence, reviews of the effects of a variety of environmental conditions upon intellectual development (Fowler, 1962; Hunt, 1964; Skeels, 1940; Swift, 1964; Wellman, 1943) have tended to show that enrichment of the environment is propitious for intellectual growth. Investigators have found dramatic retardation in infants who have been institutionalized under impersonal and nonstimulating conditions (Dennis, 1960; Goldfarb, 1947; Skeels

¹Celia Stendler Lavatelli, Piaget's Theory Applied to an Early Childhood Curriculum (Boston: American Science and Engineering, Inc., 1970), p. 23. (Hereinafter referred to as Early Childhood Curriculum.)

²J. H. Flavell, Developmental Psychology of Jean Piaget (New York: Van Nostrand, 1964), p. 378. (Hereinafter referred to as Psychology of Piaget.)

³R. Ojemann and K. Pritchett, "Piaget and the Role of Guided Experience in Human Development," Perceptual and Motor Skills, XVII (1963), 939.

⁴Martin Deutsch, "Facilitating Development in the Pre-School Child: Social and Psychological Perspectives," Merrill-Palmer Quarterly, X, No. 3 (1964), pp. 249-263.

and Dye, 1939; Spitz, 1945, 1947), but measurable retardation has not been found in well-staffed institutions (Dennis, 1960; Rheingold, 1960, 1961). Though the essential elements producing retardation or acceleration of development have not been clearly identified (Casler, 1961; Yarrow, 1961), the conclusion is unmistakable: very small infants and young children are highly reactive to both enhancing and depriving conditions in their surroundings, as well as to highly specific teaching programs.¹

J. McV. Hunt has done extensive research on intellectual development stressing the importance of early stimulation. In reviewing the major contributions of Piagetian theory, computer simulation of problem solving and neurophysiological bases of intelligence, Hunt concludes with the following statements:

. . . In the light of these theoretical considerations and the evidence concerning the effects of early experience on adult problem solving in animals, it is no longer unreasonable to consider that it might be feasible to discover ways to govern the encounters that children have with their environment, especially during the early years of their development, to achieve a substantially faster rate of intellectual development and a substantially higher adult level of intellectual capacity. Moreover, inasmuch as the optimum rate of intellectual development would mean also self-directing interest and curiosity and genuine pleasure in intellectual activity, promoting intellectual development properly need imply nothing like the grim urgency which has been associated with "pushing" children.²

Hunt stresses the importance of early learning but at the same time cautions against too much pressure.

Recent research related to early childhood education and its effects with the culturally disadvantaged

¹Robinson and Robinson, "Problem of Timing," p. 38.

²Hunt, Intelligence and Experience, p. 363.

indicates significant differences in favor of the groups who had had the preschool experience. Deutsch reported higher scores on group intelligence tests among children who had attended preschool and kindergarten as compared to children who entered school in first grade. Among the measures used were the Stanford-Binet Intelligence Test, The Columbia Mental Maturity Scale, and the Peabody Picture Vocabulary Test.¹

Following only thirteen weeks of stimulating nursery school experience Strodbeck reported a gain of as much as 6.9 points in IQ scores for culturally deprived children and in verbal intelligence, 20 points or more.²

Klaus and Gray's Early Training Project is an intervention research study which uses specially planned techniques in an attempt to test the possibility of offsetting the progressive retardation in intellectual processes and personal adjustments by the culturally deprived child during two preschool years and during the first year

¹Martin Deutsch, "Nursery Education: The Influence of Social Programming on Early Development," Journal of Nursery Education, XVIII (April, 1963), p. 191. Similar results reported by George Brain, "Baltimore Early Admissions Project," Children (March-April, 1964) in Evangeline Burgess, Values in Early Childhood Education (Washington, D.C.: National Education Association, 1965), p. 60.

²Fred L. Strodbeck, The Reading Readiness Nursery: Short-Term Social Intervention Technique, Summary of Progress Report (Chicago: Social Psychology Laboratory, University of Chicago, 1963). (Mimeographed)

of school. Klaus and Gray reported to have found that at the end of the summer the preschool group had a mean gain of 14 IQ points of the Stanford-Binet as compared to a 2.3 gain for the controls. The experimental group made a gain of 6.6 months of mental age on the Peabody Picture Vocabulary Test as compared to 0.9 for the controls. Klaus and Gray suggest that these gains may partially be attributed to the children's increased ability to relate to adults and better orientation to carry out the task. This trend continued in further studies of their program.¹ These experimenters report:

. . . On tests of intelligence and language (the Binet, the WISC., the Peabody Picture Vocabulary Test, and the Illinois Test of Psycholinguistic Ability), until the point of school entrance our two experimental groups were clearly superior to the two control groups. Over this 27 month period, the first treatment group showed a gain of 9 IQ points on the Binet; the distal group lost 6 points, despite repeated testing. During the first year in public school, our three groups in the main city have moved closer together. Differences are still significant on the Binet and the WISC; they are no longer significant on the other two measures although the relative positions are the same.²

These studies indicate that intelligence is essentially dependent on a set of developed skills which results from continuous interaction with the environment particularly

¹Rupert A. Klaus and Susan W. Gray, "The Early Training Project: Murfreesboro, Tennessee Schools," Today's Educational Programs for Culturally Deprived Children. Proceedings of Section 11, the Seventh Annual Professional Institute of the Division of School Psychologists (St. Louis: American Psychological Association, August, 1962) [Mimeographed], in Burgess, Values, p. 63.

²Ibid.

in early years. Irving Sigel has pointed out that intelligence tests do not

. . . reflect a child's curiosity, his motivation to learn, nor his ability to gain insight into various types of relationships. In other words, the question how children seek and use their new information does not receive adequate assessment.¹

Sigel continues:

Old and popular definitions of intelligence such as the capacity to profit from experience, or even, 'that which the intelligence test tests' imply something more global and more fixed than does the presently emerging view that intelligence is the variety of ways an individual has available for processing or organizing information. Such a view allows for a more adequate analysis of the varieties of thinking that underlie intelligent behavior, and of the role that experience plays in their development.²

The Work of Jerome Bruner

Bruner's work expands the newer concepts of intelligence as a set of developed skills which are interrelated and developed through continuous interaction with the environment. According to Bruner the first stage of readiness for learning ends at age six. Bruner feels that this stage corresponds roughly to the period from the first development of language to the point at which the child learns to

¹Irving Sigel, "Developmental Considerations of the Nursery School Experience," address at institute conducted by Child Development Center, New York, 1962, in Peter B. Neubauer, ed., Concepts of Development in Early Childhood Education (Springfield, Ill.: Charles C. Thomas, 1965), p. 94.

²Irving Sigel, "How Intelligence Tests Limit Understanding of Intelligence," Merrill-Palmer Quarterly, I (September, 1963), 39-56.

manipulate symbols. Throughout this stage the child's mental work consists primarily in establishing relationships between experience and action. It is here that Bruner feels that memory plays a critical role to enable the child to benefit from contact with recurrent regularities in the environment.¹

For the most important thing about memory is not storage of past experience, but rather the retrieval of what is relevant in some usable form. This depends upon how past experience is coded and processed so that it may indeed be relevant and usable in the present when needed. The end product of such a system of coding and processing is what we may speak of as a representation.²

Bruner argues that concepts are acquired through three stages using three different forms of representation. The first form he calls enactive representation, which is the sensory-motor stage where the learner builds the concept in his muscular system through enactment of overt behavior patterns. Next is iconic representation where he has a mental picture or sensory image of the concepts. Last is the symbolic representation. This is the stage where he can deal with the concepts in words.³

In the development of the set of skills which constitute intelligence Bruner places great value on learning

¹J. S. Bruner, "The Course of Cognitive Growth," American Psychologists, XIX (1964), 1-15. (Hereinafter referred to as "Cognitive Growth.")

²Ibid., p. 2.

³Ibid.

by discovery, as it enables the learner to go beyond the evidence to gain new insights. He outlines four important benefits from the experiences of learning by discovery. First it increases the intellectual skills by helping the child to learn to accumulate information and organize it effectively. "The persistence of the organized child stems from his knowledge of how to summarize things for himself."¹ The second refers to intrinsic motivation:

. . . to the degree that one is able to approach learning in a task of discovering something rather than "learning about it," to that degree there will be a tendency for the child to work with the autonomy of self-reward or more properly he will be rewarded by discovery itself.²

Thirdly, is learning how to discover " . . . Only through the exercise of problem solving and the effect of discovery . . . one learns the working heuristics of discovery. . . . "³ Fourthly, is memory:

The principle problem of human memory is not storage, but retrieval . . . The key to retrieval is organization or, in simpler terms, knowing where to find information that has been put into memory . . . In general, material that is organized in terms of a person's own interests and cognitive structures is material that has the best chance of being accessible in memory.⁴

¹Bruner, On Knowing, p. 86.

²Ibid., p. 88.

³Ibid., pp. 93-94.

⁴Ibid., pp. 94-96.

Just as Bruner has suggested a sequence of stages in modes of representation, so have other researchers recognized a sequence of related changes in various areas of development. More important is that most researchers see this sequence of changes as producing "qualitative" changes in the learner's ability to function in his environment. In Ausubel's discussion of the stages of intellectual development he stresses that in order for ideas to emerge, there must be adequate background of direct experiences "concrete-empirical in nature" thus supporting the theory of interaction as a basis for the sequence of related change. Thus, through these direct experiences qualitative change emerges which leads to symbolic manipulation. Ausubel supports the principle that a sound foundation for later development in symbolic manipulations is provided by a rich and varied environment during early years.¹

The Work of Jean Piaget

Piaget's work has had a great influence on the newer views of intellectual development. Piaget's theory is developmental in its approach to the intelligence of children. Piaget's stages of mental development constitute a fixed sequence of stages from birth to maturity. Each stage, being characterized by its particular "schemata" of

¹David Ausubel, "Stages of Intellectual Development and their Implications for Early Childhood Education," in Peter B. Neubauer, ed., Concepts of Development, p. 36.

patterns of action, is thus qualitatively different from the stage from which it emerges.¹

Both Piaget and Gesell² view mental development as qualitative change. However, these differences should be noted:

Gesell placed great emphasis upon the importance of the "mechanism of maturation" which brings about these qualitative changes through the natural unfoldment of predetermined development design. Piaget on the other hand, recognized the important role of the environment. Mental development for him, is not predetermined, is not solely a product of biological maturation, but is rather a result of continuous interaction (accommodation and assimilation) between the individual and his environment.³

Piaget conceives of intelligence as an adaptive process. Adaptation involves the establishment of an equilibrium between the organism and its environment. This process is accomplished through two invariant functional laws, "assimilation" and "accommodation," which are essential and fundamental to all aspects of mental development at all levels according to Piaget's concepts. Emphasizing the importance of the environment Piaget defines intelligence as a process of organization--"an assimilatory activity whose functional laws are laid down as early as organic life and whose successive structures serving it as

¹Flavell, Psychology of Piaget, p. 19.

²Gesell, Mental Growth, pp. 11-12.

³Stott, Child Development, pp. 175-76.

organs are elaborated by interaction between itself and the external environment."¹

In studying the sequence of related changes which takes place Piaget found no discrete steps but rather stages, which flowed into one another through continuous development. Piaget describes these stages as "successive equilibrium states," thus maintaining that development is continuous and that each stage develops from the preceding stage.² Piaget believes the steps of cognitive development to be, in essence, predetermined by the structure of the central nervous system as well as by the child's experiences in the world of reality. He gives us a picture of the central nervous system which, as a result of its interaction with the environment during the formative years, constantly, forms levels of integration which are both quantitatively and qualitatively different from the syntheses out of which they evolved. One very important attribute of Piaget's theory of intelligence is that it is truly developmental in orientation. At the very core of his system is the notion that the intellectual functioning of an individual is different at different stages or periods of his growth. He asserts that, "We cannot determine where

¹Piaget, Origins of Intelligence, p. 359.

²J. M. Tanner and B. Inhelder, eds., Discussions on Child Development, Vol. I (New York: International Universities, 1953), p. 12.

intelligence starts, but that we can plot its course of development and its ultimate goal."¹

There are five major periods in the ontogeny of intelligence in Piaget's system, each of which is divided into a variable number of subperiods, stages, and substages. The development of intelligence--whether it involves the further elaboration response patterns within a period, subperiod, stage, or substages, or the progression from one of these to the next in the sequence--is of course accomplished by gradual changes in the intercoordination of schemata which are produced by the reciprocal processes of assimilation and accommodation.²

The first period in the development of intelligence is that of the sensori-motor intelligence. The child learns to coordinate various perceptions and overt movement. The child learns to perform a wide variety of successful responses, i.e., responses which produce practical satisfactions, but there is nothing approaching representational thought during this period. This period ranges from birth throughout the first eighteen months to two years. Piaget elaborated the sensorimotor period tracing development through six stages. However, these stages are characterized

¹Piaget, Origins of Intelligence, pp. 358-61.

²J. Piaget, The Psychology of Intelligence (Patterson, N.J.: Littlefield, Adams, 1960), pp. 150-51.

by the progressive coordination and assimilation of the ready-made schemata to form motor habits and perceptions.

As the child interacts:

Patterns of behavior [are] becoming coordinated into more complex acts with an aim of attaining an end which is not immediately attainable. However, the child is limited in his ability to reach his goals and able to utilize only familiar acts in relation to them.¹

During the sensory motor period the child experiments using trial and error in an attempt to obtain desired objects. According to Piaget this type of behavior gradually leads to an appreciation within the child of spatial relations and of temporal and causal sequences. Sensori-motor intelligence consists of coordinating successive perceptions and overt movements.²

The second period in Piaget's development of conceptual intelligence in the preparation for an organization of concrete operations is called symbolic and preconceptual thought. This period is concerned with the child's acquisition of language and his ability to deal representationally and logically about his world. The period of preconceptual thought grows out of the sixth stage of the sensori-motor period and includes roughly the ages from one and one-half years to four years. During this period the child

¹Stott, Child Development, p. 177.

²Ibid., p. 179.

acquires the symbolic function which precipitates the acquisition of language. The child may use his own symbols to represent objects during play while he is in the process of acquiring the "conventional signs" that make up our language. Piaget explains this relationship by stating:

. . . it should be noted that the acquisition of language, i.e., the system of collective signs, in the child coincides with the formation of the symbol, i.e., the systems of individual significance. In fact, we cannot properly speak of symbolic play during the sensorimotor period . . . the true symbol appears only when an object or a gesture represents the perceptible data . . . Now precisely at the stage at which the symbol in the strict sense appears in play, speech brings about in addition the understanding of signs.¹

Thus this period marks the beginnings of thought or the beginning of the development of representational intelligence.

Piaget called the next period in the development of conceptual intelligence the period of intuitive thought. The child's thinking is dominated by subjective perceptual judgements and is still lacking in logical analysis. Piaget describes it as "intuitive" because it is based upon immediate, unanalyzed perceptions of the objective situation. The child "acts only with a view toward achieving the goal; he does not ask himself why he succeeds."²

¹Piaget, Psychology of Intelligence, p. 125.

²B. Inhelder and J. Piaget, The Growth of Logical Thinking from Childhood to Adolescence (New York: Basic Books, 1958), p. 6.

As the child uses language his ways of thinking become progressively more "adult like." As a result of becoming more adept at acquiring labels for experience and forming concepts by matching new experiences to already available labels, the child's way of thinking progressively becomes more like that of the adult. Also influencing the progress is an increasing ability to isolate particular aspects of experience and to deal with relationships between these aspects mentally rather than directly. In describing the child at this period Almy states:

Just as the young child acquires labels for objects in the environment, so he also learns to label their properties and attributes. He notes color, shapes, sizes, textures, sounds, movement tendencies and so on. But, the concept of properties apart from the objects in which they are embedded are difficult. The notions of relationships among objects implied in words like big and small, light and heavy, up and down, behind, beside, and before are complicated by the child's tendency to judge them more from their reference to himself than their reference to each other . . . ¹

Development in the intuitive periods extends from approximately four years of age to seven or eight years and leads the child to the beginnings of operational functioning. Piaget subdivided the period of operational functioning into concrete and formal operations.

The first period in the development of operational functions is the period of concrete operation (seven years

¹Millie Almy, "New Views on Intellectual Development: A Renaissance for Early Childhood Education" (Unpublished Mimeo., 1963) as quoted in Burgess, Values, pp. 33-34.

to eleven years). Piaget conceives of an operation as a mental or representational process. Concrete operations are concerned with:

objects that can be manipulated or known through senses. The child begins to use logic in his reasoning. The child recognizes that certain properties of objects are invariant despite changes of circumstances. Piaget describes this awareness as "conservation." At this stage the child can also place objects in a variety of serial orders. The child internalizes and integrates his actions as operations.¹

Piaget's theory stresses the gradual development from one stage to the next. Concrete operations have been in the formation throughout the sensorimotor period. Beyond this period they are applied in various areas of experience. This relationship between stages has important implications for early childhood education. Almy states that:

The turning point from sensorimotor to concrete operations comes for most children around the ages of 7 or 8 years. Consequently, it is appropriate to regard the early childhood years, encompassing nursery school, kindergarten, first and second grade, as the years thought of as in transition between sensorimotor and concrete operations . . . ²

In summarizing some of the implications of Piaget's work, Evangeline Burgess concludes:

Implications for early childhood education are clear in the principles of this theory and that of American investigators who have been influenced by Piaget.

1. The importance of sensorimotor experience is underlined.

¹Stott, Child Development, p. 181.

²Almy, in Burgess, Values, p. 34.

2. Language, especially that which relates to labeling, categorizing, and expressing is intimately tied to developing greater facility in thinking.
3. New experiences are more readily assimilated when built on the familiar.
4. Repeated exposure to a thing or an idea in different contexts contributes to the clarity and flexibility of a growing concept of the thing or idea.
5. Accelerated learning of abstract concepts without sufficient related direct experience may result in symbols without meaning.¹

This point of view supports the thesis of this study, that a rich and varied environment with opportunity for direct interaction during the early years provides the basis for the sequential development of the child's intellectual and language skills as he proceeds at his own pace. According to Evangeline Burgess:

Piaget's concept of intelligence emerging as it is nurtured, of growing as the child has things to act upon, has led good teachers to help children build new and larger concepts on the basis of former knowledge and experience. It has led them to provide rich direct sensory experience as the undergirding base for abstract concepts. It has led them also to encourage and stimulate language development.²

The Work of J. McV. Hunt

An American psychologist, J. McV. Hunt, also supports the assumption that a child's development, intellectual and sensory-motor, results from his continuous interaction with his environment, particularly in early years. Stressing the importance of early experience on the

¹Burgess, Values, p. 35.

²Ibid., p. 32.

the rate of intellectual growth, Hunt cautions that "any laws concerning the rate of intellectual growth must take into account the series of environment encounters which constitute the conditions of growth."¹ Further emphasizing the importance of experience for intellectual development, he states:

It now looks as though early experience may be even more important for the perceptual, cognitive and intellectual functions than it is for the emotional and temperamental functions.²

Just as Montessori based her "didactic materials" on the belief of an "inner force" on the part of the child to learn and explore his environment, so also does Hunt add this dimension. That is, children have an inherent motivation to explore and learn and when the child is provided with an environment of rich and varied learning opportunities, he will select and develop his own learning pattern. Basing his premises on the research from developmental neurologists and on abundant data from the animal behavior,³

¹J. McV. Hunt, "Motivation Inherent in Information Processing and Action," in O. J. Harvey, ed., Cognitive Factors in Motivation and Social Organization (New York: Ronald Press, 1963), p. 30. (Hereinafter referred to as "Motivation.")

²J. McV. Hunt, "The Psychological Basis for Pre-School Enrichment," Merrill Palmer Quarterly, X, No. 3 (July, 1964), pp. 222-23. (Hereinafter referred to as "Pre-School Enrichment.")

³I.e., D. O. Hebb, "The Effects of Early Experience on Problem-Solving at Maturity," American Psychologist, II (1947), 306-07; W. R. Thomson and W. Heron, "The Effects of Restricting Experience in Dogs," Canadian Journal of Psychology, VIII (1954), 17-31; and others.

Hunt states that there is a necessity for an "optimal amount of early stimulation appropriate for a particular sensory channel if the neural systems which monitor that pattern of stimulation are to develop properly."¹ He feels this early stimulation and, more important, the timing of the stimulation, are crucial for proper development of problem-solving and interest in the environment. Hunt states that the young child's behaviors consist of spontaneous activity which fosters an "intrinsic motivation" or "motivation inherent in information processing and action." According to Hunt, the notion of "intrinsic motivation" provides a new answer to the motivational question concerning what starts and what stops behavior.² Intrinsic motivation appears to be perpetuated by new and varied experiences. Hunt reports that the learner tends to approach sources of novel information but withdraws if it becomes too puzzling. Hunt states that it is this continual kind of adapting to the existing stimuli coupled with interest in the "slightly" novel that explains the growth of motivation. Relating this to intellectual development, Hunt theorizes:

This optimal incongruity gives to what I have elsewhere called "the problem of the match" (Hunt, 1961) a motivational meaning as well as an intellectual one. Interest in circumstances becomes a matter of a relationship between the new and the old wherein the new

¹J. McV. Hunt in Hess and Bear, Early Education, p. 73.

²Hunt, Motivation, p. 50.

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differs in proper degree from the old to provide the miss-match that elicits interest.¹

Hunt describes three phases in the development of "intrinsic motivation." During the first phase the child is motivated by homeostatic need and pain, and also by changes in ongoing input through eyes and ears. The second phase begins with "the interest in the newly familiar" that appears to come with repeated encounters with the same pattern of change in input. The third phase is characterized by the interest in novelty and commonly begins about the end of the first year of life. According to Hunt, it is "with this development of interest in novelty, the infant begins to acquire new vocal schemata, new gestures, and new interests in a rapidly widening variety of objects, persons, and places."² It is this interest and imitation of novel patterns that supplies the mechanism for learning.

Hunt summarizes the evidence from psychological theory and from psychological research to document his position:

1. that the belief in fixed intelligence is no longer tenable;
2. that development is far from completely predetermined;

¹J. McV. Hunt, "The Psychological Basis for Using Pre-School Enrichment as an Antidote for Cultural Deprivation," in Fred M. Hechinger, ed., Pre-School Education Today (Garden City, N.Y.: Doubleday and Co., Inc., 1966), p. 51.

²Ibid., p. 53.

3. that [mental processes are] like the active information processes programmed into electronic computers to enable them to solve problems;
4. that experience is the programmer of the human brain-computer . . . ;
5. that . . . an opportunity to see and hear a variety of things appears to be more important than the fate of instructional needs and impulses; and finally,
6. that learning need not be motivated by painful stimulation, homeostatic need, or the acquired drives based on these, for there is a kind of intrinsic motivation which is inherent in information processing and action.¹

Hunt's work on the interaction of motivation, stimulating environment and critical periods to produce optimal mental functioning or the development of intelligence has many implications for early childhood education programs.

The Work of Soviet Researchers

Research on intellectual development, currently being carried out by Soviet psychologists, tends to support many of Hunt's premises. Berlyne points out that there are two important streams of investigation stemming from the work of Pavlov and Vygotsky. Berlyne indicates that researchers in the United States have misrepresented Pavlov's views by thinking that all behavior consists of single reflexes set in motion by a stimulus. He feels that Pavlov did not intend to extrapolate his simple conditioning experiments on dogs to cover complex human behavior.²

¹Ibid., pp. 60-61.

²Daniel E. Berlyne, "Soviet Research on Intellectual Processes in Children," Monographs of the Society for Research in Child Development, XXVIII, No. 2 (1963), 165. (Hereinafter referred to as "Soviet Research.")

Toward the end of his life, Pavlov had reservations about the scope of his conditioning principles as applied to human beings . . . These reservations resulted primarily from the recognition of what Pavlov called the "second signal system" . . . Put briefly the second signal system is the portion of the nervous system that is concerned with verbal behavior.¹

Berlyne describes the second signal system as being characterized by "greater sensitivity, speed, and flexibility in making associations and stimulating responses within the individual."²

The research carried out by Luria³ illustrated that words not only have a variety of ways of influencing behavior, but have different effects which appear at different ages. This second signal system, as illustrated by the Russian research, tends to control the responses for older children while younger children do not appear to be controlled by it. Thus, these researchers relate greater flexibility in thinking with the acquisition of verbal behavior.⁴

Berlyne summarized Vygotsky's views concerning the role of speech in controlling behavior, thus integrating language, thought, and action:

¹Ibid., p. 168.

²Ibid.

³A. R. Luria, The Role of Speech in the Regulation of Normal and Abnormal Behavior (New York: Pergamon Press, 1961), p. 51.

⁴Berlyne, Soviet Research, p. 175.

. . . thought and speech are not quite the same thing. Thought does not grow out of speech or vice versa, but obviously, once thought and speech have appeared, they interact and influence each other intimately, and speech becomes the principal vehicle of socialization. In fact, the child begins by allowing his behavior to be directed by speech coming from others; later he uses speech to direct his own behavior as a by-product of his responsiveness to what others say to him.¹

Vygotsky and Luria both support the theoretical assumption used in this study that the child's mastery of language and concepts conveyed by language is especially vital to intellectual development.

Another Russian psychologist, Zaporozhets, basing his work on that of Vygotsky, not only points out the relationship between thought and language but also with the motor system. In summary, Zaporozhets states:

In the beginning, a new way of becoming acquainted with an object is usually carried into practice by organs that are capable of performing both practical and cognitive functions, such as the hands touching and manipulating an object or by the muscle apparatus to the larynx . . . In reality, as we have tried to show in our paper, a given form of perception is the product of a continuous development that goes on in the child under the influences of practical experiences and learning.²

In relation to the concept of inherent motivation, Zaporozhets has identified an "orienting reflex" which is an unconscious standard within the individual which starts

¹Ibid., p. 174.

²A. V. Zaporozhets, "The Development of Perception in the Preschool Child," in European Research in Cognitive Development. Monogr. Soc. Research in Child Development, XXX, No. 2 (1965), pp. 98-100.

behavior when there arises an incongruity between the input from a set of circumstances and this standard. Hunt views this "orienting reflex" as similar to his own "intrinsic motivation," acting as a monitor between the individual and his interaction with the environment. Both the orienting reflex and intrinsic motivation serve for starting and stopping behavior.¹

This "orienting reflex" can be influenced by language or verbal interaction. Zaporozhets believes:

. . . that conscious process is characterized by an accompanying orientation reaction in which the individual is constantly sensitive to feed back from all his senses as he is in process of achieving the goal. In other words he can modify thought and action in light of subtle cues which indicate whether he is en route to the goal.

The interesting finding that emerges from these numerous experiments is that verbal instruction and imitation are much more effective if they are directed toward orienting responses as well as executing responses. In other words, in teaching a child how to carry out a complex task, one must make sure that he is also taught how to organize his orienting responses. He must learn what to look at; his attention must be directed to the right cues . . . He must make use of feedback from both the external situation and his own action, and the experimenter must train him to do this. Several experiments show that the time to learn a task can be cut down if orienting behavior is specifically trained.²

The research by Zaporozhets illustrates specific use of language and the concepts conveyed by language in

¹Hunt, Preschool Enrichment, p. 50.

²Berlyne, Soviet Research, p. 180.

fostering intellectual development. Berlyne explains this relationship by stating that:

Coming still nearer to intellectual processes, Zaporozhets has related his work to thinking. Voluntary behavior is, or can be, planned behavior. When a child has behavior under voluntary control, he can plan ahead . . . Planning behavior in advance means being able to reason about it, being able to think it out, and that means building up an image of the activity . . . the whole activity and what he is going to do when he meets each of those cues.¹

Thus, Soviet research would tend to imply that the importance of language in its relationship to developing cognitive processes is one of consciously "building up an image of the total activity." This supports the idea of role playing and dramatic play as a means of rehearsing roles in an activity. This also implies the need for varied and extensive concrete experiences directed by verbal interaction, underlying the teacher's role in early childhood education as being more consciously instructive and interactive with the child and the child's environment.²

Other American psychologists such as Caldwell,³ Cazden,⁴ and Wright and Kagan⁵ closely follow the Soviet

¹Ibid., p. 181.

²This interpretation of the Soviet Research has been stated by many American writers, i.e., Burgess, Values, p. 36; similar information in Berlyne (1963) and Bromwich (1969).

³Bettye M. Caldwell, "The Fourth Dimension in Early Childhood Education," in Hess and Bear, eds., Early Education, pp. 71-82.

⁴Cazden, Language Development, pp. 131-142.

⁵John Wright and Jerome Kagan, "Basic Cognitive Processes in Children," Monographs of the Society for

line of thinking. When considering how a child acquires conceptual structures, they also relate the development of language and linguistic labels as basic to the development of intelligence. Wright and Kagan feel that language is important in functioning as a "mediating response." In discussing intellectual development they conceive of a "mediating response" as a unit of the intellectual process which is a short cut to bridge the gap between the overt response and the stimulus. Wright and Kagan believe that "if the child is impelled to organize stimuli for himself, then it is obvious that mediating responses and linguistic labels, in particular, are the most important and effective means of doing so."¹

Much of the current American research emphasizes the relationship between language development as a mediating response for both problem solving, and creativity. Learning situations which stress divergent thinking and exploratory behavior foster cognitive development more than rote situations which encourage memory of facts. Lewis stresses that spontaneous language during play is of vital importance in the development of cognitive skills.

The importance of imaginative play in a child's cognitive development is that it readily expands into

Research in Child Development, XXVIII, No. 2 (1963), p. 192 et passum.

¹Ibid., p. 192.

exploratory and constructive play which, as it presents him with successive problems, demands the exercise of reasoning. In the growth of this exploratory and experimental play, language may play a part of ever-increasing importance . . . he verbalizes his own acts, and so aids his perception, helps his recall of relevant past experience, helps his imaginative constructions, his anticipations and predictions and so fosters his conceptual and generalized thinking in the direction of reasoning . . . the effects of language are immeasurably reinforced as a child comes to play with others--particularly if adults take interest in what he is doing. Language then helps to make play more imaginative, more constructive and a greater stimulus to reasoning.¹

In a research study designed to appraise young children's ability to understand and interpret their social and physical world, Kenneth Wann and his associates found that "young children employ the essential elements of concept formations" and that they "collect information which they test and use in conversation and dramatic play."²

In all of these concepts of the developing intelligence the child constantly perceives, integrates his perceptions, and integrates sensory experience with verbal. In summarizing the newer concepts of intelligence Evangeline Burgess tries to relate the research in terms of "mediating responses" finding that "American psychologists tend to emphasize internalized verbal response as important in

¹M. M. Lewis, Language, Thought, and Personality (New York: Basic Books, 1963), p. 126.

²Kenneth Wann, Miriam S. Dorn and Elizabeth Liddle, Fostering Intellectual Development in Young Children (New York: Bureau of Publications, Teachers College, Columbia University, 1962), p. 25.

mediation." For Piaget internalized action is most significant. The Russians have given greater prominence recently to "orienting responses." However, all of these investigators view intelligence as being developmental and dependent on interaction with the environment.¹

In studying children's thinking and intellectual development, Millie Almy has found that each stage of development carries with it possibilities for acquiring new abilities and new ways of processing information. Almy feels that unless each of these abilities is sufficiently exercised as it emerges, it will not develop fully and it will contribute little to the needs of the next stage. Almy points out that: "From the standpoint of developing intelligence, he (the child) may be regarded as storing information in patterns of action."²

Recent research findings report a much greater learning potential for young children than previously thought. Hess states:

There is reason to believe that the potentialities of the human mind as genetically determined do not unfold naturally and inevitably, but require active participation of a stimulating environment in order to attain normal development. It is of utmost importance that this stimulation occur as early as possible in the child's experience. One of the primary purposes of

¹Burgess, Values, pp. 37-38.

²Millie Almy, "New Views on Intellectual Development: A Renaissance for Early Childhood Education," Unpublished Mimeo., 1963, as quoted in Burgess, Values, p. 33.

elementary school education is the maximizing of mental capabilities by systematic stimulation and exercise of mental faculties.¹

However, Biber warns:

While appropriate stimulation of cognitive strength is indeed an important responsibility to schooling at all stages, the challenge is to place this educational function properly in the context of the other developmental processes for which the school is equally responsible.²

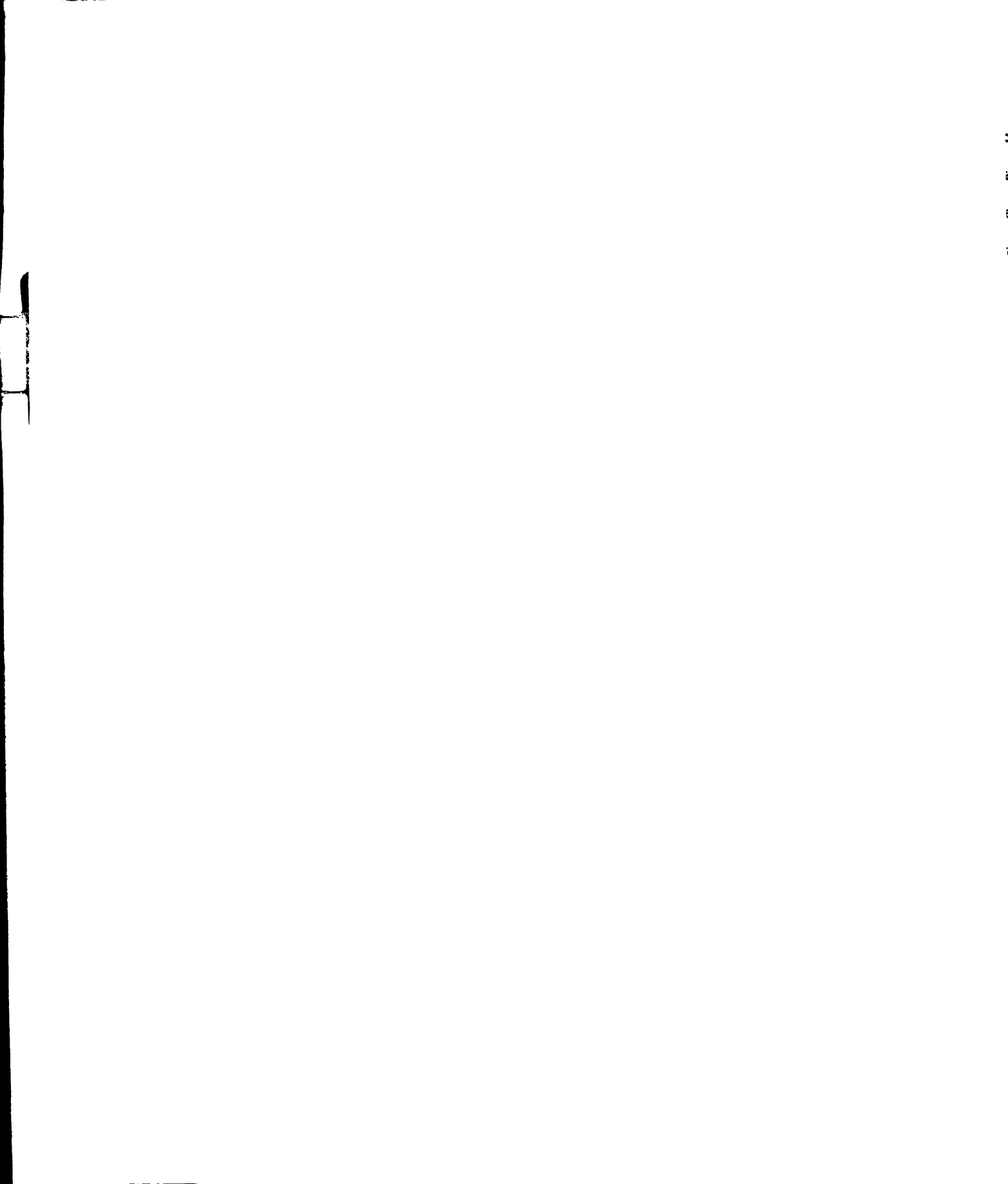
The volume of research relating to cognitive development should not detract from the attention that must be given to the affective and social development during the early years.

Summary

This section has attempted to present various researchers' views on the importance of growth in the early years, the relationship of the development of an adequate self concept, motivation to achieve, and the newer concepts of intelligence. It has presented some of the most recent concepts of intelligence as presented in the works of Bloom, Bruner, Piaget, Hunt, and the Soviet researchers. Some of these concepts have contradicted older established views of intelligence as being fixed or innate. Most of the recent research has stressed the importance of the

¹Robert Hess, "The Latent Resources of a Child's Mind," presented in Chicago, Ill., December, 1961, as reported in Thomas Francis Edwards, A Study in Teaching Selected Intellectual Skills to Kindergarten Children, (unpublished thesis, Michigan State University, 1966), p. 6.

²Biber, "Challenges Ahead," p. 200.



child interacting with his environment with materials appropriate for his own level of development to foster early learning and at the same time provide for the development of an adequate self-concept.

Thus, in view of these theoretical concepts and current research the kindergarten program to be developed in this study was designed to:

1. Provide an instructional program which would accommodate the individual stages of development of each child.
2. Provide maximum opportunity for interaction for the development of each child's abilities.
3. Provide a planned sequence of activities based on the knowledge of the stages of developmental learning.
4. Utilize the intrinsic motivation to learn rather than extrinsic motivation to learn, and to provide an environment which allows for self-selection within a structured choice of learning experiences rather than presenting the child with many random unorganized activities.
5. Help the child, through the environment of self-selection, feel that he is capable and thus maintain an adequate self-image during the learning process.

6. Provide opportunities for mastery of language and concepts conveyed by language which are especially vital to intellectual development.

Exemplary Model Programs Which Attempt to
Provide for Basic Learning Skills in
Early Childhood Education

The current model programs for early childhood education tend to fall in various categories ranging from cognitive-perceptual-motor programs, to language base programs, to cognitive programs based on Piagetian concepts. Programs of various types were reviewed and observed¹ by the writer to gain from their experience in developing a program to fit needs of the kindergarten age child. The following programs were chosen as "exemplary model programs" because they attempted to provide for basic learning skills following the current research in early childhood education and these are the models from which many concepts and activities used in developing the kindergarten program in this study were drawn. Other programs could have been included equally well, however, these models bear a close relationship to the kindergarten program in this study.

¹See Appendix C, p. 344 for a list of visitations made to model programs.

Kephart's Perceptual-Motor Program

Various researchers such as Kephart,¹ Getman,² Barsh,³ Cratty,⁴ and Delacato⁵ have purported to show that higher level skills are based on adequate motor development. Their programs stress the development of posture, coordination, body image, and position in space as the basis for further perceptual and cognitive development.

Kephart bases his program at the Achievement Center for Children on the premise that:

The first learnings in the human organism are motor learnings. These earliest motor responses represent the beginnings of a long process of development and learning . . . These motor experimentations and motor learnings become the foundation upon which subsequent learnings are built. It is logical to assume that all behavior is basically motor and that the prerequisites of any kind of behavior are muscular and motor responses.⁶

¹Kephart, Slow Learner, p. 22.

²G. N. Getman, Developing Learning Readiness, A Visual-Motor Tactile Skills Program (New York: Webster Division, McGraw-Hill Book Company, 1968), p. 2.

³Ray Barsh, A Movigenic Curriculum (Madison, Wisc.: University of Wisconsin, Bulletin No. 25, 1965), pp. 5-8.

⁴Bryant J. Cratty, Movement Behavior and Motor Learning (2nd ed.; Philadelphia: Lea and Febiger, 1967), p. 7.

⁵Carl H. Delacato, The Diagnosis and Treatment of Speech and Reading Problems (Springfield, Ill.: Charles C. Thomas, 1963), p. 49.

⁶Newell C. Kephart, The Brain Injured Child in the Classroom (National Society for Crippled Children and Adults, Inc., 1965), p. 1. (Hereinafter referred to as Brain Injured Child.)

Even though much of the work at the achievement center is done with children with learning disabilities, Kephart's program is based on the developmental sequence of motor skills. Kephart states that the motor sequence begins with generalized undifferentiated movements and, through the influence of development and learning, proceeds to specific responses. Kephart stresses the importance of two general principles governing the differentiations of specific responses.

The first of these is the cephalocaudal principle which refers to the fact that growth and motor development proceed, in general, from head end to the tail end of the organism. Thus the first effective motor control is exerted over the muscles which lift the head . . . The second principle of differentiation is the proximodistal which refers to the fact that growth and motor development proceed from the axis of the body outward to the periphery. Thus the infant's early reaching responses are accomplished by gross movement from the shoulder . . . Independent use of wrist or finger movements does not occur until well along in his first year.¹

According to Kephart it is important that the differentiation take place according to "pattern" and following these two principles. Kephart stresses that it is through differentiation in pattern that the development of specific movement is learned and "exists as an overall repertory of motor responses rather than a mere collection of independent skills."²

¹Ibid., pp. 2-3.

²Ibid.

Kephart feels that in developing this "structured motor response" system a child with learning disabilities frequently encounters difficulty. Learning is hierarchial in nature and if one pattern is not well established subsequent patterns will not be built up in the normal manner. Kephart's program includes basic activities for establishing movement patterns required for balance, posture, laterality, and body image, such as angels-in-the-snow, the walking board, the balance board, and crawling through tunnels.

Kephart also stresses the development of perceptual organization which is taking place slightly later but continuing along with the development of motor patterns. Kephart states "because of its earlier beginning, the motor system has developed a certain body of information before the perceptual system begins its course of development."¹ The perceptual information is matched to the motor information. Kephart feels that it is essential that this perceptual-motor match take place with the new learnings (perceptual) being based on the body of skills already present (motor) so that the child will not be "living in two worlds: a motor world and a perceptual world."² Kephart feels that children that have not made this match

¹Ibid., p. 10.

²Ibid.

successfully "appear to be operating on the basis of two independent sets of information with little or no commonalities, resulting [in] confusion in behavior and in achievement."¹

The activities developed by Kephart for developing balance, laterality, and posture provided a basis for many of the activities used in the kindergarten program in this study to develop basic gross motor skills.

Porter's Movement Education

Movement education has received more interest in recent years based on research conducted with retarded children. Elementary school physical education programs found that there are many activities to help the child to understand and control his body while moving that will enable the child to develop and enjoy his environment more fully. Movement education is an integral part of the physical education program in all elementary schools in DeKalb Public Schools, DeKalb, Illinois. The program was initiated in 1967. This movement education program was developed on the belief "that as the child learns to understand and control the many ways in which his body may move, he is better able to direct the actions of his body, the control of which results in increased confidence in work

¹Ibid., p. 11.

and play."¹ The focus of instruction in the program is on developing the child's kinesthetic awareness and understanding of movement. The equipment used includes ropes, ladders, climbing frames, balance beams, boxes for jumping onto and from, and mats for rolling.

Each child is encouraged to function as a purposeful, self-directed member of his group--exploring, inventing solutions to problems, testing alternatives, practicing for refining selected patterns, and so developing kinesthetic awareness and understanding. He is encouraged to select tasks appropriate to his level of development so that he can succeed in them. This sustains his natural joy in movement. The teacher encouraged the child to use his body effectively as he is challenged to find out what his body can do, where he can move in space and time, and how he moves, as well as learning to control his action patterns.²

With these objectives Porter states that the use of objective measures for evaluation are not appropriate.

However, based on observable behavior, Porter reports:

that such experiences contribute to the child's development of:

- a positive self-image
- physical dexterity, strength, and endurance
- concepts and strategies for the development of new knowledge
- inner discipline
- social skills
- self-expression
- skills of problem solving and creativity.³

These goals coincide with some of the objectives for the kindergarten program in this study which stresses the need

¹Lorena Porter, Movement Education for Children (Washington, D.C.: NEA/EKNE, Study Action Publication, 1969), p. 5.

²Ibid., p. 7.

³Ibid., p. 8.

for expressing feelings and communicating ideas through movement.

Nimnicht's New Nursery School

Other model programs have placed emphasis on self-expression while structuring the environment to provide appropriate learning activities and to foster motivation and self-esteem. According to the Glen Nimnicht, New Nursery School project in Greeley, Colorado, the teacher becomes part of the responsive environment--"they do not teach; they facilitate children's learning . . . they respond to the child as he spontaneously encounters and manipulates his surroundings."¹

The New Nursery School is organized as an "autotelic responsive environment." Nimnicht explains that "an autotelic activity is one done for its own sake rather than for obtaining rewards or avoiding punishment that have no inherent connection with the activity itself."²

A responsive environment satisfies the following conditions:

1. It permits the learner to explore freely.
2. It informs the learner immediately about the consequences of his actions.

¹Glen Nimnicht, John Meier, and Oralie McAfer, Interim Report: Research on the New Nursery School (Greeley, Colo.: Colorado State College, 1967), p. 3.

²Ibid., p. 2.

3. It is self-pacing . . .
4. It permits the learner to make full use of his capacity for discovering relations to various kinds . . . ¹

Even though the Nimnicht program was developed to meet the needs of Spanish-surnamed children who were environmentally deprived and variant in cultural and language background the program includes more than language development as its objective. The objectives of the program are:

1. To develop a positive self-image;
2. To increase sensory and perceptual acuity;
3. To improve language ability; and
4. To improve problem-solving and concept formation abilities.²

To accomplish these goals the program includes materials in the environment that are self-connecting and give immediate feedback. This is done through the use of self-correcting toys, machines, other children, and/or the teacher. Manipulative toys such as nesting or stacking toys, puzzles, concentric circles, sequences of rectangles that fit inside each other to form a pattern are included in the program because they are self-correcting. Machines such as the Language Master and the typewriter are also included. The program mainly consists of self-directed activities such as "painting, working puzzles, looking at books, dressing up, building with blocks, and a host of other activities."

¹Ibid.

²Ibid., p. 1.

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Small group activities include singing and listening to stories. The typewriters assist in motivating the child to learn letters, to dictate, and to transcribe his own stories.¹

Nimnicht clearly points out one of the most basic problems in developing a program and implementing it with children. This is the problem of research as the program is in progress. Nimnicht reports:

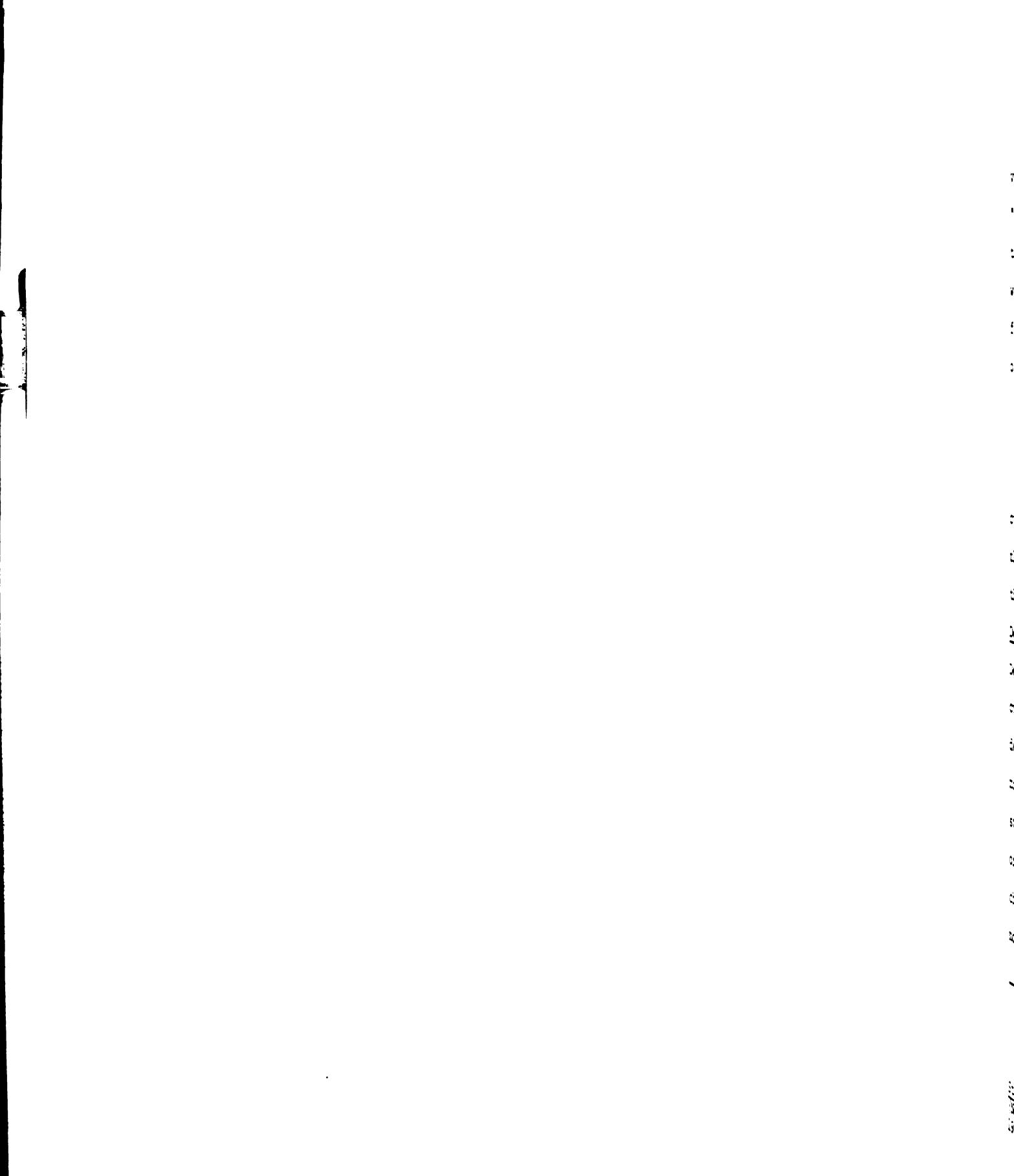
. . . We also have problems which are specific to our project. The first two years the primary focus of our activities was the development of procedures and curriculum that seemed promising according to both a review of relevant research and to a study of other attempts at early intervention. Our basic approach was to start with what we considered a sound approach and to modify it as we analyzed what we were doing and trying to accomplish . . . [Thus,] it is impossible to say precisely what any one component of the program contributed to the achievement of our objectives . . . The second problem is that the program has been in a rapid state of change as we test new approaches and eliminate others. To some extent this will always remain a problem . . . ²

With these limitations in mind the basis for evaluating the New Nursery School program included pre- and post-test scores using the Stanford-Binet and the Peabody Picture Vocabulary Test. After these children entered kindergarten the Metropolitan Reading Readiness Tests were administered.³

¹Ibid., p. 3.

²Ibid., p. 4.

³Ibid., pp. 5-6.



The self-directed activities in a structured environment resemble the "didactic materials" within a "prepared environment" advocated by Montessori, however, there appears to be more allowance of self-expression within the Nimnicht program. This program provides a model for developing and implementing some of the basic objectives of the kindergarten program of this study.

Duetsch's Institute for Developmental Studies

Another model program which was developed for the culturally deprived child, based on the assumptions that the environment affects development of cognitive skills and that development proceeds in stages, is the Institute for Developmental Studies directed by Martin Deutsch.¹ The Deutsch model is based on the premise that programs for the culturally deprived children need to emphasize cognitive development and need to overcome negative self-concepts, motivational and language handicaps. Martin Deutsch structures environment so that stimuli is presented in an orderly fashion relevant to the developmental levels of the children and so that it fosters "self-reliance, achievement motivation, and the development of a positive self-concept."²

¹Deutsch, Program for Young Children, pp. 4-9.

²Educational Resources Information Center, Head Start Childhood Research Information Bulletin, Vol. I (National Laboratory on Early Childhood Education, Fall, 1969), p. 2.

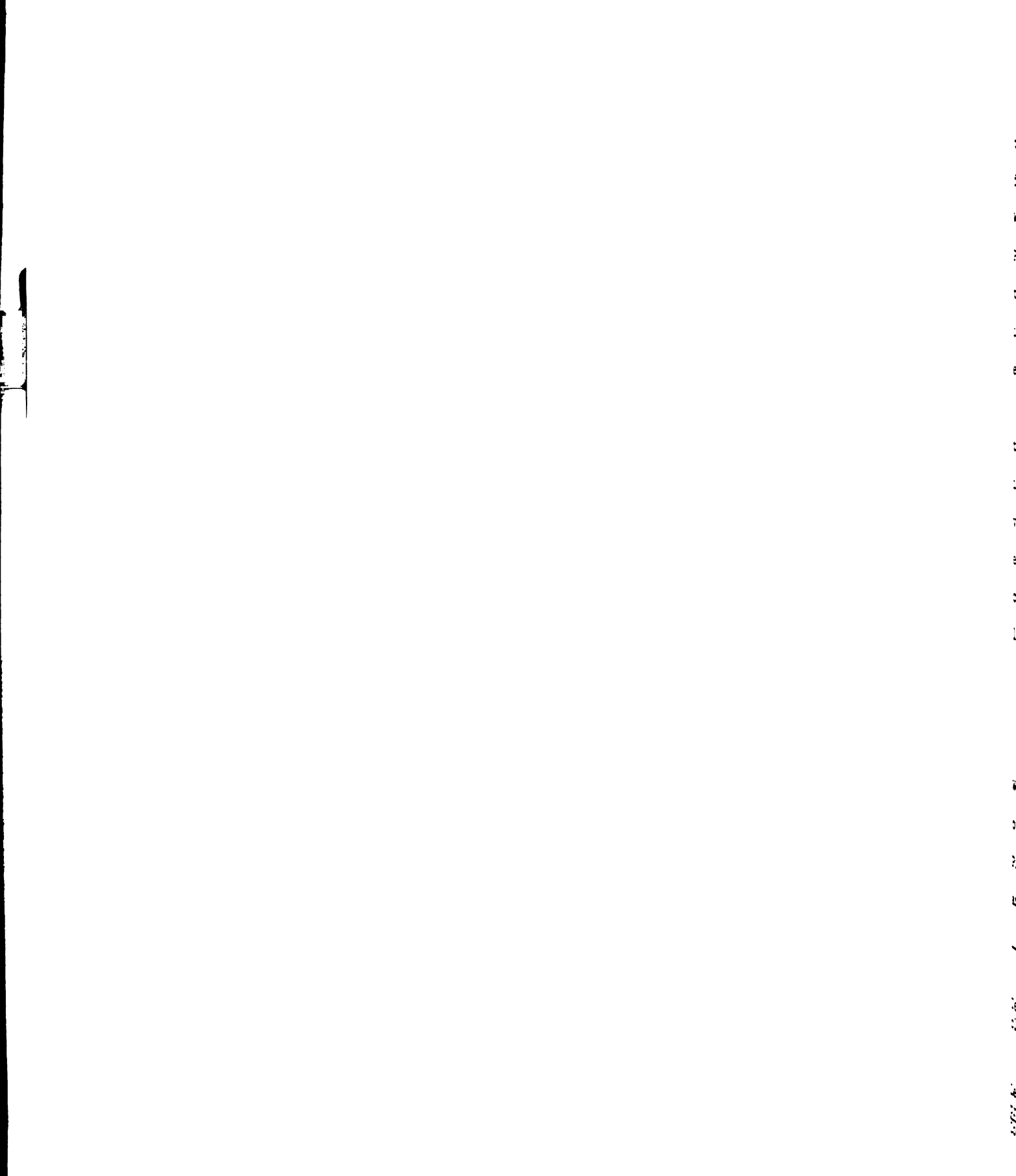
Based on the assumption that cognitive development proceeds in stages, the curriculum stresses "sequential learning, individual pacing and immediate feedback." The curriculum emphasizes four areas: language development, self-concept, perceptual development, and conceptual development. Role playing is done by the children to develop self-concept and language. Activities are provided for perceptual development which enhance the child's direct sensory skills, stimulus recognition, and discrimination. In conceptual development the children learn to relate in a one-to-one correspondence, classify according to various traits, and to generalize.

The Deutsch model stresses identifying the area of weakness in basic skills for each child and planning the program to the needs of each individual.

One such major assumption [directly underlying the action research and demonstration program,] is that the proper task for early childhood education for disadvantaged children include identification of the stimulation "lacks" in the environment; diagnosis of the areas of retardation in cognitive development of the children; prescription of particular stimuli, and strategies, and techniques for their presentation in order to accelerate the development of the retarded function; and evaluation of the efficiency of the techniques used . . . Most of [these] activities should be strongly interrelated, and a recycling and feedback process is constantly in operation.¹

For diagnosis Deutsch uses both standard tests such as IQ tests and Illinois Test of Psycholinguistic Ability and

¹Cynthia P. Deutsch and Martin Deutsch, "Brief Reflections on the Theory of Early Childhood Enrichment Programs," in Hess and Bear, Early Education, p. 85.



tests developed by the Institute. To assess particular functions more specific measures are used such as the Wepman Test of Auditory Discrimination, the Continuous Performance Test, and modifications of some of Piaget's techniques.¹ Drawing implications from the data gathered in the preceding manner Deutsch stresses that perceptual experience should precede language training.²

Deutsch's model supports the need recognized in this study for identifying the basic learning skills and instructional needs of each individual child and then providing for the development of these starting with the earlier or lower end of the continuum, motor skills proceeding through perceptual skills to the higher skills of language and cognitive development.

Weikart's Cognitively Oriented Curriculum

The cognitive curriculum developed by David P. Weikart focuses primarily on the intellectual development of the child. Weikart has based his program on the work of Piaget which concerns the development of logical thinking and representation. Weikart states that "the main premise

¹An Institute for Development Studies, Index of Tests (1965) gives pertinent data about each one used, including the samples to which it was administered.

²Martin Deutsch, "The Disadvantaged Child and the Learning Process," in Harry Passow, ed., Education in Depressed Areas (New York: Bureau of Publications, Teachers College, Columbia University, 1963), pp. 163-79.

underlying the cognitively oriented curriculum is that there cannot be a basic understanding of self and world without the ability to place the self in time and space and to classify and order objects and events."¹ To develop these capabilities Weikart structures the levels of representation in an increasing degree of abstractness following Piaget's four levels of symbolization. The child proceeds first at the object level in which the child merely identifies and labels concrete objects. The next level is the index in which the child deals with parts of an object as representing the whole. At the symbol level representations of objects are distinct from the object and exist as separate entities. The highest level of abstraction is the sign level or representation through words. All of the materials and learning activities are designed to help the child proceed sequentially through these levels of abstraction in symbolization. Weikart also uses Piaget's work for deriving the four content areas: classification, seriation, temporal relations, and spatial relations. The curriculum is designed to have the child experience concepts on the motoric level of operation and on the verbal level. Weikart reports that "By using his body to experience concepts, to operate on objects, and to employ objects for operating on

¹Weikart, Preschool Demonstration Project, p. 6.

Other objects, the child develops a 'feel' for the concepts and this facilitates verbal expression."¹

The program also includes "sociodramatic play" as a teaching device to develop the child's attention skills and concentration; and to enable the child to "make believe" in his mind while considering possibilities and to help the child integrate scattered experiences. Based on Sara Smilansky's criteria for sociodramatic play, the curriculum includes the following:

1. A child should be interacting with at least one other person;
2. Make-believe roles are taken by each child;
3. These roles are expressed in imitative action and verbalizations;
4. Actions and verbalizations substitute for real objects and situations;
5. There is sustained verbal interaction related to the play episode;
6. The play episode persists for at least ten minutes.²

Through sociodramatic play, Weikart concludes, "the child develops his ability to use symbols and broadens his comprehension of the relationships among things and events in his environment."³

Even though the Weikart model has been selected as a Follow Through model, the Cognitively Oriented Curriculum is conceived by its developers to be appropriate for any child.⁴

¹Ibid., p. 8.

²Ibid., p. 10.

³Ibid., p. 11.

⁴Ibid.

The kindergarten program developed in this study based the activities which progress through the four levels of symbolization on those used by Weikart. The activities used by Weikart for sociodramatic play provided a starting point for developing appropriate dramatic play situations in the kindergarten program in this study.

The British Infant School

At the opposite extreme from these structured programs is a movement toward "open education" which recognizes the value of play in fostering the complete development of the child. Even though much of the curriculum is based on Piagetian theories it is characterized by informal methods with the major emphasis on recognizing the worth and dignity of every child as an individual. The British Infant School utilizes the concept of self-selection and intrinsic motivation in developing their "open education system with the integrated day." The integrated day allows the children to choose their own learning activity, integrating all areas of learning with no artificial subject matter limitations or time tables. The classrooms, containing forty children each, are arranged in learning centers abounding with all kinds of materials. Art experiences, dramatic play and music are an important part of the school day. In comparing the British Infant School to the American Nursery School, Lavatelli states:

In general, there is more emphasis upon cognitive learnings, than is true in progressive preschools in our country that enroll five-year-old children. The theoretical basis is derived largely from Piaget; there is strong belief that telling is not teaching and that, as children use good, open-ended materials, their intelligence grows, and basic concepts develop . . . Play is more explicitly used for cognitive growth in the British system.¹

Many model programs in the United States such as Marie Hughes' Portrait of a Preschool, Tucson, Arizona; New Hampshire Readiness Project; World of Inquiry School, Rochester, New York; and other schools in New York, Connecticut, and California, have studied and incorporated much of the open education philosophy.

These programs support the basic assumptions of the kindergarten program to be developed in this study, that the child should be an active participant in the learning environment and the child is capable of choosing and selecting his own learning activities.

Lavatelli's Early Childhood Curriculum-- A Piaget Approach

Lavatelli has devised a model which attempts to provide a balance between free play, creative arts, music, and stories and structured activities for development of cognitive skills. In Lavatelli's model, Early Childhood Curriculum--A Piaget Approach, the daily structured period gives the teacher the opportunity to expose all children

¹Lavatelli, Childhood Curriculum, p. 23.

to specific types of cognitive training, while the unstructured part affords opportunities for application and reinforcement of the cognitive skills. Lavatelli views this balance as important since,

most educators recognize that the opportunities for growth are present in play activities, but not all children realize them. Some children play with blocks and make no discoveries that have mathematical significance.¹

As a solution to this problem Lavatelli includes structured, directed learning activities during part of the school day and allows relatively free activities during the rest of the day. The directed learning activities, cognitively and language oriented, based on Piagetian theory, are conducted in small groups of about five to six children for short periods of time. This model emphasizes activity on the part of the learner as essential to the learning process. The child is allowed to explore and manipulate to make discoveries in solving problems. The teacher, whenever possible provides feedback. Her role is to stimulate and guide. In developing her model for language training Lavatelli states that the model should incorporate the following features:

1. Some language training should be provided in small group sessions, so as to maximize opportunity for two-way conversations between teacher and child.
2. In the small group sessions, the teacher should serve as a model, presenting to children in her own speech a variety of well-formed sentences.

¹Ibid., pp. 23-24.

3. Not only should the teacher model certain syntactical structures for children, she should also elicit from them those structures she is modeling, or an approximation of them.
4. Modeling and eliciting should be carried on in a natural, conversational manner during periods of free play, as well as in small group sessions.
5. In choosing syntactical structures to model, the teacher should keep in mind two factors: the level of difficulty of the structure in relationship to the child's own linguistic development and the possible contribution of the structure to logical thinking.
6. Language training should be carried on in a warm, friendly, supportive environment with the teacher relying more on modeling than on correcting so that the child's associations with language are pleasant ones, and he will more likely be motivated to use language well.¹

The training program activities are devised along Piagetian lines using manipulative materials devised to lead the child to the development of classification operations; number, measurement, and space operations; and seriation operations.

As these models indicate, the various model early childhood education programs place varying degrees of emphasis on motor, perceptual and cognitive skills. Language and creative expression are also emphasized to different extents in the programs. However, there appears to be common agreement that these areas are interrelated and each should be included keeping in mind the individual differences of each child and providing for his varying needs.

¹Ibid., p. 78.

Summary

In this chapter a review of the historical development of kindergartens for early childhood education has been presented. Various philosophical and theoretical justification of current approaches to the problem of early childhood education have been presented. Various current model programs and their methods of evaluation have been identified and examined. From this review of the literature support for four major tasks of kindergarten teaching is evident. These tasks are:

1. Providing for the development of feelings of competence and adequacy (affective);
2. Providing opportunities for the development of feelings (social), of mutual helpfulness and respect of others;
3. Fostering intellectual development (cognitive);
4. Developing the skills for observation, communication, motor competency and manipulation (basic skills).¹

Another dimension is also added by child developmentalists, that is, the need for providing for creative self-expression. The interrelationships of these various aspects of early childhood education have been continually emphasized in most research. It can be concluded that a total kindergarten program would continue to provide a balance of all of these interrelated tasks. The total environment should be prepared to meet the individual needs of the children in each area of development. To meet the

¹Ebel, Educational Research, p. 325.

varying individual need some model programs have placed emphasis on early identification of basic skills and instructional needs of the child.

From the review of the literature and examination of various model early childhood education programs, the following conclusions can be drawn for developing an adequate kindergarten program. The kindergarten program:

1. Should identify the basic learning skills and instructional needs of each individual child in the program.
2. Should provide for the development of motor skills.
3. Should provide for the development of visual and auditory perceptual skills.
4. Should provide problem solving situations for the development of cognitive skills.
5. Should provide situations for ample expression through movement, music, free dramatics, and creative dramatics.
6. Should provide for growth in the child's language and vocabulary.
7. Should provide for the development of a positive self-concept through the process of becoming competent in cognitive-perceptual-motor skills, problem solving, making choices in a self-selective environment and interacting as

a self with the environment in dramatic play, expressive movement, creative drama, and role playing situations.

From these conclusions can be established the guidelines for developing the kindergarten program in this study. It is toward developing these objectives, the sequential organization of the basic learning skills and identification techniques, the implementation procedures and the evaluation of growth in basic learning skills and vocabulary concepts that the balance of this study is directed.

CHAPTER III

DESCRIPTIVE FEATURES OF THE STUDY AND PROGRAM

Selection and Description of the Participants

The kindergarten program in this study is designed for children from the ages of four years eight months to five years eight months. For purposes of evaluation, only a sampling of the ten kindergarten classrooms involved in the kindergarten program was included. The kindergarten subjects included in the sample were from two kindergarten classrooms from the public school system in a predominantly white area. As indicated by the school district's Title I records, the socio-economic level of the area consisted of predominantly middle class, blue-collar workers, although there were some instances at the extremely low and extremely high socio-economic levels. Approximately five per cent of the school age children would qualify in the low-income economically deprived category.

The sampling was done by selecting two complete kindergarten classes, one morning ($n = 19$) and one afternoon ($n = 21$), at the same school but taught by different teachers. The children were placed in the classrooms on the basis of their composite ratings assigned from their

performance on a diagnostic kindergarten test battery administered to all of the entering kindergarten children at kindergarten roundup in the spring before they were to enter school. An attempt was made to have each of the two classes in the study have the same profile by having them contain approximately the same number of children scoring in the lower half of the group and the same number in the upper half of the group. Thus, the children in the kindergarten classrooms in the sample were assumed to be representative of a normal kindergarten sample.¹

The implementation workshops for the program not only included the teachers of the two classrooms from which the children were drawn, but also, other kindergarten and readiness-room teachers (n = 21) within the same district that volunteered to participate. The teachers varied in experience from first year teachers to twelfth year teachers. Educational experience ranged from Bachelor's Degrees to Master's Degrees.

Development of the Kindergarten Program

The purpose of this chapter is to describe the study through a description of: (1) the development of the diagnostic kindergarten test battery, (2) the development of the instructional program, (3) the process of implementation and, (4) evaluation procedures.

¹See infra, pp. 209-11.

Based on the review of current theories and research in child development, a kindergarten program was developed which attempted to meet the objectives which formed the guidelines for the program. These objectives were as follows:

1. To identify the basic learning skills and instructional needs of each individual child in the program.
2. To provide for the development of motor skills.
3. To develop visual and auditory perceptual skills.
4. To provide problem solving situations for the development of cognitive skills.
5. To provide situations for ample expression through movement, music, free dramatics, and creative dramatics.
6. To provide for growth in the child's language and vocabulary development through "moving into drama" activities.
7. To provide for the development of a positive self-concept through the process of becoming competent in cognitive-perceptual-motor skills, problem solving, making choices in a self-selective environment and interacting as a self with the environment in dramatic play, expressive movement, creative drama, and role playing.

To meet the first objective a diagnostic test battery was developed. The diagnostic test was administered to each child to provide information about the child in the basic skill areas of motor development, visual and auditory skills, cognitive skills, and language development. These skills areas were subdivided into the following areas:

1. Motor skills.
 - a. Gross or general movement
 - b. Fine or manipulative skills
2. Visual skills.
 - a. Acuity
 - b. Discrimination
3. Auditory skills.
 - a. Acuity
 - b. Discrimination
4. Speech and language.
5. Cognitive skills.

The instructional program consisted of sequentially planned activities in each of these areas. To provide a proper balance between skill development and creative activities an expressive aspect was included in the program through the self-selection of skill activities and through the "moving into drama" program.

To provide an evaluation of the effects of the kindergarten program on the growth of basic learning skills and vocabulary concepts of the children during participation in the program, the following hypotheses were formulated:

1. Individual children may exhibit significant growth in basic skill areas and vocabulary concepts that may not be evident by focusing

entirely upon statistical evaluations of the whole group.

2. There will be no significant gain in the means of the pre- and post-test scores of children participating in the kindergarten program on the following:
 - a. Metropolitan Readiness Test (MRT).
 - b. Peabody Picture Vocabulary Test (PPVT).
3. There will be no significant difference between the means of the post-test scores on the Metropolitan Readiness Test of children participating in the kindergarten program and the normative population used for standardization of the Metropolitan Readiness Test.
4. There will be no significant difference between the means of the post-test scores on the Peabody Picture Vocabulary Test of children participating in the kindergarten program and the normative population used for standardization of the Peabody Picture Vocabulary Test.
5. There will be no significant differences between the mean raw scores made by two classrooms participating in the kindergarten program regardless of being taught by different teachers on the following:
 - a. Metropolitan Readiness Test (MRT).
 - b. Peabody Picture Vocabulary Test (PPVT).

Description, Development, and Administration
of the Diagnostic Test Battery

The role of the teacher as a diagnostic teacher was incorporated as an integral part of the kindergarten program. The screening of children entering school was designed to provide an opportunity for the launching of a treatment program before problems in basic learning skills become grievous to the child and perpetuated emotional and behavioral difficulties. The need for early identification of potential learning problems has been stated by many researchers. Ilg and Ames propose an individual behavior examination be given to every child and that his level of performance be determined before entrance to school.¹

DeHirsch has demonstrated "that valid prediction of reading, spelling, and writing achievement can be made by evaluating children's perceptual motor and language behavior at early years,"² and that many "intelligent but educationally disabled children . . . would not have required help had their difficulties been recognized at early ages.

¹Francis L. Ilg and Louise Bates Ames, School Readiness Behavior Tests Used at the Gesell Institute (New York: Harper and Row, 1965), p. 18; similar information in DeHirsch, Deutsch, Kephart, and Bangs. (Hereinafter referred to as School Readiness.)

²Katrina DeHirsch, Jeannette Jefferson Jansky and William S. Langford, Predicting Reading Failure (New York: Harper and Row, 1966), p. vii.

Early identification would have obviated the need for later remedial measures."¹

The diagnostic test battery needed for this study was based on child growth and development to give a developmental profile of each child's proficiency in each of the basic skill areas as well as the affective area. Therefore, Gesell's growth and development norms were consulted as a basis for "determining normal development and the pertinent areas in which assessment would be needed for a developmental diagnosis."² A growth and development chart representing the characteristics of children from four years nine months to six years eight months is included in Chart I. The chart includes the following areas for assessment:

1. General physiological growth patterns,
2. Neuromuscular coordinations (motor coordination),
3. Rhythms,
4. Eye-hand coordination (integration),
5. Language and speech,
6. Emotional behavior,
7. Cognitive behavior (including visual and auditory perception),

¹Ibid., p. 92.

²A. Gesell and C. S. Armatruda, Developmental Diagnosis; Normal and Abnormal Child Development, Clinical Methods and Pediatric Applications (New York: Paul B. Hoeber, Inc., 1947), p. 7.

CHART 1.--Growth and development chart.¹

Grade Age	K 4 yr. 9 mo. to 5 yr. 9 mo.	1 5 yr. 9 mo. to 6 yr. 8 mo.
General Physio- logical Growth Patterns	Achievement in school is the function of total growth of a child. When parents of a child are of divergent physical builds, there may be a wide range in the different physical measurements of a child--ht., wt., etc. Emotional stress may also affect the physical growth of a child for as long as six months. At this age range there is frequently a homogeneity of all measures of physical and psychological growth.	Slow growth with wide variations. Active, apt to fatigue easily.
Neuro-Muscular Coordination (Motor- Development)	Rides tricycle; climbs, does tricks; begins detailed construction with blocks; begins to coordinate prehension more and more; skips.	In constant movement; balls bounced and tossed; likes to dig, play tag, wrestle; likes to construct on a gross level. Majority can skip.
Rhythm	Likes to march to music. Responds well	Hopping, skipping, clapping, etc.

¹Office of the County Superintendent of Schools,
Growth and Development Through the Grades (Sonoma County,
California).

CHART 1.--Continued

Grade Age	K 4 yr. 9 mo. to 5 yr. 9 mo.	1 5 yr. 9 mo. to 6 yr. 8 mo.
Eye-Hand Coordination (Integration)	4-7% apt to be left-handed. May print from right to left. Can draw a circle, cross, square. Girls generally have better coordination. Can button and lace.	Capable of printing, but frequently reverses numbers and letters. Cuts, pastes, likes to hammer. Can use large sewing needle. Needs help in completing tasks. Frequently tasks must be structured for the child to give a "rolling start." 80-90% of group can catch and bounce a ball.
Cognitive Behavior	Can note differences of materials. Can note simple analogies. Can make comparisons of things he sees. May be capable of counting from 1-2. Attention span rudimentary; is just developing verbal communication that is purposeful for general use. Minimum interest in symbols. Notes common cultural forms i.e., triangle, hexagon, square, circle, diamond, etc. Memory good for concrete, sequential tasks, i.e., numbers, letters, objects. Memory adequate for simple sentences only.	Concept of left to right not yet established in many. Can reason through simple mazes. Can reproduce tasks. Knows values of coins. Knows address. May know simple measures. Should recognize name. Notes pictorial differences and similarities. Capable of foreseeing and planning the solution to simple problems. Recognition of words and phrases. Majority ready to read.

CHART 1.--Continued

Grade Age	K 4 yr. 9 mo. to 5 yr. 9 mo.	1 5 yr. 9 mo. to 6 yr. 8 mo.
Language and Speech	Likes to talk, exaggerates, tells tall tales. Vocabulary comprehension mostly concrete--some functional. Frequently an incomplete mastery of consonant sounds. Speech reflects socio-economic backgrounds. May use aggressively; call names, argue, contradicts, etc.	Speech problems frequent here and should be watched for. This is a period of tension and stuttering may be frequent. Interest in new words; will frequently repeat words; learns that language is more and more functional. Still apt to use language aggressively. Vocabulary may vary from 200 words to 2200 according to the home the child comes from.
Emotional Behavior	Upset by sudden change of routine. Extremes of fear, joy, affection, anger, shyness, aggressiveness. Behavior reflects family relationships, but are amenable to change.	Learning to share affection. Beginning to identify male and female roles in society. Beginning to interact adequately with own age groups.
Ethical Behavior	Rapid alteration between "good" and "bad" behavior. May blame others for misdeeds.	More interest in acting and dressing like the peer group; choice of friends apt to be influenced by social and economic status.

CHART 1.--Continued

Grade Age	K 4 yr. 9 mo. to 5 yr. 9 mo.	1 5 yr. 9 mo. to 6 yr. 8 mo.
Play Activities and Interests	May play in one location for periods. Boys and girls play together in small groups without much identification of sex differences. Play is not well organized.	Likes to use materials and ideas related to home and community. Interest in TV, movies, comics, radio, puzzles, "gadgets." Much imaginative play. Beginning of collections.
Guidance	Stress use of language. Wide variety of experience necessary; active; boisterous games. Expression through movement, i.e., visual auditory, kinesthetic, verbal. Needs, invites, and accepts some supervision and direction. Needs time to adjust to change. Expansive and inquisitive about human relations.	Permit for slow reactions; the indirect approach is frequently the most effective. May respond to isolation rather than punitive measures that are verbal in nature. Directions must be in clear, simple, sentences. Needs structured established routine. Praise and encouragement necessary.

8. Ethical behavior,
9. Play activities and interest,
10. Guidance.

A review of the current tests available for kindergarten did not provide a test suitable for this program in each of the developmental areas desired. Therefore, several tests and subtests were combined to form the kindergarten test battery. These tests are listed on Chart 2 Tests Correlated with the Growth and Development Chart.

For assessing the general physical growth patterns and expressive behavior of the child a checklist was devised (see Appendix A, p. 267). This checklist was based on the checklists included in the Lippincott Reading Readiness Test¹ and the Brenner Developmental Gestalt Test of School Readiness.² After observing the child during the testing administration the teacher would check the items. The checklist was short and considered as only superficial screening. If it appeared that further vision and hearing or other physical tests were needed the child was recommended to the school nurse for further screening.

¹Pierce H. McLeod, Lippincott Reading Readiness Test (Philadelphia: Lippincott Co., 1965), p. 2.

²Anton Brenner, The Anton Brenner Developmental Gestalt Test of School Readiness (Beverly Hills, Calif.: Western Psychological Service, 1964), p. 1. (Hereinafter referred to as Brenner Gestalt Test or BDGT.)

CHART 2.--Tests correlated with growth and development chart.

Area	Test	Source	Reference
General Physiological Growth Patterns	Checklist	Lippincott Reading Readiness Test Brenner-Gestalt	
Neuro-Muscular Coordination (Motor Development)	Jumping	Kephart	Kephart--This subtest is helpful in detecting children with laterality, body image, rhythm, or neuro-muscular control problems.
	Walking Board	Kephart	Kephart--This subtest is helpful in detecting children with a general balance problem. Gesell--Postural skills serve as essential preparation for more refined skills of later years.
	Body Image	Kephart	Bender--Body image is a Gestalt determined by laws of growth and development.
Rhythms	Jumping	Kephart	See above.
	Aural Coding	deHirsch	Hardy--The ability to perceive, to process and to reproduce sequences is a prerequisite for spoken and printed language.
Eye-Hand Coordination	Winterhaven Copy Forms 0 + □ Δ	Winterhaven Perceptual Motor Survey	Lowder found significant relationships between copying tasks and school achievement. Cross and Square least reliable. Swanson found among kindergarten children that the ability to copy the forms was a significant predictor of first grade achievement.

CHART 2.--Continued

Area	Test	Source	Reference
	Draw a Man	Goodenough Scoring Brenner Gestalt	Koppitz--A child's score on his human-figure drawing at the beginning of first grade was predictive of his reading level at the end of the year.
Language	<u>Receptive Auditory</u> Memory	Macomb Test Battery	Pierce McLeod--Designed to provide some measure of auditory memory.
	<u>Expressive Interview</u> and Check-list	Lippincott Reading Readiness Brenner Gestalt; School Readiness	
Perception Cognitive Behavior (Visual-Auditory)	<u>Visual Skills Letter Knowledge</u>	Lippincott Reading Readiness	Durrell, Monroe--The ability to name letters at the beginning of first grade is highly predictive of reading achievement.
	<u>Matching Sentence Gestalt</u>	Lippincott Reading Readiness Brenner Gestalt	Harris--ability to match letters is important for reading.
	<u>Auditory Skills</u>	Wepman Auditory Discrimination Test	Deutsch--Significant association between auditory discrimination and reading.

CHART 2.--Continued

Area	Test	Source	Reference
	Aural Coding	deHirsch	Hardy--Ability to perceive, to process and to reproduce sequences is a prerequisite for spoken and printed language.
	Mathematical Skills		
	Number Producing	Brenner-Gestalt	Kephart--Most reliability on Metropolitan Readiness Test in predicting reading achievement.
	Number Recognition	Brenner-Gestalt	
Affective	Bert Brown IDS Self-Concept	Bert Brown	
	Lafferty Self-Concept Measure	Clayton Lafferty	

If social or emotional problems were indicated the child was referred to the school social worker and school psychologist for further evaluation.

Three tests were included in the area of neuromuscular coordination or motor development. The subtests of jumping, walking board, and body image were selected from the Purdue Perceptual-Motor Survey.¹ Kephart states that the jumping subtest is "helpful in detecting children with laterality, body image, rhythm, or neuromuscular control problems."² The walking board, according to Kephart, is helpful in detecting children with a general balance problem. The examiner can observe whether the child has developed enough postural flexibility to meet new situations requiring balance. Many writers have stressed that postural skills serve as essential preparation for more refined skills in later years. Chaney states that "through activities of balance and posture, the child determines where the line of gravity is and the direction of its force." She feels that this knowledge is essential for the development of the coordinates of spatial system.³ (See Appendix A, p. 264.)

¹Eugene G. Roach and Newell C. Kephart, The Purdue Perceptual-Motor Survey (Columbus, Ohio: Charles E. Merrill Books, Inc., 1966), pp. 28-36. (Hereinafter referred to as Purdue P-M Survey.)

²Ibid., p. 32.

³Clara Chaney and Newel Kephart, Motoric Aids to Perceptual Training (Columbus, Ohio: Charles E. Merrill

Kephart stressed the importance of establishment of body image early in the development of the child. He states that body image is "the point of origin for all the spatial relationships among objects outside our body."¹ Bender has also stressed the importance of body image. She views body image as a Gestalt determined by laws of growth and development.² (See Appendix A, p. 263.)

When participating in rhythm activities the child is required to interrelate neuromuscular coordination with auditory perception and express this in a temporal sequence. Kephart's jumping test required the child to coordinate gross motor movements in a specific rhythmic pattern. This test, therefore, is beneficial in indicating problems in both gross motor coordination and rhythm. (See Appendix A, p. 266.)

DeHirsch includes a test of "imitation of tapped-out patterns" in her test to predict reading failure. She substantiates this test by stating:

Hardy suggests that the ability to perceive, to process, and to reproduce sequences is a prerequisite for spoken and printed language. Some children experience difficulty even with nonverbal sequences. Ability to imitate tapped patterns, according to Stamback,

Pub. Co., 1968), p. 9. Similar information in Gesell (1947), Kephart (1960), and Cratty (1967).

¹Kephart, Slow Learner, p. 50.

²Lauretta Bender, as stated in Katrina DeHirsch, et al., Predicting Reading Failure, p. 16.

increases with age; and Myklebust maintains that this ability differentiates normal children from those with learning disorders.¹

Therefore, a test of aural coding was devised. The examiner taps out a simple rhythmic pattern with a block out of sight of the child. The child is then given a block and asked to tap out the same pattern. (See Appendix A, p. 258.)

To assess the area of eye-hand coordination or fine motor control, Gesell's original Copy Forms Test and the Goodenough Draw-a-Man test were used. Much research has been conducted with these Copy Forms by Lowder.² Lowder has found a significant relationship between performance and the copying task and school achievement.

Swanson also has found that there is a significant relationship among kindergarten children's ability to copy the forms and first grade achievement.³

The copy forms consist of six forms increasing in difficulty beginning with a circle, then a cross, square, triangle, divided rectangle, and the diamond. The significance of this test is not merely in the final product but in observing the way the child copies, the size of his forms, the place on the paper where he draws the forms and

¹DeHirsch, Predicting Reading Failure, p. 18.

²R. G. Lowder, Perceptual Ability and School Achievement (Winter Haven, Florida: Winter Haven Lion's Club, 1956).

³Swanson, in Roach and Kephart, Purdue P-M Survey, p. 63.

the position in which he holds his paper. Therefore, it was suggested that the teacher be trained in the administration of the test, following the Winterhaven Copy Forms manual to enable her to make the pertinent observations. Thus the teacher would have the information to use when planning the educational program for each child, enabling her to work as a diagnostic teacher. (See Appendix A, p. 261.)

Human figure drawings have long been used by kindergarten teachers as indicators of eye-hand coordination and body image concepts. The draw-a-man test has been included in reading readiness tests such as the Anton Brenner Development Gestalt Test of School Readiness,¹ The Metropolitan Reading Readiness Test,² and DeHirsch's Predicting Reading Failure Tests.³ Elizabeth Kappity found the human figure drawing score at the beginning of the first grade was predictive of the child's reading level at the end of the year.⁴ (See Appendix A, p. 262.)

¹Brenner, Brenner Gestalt Test, p. 16.

²Gertrude H. Hildreth, Nellie L. Griffiths, and Mary E. McGaurran, Metropolitan Readiness Test (New York: Harcourt, Brace and World, Inc., 1965), p. 1. (Hereinafter referred to as MRT.)

³DeHirsch, et al., Predicting Reading Failure, p. 16.

⁴Elizabeth Kappity, et al., "Prediction of First Grade School Achievement with the Bender Gestalt Test and Human Figure Drawings," Journal of Clinical Psychology, XV (1959), 168.

To simplify the evaluation of the human figure drawing test the scoring from the Brenner Gestalt School Readiness Test was used. The child is given points for specific items included in the drawing thus giving the teacher a numerical evaluation as well as her own observations. (See Appendix A, p. 262.)

Both expressive and receptive language evaluating instruments were included in the diagnostic test battery. Receptive language was measured by an Auditory Memory Test from the Macomb Test Battery designed by Pierce McLeod. The Auditory Memory Test consisted of a series of fifteen dictated sentences which become progressively longer and more complex. The child was asked to repeat each sentence after the examiner. The examiner was then able to note not only the child's ability to retain related information, but also orient speech patterns which the child may have produced in repeating the sentences. (See Appendix A, p. 257.)

Expressive language included a rather subjective observation by the teacher of the child's language throughout the testing situation and was recorded on the checklist. However, to provide more spontaneous language on the part of the child the initial interview from the Ilg and Ames, School Readiness Behavior Tests, was included in the diagnostic test battery. This test consists of questions about age, birth date, birthday party or favorite activity,

siblings, names and ages; father's occupation.¹ (See Appendix A, p. 256.)

For purposes of selection of the diagnostic tests the area of cognitive behavior was further subdivided into visual perception, auditory perception, and mathematical ability. Since the diagnostic test battery was viewed as a screening device it was necessary to include tests that would identify any lack of skills which were viewed as essential for beginning reading and number activities. If extreme difficulties were noted on these tests then the teacher would refer the child to a qualified school psychologist for further evaluation.

Durrell has found that the ability to name letters at the beginning of first grade is highly predictive of reading achievement at the end of the year.² The importance of letter knowledge has also been stated by Monroe³ and DeHirsch.⁴

The Letter Knowledge and the Matching subtests from the Lippincott Reading Readiness⁵ test were included for

¹Ilg and Ames, School Readiness, pp. 41-44.

²Donald D. Durrell, "First-Grade Reading Success Study: A Summary," Journal of Education, CXL (1958), 1-6.

³Marion Monroe, "Reading Aptitude Tests for the Prediction of Success and Failure in Beginning Reading," Education, LVI (1935), 14.

⁴DeHirsch, Predicting Reading Failure, p. 24.

⁵Pierce H. McLeod, Lippincott Reading Readiness Test (Manual), pp. 2-3.

the visual perception tests. Letters rather than geometric forms were used based on Harris' work which suggests that only the ability to match letters rather than geometric shapes and pictures is important for reading.¹ (See Appendix A, p. 259.)

Anton Brenner has found the copying of letter forms in his Sentence Gestalt subtest as most predictive for Reading Readiness.² The children are asked to copy the sentence "Fred is here." Scoring requires analysis of recognizable letters and spaces with no score for omitted letters or reversals, inverted or unrecognizable letters. However, Brenner states that reversed or unrecognizable letters suggest a higher degree of development than do omissions or inability to produce.³

Two tests, the Wepman Auditory Discrimination Test⁴ and the Aural Coding Tests, were included in the diagnostic test battery to provide the teacher with an assessment for auditory skills. These tests could easily be used by the teacher throughout the year when she felt a child might be

¹Albert J. Harris, "Visual and Auditory Perception in Learning to Read," Optometric Weekly, L (1959), 2115-2121.

²Anton Brenner, "Anton Brenner Developmental Gestalt Test of School Readiness" (lecture given at the Merrill Palmer Institute, Detroit, Michigan, 1968).

³Brenner, Gestalt Test (Manual), p. 16.

⁴Joseph Wepman, Wepman Auditory Discrimination Test (Chicago: Language Research Associates, 1958).

having difficulty in the auditory area. The Wepman Auditory Discrimination test consists of twenty alternate word pairs which are presented by the teacher, the child's task is to judge if the pair of words sounds the "same" or "different." This test was included by DeHirsch since in the test the child is required "to perceive fine differences between sounds and to hold them in mind long enough to make comparisons between them." DeHirsch states that "appreciation of the meaning of words depends on such discrimination, which follows a maturational pattern."¹ Deutsch also reported a significant relationship between auditory discrimination and reading achievement.² The Aural Coding Test required the child to reproduce a simple rhythmic pattern. (See Appendix A, p. 258.)

Cognitive behavior is represented by the ability to solve problems. Therefore, the simplest device for screening cognitive behavior was assumed to be through mathematical activities. Reading readiness tests such as the Metropolitan Reading Readiness,³ the Anton-Brenner

¹DeHirsch, Predicting Reading Failure, p. 19.

²Cynthia Deutsch, "Auditory Discrimination and Learning: Social Factors," (December, 1962), reported in DeHirsch, Predicting Reading Failure, p. 19.

³Hildreth, MRT, p. 7.

Developmental Gestalt Test of School Readiness,¹ and Ilg and Ames School Readiness tests² include number tests.

As suggested in School Readiness Test,³ the children were asked to write their numbers as far toward twenty as they could go. The teacher observed not only the writing of the numbers, but the child's pencil grasp, posture, and other behaviors while the child attempted to complete the task.

The subtests of Number Producing and Number Recognition from the Anton Brenner⁴ test were also included in the test battery. In number producing the child was asked to pick out three blocks from a group of twelve blocks. He was then asked to pick out enough more blocks to make seven. Pertinent observations included: How the child approached the task; did he have to count or could he easily identify three? In the number recognition task the child was required to identify the number of dots in each group. Dots were arranged in different patterns with groupings from one to ten dots. (See Appendix A, p. 260.)

A screening test for the assessment of affective behavior provided a more difficult problem. The device

¹Brenner, Gestalt Test, pp. 10-11.

²Ilg and Ames, School Readiness, pp. 54-57.

³Ibid., p. 54.

⁴Brenner, Brenner Gestalt Test (Manual), p. 10.

needed to be simple to administer and flexible enough to use for continuous evaluation throughout the year. The Bert Brown Self-Concept Reference Test¹ and the Lafferty Measure of Self-Concept in Kindergarten² were suggested as optional devices for the teachers. However, the Brown Self-Concept Referent Test was administered to all of the children participating in the study upon entering kindergarten.

The Bert Brown-IDS Self-Concept Referents Test consisted of photographing each child with a Polaroid camera and then after taking the photograph, using it to stimulate the children to report: (1) their perceptions of the ways in which they suppose they are seen by each of the "significant other" referents, and (2) their perceptions of themselves.

The test included fourteen bipolar adjectival items on which the children were asked to report their perceptions of themselves and their perceptions of their mothers', teachers' and peers' perceptions of them on each of these items.³

¹Bert Brown, The Assessment of Self-Concept Among Four-Year-Old Negro and White Children: A Comparative Study Using the Brown-IDS Self-Concept Referents Test (New York: Institute for Developmental Studies, New York University, 1966), pp. 14-18. (Mimeographed.) (Hereinafter referred to as IDS Self-Concept.)

²Lucienne Y. Levine and J. Clayton Lafferty, The Measure of Self-Concept in Kindergarten Children (Livonia, Mich.: Research Concepts, 1967), pp. 32-38. (Hereinafter referred to as Self-Concept.)

³Brown, IDS Self-Concept, p. 12.

The Lafferty Measure of Self-Concept used children's drawings as an aid to understanding children. Lafferty states:

Kindergarten teachers' use of drawing has long been a source of information to them about the growth and development of children. The new materials here presented have been designed so that they adequately fit the needs of the teacher and the children. The ideal use of these materials demands that they become an integrated part of the kindergarten program. The material consists of a set of ideas involving major concepts that children can and should understand. The original set of ideas requires that the teachers have the children produce, periodically, drawings on a specific set of subjects designed to build better understanding of the problems, fears, concerns, and strengths of individual children.¹

The measure consisted of sixteen drawing activities which were included interspersed throughout the program on a weekly basis giving a continual diagnostic profile of the emerging self-concept of each child.

The tests selected (see Chart 3) were then arranged in an order of presentation which would provide a variation between passive and active tasks required of the child. In order to establish rapport with the child it was suggested that the informal interview introduce the test. The motor tests were presented near the midpoint of the testing situation to provide some active movement which is necessary with young children. The suggested sequence is as follows:

1. Language Expressive (Interview, Checklist)
2. Numbers (1. producing, 2. recognition)

¹Levin and Lafferty, Self-Concept, p. 12.

CHART 3.--Diagnostic tests for kindergarten.

I. Language (Expressive)		
Interview - checklist		
A. Age, birthday, brothers and sisters		School Readiness
B. Social - Emotional Behavior Checklist		Brenner Gestalt
C. Checklist		Lippincott Reading Readiness
II. Numbers		
1. Number Producing		Brenner Gestalt
2. Number Recognition		Brenner Gestalt
III. Visual Discrimination		
1. Letter knowledge test 1, 1a, 1b		Lippincott Reading Readiness
2. Sentence Gestalt		Brenner Gestalt
IV. Visual Motor--eye-hand coordination		
1. Winterhaven forms 1 through 4 Have child write his name on the paper if he can.		Lowder
2. Draw-a-Man Score		Brenner Gestalt
V. Neuro-Muscular Coordination (Motor Development)		
1. Body Image (Naming parts of body)		Perceptual Motor Survey
2. Posture and Coordination		
a. Walking Board		Perceptual Motor Survey
b. Jumping		Perceptual Motor Survey
VI. Language (receptive)		
1. Dictated Sentences		Macomb Test Battery
VII. Auditory		
1. Aural Coding		DeHirsch
2. Wepman Auditory Discrimination		Wepman
VIII. Affective		
1. Self-Concept		Bert Brown Self-Concept Referent Test

3. Visual Discrimination (letter knowledge test, 1, 1a, 1b)
4. Visual Motor--eye-hand coordination (Winter-haven Forms, Draw-a-Man)
5. Motor Development (1. body image, 2. posture and coordination)
6. Language-Receptive (1. dictated sentences, 2. jumbled sentences)
7. Auditory (1. aural coding, 2. Wepman Auditory Discrimination).

In the spring, preceding the entry to kindergarten that following September, all of the children were asked to attend a kindergarten roundup with their parent. At this time the diagnostic kindergarten test battery was administered to each entering kindergartner. The average time of actual testing was about twenty minutes per child during a forty-minute interval. The classroom teachers, the elementary school counselor, the speech therapist, the school psychologist and the principal worked together as a team for this administration. Stations were set up so that each was responsible for administering only a specific portion of the test battery and each was able to meet with every child.¹

¹For detailed description of the stations see Appendix A, p. 206.

Using the information gained from the diagnostic test battery which was developed specifically for the program, the children were rated in each of the six skill areas (general movement, manipulative skills, visual skills, auditory skills, speech and language, and cognitive skills) as well as a pre-test which yielded data in the affective domain. This information was used for placing the children in their kindergarten classes and was available for each kindergarten teacher in the fall so that she could plan her instructional program to provide for the individual needs of the children.

The diagnostic kindergarten battery was designed to be readministered periodically to the children by the classroom teacher, thus providing the teacher with techniques to use diagnostically throughout the year. Using the results of these tests to help her make adjustments in the program, the teacher was better able to meet the individual needs of the children and functioned as a "diagnostic teacher."

Development and Procedures for the Instructional Program

Overview

The instructional program was designed to foster growth in affective, social, and cognitive domains by providing a structured environment with opportunity for self-selection and creative activities.

The concept of self-selection was based on Murphy and Murphy's child development view of letting the child choose. Learning activities which the child selects relate to his own interests, his stage of readiness and his pace of learning, thus, the self-selection of activities provided an optimal chance for the fullest growth of the child's potential capacity. The amount of freedom, as suggested by Murphy and Murphy, varied depending on the child's ability to "grasp and to organize situations for himself" and on the child's capacity to handle the complexity of the activity.¹

Therefore, the program was developed so that basic skills in all areas of development could be fostered through a structured environment of materials that lead to cognitive activity in which the child was free to choose and select his own particular activity. The program attempted to provide opportunities for development at all levels in the areas of motor, perceptual, cognitive, and language development. The program attempted to present activities in problem solving situations which would foster creative thinking.

Based on the concept that learning occurs when there is a good relationship between the teacher and the students, activities were included in the program to

¹Murphy and L. B. Murphy, "The Child as Potential," in Breckenridge and Murphy, Growth and Development, p. 24.

provide for positive motivation, creative self expression, and positive self-image. The self-selection of learning activities and the "moving into drama" program helped the teacher to be more aware of and to focus on the affective domain. Don Glines, director of the Wilson Campus School Program, states:

With the proper match (of teacher and student) the affective domain then becomes the focus. Self-image, attitude toward life, being turned-on, good peer relationships, positive motivation, and perception of others are crucial . . . The psychomotor domain closely follows the affective domain in importance. Gross motor, fine motor, visual motor, auditory discrimination, and others are keys in learning . . . Then comes cognitive . . . Further we are concerned about individual learning styles, especially those related to the self-paced program.¹

Similar to the Wilson Campus School Program,² the kindergarten program in this study attempted to provide for all phases of development with a balanced curriculum. Even though cognitive skills were stressed, the organization of the program was not subject-matter oriented. The organizational plan adapted to meet individual needs was, as stated by Nila Banton Smith, " . . . child psychology oriented, utilizing particularly Dr. Willard Olson's theory of seeking; self-selection and pacing in that the child

¹Don E. Glines, "Implementing a Humane School," Educational Leadership (November, 1970), p. 185.

²Ibid.

seeks that which stimulates him, selects the book he desires to read (or activity) and proceeds at his own rate."¹

The instructional program from which the child selects consisted of sequentially planned activities in each of the following six skill areas:

1. general movement,
2. manipulative skills (eye-hand coordination),
3. visual skills,
4. auditory skills,
5. speech and language,
6. cognitive skills.

Emphasis was placed on perceptual motor training for children that function in the lower quartile on the gross motor coordination section of the pre-screening kindergarten battery test. The teacher used the knowledge gained from the testing as a diagnostic base from which to plan which activities to have available for the children.

The first two months of school were considered to be a period of adjustment to routine school procedures. The teachers gradually introduced the activities in the six skill areas and arranged them so that self-selection was encouraged within the activity areas. The "moving into

¹Nila Banton Smith, "What Have We Accomplished in Reading--A Review of the Past Fifty Years?" in William Durr, ed., Reading Instruction Dimensions and Issues (Boston: Houghton Mifflin Co., 1967), p. 11.

drama" or expressive aspect of the program developed in the following manner:

Phase I: After the first two months of school, the perceptual motor activities were presented in problem solving situations. According to Piaget intelligence emerges as it is nurtured, it grows, as the child has things to act upon. " . . . This understanding has led teachers to provide sensory experiences as the undergirding base for abstract concepts."¹ Development of movement, posture, eyes, and thinking are all related.² Therefore, total body movement was used to emphasize cognitive development. The teacher provided situations in which the children interacted with their environment in finding solutions to problems in the motor modality. (See Appendix A, p. 274.) The teachers were asked to provide an opportunity for the children to participate in this activity period from three to five times per week. The activity periods varied between fifteen minutes to twenty minutes depending on the situation.

Phase II: Expressive movement began to receive primary emphasis after the first four months of school.

¹Jean Piaget as quoted in Mary Mindess and Alice U. Keliher, "Review of Research Related to the Advantages of Kindergarten" (Washington, D.C.: Association for Childhood Education International, 1967), p. 2. (Herein-after referred to as "Research Related to Kindergarten.")

²General information found in Kephart (1960), Getman (1969), Luria (1959, 1961), Vygotsky (1934, 1962).

However, the teacher continued to include perceptual motor problem solving activities. In expressive movement, the intelligence directs the movement, recalling sensory experience, interrelating movement, sound, and speech. The work of Rudolf Laban,¹ in the Infant Schools in England provided a basis for developing activities for this period.

Phase III: Emphasis was placed on dramatizations at the beginning of the second semester of school. In a research study designed to systematically appraise the ability of young children to understand and interpret their social and physical world, Kenneth Wann found that:

1. Young children collect information which they test and use in conversation and dramatic play.
2. Young children employ the essential elements of concept formations.²

Free dramatics or the children's spontaneous dramatization of real life situations, role-playing and pantomime were encouraged. Carlton and Moore³ also found that self-directive dramatization of stories by children

¹Rudolf Laban in A Report of the Central Advisory Council for Education, Children and Their Primary Schools, Vol. I (England: Her Majesty's Stationary Office, 1967), pp. 256-57.

²Kenneth Wann, as stated in Mindess and Keliher, Research Related to Kindergarten, p. 3.

³Leslie Carlton and Robert H. Moore, Reading Self-Directive Dramatization and Self Concept (Columbus, Ohio: Charles Merrill Publishing Co., 1968), p. 1.

contributed to their total development--personal, social, and educational. Therefore, the teacher attempted to ultimately lead the children into dramatization of stories for not only the language aspect but for affective and social value. The teachers read stories suitable for dramatization to the children. The children then dramatized the stories according to their own imaginative, spontaneous interpretation of a character of their own choosing. During all three phases, many stories were read to the children to provide a language background for the creative dramatic work. These dramatizations were for the most part done without costumes or predetermined scripts. Each child was encouraged to improvise the character the way he felt that particular character would act.

The classroom teacher was asked to arrange her room in activity areas. The activity areas were to be equipped with many varied manipulative materials for appropriate stimulation of cognitive skills and to accommodate to each child's developmental process by allowing self-selection and self-pacing. Thus, they practiced the philosophy stated by Biber:

Young children learn through their own exploration and activity, realize themselves through the impact they make on the world and extend their understanding through rehearsing and reliving experience through play.¹

¹Biber, "Challenges Ahead," p. 204.

The six skill areas provided a foundation for learning skills and were considered as basic readiness activities. Recognizing the interrelatedness to each of these skills areas, an attempt was made to categorize the areas sequentially from lower level skills, which consisted of the previously mentioned areas of: (1) general movement, (2) manipulative skills or eye-hand coordination, (3) visual skills, (4) auditory skills, to the upper level skills of, (5) language and (6) cognitive behavior. The remaining portion of this section will be devoted to describing the recommended types of activities and determining relative sequence of difficulty.¹

Sequential Skill Areas

A. General Movement.--Many children upon entering kindergarten are awkward when running and walking, lack eye-hand coordination, lack skill in organizing and show a confusion about judgment of time, direction, distance and size.

Charles Drake, Director of the Perceptual Educational Research Center in Wellesly, Massachusetts, believes that it is important to begin at an early age to teach children in a carefully worked out sequence of motor competencies that follows a hierarchy of development.

¹See Appendix B for Handbook of Lesson Plans for Activity Centers in A Self Selection Kindergarten, pp. 269-308.

This is especially important as a preventative program in order that secondary psychological symptoms resulting from continued failure will not become generalized in the child's whole personality structure.¹

It has been estimated that 15 to 20 per cent² of the children in a typical school population have not developed or are not developing their basic learning skills at a rate that is appropriate to the demands of the learning tasks that are presented to them. These learning problems often indicate a type of perceptual disorder. Since behavior is both instigated by and guided by perception, significant distortions in the way in which a child perceives his environment will result in more or less serious difficulties in learning to understand and to respond correctly to that environment.³

¹Drake as stated in Mary Walsh Small, "Just What is Dyslexia?" Instructor (Aug.-Sept., 1967), pp. 54-57.

²Pierce H. McLeod, The Undeveloped Learner (Springfield, Ill.: Charles C. Thomas Publishing, 1968), pp. 10-11. McLeod points out that in Macomb County surveys have shown that more than 25 per cent of the children attending public school benefit to a limited degree from the instruction they receive. McLeod lists other estimates as to the number of children with learning problems have been made: W. C. Olson (1959) estimates between 10-15 per cent of total school population; Flower (1965) estimates over 15 per cent of total school population; and J. Deboer and M. Dallman (1960) estimate as high as 30 per cent of the total school population.

³Kephart, Brain Injured Child, p. 3.

The general motor activities were developed not only to help the child with problems that stem from a perceptual disorder, but were planned following the sequential stages of child growth and development. Piaget describes sensory-motor intelligence as consisting of coordinating successive perceptions and overt movements. Thus, he views this behavior as the basis for the child's developing an appreciation of spatial relationships and temporal and causal sequences.¹ Based on the work of Piaget and on the work of Kephart,² the premise that all learning was based on initial motor learnings was accepted. The child finds out about himself and the world around him through motor experience. Therefore, the general motor activities would benefit all children to some degree.

Piaget and Inhelder point out that motor learnings become the foundation upon which subsequent learnings are based.

Language and communication demand the use of verbal symbol which must stand for a motor pattern, an image of a motor pattern, or the data from motor patterns particularly as these are combined with sensory elements to form perception.³

¹See Supra, pp. 82-85 of this study.

²Kephart, Slow Learner, passim chapters i and ii.

³Jean Piaget and B. Inhelder. The Child's Conception of Space (London: Southledge and Paul Kegen, 1956), p. 453.

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The importance of gross motor and perceptual motor activities has been rather controversial. Some research has shown a relationship to intellect and achievement while others have not. Cratty summarizes the research in this way:

The programs espoused by Kephart, Harmon, and Getman purport to improve the intellectual functioning as well as the motor development of neurologically handicapped and retarded children and youth. Experimentalists who have investigated these relationships have arrived at conflicting findings. When Oliver found that physical improvement positively affected mental functioning, he concluded that the effect could have been caused by the improvement of the children's self-concept. Corder attempted to replicate Oliver's study, utilizing fewer subjects, and found substantially the same results. A more definitive study by Prangle and Solomon concluded that although motor functioning can be improved by engaging in motor activity, intellectual functioning is largely independent of the motor domain. Robbins similarly found that a program of basic motor activities had no significant effect upon intellectual or perceptual functioning.

Perhaps in no other area can researchers competent in carrying out studies in perceptual-motor functioning make a more significant contribution. Proponents of various systems of perceptual-motor training continue to postulate various relationships between motor, perceptual, intellectual, and emotional functioning. The data supporting these contentions, however, frequently contradicts the supporters of these theories.¹

Despite this controversy and even if basic motor activities only help improve the child's self-concept and motor functioning itself, it is worth including basic gross motor activities in a developmental program for young children.

¹Bryant J. Cratty, Movement Behavior and Motor Learning (Philadelphia: Lea and Febiger, 1967), pp. 66-67.

The sequence of the basic motor program was based on Kephart's developmental theory. According to Kephart first movements are generalized movements. Out of these generalized, undifferentiated movements more specific responses develop. Simultaneously a second developmental process is taking place. Specific reflex responses are being integrated to occur together in related groups rather than isolation. The two structures of specific movements and integrated reflexes are then combined so that movement patterns can be built up. After the movement patterns have been integrated the child no longer has to attend to the purely motor aspects of behavior but his attention is free for control of the behavior. Kephart states that "only patterned motor behavior provides the flexibility necessary to allow for changes in specific movements as these are dictated by the details of each new problem."¹

Following this developmental pattern, (1) beginning with gross motor activities, (2) followed by developing control and coordination, (3) establishing patterns of movements, and finally (4) flexible differentiated control) the following guidelines by McLeod were adopted for organizing the motor activities:

There should be an effort to relate this motor training to a sequence of skill development as outlined below.

¹Kephart, Brain Injured Child, p. 7.

1. Develop coordination within and between the large muscle systems of his body. These activities should be confined to one relatively limited area.
2. Help the child to develop a conscious awareness of the sensory stimulus produced by these coordination activities.
3. Encourage the child to learn the names for his various body parts and their relationships to one another so that he eventually will develop a mental image of his physical being which he can relate to objects in the space which surrounds him.
4. Develop an awareness of body sides so that the child can perceive the existence of the two opposite sides of his body.
5. Develop skills which enable the child to move his body sides in concert with one side assuming a dominant or lead role. In theory a child should be right-eyed, right-handed and right-footed or left-eyed, left-handed and left-footed.
6. Once the above mentioned skills are in evidence, a variety of activities should be provided which give the child opportunities to move through his environment using a variety of methods of locomotion at various speeds. Vary the environment periodically. Help to make the child consciously aware of the visual-motor experiences he is undergoing.¹

The motor activities were divided into three levels.

The first level consisted of gross motor activities to develop coordination and body image concepts. This level included physical fitness exercises, Kraus-Weber Tests and games to help establish body image. The second level consisted of bilateral activities to develop patterned movements, coordination, and balance. This level included activities used by Kephart such as Angels-in-the-Snow,²

¹McLeod, The Undeveloped Learner, pp. 83-84.

²Kephart, Slow Learner, p. 230.

walking beam,¹ balance board,² and ladder exercises.

Chart 4 gives an outline for the sequential procedures for the development of gross motor skills. (See Appendix B, p. 299-300 for example lesson plans.)

B. Manipulative Skills.--Manipulative activities were devised which involved the child as an active participant in the learning situation as he acquired knowledge. Also important in the development of manipulative skills and eye-hand coordination was providing learning activities appropriate for the state of development of the child. Based on the work of Piaget,³ Montessori,⁴ Kephart,⁵ Zaporozhets,⁶ and others, training for the development of sensory abilities was provided by using manipulative toys such as peg boards, large beads to string, blocks, puzzles, shape boxes, stacking toys, nesting blocks, stacking pyramids, etc. The importance of this manipulation is pointed out by Hamlin, Mukeyi and Yonomura. They state:

We are extremely clear about the need for direct contact and physical manipulation of the environment in the years before a child develops a large vocabulary.

¹Ibid., pp. 217-21.

²Ibid., pp. 222-24.

³Piaget, supra, pp. 58-66 of this study.

⁴Montessori, supra, pp. 31-32 of this study.

⁵Kephart, supra, pp. 81-84 of this study.

⁶Zaporozhets, supra, pp. 72-74 of this study.

CHART 4.--Sequential activities to develop general movement patterns.¹

Level I Gross Motor**A. Physical Fitness Activities****B. Basic Movement**

1. Bend knee sit-ups
2. Sit-up
3. Feet lift
4. Toe touch
5. Stomach roll
6. Rolling sit-ups
7. Roll from back to hands to knees
8. Roll from back to hands and feet

Level II Bilateral

- A. Angels-in-the-Snow, Bear Walk, Walking Board, etc.

Level III Cross Pattern

- A. Walking, running, skipping
 - B. Rhythmical work with music, skipping, hopping, dancing, etc.
 - C. Catching and throwing games
-

¹For more detail and further activities see: "Primary Guide for Motor Patterning," Patty Rice and Sue Chojnacki (mimeo) and "Primary Guide to Creative Movement and Planned Variation Perceptual-Motor Group Activities," Patty Rice and Sue Chojnacki (mimeo); available from Macomb County Intermediate School District; Kephart, Success Through Play; McLeod, Readiness for Learning, Teacher's manual.

We must, however, caution ourselves against forcing a too hasty and unwarranted retreat from manipulative and exploratory learning just because a child can communicate verbally to some extent.¹

They continue to state that:

Manipulation as a tool for learning is matched only by vigorous activity and large movement. The demand for large movement from infancy through childhood is inescapable; exercise, practice, and repeated efforts are intertwined with maturation, which cannot occur without them.²

The first types of manipulative materials were simple toys that provided experiences in eye-hand coordination and visually matching of shapes, sizes, textures, inside, outside top or bottom, curved or flat, light or heavy. This material included such objects as simple puzzles consisting of only basic shapes (circle, squares, triangles); stacking pyramids; large and small plastic or wooden circles, squares, and triangles; nested toys; posting boxes; shape-o-balls; and toys which required buttoning and lacing.³ The color cones, consisting of large, brightly colored wooden doughnuts to be placed on a wooden dowel according to color or size were found to be valuable

¹Ruth Hamlin, Rose Mukeyi, and Margaret Yonemura, Schools for Young Disadvantaged Children (Columbia, New York: Teachers College Press, 1967), p. 129.

²Ibid., p. 130.

³For a detailed list of materials suggested see Appendix B, pp. 308-16. A recommended materials list was given to the teachers. The teachers inventoried the existing materials, and ordered additional materials as listed. For materials purchased see Appendix C, pp. 341-43.

for beginning work. Color discrimination and learning of such concepts as largest, larger, smaller, smallest were emphasized.

Activities which involved catching and throwing large balls and bean bags provided opportunity for both eye-hand coordination and gross motor skills. Bean bag games were made with the target consisting of circle, square, and triangular shaped holes. The child named the shape before throwing the bean bag through the hole.

Activities were included which would help the child become more aware of the tactile sense. These activities were also used as a means to stimulate language. The teacher encouraged the child to produce verbal descriptions of exactly what he was feeling as he manipulated the objects. Touch boxes with pieces of cloth of different textures such as velvet, taffeta, net, flannel, felt, fur, and sandpaper were made by the teacher. The children matched pieces that felt the same, and used words such as soft, smooth, rough, fuzzy, etc. to describe the pieces. Touching games such as a grab bag or mystery box were included. The children would take turns feeling the objects and attempting to identify them by touch. The teacher encouraged the children to use descriptive terms such as soft, rough, smooth, small, wide, narrow, pointed, dull, etc.

The next level of manipulative materials were chosen to provide many opportunities to follow directions,

developing a sequence, and transferring from a visual, two dimensional symbol to three dimensional forms. Following Weikart's concept of moving from the real object to the index and then to the symbolic level of representations, visual pattern cards with representations the actual size of the real object were used with toys. Manipulative games were used with visual pattern cards.¹

It was suggested that the teachers make pattern cards for stringing the large wooden beads. These began with only three bead sequences and gradually developing more complex patterns in which the child must attend to likenesses and differences in size, shape, and color of the beads. This type of activity also provided opportunity for counting and, as the child related his production to the pattern, for developing concepts of one-to-one correspondence.

One-inch wooden cubes of various colors were also used with simple pattern cards. The child began by matching the cubes directly on top of the pattern card, later moving to viewing the card and constructing the pattern beside it. Thus, the activity provided visual clues that matched manual clues as the child manipulated the materials successfully.²

¹Wiekart, Preschool Demonstration Project, p. 9.

²Detailed description of the patterns and activities can be found in "Activities to Develop Basic Learning

Similar visual pattern cards were used with parquetry blocks, construction toys, rig-a-jig and plastic mozaics.

Square pegboards with an assortment of colored pegs were helpful in developing fine motor control, spatial relationships, and the ability to follow visual patterns. The first designs were simple and constructed by the teacher in the presence of the child.

Susan Gray describes the activity thus:

Continuous reinforcement is supplied as the child chooses the correct color and moves along his construction. When he successfully completes the line he is rewarded materially for his efforts. Opportunities to develop positional concepts incidental to the pegboard designs form an important part of the activity. As a simple square (box) is made, two red apples (pegs) can be placed inside the box, and so forth. Many variations on this theme are possible and the children can be given the opportunity to give directions for others to follow.¹

As skills developed, more complex designs were introduced for the children to follow. Pegboard designs as outlined by Gray,² and Kephart,³ and Developmental Learning Material Cards⁴ were suggested.

Skills for Pre-School and Kindergarten Children" by Patty Rice and Sue Chojnacki available from Macomb County Intermediate School District.

¹Susan W. Gray, et al., Before First Grade: The Early Training Project for Culturally Disadvantaged Children (New York: Teachers College, 1966), pp. 34-35. (Herein-after referred to as Before First Grade.)

²Ibid.

³Kephart, Slow Learner, pp. 266-74.

⁴Developmental Learning Design Cards for Pegboards. See Appendix B, p. 311.

Following the Piagetian program developed by Wiekart,¹ as many activities as possible were included which helped the child to make the transition from the object level of representation through the index level to the symbolic level and later to the sign level. Activities were designed to begin with matching real objects or following patterns made with the real object.

The children made prints with various objects in paint, hand prints, and splatter paintings of objects representing the index level. Design cards the actual size of the blocks, beads, and parquetry sets were also used. The child could build his reproduction with the real objects directly on top of the card. Gradually small design cards that were symbolic of the real objects were introduced.

Art materials were very useful for the integration of hand movements and the resulting visual pattern.

The children traced shapes, objects, templates, stencils, and their own names. Finger painting, easel painting, coloring, cutting, and tearing were included in the program not only for their creative artistic contribution but for the opportunities they provided for basic skill development.

¹Wiekart, Preschool Demonstration Project, passim, pp. 5-15.

For children that had difficulty with cutting and manipulating scissors sequential steps for teaching these skills were developed.¹

Following the work of Kephart² and Getman³ the children with specific problems in eye-hand coordination were given additional training at the chalkboard.

Chalkboard activities began with simple scribbling activities. Control of movements was developed through making circles, straight lines, and follow-the-dot patterns. The children proceeded to do similar perceptual motor eye-hand coordination exercises using large sheets of paper and crayons. Templates were traced at the chalkboard and on paper. The purpose of these activities was to provide experience in matching visual clues with manual clues and thus provided a perceptual-motor basis for interpreting spatial relationships and other perceptual information.

An outline of the procedures for the development of manipulation and eye-hand coordination skills can be found on Chart 5.⁴

¹Phoebe Lazaras and Harriet Carlin, "Cutting: A Kinesthetic Tool for Learning," Exceptional Children (March, 1967), pp. 361-65.

²Kephart, Slow Learner, pp. 139-46.

³Getman, Developing Learning Readiness, pp. 55-66.

⁴See Appendix B, pp. 301-03 for sample lesson plans.

CHART 5.--Coordination of manipulative patterns.

- A. Eye-hand experience in manipulating shapes, sizes, textures, temperatures; developing the concept inside, outside, curved or flat, top or bottom, light or heavy, smaller or larger through games, nested blocks, stacking pyramids, puzzles, Lincoln logs, tinker toys, etc.
 - B. Integration of hand movements and a visual pattern by using parquetry blocks and pattern cards, one-inch cubes and design cards, wooden beads and sequence patterns, pegboards and design cards.¹
 - C. Art activities which involved cutting, tearing, coloring, easel painting, and fingerpainting.
 - D. Work at chalkboard:
 - 1. Scribbling
 - 2. Two handed circles
 - 3. Two handed straight lines
 - 4. Rhythmical horizontal writing patterns with the dominant hand.²
 - 5. Follow-the-dot.
 - E. Use large sheets of paper and crayons and proceed following chalkboard exercise sequence.
 - F. Use templates to trace at chalkboard and on paper.
 - G. Trace shapes, objects, stencils, and name.
-

¹For more detailed activities see "Activities to Develop Learning Skills for Pre-School and Kindergarten Children," by Patty Rice and Sue Chojnacki, at the Macomb Intermediate School District.

²See Kephart, Slow Learner in Classroom; Purdue Perceptual Motor Survey; and Success Through Play; and Getman's How to Improve Your Child's Intelligence and Developing Learning Readiness.

C. Visual Skills.--Based on Piaget's and Hunts'

Interactional Theory, the activities to develop visual skills began with many materials similar to those used in developing manipulative and eye-hand coordination. The work of Kephart, Getman, Frostig, Montessori, and Harris also provided guidelines for developing the visual perception program.

Kephart, Getman, and Frostig agree that the child who has difficulty in discriminating likenesses and differences among forms and symbols has not developed form perception adequately. Getman states that this child will not be able to learn to read as the letters will appear too much the same to him. To help the child to develop form perception, tactile-kinesthetic and visual senses are used. Getman advocates that the child practice tracing a circle, square, or other geometrical shapes, which are cut out of cardboard, called templates. When the child can reproduce these forms free-hand, the template is no longer needed.¹

The importance of perceptual form constancy, the ability to perceive an object as possessing properties of size, shape, or color regardless of the variability of the impression on the sensory surface, was also stressed by Marianne Frostig. According to Frostig shapes do not

¹Getman, Developing Learning Readiness, pp. 25-30.

always appear the same to some children. These children can not recognize a word as the same if it appears in a different color, type, size, or position. If the child has not had appropriate experiences to prevent this type of difficulty the child may have difficulty learning to read, to do arithmetic and spell. Frostig believes that perceptual constancy depends on the child's learning and experience. Therefore, the child can be given experiences that will teach form constancy. Frostig suggests that this is best done by starting with simple objects. The child is given the opportunity to identify the objects in a variety of increasing complex groupings, of different sizes and colors and at different angles. She recommends that all beginning work in this area start with three-dimensional objects seen in three dimensional space, such as sorting buttons, blocks, and matching shapes of felt or cardboard. Whenever a child begins having difficulty at the symbolic level, Frostig feels that attempts should be made to relate the symbolic material through three dimensional objects, and from three dimensions to two (i.e., making block designs from a pattern made of blocks then progressing to the use of design cards.)¹

Frostig recommends that because objects can best be taught in relation to their background, training in form

¹Marianne Frostig and David Horne, The Frostig Program for Development of Visual Perception (Teacher's Guide) (Chicago: Follett Pub. Co., 1964), p. 31.

constancy should be given in conjunction with training in figure ground perception. Objects are perceived in relation to their background. The human is so organized that it can select from all of the incoming stimuli that limited number which will become the center of attention. When one fixes his attention on a given object, this object stands out against the background, although the person may see the surrounding objects clearly. To the child with figure ground difficulty, no one object stands out. The child with the difficulty does not know on what to fix his attention and, therefore, often has difficulty in catching a ball, accurately judging distance, size, or shapes. This child tends to be distractable and disorganized. He will have difficulty in learning to read as he often loses his place in the book skipping lines and words. To prevent this problem in reading the kindergarten child may be given tasks which involve finding various objects in the room such as round things, blue things, large things, etc. finding a different object in a box of round ones; or sorting objects according to size, shape, and color.¹

Harris points out the relationship of perception in the reading process. He states that the reading sequence involves motor adjustments, sensory excitation, perception, grasp of meaning, reaction, and readjustment, the cycle

¹Ibid., p. 32.

being repeated over and over as one reads. Harris defines perception as "the awareness of objects or relations of qualities, primarily controlled by the excitation of sense organs, but also influenced by the individual's past experience and by his immediate set." Harris further establishes the importance of visual perception in reading readiness by stating:

Every reading readiness test has at least one part that involves the ability to note similarities and differences in pictures, geometric forms, alphabet letters or words; usually the task is to find an identical item among several that are slightly different. Research has shown that differences in ability to make such discriminations are definitely correlated to success in beginning reading. However, these perceptual skills are highly specific. Malmquist used five different tests of visual perception with first grade children. Those tests which involved geometrical shapes or meaningful pictures had very low correlations with reading, while those which used groups of letters and groups of digits showed substantial correlations.

Goins found appreciable correlations between reading achievement of first grade children and their scores on various perception tests. She concluded that the good readers were those who were able to hold in mind a total gestalt or configuration at the same time that they attended to the parts of the whole. Difficulty arises when the child either perceives the whole in a general way without discerning the individual letters or attends to the letters without perceiving the words as a whole. This tendency to perceive either undifferentiated gestalten or unintegrated parts is emphasized by Vernon.¹

Thus, Harris illustrated the fallacies in many of the visual perception activities included in many kindergartens which center around reading readiness workbooks.

¹Albert Harris, "Perceptual Difficulty in Reading Difficulty" (presented at the International Reading Association, Chicago, 1968), pp. 4-5. (Mimeographed.)

Due to the interrelationships between manipulative skills, eye-hand coordination, and visual skills, the visual perception activities included in this kindergarten program were based on and grew out of the types of activities used for developing eye-hand coordination. Children began working with basic shapes such as plastic circles, squares, rectangles, and triangles matching them to a representation of the shape the same size but printed on black paper.¹

Similar activities were devised for individual flannel boards. Model designs composed of circles, squares, and triangles were made on cardboard for the child to duplicate with similar flannel pieces. Verbalization was encouraged during the activity.

Puzzles were selected in varying degrees of difficulty. The simple puzzles provided training in form and color discrimination. In these early puzzles complete objects, such as shapes, vegetables, fruits, houses, tracks or animals were to be placed in appropriate spaces. As the

¹George Manolakes, Robert Weltman, Marie Scion, and Louis Waldo, Try Experiences for Young Children (Pine Brook, New York: Noble and Noble, Publishing, Inc., 1969). Task 1. Child learns to discriminate basic geometric shapes first by shape, then by size, then by rotation. Task 2. Child encounters more intricate design patterns created with three dimensional red and white blocks. Task 3. Child uses alphabet tiles to create words and word groups as he recognizes letter forms. (See Appendix B, p. 312 for list of materials suggested for developing visual patterns.)

children progressed they used puzzles in which important parts of objects were to be fitted together in order to produce a whole. These were developed by teachers. Gray and Klaus state:

A puzzle in which each piece is a meaningful part of the whole will be more valuable than one consisting of randomly cut parts, since to put together one of the former, the child must focus on the meaning and relationships of the different pieces. An animal which has been cut into body, head, legs, feet, and tail is meaningfully assembled according to relevant features of the animal. Extension of this experience to developing the concept of functional use of parts is possible.¹

Language was used throughout all activities for orienting and focusing attention as well as for the development of vocabulary and communication skills.

Visual perception skills were also developed through the organization of the classrooms. The children were asked to return their own materials back on the proper shelves or storage places. The children sorted and matched materials such as blocks, dishes, and hats to the appropriate outline on the shelves when storing them. Thus they had practice in matching the real object to the index level of representation.

Games to develop visual memory required the child to look at a group of objects or pictures then look away and name as many as possible. Another game required the child to look at a group of objects. Then, while the child

¹Gray, et al., Before First Grade, p. 34.

was looking away, the teacher would change something or remove an object. The child would then look back and describe what changes had been made.

Following Harris' work on the relationship of letters and development of reading readiness, activities which involved manipulative letters were included. Magnetic boards and plastic letters were available for simple manipulation and for matching the 3-D letters to the printed letters in alphabetical sequence. Letter forms that punched out, leaving a stencil of the letter shape, were used in spatter painting activities and in matching games. The children made letters of clay or other art materials. Activities in which the children matched raised alphabet tiles to printed letters of the same size to create words under a picture were used.¹ In this way motivation to read was provided as the children learned to match letters. (See Appendix B, pp. 304-06 for sample lesson plans.)

Chart 6 gives an outline of procedures for developing visualization patterns.

D. Auditory Skills.--Auditory adequacy was considered to be important in the development of speech, reading readiness and basic learning skills. Auditory

¹These and other materials of a like nature are contained in the kit Try Task III (Noble and Noble Publishing Inc., 1969). (See Appendix B, p. 312.)

CHART 6.--Visualization patterns.

- A. Visual Comparison (perceptual constancy, figure ground and spatial relationships)**
 - 1. Sort and compare objects according to size, shape, and color. Ask: How are they alike? How are they different?
 - 2. Jigsaw puzzles and Try Task I and II activities
 - 3. Flannel board pattern games
 - 4. Sort and match materials such as blocks, dishes, etc. to appropriate outline on shelves when sorting them.
 - B. Visual Memory**
 - 1. Look, look away, and name objects, pictures, etc.
 - 2. Look, look away, look back: child tells what has changed.
 - C. Visual Discrimination**
 - 1. Magnetic alphabet boards and plastic letters
 - 2. Rubber stencil and letter forms
 - 3. Try Task III, letter activities
 - 4. Make letters with clay or other art materials
-

adequacy, according to Dechant, includes three things: auditory acuity, auditory comprehension, and auditory discrimination. Auditory acuity refers to the adequate transmission of the sound waves and recognition of discrete units of sounds. But also the child must be able to discriminate and retain what he hears. Dechant states that:

Studies generally have indicated that the ability to discriminate speech sounds is important for speech and reading development. Without it, children cannot isolate the separate sounds in words and thus find phonics training incomprehensive.¹

Dechant adds that the child must also be able to comprehend and interpret what he hears.²

DeHirsch reminds that ability to listen should not be taken for granted. Moreover, DeHirsch states that the child's short auditory memory span and undifferentiated auditory discrimination, interferes with interpretation of what is heard. DeHirsch advocates early training in auditory discrimination.³

Auditory discrimination practice clarifies auditory-perceptual Gestalten for the child whose language reception is diffuse. It is an essential aspect of training in a transition class.⁴

¹Emerald V. Dechant, Improving the Teaching of Reading (New Jersey: Prentice-Hall, Inc., 1964), pp. 51-53. (Hereinafter referred to as Reading.)

²Ibid.

³DeHirsch, et al., Predicting Reading Failure, p. 88.

⁴Ibid.

The kindergarten program attempted to train the children in the awareness of sound, beginning with gross auditory discriminations such as listening to sounds around the school, the house, the farm or the city.¹ As the children developed proficiency they were asked to make finer discriminations such as matching sound boxes, bells, etc. Other listening activities provided training for the children in fine auditory discriminations such as initial sounds and rhyming. Rhythm activities were included in which the child would tap out simple rhythmic patterns and clap to the rhythm of the syllables of names.²

In addition to the auditory adequacy that was necessary for reading readiness, auditory activities were considered to be important in helping the child in orienting his responses and interpreting the directions as he was in the process of achieving a goal. Based on Zaporozhet's³ work concerning influence of language or verbal interaction on the "orienting reflex," the children were taught to

¹These are on records contained in the kit Sounds I Can Hear, Scott Foresman Company. See Appendix B, p. 313.

²Dechant, Reading, pp. 143-52. Provides exercises or auditory training. See also Patty Rice, "Primary Guide Handbook," (mimeo), available from Macomb Intermediate School District and Patty Rice and Sue Chojnacki, "Activities to Develop Basic Learning Skills."

³Zaporozhet in Berlyne, Soviet Research, pp. 180-81. See supra, pp. 72-74 of this study.

listen for specific purposes. Directions were given simply but explicitly to help the child organize before beginning an activity. The child was to be aware of the goal of each activity he engaged in before beginning the task. Simple verbal clues were given when the child needed help in directing his attention to the right cues. Thus the child received feedback from both the external situation (verbal cues by teacher) and his own action (interaction with materials). (See Appendix B, p. 307 for sample lesson plan.)

An outline of the procedures for sequential teaching of auditory skills follows on Chart 7.

E. Language and Speech.--The language development aspect of the program provided the basis for interrelating all of the skill development activities and was interwoven throughout the program. Based on Piaget's work it was assumed that children first form mental images of objects by manipulating them. In addition, based on the work of the Russian researchers and others, it was assumed that knowing and associating verbal labels while manipulating the objects would help the child to identify the objects and grasp the meaning of the labels. Soviet psychologists

¹Michael Cole and Sheila Cole, "Russian Nursery School: Children and Learning," Psychology Today (Oct., 1969), pp. 23-28. Similar information in Maya Pines, "Can You Raise Your Child's I.Q.," Reader's Digest, XCIII (Dec., 1968), pp. 116-21.

CHART 7.--Auditory skills.

Auditory Skills**I. Make gross auditory discriminations**

- A. Children identify gross sounds by the use of different sounds around the house, etc.
- B. Children match sound boxes and matching bells.
- C. Produce three different sounds and have the children imitate the sequence.

II. Rhythm

- A. Use rhythm instruments or clap simple patterns.
- B. Children clap their hands to the tempo of their names such as "Ju-dy Jones."
- C. The teacher beats on a drum a certain number of times, then a child is called to clap the same number of times.

III. Make fine auditory discriminations (initial consonants, rhyming)

- A. Identify initial sounds of objects, match objects with same initial sound.
 - B. Identify rhyming pictures.
 - C. Identify rhyming words in a sentence from familiar context.
 - D. Identify rhyming words in a sentence from unfamiliar context.
 - E. Identify rhyming words in a series of isolated words.
 - F. Supply rhyming words in a familiar and unfamiliar context.
 - G. Supply a word to rhyme with a given word.
-

have shown that children learn more rapidly when they can name things or talk about the problems as they are working with them. These researchers believe that verbal ability, perception, and intelligence are inseparable.¹

Vygotsky points out that the role of language changes as the child grows and develops. Language begins by serving merely a social function of expressing the child's immediate needs or moods. However, gradually language becomes internalized as an instrument for thought which Vygotsky calls inner speech. Young children often talk aloud in a disconnected monologue which Vygotsky calls "egocentric speech." This is an intermediate stage which fills the function of inner speech. Vygotsky has found that "egocentric speech" can alter the course of the child's activities. According to Vygotsky early "egocentric speech" marks the end of an activity. However, as the child matures, this form of speech tends to move to the middle of the activity and eventually to the beginning of the activity. At this stage egocentric speech takes on a directing, planning function which provides for purposeful behavior on the part of the child, Vygotsky has concluded from his research that instruction can change a child's

¹Michael Cole and Sheila Cole, "Russian Nursery School: Children and Learning," Psychology Today (Oct., 1969), 23-28. Similar information in Maya Pines, "Can You Raise Your Child's I.Q.?" Reader's Digest, XCIII (Dec., 1968), pp. 116-21.

verbal development, which in turn directs the child's thought.¹

The importance of specific instruction in language was recognized in the development of the kindergarten program in this study. Language development instruction was planned and carried out during all activities in which the children participated. During the sensory training activities (manipulative, visual, and auditory) language was used informally. Thus the child was taught to use his senses, at the same time he was taught the meaning of what he perceives and what words he could use to describe these sensory experiences. This automatically led to other cognitive skills as the child was encouraged to generalize his immediate sensory experiences. Generally the language activities were planned in three stages to follow Bruner's levels of representation.² When listening to a story, the children would physically act out parts of the story (en-active representation). For example, if the spaceman in the story stood up, the children stood up; when the spaceman stretched, the children stretched. The next stage involved the child in forming a mental image (iconic representation) through pictures. The children would retell stories using

¹Berlyne, Soviet Research, pp. 174-75. Similar information in Eleanor Duckworth, "Thought and Language--Vygotsky and Piaget" (Canada: 1966), p. 8. (Mimeographed.)

²Bruner, Cognitive Growth, pp. 1-15.

the flannel board or their own drawings related to the story. The third stage (symbolic representation) involved the child in retelling the story in his own words, dictating a sentence about his picture, describing the sequence of what happened in the story, or having a child retell the story while the rest of the group pantomined it.

Activities for developing language were of both receptive and expressive nature. However, receptive activities were planned to include involvement of the child in more than simply listening. Carlson's book, Listen and Help Tell the Story,¹ provided an excellent source of play-action stories in which the child listened intently to discover what he should do next. Another activity included verbal directions to which the child complied. These children began with simple one-step commands such as "Put the block under the table." "Put the block on top of the table." Then two-step directions were added such as "Run to the desk and then walk to the chalkboard." "Touch the back of your head with your left hand." The directions gradually become more complex.

After reading a story to the child, the teachers would ask a child to retell the story in his own words,

¹Bernice Carlson, Listen and Help Tell the Story, (New York: Abingdon Press, 1965).

answer questions regarding the content or to organize a series of pictures from the story in proper sequence.¹

Expressive activities involved speaking on the part of the child. Children were encouraged to express themselves through a variety of free dramatic play activities as well as more formal activities. During "Show and Tell" the children were encouraged to talk about their interest and activities. The children were asked to talk about pictures beginning with simple descriptions then leading into telling imaginative stories related to the picture. Flannel boards and flannel characters were available for the child to manipulate as he composed his story.

Games were played in which the child would describe an object while the other children attempted to locate it or guess what it was.

The children were asked to describe sequences such as a trip to the grocery store, the ride on the school bus, a story they saw on T.V., or how to go someplace. Many of these activities were recorded through dictation to the teachers. Class books were made. The children also dictated sentences about their own pictures. Many suggestions of this type were included in the program from the Van

¹Other activities similar to these may be found in Merle Karnes, Helping Young Children Develop Language Skills (Arlington, Va.: Council of Exceptional Children, 1968).

Allen, Language Experience Units.¹ (See Appendix B, p. 308 for sample lesson plan.)

Drama activities also provided opportunities for language development. These provided the basis of the "moving into drama" program. Chart 8 provides the outline for activities to provide for the development of speech and language.

F. Cognitive Skills.--Cognitive activities were based on Piagetian theory, which indicates that during the sensorimotor period the foundation is laid for later representational thought. Gradually, actions become internalized and are represented in thought processes. During the pre-operational (eighteen months to seven years) stage, language and thought become interrelated. The child at this stage is still perceptually oriented. Piaget states that perceptual judgments enter into the child's thinking about matter, space, time, number, and causality. Also important according to Piaget is that the child tends to "center" on one variable only, lacking the ability to coordinate variables. Thus when you pour water from a short, fat container into a tall, thin container, the child will fail to coordinate the change in height with the change in width and will believe there is more water in the tall container.

¹Roach Van Allen, Language Experience in Reading (Chicago: Encyclopedia Britannica, 1969).

CHART 8.--Language and speech communication patterns.

Receptive

- I. Describe shapes and colors, stress appropriate labels. "This is a red square." "This is a yellow square." Child feels the shape and repeats the sentence.
- II. Give simple oral directions and check for success in following them.
- III. Read stories to the child
 - A. Ask him questions
 - B. Ask him to retell the story noting sequence or arrange a series of pictures in sequence
 - C. Begin a story and let the children add different endings
 - D. After reading a story discuss with the children if it could be true or not
- IV. Read play action stories in which the child participates such as "The Lion Hunt" or "Brave Little Indian"
- V. Play games holding conversations in different voices such as Billy Goat Gruff, The Three Bears, etc. Have children identify them with their eyes closed.
- VI. Use language without pictures or concrete objects
 - A. Games such as I am thinking of something--describe until child guesses what
 - B. Describe person until child guesses who
 - C. Describe a place until child guesses what and where

CHART 8.--Continued

Expressive

- I. Encourage the child to talk about his interests and activities--Show and Tell
 - II. Have him talk about activities that serve to identify other children and adults
 - III. Show the child a picture. Let him hold it and feel it. Encourage him to talk about it--first description then a story
 - IV. Use flannel board pieces to develop a story
 - V. Have child describe and locate objects around the room
 - VI. Use language without pictures or concrete objects
 - A. Describe a sequence
 - 1. A trip to the grocery store
 - 2. A story he saw on T.V.
 - 3. How to go to school, to grandma's house, or some other place
 - 4. How to go someplace, what the landmarks are, and other interesting sights along the way
 - VII. Describe a situation or use a picture of a situation and let the child dramatize what he would do to solve the problem
-

Thus activities were planned to allow the child to manipulate and experiment with real objects to provide a background of experience to discover concepts for himself. Activities were planned to develop concepts in the area of classification, seriation, conservation, one-to-one correspondence, number relations, and understanding cause and effect.¹

The math program provided a vehicle for developing many of these concepts. Classification not only involved sorting objects into sets according to perceptual qualities (size, color, shape) but also according to functional qualities. For example, the children would place buses, trucks, trains, and planes together in a set, or hammer, screwdriver, saw, and pliers together. Also children made books of things that were round or things that were triangle shape by finding pictures to classify according to similar qualities of shape.

Numbers and letters were organized in sequence. Children placed objects and pictures in sequence according to size, such as width, length, and height, or variations in color or pitch. Children worked with clay and water to experience changes in shape without changes in volume. A water pan with various plastic containers was recommended

¹Educational Testing Services, Let's Look at First Grades (New York: Board of Education of the City of New York, 1965).

for water play activities to provide for preconservation experiences.

Many informal activities provided opportunities for one-to-one correspondence. Setting the table in the doll house corner, passing out napkins and cookies at snack time, or matching hats to dolls helped the child establish the concept of equality.

Manipulative materials, bead frames, and other counters were used to help the child understand cardinal value.

To help the child develop an understanding of cause and effect the teacher was asked to encourage the child to ask "why." The child was asked to hypothesize what he thought would happen before an action in a problematic situation.

Many activities which were included in the kindergarten program of this study were similar to those recommended by Weikart¹ in his cognitive curriculum and Lavatelli² in her Piagetian Early Childhood Curriculum.

Chart 9 provides an outline of the suggested activities for the development of cognitive skills.

¹Weikart, Preschool Demonstration Project, pp. 6-11.

²Lavatelli, Early Childhood Curriculum, pp. 81-145.

CHART 9.--Cognitive skills.

I. Classification

- A. Sort objects according to one perceptual quality-- shape, color, texture, size, or match one of a pair with the other.
- B. Sort objects into sets according to two perceptual qualities. Example: red squares, blue squares, and red circles, could be grouped in a class of squares and a class introducing intersecting sets. String or yarn could be used to make the circles around the sets. Flannel boards and flannel pieces could also be used.
- C. Sort objects according to function such as things that are tools, things that belong in the kitchen--foods, machines, transportation, etc.
- D. Sort objects according to similar qualities. Example: things that are round such as apple, balloon, pumpkin, orange, ball; things that are triangular such as sail boat, bird's wing, etc.

II. Seriation

- A. Sorting objects according to size and arranging in sequence from smallest to largest, widest to narrowest, tallest to shortest, or vice versa.
- B. Stringing beads according to a pattern of beads or pattern cards.
- C. Arranging numbers and letters in proper sequence.

CHART 9.--Continued

III. Preconversation Experiences

- A. Water pan with various shapes and sizes of containers to pour back and forth.
- B. Clay and balance scales. Children are given two equal balls of clay. They make each into various shapes and balance them.

IV. One-to-one Correspondence

- A. Counting objects
 - B. Setting table, passing out materials to each child, etc.
-

Expressive Activities--"Moving
into Drama"

The expressive activities began with expressing oneself through bodily movement. Breckenridge and Murphy describe the importance of body movement perception and language in the development of imagination.

Ability to express himself with any fluency depends on the acquisition of controls over his body, on accumulation of knowledge which will permit him to judge and to handle objects intelligently (sense perceptions and judgments), on language facility and on increasing capacity to have and to use ideas in concept formation, problem solving and thought.¹

The first phase of the "moving into drama" activities was based on an extension of the perceptual motor training activities. The children were asked to participate in perceptual motor activities in a problem solving situation. It was assumed that the child's learning environment should not only provide opportunity for interaction of movement, multisensory experiences, appropriate labeling and communication of the experience, but also finding solutions to the problems through the motor modality.² Most of the activities suggested for perceptual motor-problem solving are not generally considered to be

¹Breckenridge and Murphy, Growth and Development, p. 375.

²Some work of this type has been carried on by Dr. Walker of Gesell Institute in New Haven, Connecticut. However, no printed material is presently available. (See Appendix B, p. 318 for a sample lesson plan.)

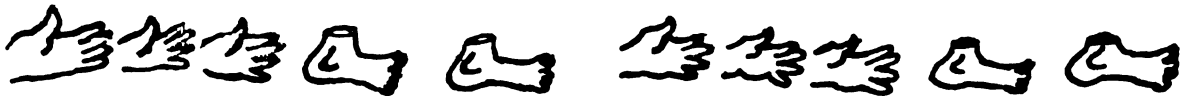
sequential activities. Instead, they were considered expanding activities which were introduced and then used intermittently with other activities.

One activity which allowed the children to explore problems in sensory-motor organization and spatial transformation was the "road game." The children drew a road on the floor. Different children walked down the road. The children explained "How was the walking different from the way the previous child walked?" or "How was it the same?" The children worked in pairs matching the other child's walk and thinking of variations in ways to walk. One child taught the other his new variation. Stepping stones could be added for a variation. The child used his left foot on the green blocks and his right foot on the red blocks. Pictures of animals were used to encourage the children to try different animal walks when traveling the road.

Another activity required the making of a river on the floor. The children thought of different methods by which they might cross the river. In this activity the children decided to use various apparatus such as the walking rail, skate boards, ladders, ramps, stepping stones, etc., thus setting up their own obstacle course.

The perceptual motor problem solving activities also included visual and auditory stimulation thus interrelating these modalities through movement. The children

produced rhythms following symbolic pattern cards. The pattern cards included a drawing of a hand to indicate a clap, a foot indicated a stomp of the feet, or picture of animals for animal sounds. For example:



These pictures indicated three claps, two stomps, three claps, two stomps. The children also developed their own symbol to represent various actions. They then arranged these in a visual pattern and then produced the rhythm. Thus, the children supplied both the auditory movement and suggested the code.

The second phase of the "moving into drama" program added the dimension of expressive movement. In expressive movement the children participated in responding to music, stories, and ideas. The child interpreted the mood of the music or story and directed his movements to express this mood, constantly recalling the sensory experience of the present and interpreting it based on past experiences.

Based on the work of Rudolf Laban,¹ the expressive movement activities combined the concepts of weight, time, and space to produce movement qualities. The teacher

¹Rudolf Laban, in Joan Russell, Creative Dance in the Primary School (London: MacDonald and Evans Ltd., 1965), pp. 16-18.

directed the children's attention to these qualities and helped the children learn how to move and where to move through verbalizing the experience.

Activities began by providing experiences to discover parts of the body that can move. Any part of the body such as hands, feet, knees, head, and elbows could lead a movement. These experiences helped the young child to develop body awareness. The commands by the teacher verbalized the quality of movement to be performed while the children enacted the appropriate movement in their own individual manner. Time in movement was taught with directions such as "Punch down at the floor quickly!" or "Lift your arms up slowly and gently." For teaching body awareness movement activities such as the following were suggested:

1. Curl up as small as you can. Slowly make your elbow go up towards the ceiling. Quickly curl up as small as you can again.
2. This time let your nose (or some other body part) go up to the ceiling.
3. Now slap your knees softly, raise your knees as high as you can, slowly. Move with your knees going quickly up to your chin.¹

Activities to develop self-control provided experience in control of the body as well as the problem of discipline. One activity suggested was running quickly and stopping abruptly. As the children developed control they were told to stop "high up in the air" or "low down near

¹Gray and Percival, Music, Movement and Mime, p. 4.

the floor," frozen like statues. Movement lessons were developed to teach the children to avoid being rough and bumping into each other and to help the children learn to use their eyes to find a space to move in. Chart 10 provides a sample lesson plan on Use of Space and Movement for Primary Children.

Other suggested activities for teaching weight, space, and time were as follows:

1. "Walk very slowly, you are very tired."
2. "You are an old, old man. Walk like an old man."
3. "Now walk slowly up a mountain." "Run down the other side of the mountain."
4. "Now you are carrying something very heavy."¹

The movement lessons were designed to use movement as the child's natural language to teach abstract concepts such as weight, time, space, and emotional feeling by making the concepts concrete through the movement media. When the child experienced them with his body, the abstract concept became a first-hand experience. The learning activities followed the sequence of becoming aware, exploring, improvising, organizing into the child's own pattern of thinking and doing, and then communicating to

¹Other similar suggestions may be found in Gray and Percival, Music, Movement and Mime, passum, Appendix A.

CHART 10.--Lesson plan on use of space and movement for
primary children.

Main Idea: A space can be used best when every child has room to move freely.

Behavioral

Objective: Each child will find a space in the room and stretch in different directions without touching another child. Each child will solve the problem of finding a new space to move to without colliding with another child.

Learning Activities

Teaching Activities

1. Stretching Movements

Show: Ask leading questions.

How high can you stretch?

Discuss: Close to the floor on knees. One leg in back of you.

Apply: Children stretch.

2. Identifying a Space

Show: Stretch your arms out away from your sides.

Discuss: Are you in a space of your own? If you are you will not be able to touch anyone. This is your very own space.

Apply: Children move until they cannot touch anyone.

3. Finding a New Space

Moving to a new space without colliding with other children

Show: Finding a space

Discuss: With your eyes look for a space that you would like to be in. Now keep your eyes on that space and don't lose it. Let's see if you can slowly move to that space. Check to see if this is your very own space.

Apply: Move and discuss keeping space in mind.

4. Returning to "Home Space" without colliding with other children

Show: You moved so nicely to that new space, you were so careful not to interfere with anyone else's space.

Discuss: Look back at your home space. Think how you could move quickly to your home space. When you hear the sound of the triangle you move quickly to your home space.

CHART 10.--Continued

<u>Learning Activities</u>	<u>Teaching Activities</u>
	<u>Apply:</u> Quick movements back to home space.
5. Swing and turning movements with a quiet ending. Exploring the use of rhymes for movement	<u>Show:</u> Who could let their arms and back go swinging? <u>Discuss:</u> Swing and swing and swing and turn right around. Lift way up high. Now sit right down. <u>Apply:</u> Move to rhyme.

others. Thus the teacher devised her teaching activities to parallel the child's learning sequence. The teacher would first show the children through movement what it was she wanted them to do, this may have been demonstrated by another child. Then followed a discussion to see if the children understood and to clarify the goal of the activity. Next the teacher asked the children to practice (apply) the behavior under supervision. At this stage all children participated--everyone is moving according to his own interpretation. The teacher reinforced by praising children's actions. Last the children verbalized how they felt when doing their movement. Chart 11 provides a sample lesson plan for An Expressive Movement Activity.

These activities of expressive movement naturally lead into pantomime and improvising the dramatization of stories. This type of drama began with the reading of stories such as Snow. After the reading the children would pantomime getting dressed to go out in the snow, snowflakes falling on their projected tongues, feeling the cold wind blow, sliding down the hill, rolling in the snow, climbing hills, making tracks and angels in the snow, and constructing a snowman.

"The Lion and the Mouse" was read and the children would choose partners and "act out" the story together making the lion talk with "long lion sounds" and the mouse talk with "short mouse sounds."

CHART 11.--Lesson plan for expressive movement activity.

Main Idea: Movements can vary by placing the weight on different parts of the body and by being heavy or light.

Behavioral

- Objectives:**
1. Each child will participate in placing weight of his body on his toes, hands and various parts of his body.
 2. Each child will make heavy and light movements.

Ideas Taught

1. Weight can be placed on different parts of the body.

Weight on toes.
Moving in space without being rough or bumping each other.
Changing weight to other parts of the body when they hear the line "Around the house"
Control of movement with ending "Quiet as a mouse"

2. Movements can be heavy or light.

Learning Activities

Show: "Stand on tip-toes. All of your weight is on your tip-toes." "Put your hands on the floor, too. Now your weight is on your hands and toes." "Sit on the floor." "Put your heels and your hands on the floor." "Put all of your weight on your heels and hands."

Discuss: Tip toe, tip toe
 Here we go
 Tip toe tip toe
 To and fro
 Tip toe tip toe
 Around the house
 Tip toe tip toe
 Quiet as a mouse
 (Let the children suggest meaning and ways to move to the poem.)

Do: Children move to the poem.

Show: "You are a very fat old lady. Walk like a fat lady." "Now you are as light as a feather. You can hardly stay on the floor. You want to float away." "Now you are carrying something very heavy."

CHART 11.--Continued

<u>Ideas Taught</u>	<u>Learning Activities</u>
Nonsense Song Elephants are large and heavy animals. Spiders webs are light and delicate. Heavy objects can more carefully.	<u>Discuss:</u> One elephant went out to play Out on a spider's web one day He had such enormous fun He called for another elephant to come Two elephants--repeat verse <u>Do:</u> Children move to the song.

The children listened to several stories and fairy tales which they acted out by improvising and talking when it came natural to them. Dance a Story Records¹ were used to encourage their own interpretation of stories and music.

Free dramatic activities were encouraged in the doll house corner, with dress up clothes, with various hats and in the play store. The telephone was a very popular toy for carrying on dramatic conversation.

Summary of the Instructional Program

Even though the kindergarten program in this study attempted to provide a sequence of activities in six basic skill development areas the interdependence and interrelationships of these was recognized. There appears to be some controversy in planning programs for young children. At one end of the continuum is the highly structured program, while at the other end are advocates of "open education" with apparent freedom of learning activities.

Cronbach's summary of the research leads her to state:

What research seems to say is that leaving the child to discover is not nearly so good as providing him with a guided sequence to maximize the possibility of early discovery.²

¹Dance a Story Record Series (Arlington, Ill.: Ginn and Co). (See Appendix B, p. 316 for detailed list and price.)

²Lee Cronbach, "Learning Research and Curriculum Development," Journal of Research in Science Teaching, II (1964), 204-07.

It was the thesis of this study that this sequence and structure could be part of the learning environment, thus, allowing the child the freedom to make choices within this prepared environment.

This concept is supported by Silberman, an advocate of more humane practices in American Schools:

Most advocates and practitioners of informal education, in short, reject John Holt's romantic notion that children should simply be turned loose to do their own thing, that as soon as one introduces adult notion of what is worth learning, one destroys the fidelity of the child. What the child wants and how much he wants is largely determined by his environment, Mary Brown and Norman Precious write, in criticism of Holt, and the school and the teacher must play a vital role in this choice.¹

The teachers were asked to arrange their classroom in activity centers or stations. The activity centers were arranged by the teacher to provide a stimulating environment that encouraged active participation on the part of the child. The centers were organized to provide for development of the six basic learning skill areas:

1. General Movement
2. Manipulation
3. Visual
4. Auditory
5. Language
6. Cognitive Skills.

¹Charles E. Silberman, Crisis in the Classroom (New York: Random House, 1970), p. 211.

Within this environment the children were allowed to select and choose their own learning materials. If a child tended to stay at one activity center, the teacher would encourage him to try a new but related activity. The teacher used the information from the diagnostic tests which were administered periodically to guide her in selecting appropriate activities to have available for the children.

In the self-selection environment the goals for each child were based on a belief in: (1) the worth, the value, and dignity of each individual within the classroom, and, (2) recognition that meaningful interaction with others is a basic need for young children. The teachers then attempted to guide the child through critical and creative thinking into: (1) selecting and setting worthwhile goals for himself, (2) arriving at purposes that would give direction to his behavior, and (3) planning and carrying out the necessary actions to realize these goals in terms of the child's purposes. In the self-selection environment the ultimate goal for the child was the acquiring of self-discipline, learning how to make his own decisions, and knowing whether his behavior was acceptable to others.¹

As the child interacted and adapted to his environment while developing his basic learning skills at his own

¹Sarah Leeper, Ruth Dale, Dora Skipper, and Ralph Witherspoon, Good Schools for Young Children (New York: Macmillan Co., 1968), p. 60.

pace, opportunities were also provided for the child to create and express himself in a variety of modes. It was suggested that three types of activities be made available in the self-selection classroom. These would include:

(1) independent activities with materials that were self-correcting and gave immediate feedback as the child interacted with them, (2) creative or expressive activities where the child was free to experiment or express himself in a variety of ways, and (3) planned learning activities where the child and the teacher interacted with each other.¹

The creative or expressive activities included art, music, and dramatic situations in which the child was an active participant. The child was allowed to express himself in creative ways through paints and clay, through rhythm and bodily movement and in dramatic play of various types. These expressive activities were called the "moving into drama" program, which was generally conducted as a large group activity. Chart 12 illustrates the time guidelines for the expressive "Moving into Drama" activities in relation to the rest of the program.

Implementation of the Program

The main vehicle for preparing teachers to implement the program was an extensive series of in-service

¹See Appendix B, p. 295 for Handbook for Planning Activity Centers in a Self-Selection Kindergarten Program. Samples of lesson plans for various activities are included.

CHART 12.--Time guide for "Moving into Drama" program.

Introduction to School--September through October

1. Help children learn the routine of a self-selection classroom.
2. Introduce new materials and their use in learning centers.
3. Teach gross motor activities Level I and II^a (15 minutes per day).
4. First week in November administer standardized pre-test for evaluation of growth of children during participation in the program.

Phase I--November through December

1. Continue basic skills development through self-selection in learning centers.
2. Perceptual-motor problem solving, 15 minutes, 3 times per week.
 - a. Describe similarities and differences in activities.
 - b. Try to match performances.
 - c. Let the children try before telling.
3. Read stories to the children daily--minimum of 5 minutes.

Phase II--January through February

1. Expressive movement, 15 minutes, 3 times per week.
2. Continue perceptual-motor problem solving in the gross motor program.
3. Self-selection of basic skills activities in learning centers and read stories daily.

Phase III--March through April

1. Self-directive dramatization, 15 minutes, 3 times per week.
2. Continue regular program.

May (last two weeks) administer post-tests for evaluation of growth of children during participation in the program.

^aSee sequential list of gross motor activities, p. 143.

workshops which attempted to familiarize the teachers with: (1) the objectives of the program, (2) the importance of early identification of learning problems and providing for the child that lacks basic learning skills, (3) the concept of the teacher as a diagnostic teacher, and (4) the use of testing as a means for furthering instruction. The workshops presented methods and materials as well as diagnostic tests in six specific areas to provide a foundation of learning skills. While discussing the six areas of: (1) general movement, (2) manipulative skills, (3) visual skills, (4) auditory skills, (5) speech and language, and (6) cognitive skills, emphasis was placed on stressing language development throughout all activities.

An orientation meeting for all primary teachers interested in participating was held in the fall to present the objectives of the program and the in-service workshops. The objectives of the workshops were stated as:

1. To help the participant develop an understanding of the importance of early identification and provision for the child that lacks basic learning skills.
2. To help the participant develop the concept of the teacher as a diagnostic teacher.
3. To help the participant develop skill in using the results of testing as a criteria for planning further instruction.

4. To help the participant begin to develop a sound philosophical framework in child development and early childhood education.
5. To help the participant develop the ability to plan effectively for learning experiences in visual, auditory, and motor skills.
6. To help the participant develop skills in providing problem solving situations for the development of cognitive skills.
7. To explore means of providing situations for ample expression through movement, music, and creative dramatics.
8. To help the participant provide for growth in the child's patterns of language and vocabulary development through "moving into drama."

All primary teachers in the school district were invited to participate in the in-service training workshops for implementation of the instructional program. Although teachers participated on a volunteer basis, they were reimbursed financially for time spent beyond the school day or given the option of taking the course for college credit. The teachers participated in approximately twenty-six hours of in-service workshops prior to full implementation of the program. These workshops were conducted from September through February. At the completion of this training the teachers were competent in the administration of the

diagnostic screening test battery to be given in May to the entering kindergarten children. At the completion of these workshops two kindergarten teachers volunteered to participate the following year to implement the program in their classroom.

The workshop session was organized to provide for interaction and active involvement on the part of each participant. An outline of the in-service training program follows:

In-service Workshop Outline^{1,2,3}

I. Current Theory and Research in Early Childhood Education

A. Basic Assumptions of Early Childhood Education
Current Theory and Research by J. McV. Hunt,
Piaget, Bruner, Cazden, Bernstein, Vygotsky and
Luria.

1. The expression of a child's intelligence is not fixed at birth, but rather is essentially dependent on a set of developed skills.
2. Children have an inherent motivation to explore and learn; however, manipulation of the environment can produce changes in this willingness and ability to learn.

¹A more detailed outline of each workshop session, a sample lesson plan of a workshop session, and a bibliography are included in the Appendix C, pp. 323-31. The teachers were also provided with resource papers available from the Macomb County Intermediate School District.

²See Appendix C, p. 319 which provides a time guide for the sequence of the phases of the program.

³See Appendix C, p. 345 for the budget covering the in-service, visitations, and new materials.

3. The child's development results from his maturation plus continuous interaction with his environment particularly in his early years.
 4. The child's intellect develops through a sequence of related changes that produce "qualitative" and "quantitative" changes in his ability to function in his environment.
 5. When a child is provided with an environment of rich and varied learning opportunities, he will select and develop his own learning pattern.
 6. The child's mastery of language, other symbolic systems and concepts conveyed by these systems is especially vital to intellectual development.
- B. Importance of Early Identification and Remediation for Children Who Lack Basic Learning Skills
- C. Concept of Grouping and Pacing
1. The kindergarten teacher as a diagnostic teacher.
 2. Testing as a means for planning further instruction.
- D. The Kindergarten Program
1. Provides an instructional program which accommodates the individual stages of development of the children.
 2. Provides optimal opportunity for the child to develop his abilities.
 3. Uses a planned sequence of activities based on knowledge of stages of developmental learning.
 4. Provides an environment which provides for self-selection within a structured choice of learning experiences rather than presenting the child with only random unorganized activities.

5. Provides opportunity for self knowledge through self expression rather than rote learning.
6. Utilizes the intrinsic motivation to learn rather than extrinsic motivation.
7. Provides activities to develop a foundation of learning skills.

II. Sequential Activities to Develop a Foundation of Learning Skills

A. General Movement

1. Perceptual motor activities
2. Creative movement activities

B. Manipulative Skills

1. Fine motor coordination
2. Eye-hand coordination

C. Visualization Skills

1. Position in space
2. Spatial relationships
3. Perceptual constancy
4. Figure ground relationship

D. Auditory Skills

1. Discrimination of grossly different sounds
2. Discrimination and reproduction of rhythms
3. Finer auditory discriminations
4. Discrimination of speech sounds

E. Speech and Language

1. Language experience approach (Van Allen)
2. Language Patterns (Bill Martin)
3. Creative Drama (Brian Way) (Gray and Percival)

4. Role playing problem solving situations (Shaftel)

F. Cognitive Behavior

1. Problem solving situations--motor and verbal levels
2. Classification
3. Seriation
4. Beginning logical concepts
5. Relationship
6. Cause and effect
7. Influence

III. Diagnostic Test for Early Identification of Learning Skills

- A. Suggested Diagnostic Tests Correlated with Child Growth and Development
- B. Procedures of Administering Tests
- C. Interpretation and Use in Planning Instruction

The full implementation of the program in the classroom actually began in the following September when these children entered school. During this second year the two kindergarten teachers and others that wished to join them were involved in monthly workshops which focused on activities which emphasized the use of language as a vehicle for directing thought and interaction. These workshops stressed the presentation of perceptual-motor activities in problem solving situations, expressive movement, and creative drama, which constituted the "moving into drama" program.

The workshop director conducted classroom demonstration teaching and classroom visitations to help the teachers with problems in implementation as they arose. Video tapes were made of classroom activities. These were used in the workshops to illustrate teaching methods. The teachers also made visitations to other model programs to help them in implementing various activities after seeing similar procedures during the visitation. (See Appendix C, p. 339-40 for a sample video taped demonstration lesson.)

Evaluation

Standardized pre- and post-tests were administered to all of the children in both kindergarten classrooms (n = 19 and n = 21) participating in the study to assess the growth in vocabulary concepts and basic learning skills which were defined as fundamental skills in the motor, perceptual, cognitive, and language areas which are interrelated and are involved in the development of "reading readiness."

The problem of selecting an appropriate test for young children from the point of view of anticipating significant reliability and validity was pointed out by Anna Freud's statement, " . . . there is in childhood no stable level of functioning in any area of any time."¹ However,

¹Anna Freud, Normality and Pathology in Childhood (New York: International University Press, 1965), p. 122.

acknowledging these and other limitations in selecting appropriate standardized tests for kindergarten children, an attempt was made to find tests that could be administered to small groups of the children and adequately assess their progress during the program.

To measure growth in vocabulary concepts the Peabody Picture Vocabulary Test (PPVT)¹ was selected. This test was designed by Lloyd M. Dunn to provide an estimate of a subject's verbal intelligence through measuring his receptive vocabulary.² It is a picture vocabulary test in which the child is asked to point to the best picture in a choice of four possible responses to the stimulus word. The test must be administered individually. However, it required only ten to fifteen minutes to complete with the usual kindergarten-age child.

The PPVT was standardized on 4,012 subjects ranging from ages two and one-half to eighteen. All subjects were administered both Form A and Form B. The reliability coefficients (the degree to which scores remain stable) for the PPVT were calculated using the Pearson product-moment correlations on the raw scores earned on both forms at each age level by the normative population. The resulting reliability coefficients ranged from 0.75 to

¹See Appendix A, p. 293 for sample test sheet.

²Dunn, Peabody PVT, p. 25.

0.97. Thus, Dunn states that the PPVT is a "reasonably stable instrument."¹ The validity (the extent to which the test measures what it professes to measure) was "obtained both for individual items and for the total test."² "Content" validity was obtained by conducting a search in the Merriam Webster New College Dictionary for all words that could be illustrated. Dunn claims that a "good cross section" was obtained of words in common usage in the United States and, thus, assumes that the final product meets adequate standards for a picture vocabulary test."³ "Construct" validity was also claimed as the test correlated highly with measures of academic performance, and research had shown that vocabulary was the best single item for predicting success in school.⁴

Even though the validity evidence of the PPVT was limited and has received some criticism, the test is one of the best available at this time for assessing receptive vocabulary for this age range of children. This test has been used frequently in evaluating vocabulary concepts by such researchers as Deutsch (1963), Karnes (1965), Gray and Klaus (1963), Weikart (1964), and others. Therefore, the

¹Ibid.

²Ibid.

³Ibid.

⁴May L. Hutt and Robert G. Gibby, The Mentally Retarded Child (2nd ed.; Boston: Allyn and Bacon, Inc., 1966), p. 262.

Peabody Picture Vocabulary Test was chosen for this study to evaluate growth in vocabulary concepts. Form A of the PPVT was administered in November to all of the subjects as a pre-test; Form B of the PPVT was administered in May to all of the subjects as a post-test.

Since the basic learning skills in this study were considered to be the linguistic attainments, the visual and auditory perception, and the muscular coordination needed for beginning reading, it was considered desirable to administer a "reading readiness" instrument for evaluating growth in this area.

Of all of the evaluation instruments examined which were group measures designed for kindergarten children, the Metropolitan Readiness Test was the single standardized instrument that contained the most subtests which would parallel the areas of growth and development that the kindergarten program in this study was attempting to develop as "basic learning skills" required for reading readiness. The Metropolitan Readiness Test (MRT)¹ consists of the following six parts: word meaning, listening, matching, alphabet, numbers, and copying. The subtests corresponded as follows with the basic skill areas considered when developing the program in this study:

1. Motor Coordination--the Copying Subtest

¹See Appendix A, p. 277, for sample test booklet.

2. Visual Skills--the Matching and Alphabet Subtests
3. Auditory and Language Skills--the Word Meaning and Listening Subtests
4. Cognitive Skills--the Number Subtest.

Both the number and the listening subtests involved problem solving ability as well as visual perception and auditory perception in order to complete several of the items.

Table 3.1 shows the relationships of the tests to the skill areas. Therefore, to measure the readiness for reading of the kindergarten children in this study, the Metropolitan Readiness Test, Form A, was administered as a pre- and post-test. This test was administered to small groups of children rather than individually. The MRT was standardized on a sample of approximately 15,000 pupils in some sixty-five school systems shortly after the opening of schools in the fall of 1964. The manual provides detailed information concerning the reliability and validity of the subtests and total test. The total score is recommended as adequate basis for measuring progress in reading readiness.¹

The pre-tests were administered during the last week of October and the first week of November. This provided time for the teachers to gain a better knowledge of

¹Hildreth, MRT, p. 15.

TABLE 3.1.--Areas of basic learning skills and diagnostic and evaluation instruments used in this study to determine growth in each area.

	Self Concept	Gross Motor	Manipulative Eye-Hand Coordination	Visual Skills	Auditory Skills	Language Vocabulary Concepts	Cognitive Skills
Teacher's Diagnostic Test Battery	Brown IDS Self- Referent Test Child's Drawings- Lafferty	Purdue Percep- tual Motor Survey	←-----Copy Forms----- Draw-a-Man ←--Sentence Gestalt--→	←-----Brenner Subtest Gestalt--→	Auditory-Speech Tests		Brenner Subtests Numbers
Standard- ized Tests for Evaluation			MRT Copying	←-----Picture Vocabulary----- ←-----MRT Listening----- MRT Alpha- bet MRT Match- ing	Peabody ←--MRT Word Meaning--→		MRT Numbers

the children by having worked with them for two months. This also allowed time for the children to adjust to the school situation, the teachers, and the examiner. Both pre- and post-tests were administered by the same examiner to all the children in both kindergarten classes. The post-tests were administered in May after the children had been attending kindergarten and participating in the program for nine months.

Analysis of Standardized Instruments

Scores obtained from all subjects on both the pre- and post-test on both instruments, PPVT, and MRT, were transferred to IBM cards. These IBM tabulated cards were programmed for statistical treatment through Michigan State University Computer Laboratory by the CDC 3600 Computer. Standard computer programs for determining means, standard deviation, least squares estimates, and t test statistics were used in order to analyze the data of this study.

Summary

This chapter has provided a description of: (1) the development of the kindergarten diagnostic test battery, (2) the development of the kindergarten instructional program, (3) the implementation procedures for the program, and (4) the evaluation instruments. A description of the population and analysis of the data from the evaluation instruments was included.

CHAPTER IV

ANALYSIS OF DATA AND RESULTS

Introductory Statement

To identify the instructional needs of each child participating in the kindergarten program, an informal diagnostic test battery was compiled. The kindergarten teachers were trained as diagnostic teachers in the use of this battery as a tool for adjusting instruction to meet the individual needs of the children within their groups.

Instruction in implementation of the program and training in methods of administering and interpreting the diagnostic test battery took place through an in-service training program for the teachers. The teachers participated in a series of in-service workshops, visitations to other model programs, classroom teaching demonstrations, and video tape demonstrations.

Evaluation of the effect of the program in increasing the child's vocabulary concepts and basic learning skills in the areas of motor, perceptual, cognitive, and language development needed for "reading readiness" was measured by administering the Peabody Picture Vocabulary

Test (PPVT) and the Metropolitan Readiness Test (MRT) as standardized instruments for pre- and post-tests.

The data collected in this study was descriptive in nature and included both standardized and non-standardized measures. This chapter presents the description of the results in the following three sections: (1) the results of the teachers' diagnostic procedures using the kindergarten diagnostic test battery developed for this study, (2) the procedures used in implementing the kindergarten program, (3) the results of the instruments for measuring the children's progress in the vocabulary concepts and growth in basic learning skills which took place during the time of participation in the study, as measured by the PPVT and the MRT.

Results of the Teachers' Diagnostic Procedures

Upon the recommendation of a committee of teachers, under the direction of the supervisor of elementary education, the customary spring "kindergarten roundup" program was expanded to include the administration of the diagnostic test battery in order to provide a more complete and improved understanding of the children entering school. The diagnostic kindergarten test battery was administered by the kindergarten teachers with the help of special personnel. The additional personnel enabled the diagnostic testing to be completed with a minimum of release time for

the classroom teachers.¹ The children were rated in each of the six skill areas (general movement, manipulative skills, visual skills, auditory skills, speech and language, and cognitive skills) and social and emotional development. The information gathered about each child helped to prepare the school for a more sensitive and consistent approach to beginning students. The information obtained from the kindergarten diagnostic test battery was available for each kindergarten teacher in the fall so that she could plan her instructional program to provide for the individual needs of the children.

For convenience in administering the diagnostic test battery at the kindergarten roundup, the battery was divided up into sections relating to the skills tested and was administered in areas set up as stations. At these stations, the tests were administered by the regular classroom teachers with the help of the special services personnel. By establishing stations and with several teachers working together, several children could be scheduled concurrently, thus shortening the total time required for administration of the complete diagnostic test battery. This

¹The number of personnel in the kindergarten testing team varied depending on the number of children that were to be tested during the day. With one reading consultant, two speech teachers, three elementary school counselors, and three classroom teachers working together, four children could be scheduled for testing every ten minutes, thus, enabling the test battery to be administered to approximately 145 children in one school day.

also allowed the children to move around between the short periods of time required for actual test administration. The following stations were established for administering the kindergarten diagnostic test battery: (1) speech and language tests administered by two speech therapists, (2) visual perception and number skills tests administered by two school counselors and the reading consultant, (3) fine motor tests (eye-hand coordination) administered by a classroom teacher and an elementary school counselor, and (4) gross motor tests administered by three classroom teachers.¹ Chart 13 shows these stations and the tests administered at each station.

Prior to the kindergarten roundup, the school nurse arranged for hearing and vision testing to be done by the Macomb County Health Department. The nurse was present to talk with parents about the importance of immunizations and a physical examination of their child. While the children were being administered the diagnostic test battery

¹The Letter Knowledge Test was eliminated from the "kindergarten roundup" testing because the same information would be obtained from the Alphabet subtest of the MRT, which was administered as a standardized test when the children entered school in the fall. The complete Brenner Gestalt Test was administered at the second station, thus, including the number subtests and visual perception subtests. The auditory tests, Wepman and aural coding, were eliminated from the roundup screening because the health department was conducting the hearing screening. However, these tests were used during the school year by the teachers.

CHART 13.--Stations for diagnostic screening test at kindergarten roundup.

Station 1 Auditory Perception and Language Skills

Tests: Speech and Language

- a. Dictated Sentences**
- b. Informal Interview**

Administered by: two speech teachers

Station 2 Visual Skills and Cognitive Skills

Tests: Brenner Gestalt Developmental Test

**Administered by: two school counselors
 one reading consultant**

Station 3 Manipulative Skills (fine motor and eye-hand coordination)

**Tests: Winterhaven Copy Forms
 Draw-a-Man**

**Administered by: one classroom teacher
 one school counselor**

Station 4 Gross Motor Skills

Tests: Purdue Perceptual Motor Survey

Administered by: three classroom teachers

Station 5 Social-Emotional and Physical

**Tests: Vision and Hearing
 Questionnaire**

Administered by: Nurse and Social Worker

the school social worker interviewed the parents who accompanied their children. The basis of the interview was information supplied by parents in a completed questionnaire which previously had been distributed and explained to the parents at an evening Orientation Program. Thus, an opportunity was provided for the school to review the information given by the parents and to clarify any possible confusion or questions relating to the social and/or health history of the child. The school nurse and school social worker, as an integral part of the roundup team, attempted to complete all available background material in the social, emotional, and health areas; contributing from their respective disciplines to a better understanding of each child's individual needs.

Based on the results of the diagnostic test battery, each child was given a rating from one to four, from the most mature to the least mature respectively, in each of the developmental areas tested. The speech teachers administered and scored the speech and language tests. The median was found and used to divide the scores into quartiles. The subjects were then assigned a rating according to the quartile in which their score fell.

Table 4.1 shows the score ranges on the Brenner Gestalt Developmental Test of School Readiness and the rating assigned to each range. The ratings range from one to four, the most mature range was assigned the rating of

TABLE 4.1.--Brenner GDT raw score ranges and rating assigned.

Brenner GDT Score Range	Rating
45-80	1
34-44	2
15-33	3
0-14	4

Note:

This table should be read as follows: a child's score falling within the range of 45 to 80 on the Brenner Gestalt Test would receive a rating of 1, which would place the child in the highest quartile of the group.

1, with the least mature range assigned the rating of 4.

The Brenner GDT was used to measure visual skills and cognitive skills.

Fine motor skills were rated according to the scoring descriptions suggested in the Winterhaven Copy Forms Manual.¹ The ratings for the gross motor items were explained in the Purdue Perceptual Motor Survey Manual, which gives descriptions of the expected performance for each rating on each of the three gross motor tests.² (See Appendix A, pp. 263, 264, and 266.) Even though a description was provided in the manual for assigning

¹Lowder, Winterhaven Copy Forms (Manual), pp. 2, 4, and 6.

²Kephart and Roach, Purdue P-M Survey, pp. 31, 34, and 36.

the ratings, both of these tests tended to be rather subjective in their interpretation. Due to their subjective nature, these tests were administered and rated by the classroom teacher while she observed the child perform the tasks required. Thus, the teacher was able to record pertinent observations as well as assigning a numerical rating.

After the ratings were assigned to a child for each skill area tested, an average was taken for the composite rating. The subjects were then assigned to their respective kindergarten classrooms on the basis of their composite ratings on the complete diagnostic test battery. An attempt was made to have each of the two classes in the study contain approximately the same number of children scoring in the lower half of the group and the same number in the upper half of the group. Table 4.2 illustrates the class profile for each class, showing the number of children receiving each rating.

TABLE 4.2.--Profile of ratings within each classroom.

Rating	Classroom I No. of Children	Classroom II No. of Children
1	1	2
2	5	7
3	11	6
4	1	6
Total	18 ^a	21

^aOne child in Classroom I was not administered the diagnostic test battery, but was retained from the previous year due to immaturity.

In the fall the teachers used the ratings within each skill area, rather than the total test ratings for planning their instructional program. Children that scored low in the gross motor tests were given specific training in perceptual motor activities. For children that functioned below average on speech and language tests, additional emphasis was placed on language development activities. Table 4.3 shows in more detail the class composition and ratings in each skill area.

In the fall the Bert Brown IDS Self-Concept Referent¹ Test was administered. The scores were divided into quartiles and the subjects were assigned a rating from one to four, with one the top quartile, according to the quartile in which their score fell. The results were to be used to enable the teacher to plan activities to promote the development of a positive self-concept. Table 4.4 shows the raw score ranges and the ratings based on quartiles.

Figure 4.1 graphically illustrates how the classes scored on the Brown IDS Self-Concept Referent Test. The instrument contained fifty-two items. The mean score for Class I was 45 and for Class II the mean score was 43.6. The mode was fifty-two for both classes, with most of the subjects falling within a seven-point range at the

¹Brown, Self-Concept Referent Test, (manual).
(Mimeographed.)

TABLE 4.3.--Profile of classes showing ratings in skill areas on kindergarten roundup diagnostic testing.

Class I--AM: n = 19							
Child	Personal Health Data	Speech Language	Gross Motor	Fine Motor	Brenner Gestalt	Self Con- cept	Composite Rating
IA	2	2	2	3	4	3	3
IB	1	1	1	3	1	1	2
IC	2	2	2	3	1	3	2-a
ID	1	1	2	4	4	2	3
IE	(retention)					4	
IF	2	4	4	4	4	1	4
IG	1	1	2	4	4	1	3-
IH	2	3	2	2	2	2	2
II	1	3	4	1	3	2	3
IJ	2	2	4	3	2	4	3
IK	1	2	2	4	2	3	3
IL	1	2	1	2	1	3	1
IM	2	1	2	3	2	1	2
IN	1	2	4	3	3	2	3
IO	1	1	1	3	1	2	2
IP	1	2	2	4	3	3	3
IQ	1	2	3-	2	3	3	3
IR	1	1	2	4	2	2	3
IS	1	2	2	4	4	2	3-
Class II--PM: n = 21							
IIA	1-	2	2	2	1	2	2
IIB	2	1	3-	4	3	4	3
IIC	1	2	3	2	2	1	2
IID	2	2	3-	2	1	3	2-
IIE	2	2	3-	4	4	2	4
IIF	1	2	4	2	1	1	3
IIG	1	2	2	3	2	4	2-
IIH	2	3	3-	4	4	4	4
III	1	1	2	3	3	3	3
IIJ	2	2	4	4	4	1	4
IIK	1	1	4	3	3		3-
IIL	1	2	1	1	2	2	1
IIM	1	1	4	2	1	1	2-
IIN	3	2	2	1	1	3	1
IIO	2	3	3	2	2	4	2-
IIP	1	1	3	4	4	3	4
IIQ	3	2	2	4	3	3	3
IIR	2	2	2	3	2	2	2
IIS	1	1	2	2	2	1	2
IIT	1	1	3	4	4	2	4
IIU	2	3	4	4	4	2	4

^aA minus sign after a number indicates that the child scored in the lower range of the rating assigned.

TABLE 4.4.--Bert Brown IDS Self-Concept Referent Test raw score range and rating.

Self-Concept Score Range	Rating
50-52	1
45-49	2
40-44	3
20-39	4

ceiling of the test. (See Appendix D, p. 370 for Frequency Distribution Chart.) Since so many of the children scored near the top of this test, the teachers felt that they would gain more information concerning the child's self-concept by using Lafferty's Measure of Self-Concept for Kindergarten Children for further evaluation throughout the program. -This measure involved the use of children's drawings and provided a method for scoring the drawings to determine the self-concept rating. This device had the advantage that the administration of the measure could be extended through the entire year and samples of the drawings could be collected at "specific intervals rather than using one-shot testing."¹ Another advantage claimed by Lafferty is "increasing the scope of teacher awareness, by helping to sharpen their skills in knowing what to look for in children's drawings by use of a scoring system."²

¹Lafferty, Self Concept, p. 15.

²Ibid.

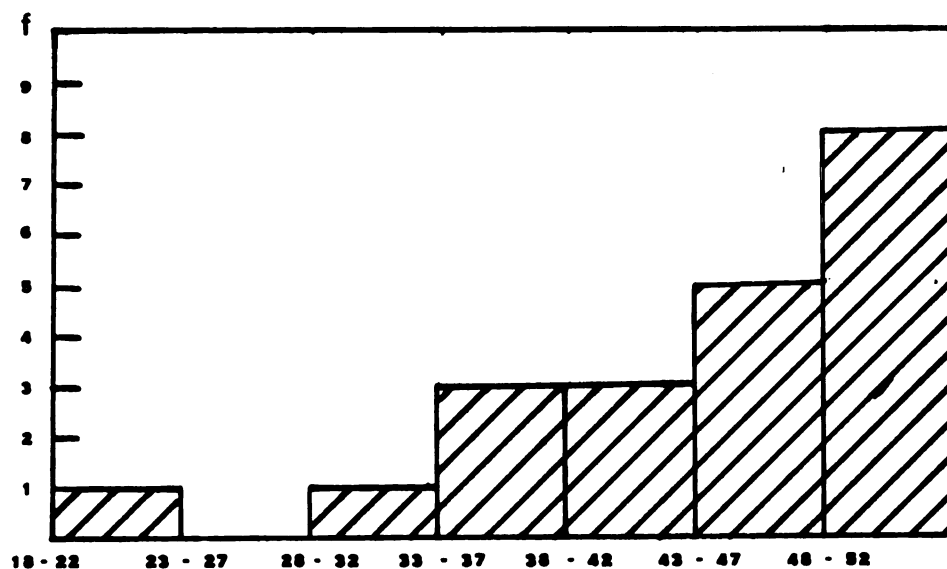
Class I AM



Class I

Mean = 45 Range = 36 - 52
 Mode = 52 No. of items = 52

Class II PM



Class II

Mean = 43.6 Range = 20 - 52
 Mode = 52 No. of items = 52

Figure 4.1.--Histogram of the Brown IDS Self-Concept Referent Test.

The kindergarten teachers participating in the study were especially concerned with identifying the learning needs of the child who was experiencing difficulty, and then, developing the appropriate learning environment necessary for that child to experience success. Therefore, the diagnostic testing procedures were used more often with the children that scored in the lower half of the class on the kindergarten roundup screening procedures. It was assumed that appropriate learning experiences during the child's first exposure to school might prevent future need for remedial teaching. The teachers carefully planned the objectives of each learning activity with the students' needs in mind. The kindergarten teachers, functioning as diagnostic teachers, planned the learning activities to include a preassessment for readiness for the activity which was preplanned to develop the objectives and provided alternative activities for the child that was not "ready." Evaluation was conducted after the activity to determine if the objectives had been accomplished.

Portions of the diagnostic kindergarten test battery were readministered periodically to the children at the discretion of the kindergarten classroom teacher. The teacher used these results to help her make adjustments in the program so that it would continue to meet the individual needs of the children. In March the entire diagnostic battery was readministered to those children who had received

ratings of three or four on the pre-test during kindergarten roundup. Thus, emphasis was placed on meeting the individual needs of the children that were functioning in the lower half of the class.

Since the kindergarten program was designed to meet the needs of individual children within the program, a graphic representation was used which would illustrate the growth of individual children in each of the separate dimensions assessed and would also graphically convey the interrelationship of the multi-dimensionalities for each of these children. Frank recommends the use of a polar coordinate graph for this purpose, stating:

A polar coordinate is a graphic device showing a circle with 360 radii which can be divided into a number of segments each of which is allocated to the major classes of recordings and dimensions. Within each such segment, an individual radius can be assigned for showing the rank order from 0 to 100 percentiles for each selected dimensions . . . Then on each radius the individual child's rank order for each dimension will be marked on the appropriate radius in terms of his percentile rank for that dimension, preparing a separate polar coordinate for each child's record . . .

Polar coordinates may be especially useful for presenting a comprehensive inventory of assessment of an individual child's status and condition and should be made at the beginning, at repeated intervals, and at the conclusion of the program, as a way of evaluating a project and discovering what and how the individual child in the group has changed.¹

Frank also points out that when the various points of the polar coordinate are connected by a line, they will portray

¹Lawrence K. Frank, "Evaluation of Education Programs," Young Children, XXIV (January, 1969), 172.

"any discrepancies, imbalance, handicaps and impairments as well as any favorable or superior rank orders for that individual child."¹ In this manner this graphic model of each child was useful in revealing what each particular child needed for normal development when planning for the whole personality of the child. Frank claims that the prescribed methods for research designs which focus upon statistical evaluations of the whole group ignore significant improvements shown by individual children even though the group as a whole may not exhibit what is considered as significant gain.² The Polar Coordinate Graphs for the twenty-two children that had scored in the lower half of the class on the pre-test (kindergarten roundup and standardized tests) are included with an explanation for reading the graphs in the Appendix D, p. 346.

To examine significant gains made by these individual students in the lower half of the kindergarten group, the scores made by them on the standardized pre- and post-tests (PPVT and BGDТ) were compared to the norms. The BGDТ was administered during the kindergarten roundup in May and re-administered in March of the kindergarten school year to assess growth in numbers (cognitive skills) and perceptual-motor skills. The PPVT was one of the standardized tests administered in October and re-administered the

¹Ibid., p. 172.

²Ibid.

following May of the kindergarten school year to assess the growth in vocabulary concepts as measured by the PPVT. Since standardized norms were available for both pre- and post-tests for these two instruments the scores of individual children on the PPVT and the BGDТ were compared to their respective norms for indication of significant gains made by individuals. Using a t test, it was found that a gain score of 13.71 or better on the PPVT would indicate a significant gain from pre- to post-test made by that individual in vocabulary concepts as measured by the PPVT. Of the twenty-two children who had received a three or four composite rating on the kindergarten roundup diagnostic test battery, all but two of the children's gain scores on the PPVT were greater than the normative population, with six individuals making significant gains.

Using a t test, it was found that on the BGDТ a gain score of 32.52 or better would indicate that significant gains were made by that individual in numbers (cognitive skills) and perceptual-motor skills, as measured by the BGDТ. Of the twenty-two children who had received a three or four composite rating on the kindergarten roundup diagnostic test battery, all but two had gain scores from pre- to post-test greater than the normative population for the BGDТ. Further analysis indicated that twelve individual children made significant gains in numbers (cognitive skills) and perceptual-motor skills as measured by

the BGDТ. Table 4.5 shows the gains made by the individual children who had received three or four composite ratings on the kindergarten roundup diagnostic test battery. This table also indicates which individuals had made significant gains as compared to the norm gain for the PPVT and the norm gain for the BGDТ.

Results of the Implementation Procedures

This section will attempt to describe results of the procedures used to train teachers to implement the kindergarten program developed in this study. Training for implementation began with a series of in-service training workshops. The program and workshops were explained at a meeting for all interested primary teachers in the Fitzgerald Public Schools in Macomb County, Warren, Michigan. Any interested teacher was invited to attend. Participating teachers had the option of being paid for workshops which extended beyond the normal school day or for taking the series for college credit. A total of twenty-seven teachers¹ participated in this in-service training workshop series. It was assumed that the information gained in the workshops would be of benefit to all primary teachers and would improve their teaching even if they used only portions of the program. Table 4.6 illustrates the make-up of the participating group of teachers.

¹This number indicates 76.5 per cent of all those invited to participate in the in-service training program.

TABLE 4.5.--Gain made by individual children during period of participation in the kindergarten program.

Children Rating 4-3 on Round- up Tests	Peabody PVT			Brenner GDT		
	Pre- Test Form A	Post- Test Form B	Gain Score	Pre- Test	Post- Test	Gain Score
Norma- tive Popu- lation	50.22 S.D. 8.17 r=.73	55.20 7.00	5	40.4 19.1 r=.55	59.4 14.52	13.3
Class I						
IA	50	59	9	13	52	39*
ID	39	55	16*	8	37	29
IF	34	47	13	10	40	30
IG	58	57	- 1	38	60	52*
II	36	52	16*	16	66	50*
IJ	54	56	2	36	66	30
IK	44	72	28*	34	70	36*
IN	51	66	15*	32	68	36*
IP	56	62	6	21	52	31
IQ	51	58	7	24	60	36*
IR	60	67	7	37	64	27
IS	57	59	2	10	38	28
Class II						
IIB	63	59	- 4	19	58	39*
IIE	48	51	3	8	34	26
IIF	51	60	9	53	60	7
IIH	29	48	19*	11	20	9
III	43	53	10	16	42	26
IIJ	36	48	12	4	50	46*
IIK	32	54	24*	32	69	37*
IIP	52	58	6	14	59	45*
IIQ	49	58	9	15	51	36*
IIU	41	42	1	8	41	33*

Note:

On the PPVT a gain score of 13.71 or better indicates significant gains. On the BGDT a gain score of 32.52 or better indicates significant gains. Significant gains are identified on this table by an asterisk (*).

TABLE 4.6.--Participation in the in-service training.

	Total No. of Teachers Invited To Attend	No. of Teachers Participating in In-service Training
Classroom Teachers (K through 2)	28	21
Elementary Counselors	4	3
Speech Therapist	2	1
Elementary Principals	<u>4</u>	<u>2</u>
Total	38	27

Teachers to help administer the kindergarten roundup diagnostic test battery were selected from the group that had participated in the in-service training program. Thus there were several teachers that were capable of administering the kindergarten test battery and they worked together as a team. Chart 14 illustrates the team of teachers that participated in administering the kindergarten roundup screening testing.

CHART 14.--Teacher participants in administering kindergarten roundup diagnostic screening tests and the stations at which they administered the tests.

Stations	Examiner	Tests Administered
I	Social Worker-Nurse	Social-emotional, health
II	Speech Therapists	Speech - auditory
III	Elementary School Counselors	Brenner Gestalt DT
IV	Classroom Teachers	Gross Motor
V	Classroom Teachers	Fine Motor

The in-service training program began in late September of 1968 and extended through February 1969. Twenty-six hours of in-service training workshops were held. The teachers then participated in two hours of practicum for administering the test battery and administered the complete test battery to two kindergarten children individually. The Kindergarten Roundup Screening testing was held in May of 1969. The kindergarten test battery was administered by teams of teachers, working at skill stations to all children who would be entering kindergarten in the following fall.

The actual implementation of the total program with the children did not take place until September of 1969. Two kindergarten teachers who had been involved in the previous in-service training program volunteered to work more closely with the study. During this school year these two teachers and other interested teachers participated in monthly workshops, periodic classroom demonstrations, visitations by the workshop director, video tape teaching demonstrations, and visitations to model programs.

Special materials were purchased for the program and introduced to the teachers in the in-service workshops. The teachers used these materials in their classrooms and returned to the workshops with their own comments and suggestions about the use of these materials. Thus the teachers were familiar with the materials when they started

with the new class in the fall of 1969. (See Appendix C, pp. 341-43, for the lists of materials purchased in 1968-69 and 1969-70. These materials were purchased with Title I Funds as the children in this area qualified for Title I monies.)

The following visitations were made by the two kindergarten classroom teachers that worked with the subjects in this study:

1. Curriculum Demonstration Project, David P. Weikart, Director, Ypsilanti Preschool, Ypsilanti, Michigan
 - a. Unit Base Curriculum
 - b. Language Training Curriculum (Berierter-Engleman)
 - c. Cognitively Oriented Curriculum (Weikart)
2. Drama Program, the Lab School, Ann Flagg, Drama Teacher, Evanston, Illinois
3. World of Inquiry School, Rochester, New York.

After these visitations the teachers attempted to incorporate some of the ideas that would pertain to the kindergarten program. They made video tapes in their classrooms using the ideas with their own children. These video tapes were shared with other teachers in the monthly in-service meetings. (See Appendix C, p. 344, for a list of visitations made by the workshop director to gain first hand information for developing and implementing the kindergarten program.)

Video tapes were also used for demonstrating and implementing many of the "Moving into Drama" activities. By viewing the video tapes after the activity the teachers could observe from the tape whether:

1. All of the children were actively involved.
2. The children were allowed to respond in their own way rather than a pre-described manner.
3. If language was involved, were all of the children joining in chanting the rhyme or verse, rather than a few children?
4. The teacher occupied the main role or whether the children used language and responded to it with the teacher only "side coaching."

By watching for these points when viewing the tapes, the teachers were more aware of attempting to incorporate the children when planning the lessons. (See Appendix C, p. 339, for an example of a video demonstration of a creative movement lesson.) Chart 15 outlines the schedule and time sequence of the different phases and participation in the program.

The teachers felt that the in-service training workshops were valuable in presenting methods and materials that were new to them. Also, they expressed the feeling that the workshops provided them with an opportunity to become familiar with methods of teaching and ways to evaluate the effect of their teaching rather than merely

CHART 15.--Participation and time sequence.

1968-69 26 hours in-service training workshops

2 hours administration of complete kindergarten diagnostic test battery to two children individually.

May 1969 Kindergarten Roundup administration of diagnostic screening test battery to entering kindergarten children.

1969-70	In-service	Program
	Two kindergarten teachers and other interested teachers	Two classrooms of kindergarten children (n = 40)
	a. monthly workshops	a. self-selection activities to develop basic learning skills
	b. classroom visitations and demonstrations by workshop director	b. Moving into Drama Program
	c. Video tape demonstrations made by the teachers	1. Perceptual-Motor Problem Solving
	d. Visitations to model programs by the teachers	2. Expressive Movement
		3. Creative Drama
		c. Diagnostic evaluation (March)

Evaluation of children's progress by standardized instruments.

Pre-testing--October-November 1969

Post-testing--May 1970

listening to theories. The teachers felt that this actual involvement was most valuable to them.

No formal evaluation was made of the workshops themselves, however, the continued high amount of voluntary participation appeared to be a positive evaluation.

Results of Standardized Instruments for
Evaluating the Growth in Vocabulary
Concepts and Basic Readiness

The Peabody Picture Vocabulary Test (PPVT) and the Metropolitan Readiness Test (MRT) were administered to all children in both kindergarten classrooms participating in the program to provide a standard measure for describing their growth during the year in vocabulary concepts and basic learning skills required for reading. Random assignment was not possible for this study. Therefore, students were assigned to the classrooms in this study in such a manner as to make the profiles of each classroom similar, as explained on page 209.

Standardized tests were used to determine whether the two classes differed in vocabulary concepts and basic learning skills required for reading held by the children at the beginning and at the end of the program. The children were placed in the classrooms on the basis of the diagnostic test battery. The standardized pre-tests found essentially no difference between the groups at the beginning of the program and tended to verify the results of the kindergarten diagnostic test battery and the placement

of the children. The post-tests, PPVT and MRT, also indicated no differences between the two groups. As indicated in Table 4.7 there was essentially no difference between the two kindergarten groups in this study as measured by the MRT (Form A) and PPVT (Form A and Form B).

Table 4.8 illustrates this difference in detail and also indicates no significant differences between the two classes during the treatment period.

TABLE 4.7.--Cell means of classrooms I and II on the pre- and post-MRT and PPVT.¹

	MRT Pre- Form A	MRT Post- Form A	PPVT Pre- Form A	PPVT Post- Form B
I Classroom AM (n = 19)	31.37	61.74	50.05	58.68
II Classroom PM (n = 21)	36.67	61.95	51.19	57.24

TABLE 4.8.--Mean differences of pre- and post-MRT and PPVT for each classroom.

Class	Mean Post-	Mean Pre -	Difference
I AM MRT	61.736	31.368	30.368
II PM MRT	61.952	36.667	25.282
I AM PPVT	58.684	50.052	8.632
II PM PPVT	57.238	51.190	6.048

¹See Appendix D for frequency distribution charts and histogram.

The analysis of the least squares estimates, which mathematically indicates the gains of the students on the MRT and the PPVT, was significant ($\alpha = .05$) and was in a positive direction. Further analysis shows that there was no significant difference between classrooms at the .05 level. This indicates that the change was not classroom specific. That is, every child changed regardless of the classroom and the change was in the positive direction. Table 4.9 shows this gain in detail.

TABLE 4.9.--Least squares estimates adjusted for covariates.

	MRT Post-	PPVT Post-
Overall Effect	20.302	36.933
Classroom Effect	3.718	2.050
Standard Errors of Adjusted Estimates		
Overall Effect	7.407	4.899
Classroom Effect	2.667	1.764

Even though a significant gain is indicated in growth in both vocabulary concepts as measured by the PPVT and in basic learning skills as measured by the MRT, no cause and effect relationships can be stated due to the descriptive nature of this study. A comparison of the two sample classrooms with the norms established for the PPVT

and the MRT will, however, show the relative standing of the classrooms used in this study. Table 4.10 shows the difference of the means of the norm and the sample groups on the post-test of the MRT. This comparison indicates a significant difference in the positive direction at the .05 level of significance for both sample classrooms at the completion of the study when compared to the normative population.

Table 4.11 illustrates the difference of the means of the sample classrooms in this study and the normative population of the post-test of the PPVT, Form B. This

TABLE 4.10.--Mean difference for post-test and norm for the Metropolitan Readiness Test.

	MRT Norm ^a	Class I AM	Class II PM
Mean	53.21	61.736	61.952
Difference		+ 8.525*	+ 8.742*

Note:

The asterisk indicates a significant difference ($\alpha = .05$).

^aHildreth, et al., MRT Manual, p. 16.

TABLE 4.11.--Mean difference of post-test and norm for the Peabody Picture Vocabulary Test.

	PPVT Norm ^a	Class I AM	Class II PM
Mean	55.20	58.684	57.238
Difference		3.484	2.038

^aDunn, PPVT Manual, p. 28.

comparison indicates no significant difference at the .05 level. This indicates that there is essentially no difference in vocabulary concepts as measured by the PPVT between the two sample classrooms participating in this study and the normative population for the PPVT.

The MRT was chosen as a standardized measure to assess basic learning skills because the MRT subtests corresponded closely to the areas of basic learning skills which the kindergarten program in this study emphasized.¹ Therefore, an analysis of the subtests was also made and compared with the norms for each subtest. A t test statistic was used to compare each subtest for each class with the appropriate norm to test significance. Table 4.12 shows the mean, standard deviation, and t test statistic for each subtest for each class in the study and the normative population for the MRT. This table shows a significant difference in the positive direction at the .05 level for the subtests of word meaning, alphabet, copying, and the total score. Classroom I AM shows a significant difference in the positive direction at the .05 level on the matching subtest, while Classroom II PM shows a significant difference on the listening subtest.

¹The MRT subtests correspond to the basic learning skill areas in the following way: (1) Manipulative (eye-hand coordination)--the Copying Subtest, (2) Visual Skills--the Matching and Alphabet Subtests, (3) Auditory-Language Skills--Word Meaning and Listening Subtests, (4) Cognitive Skills--Listening and Numbers Subtests.

TABLE 4.12.--Metropolitan Readiness Test, subtest data means, standard deviation and t tests.

	Word Meaning	Listening	Matching	Alphabet	Numbers	Copy	Total
Class I							
Mean	9.737	8.947	9.316	10.842	12.421	8.895	61.7
S.D.	2.124	2.181	3.55	2.996	3.732	3.024	13.9
t	2.19*	.114	2.24*	2.11*	.468	2.99*	2.66*
Class II							
Mean	9.952	10.571	8.571	11.619	12.19	9.048	61.95
S.D.	2.716	2.129	3.606	3.498	3.97	3.565	13.29
t	2.163*	3.618**	1.374	2.92*	.20	2.86*	3.02*
MRT Norm ^a							
Mean	8.67	8.89	7.49	9.39	12.02	6.82	53.21
S.D.	3.10	2.85	4.04	4.70	4.70	3.88	17.75

Note:

Asterisk (*) indicates significant at the $\alpha = .05$ level.Asterisk (**) indicates significant at the $\alpha = .025$ level.^aHildreth, MRT Manual, p. 18.

Summary of Standardized Evaluation Procedures

The MRT indicated that classrooms in the study changed significantly in a positive direction in basic learning skills as measured by this test, but did not differ significantly from each other in their growth. When the two sample classrooms were compared to the norm for the MRT this gain was beyond that which was expected. Furthermore, the greatest growth was in the areas of manipulation skills, visual skills, and auditory-language skills as measured by the MRT subtests.

The PPVT indicated that growth had taken place in each classroom in the study but that comparing this growth to the norm there was no significant difference. This implies that the program did not develop vocabulary concepts as measured by the PPVT beyond that normally expected, but also did not hinder expected growth of the child in vocabulary concepts as measured by this test.

Summary of Results

This study, being descriptive in nature does not attempt to make any cause and effect statements. However, the results of the program were described in terms of: (1) the diagnostic procedures used with children, (2) the procedures for training teachers to implement the program, and (3) the procedures used to evaluate children's progress. The diagnostic testing procedures indicated growth for

individuals in specific skill development areas. This growth was graphically illustrated on polar coordinate graphs. This growth was in a positive direction and showed significant gains for fourteen of the twenty-two individuals who had received a composite rating of three or four on the kindergarten roundup screening tests, when their individual gains were compared to the norms of the PPVT and the BGDТ.

The procedures for training teachers to implement the program held the continued participation of twenty-seven teachers (or 76.5 per cent of all those teachers invited to participate) over a period of a year in in-service training workshops. Two teachers volunteered to participate more intensively in the program during the second year with several other teachers continuing to attend the monthly in-service sessions.

The standardized testing data obtained on the children indicated a change in a positive direction over the period of the study. This gain was not significant for the PPVT when compared to the norm, however, it was significant at the .05 level for the MRT. When analyzing the subtests of the MRT, all subtests, except for the number subtest, showed significant gains ($\alpha = .05$), with the copying test or manipulation skills, the alphabet test or visual skills, and the word meaning test or auditory-language skills indicating a significant gain for both classes.

CHAPTER V

SUMMARY AND CONCLUSIONS

Review of Design, Objectives, Hypotheses, and Results

The purpose of this study was to provide a description of the development of a kindergarten program, techniques for training teachers to implement it, and evaluation of the program. The objectives of the study were:

1. To develop a kindergarten program based on the selected theories and research in child development.
2. To prepare teachers, through an in-service education program to implement the kindergarten program.
3. To provide simple diagnostic techniques that could be used effectively by classroom teachers to assess basic learning skills of children.
4. To provide a standardized evaluation of the growth in basic learning skills and vocabulary concepts of the children participating in the kindergarten program.

The kindergarten program developed in this study provided for affective, social, and cognitive interaction

in an environment carefully structured to provide opportunities for developing basic learning skills in the areas of motor development, visual and auditory skills, language development, and cognitive skills. Within this environment the child could select his own learning experiences. The objectives for the kindergarten program which was developed were:

1. To identify the basic learning skills and instructional needs of each individual child in the program.
2. To provide for the development of motor skills.
3. To provide for the development of visual and auditory perception skills.
4. To provide problem solving situations for the development of cognitive skills.
5. To provide situations for ample expression through movement, music, free dramatics, and creative dramatics.
6. To provide for growth in the child's language and vocabulary concepts through "moving into drama" activities.
7. To provide for the development of a positive self-concept through the process of becoming competent in cognitive-perceptual-motor skills, problem solving, making choices in a self selective environment and interactions as a self with the environment in dramatic play,

expressive movement, creative drama and role playing situations.

The hypotheses formulated to ascertain the effects of participation in the kindergarten program on the growth of vocabulary concepts and the basic learning skills of the children were:

1. Individual children will exhibit no significant growth in basic learning skills and vocabulary concepts as compared to a normative population. Growth made by individuals may not be evident by focusing entirely upon statistical evaluations of the whole group.
2. There will be no significant gain in the means of the pre- and post-test scores of children participating in the kindergarten program on the following:
 - a. Metropolitan Readiness Test (MRT).
 - b. Peabody Picture Vocabulary Test (PPVT).
3. There will be no significant difference between the means of the post-test scores on the Metropolitan Readiness Test of children participating in the kindergarten program and the normative population used for standardization of the Metropolitan Readiness Test.
4. There will be no significant difference between the means of the post-test scores on the Peabody

Picture Vocabulary Test of children participating in the kindergarten program and the normative population used for standardization of the Peabody Picture Vocabulary Test.

5. There will be no significant differences between the mean raw scores made by two classrooms participating in the kindergarten program regardless of being taught by different teachers on the following:

- a. Metropolitan Readiness Test (MRT).
- b. Peabody Picture Vocabulary Test (PPVT).

In order to identify the basic learning skills and instructional needs of each child a diagnostic test battery was compiled. This battery provided a means for assessing gross motor skills, manipulation and/or visual motor skills, visual skills, auditory skills, language skills, and cognitive skills. To provide for development in each of the above, guidelines were developed for learning activities in each of the developmental skills areas: (1) general movement, (2) manipulation skills, (3) visual skills, (4) auditory skills, (5) speech and language, and (6) cognitive skills. The guidelines were based on the review of recent research and visitations to current programs in early childhood education. Emphasis was placed on the child's mastery of language throughout all activities. Opportunities for self expression also were provided through dramatic

play and the "moving into drama" program. The "moving into drama" program progressed from perceptual-motor activities presented in problem solving situations to expressive movement activities to creative dramatics and role playing.

Training the teachers to implement the kindergarten program was done through a series of in-service training workshops which presented new methods and materials, demonstration classroom teaching, video tape demonstrations made by classroom teachers, and visitations to other early childhood education programs. Teachers volunteered to participate in this in-service training and continued to participate over a period of two years.

The classroom teachers were trained in techniques necessary for administering the diagnostic test battery to enable them to become "diagnostic teachers." This instrument was administered to all of the children in the kindergarten classrooms to provide criteria for planning an instructional program based on the learning needs of the children. The teachers readministered portions of the diagnostic test battery periodically to adjust their program to the individual child's changing needs. The growth in each of the interrelated basic skill areas for individual children, as measured by the diagnostic test battery and standardized tests, was illustrated graphically on polar coordinate graphs which were useful in revealing what each particular child needed for normal development when planning for the whole personality of the child.

Growth in basic learning skills was measured by administering a pre- and post-test in readiness with mean growth used in comparison with the normative population for the instrument. Growth in vocabulary concepts was measured by administering a pre- and post-picture vocabulary test with mean growth used in comparison with the normative population for this instrument.

Statistical comparisons between the two classrooms participating in the program were made by use of the mean raw scores on the picture vocabulary and readiness pre- and post-tests to determine if the difference between these groups taught by different teachers was statistically significant.

The findings of this study were as follows:

1. Individual children exhibited significant ($\alpha = .05$) growth in basic skill areas that may have been submerged by focusing entirely upon statistical evaluations of the whole group.
2. In basic learning skills, as measured by the standardized readiness test (MRT), children participating in the kindergarten program made positive gains at the .05 level of significance during the time of the study. Furthermore, when comparing this gain to the norm it was beyond that which was expected and was significant at the .05 level.

3. Growth in basic learning skills was greatest in the areas of manipulation skills, visual skills, and auditory-language skills as measured by the subtests of the standardized readiness test.
4. In vocabulary concepts, as measured by the picture vocabulary test (PPVT), children participating in the kindergarten program made positive gains at the .05 level of significance during the time of the study. However, comparing this gain to the norm it was not significantly different from that which was expected.
5. No significant differences were found between the two classrooms participating in the kindergarten program in vocabulary concepts and basic learning skills even though they were taught by different teachers.

Educational Implications and Conclusions

This study provided a description of the development of the kindergarten program and the diagnostic test battery. The study also provided a description of the training procedures for teachers to enable them to implement the program. An attempt was made to evaluate the growth of the children in basic learning skills and vocabulary concepts, by use of both nonstandardized and standardized measures.

From the data, the following conclusions and implications are presented:

1. The kindergarten program developed in this study appears to be an effective means for providing for basic learning skills of individual children as well as the class as a whole.
2. In-service education appears to be an effective means of preparing teachers to implement a program and was effective in helping the teachers select appropriate methods and materials in planning for the individual needs of children.
3. The use of a diagnostic test battery to assess basic learning skills appears to be useful in assisting the teacher in planning effectively to meet the learning needs of individual children.
4. The data appear to indicate that the program was more effective in developing the basic learning skills and language concepts which involved reasoning rather than the vocabulary concepts as measured by the picture vocabulary test. The reason for this discrepancy may be that the expressive aspect of the program emphasized a general understanding of language patterns rather than specific vocabulary concepts.
5. The data appear to indicate that the groups that the teachers worked with were fairly equal in both kindergarten classrooms and remained so

throughout the study since there was no difference between the groups at the .05 level of significance as measured on the standardized pre- and post-tests. This would indicate different teachers did not influence the effect of the program. This may have been a result of the influence of the in-service training during the program.

Recommendations for Further Research

The limitations of this study point up the need for further research to determine the cause and effect relationships of the kindergarten program developed in this study. There is a particular need to investigate the relationship of the diagnostic test battery compared with a criterion measure throughout the program to establish the reliability and validity of the test battery. From this study and according to the measures used in this study, it would seem that there is a close relationship between the battery and the readiness test. However, further research would be indicated to determine whether the relationship remains over a period of time and how close this relationship is.

Since this study was concerned with providing a description of the development of the program, implementation procedures and evaluation procedures, an experimental

study might reveal causal relationships between specific activities and gain in basic learning skills and language concepts.

Further research to determine the growth in sentence patterns and expressive language is indicated. From this study and the measures used, the evidence does not clearly indicate what the influence of the program was on language development.

In view of the fact that this study was a descriptive study of one type of kindergarten program which involved reviewing other early childhood programs it would be recommended that further research of this type might make a compilation of various kindergarten programs now being conducted. This would provide a guide of the current trends and also provide a reference for making visitations to programs that might be attempting to meet similar objectives.

From this study recommendations could be made for the support of the public school system to provide opportunities for in-service for their classroom teachers. It appears that the public school and the children both would benefit from the participation of classroom teachers in in-service programs designed specifically for classroom teachers and their current problems.

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APPENDICES

APPENDIX A

DIAGNOSTIC KINDERGARTEN TEST BATTERY

INFORMAL INTERVIEW¹

A short initial interview not only puts the child at ease, since the questions are within the realm of his immediate knowledge and experience, but also gives the examiner a quick glimpse of the child's level of performance and of his powers of organization.

You, as an examiner, need to be deft and fluid. If the child hits an impasse, it is up to you to shift questioning or proceed with the next item.

Observe and, if you can, jot down what he says.

This sentence construction, grammatical errors, pronunciation, all tell a story about this specific child in this specific situation. The exact information is not the important aspect of this task. Rather how he proceeded, his methods the way he answered each question is more significant.

QUESTIONS

1. How old are you? When is your birthday?
2. How many brothers and sisters do you have? How old are they?
Do you like being older, younger, middle? Why? (etc.)
3. What is today? (date - date)
What is the month?
What is the year?
What did you do yesterday?
4. Where are you? What town do you live in? Street?
5. What do you like to do at home?
What games do you like to play?
What jobs do you have at home?
Do you have any pets at home?

¹ Reprinted from
Ilg and Ames, School Readiness, p. 41.

DICTATED SENTENCES ¹

Directions:

Say: "I am going to read some sentences. I want you to listen carefully. When I finish, I want you to say them back to me. Say them just the way I say them. Don't change any of the words."

"If I say, *The birds sing*. What would you say?" Correct him if necessary.

"Now try this one, *The rain began to fall*." Correct him if necessary. If he fails both examples, go back over them until he repeats them correctly. Then go on to the test. Say the sentences only once after going over the sample.

Test Sentences:

1. The boy hit the baseball.
2. The Jack-in-the-box popped up.
3. The children played with the puppies.
4. The little kitten drank her milk.
5. The big dog barked at the black cat.
6. The boys threw snowballs at the snowman.
7. The fish took the worm from the boy's hook.
8. The bell rang for the children to come in to school.
9. The snow falls in the winter, the rain falls in the summer.
10. When the weather is good, we go out in a boat to catch fish.
11. After the rain stopped, the birds looked for worms in the grass.
12. In summer the little animals play in the green forest.
13. The ball bounced into the backyard, and rolled under a rosebush.
14. I have two red sweaters and one pair of black boots.
15. The wind began to blow, the leaves began to fall, and the clouds covered the sun.

(Discontinue after 5 consecutive errors.)

Observation:

This test is designed to provide some measure of auditory memory. From the test the examiner may observe the student's skill in retaining related information received auditorily. The examiner may also be able to observe the child's skill in relating to the correct language pattern. Observation of the child's reaction as the task increases in difficulty should be made. Observe enunciation, sentence structure, verb tense, and usage.

¹Pierce H. McLeod, Macomb Test Battery, Macomb County Intermediate School District, mimeo., 1963.

AURAL CODING¹

Directions:

Say: "Now we are going to play with blocks." (Hand the block to the child.) "Can you do this? (Tap the corner of the block on the table top 3 or 4 times.) "I am going to tap on the bottom of the table in a certain way and when I'm finished I want you to tap on the top of the table the same way I tapped on the bottom. Now, do you know what the hardest part of the game is? It's waiting until I've finished before you start. I'll help you. I'll nod my head when I'm finished. Wait for the nod. Ready? Listen!"

Tapping Patterns

1. dot - dot
2. dot — dot
3. dot dot — dot dot
4. dot — dot dot dot
5. dot dot dot — dot
6. dot dot — dot dot dot
7. dot dot dot — dot dot
8. dot — dot dot — dot dot dot
9. dot dot dot — dot dot — dot
10. dot — dot dot dot — dot — dot dot

¹ Ibid.

LETTER KNOWLEDGE TEST¹

Materials needed: Lippincott Reading Readiness Test
Pierce McLeod, Lippincott Company,
You need the test booklet and the letter flash cards.

Directions For Administration:

Say: "I am going to show you how to play some games with letters."

"There are four letters in this box. Let's say their names together: J - M - O - G.
(Point to the letter named.) Now look at the letter on this card."

Hold up a card with O on it.

"Is the letter on the card the same as the first letter? (Point) No, it isn't. Is the letter on the card the same as the second letter? (Point) No, it isn't. Is the letter on the card the same as the third letter? (Point) Yes, it is. So you point to this letter." (Point to the O.)

Follow the same procedure for the second line using letter A, and the third line using letter B.

Check to see that the children understand and that they are following these procedures.

Say: "Now, open your booklet and place your marker under the first line." (Demonstrate)

"I am going to show you a letter on a card. I want you to look at the letter carefully and then find it among the letters on the first line and point to it. We will be doing the same thing that we just did on the other page (cover). Ready? Look!"

Show the flash card for five seconds. Put the card down.

"Find the letter and point to it." "Move your marker to the next line, etc."

Continue as described above presenting the letters on flash cards in the following order:

1 2 3 4 5 6 7 8 9 10 11 12 13
F S O I C L P A R B T X N

"Now go on to the next page. Put your marker under the first line."

1 2 3 4 5 6 7 8 9 10 11 12 13
D J H Y U W Z E K Q M G V

¹ Reprinted from
Pierce H. McLeod, Letter Knowledge Reading Readiness Test, (Philadelphia: Lippincott Company, 1965), p. 2 - 3.

NUMBER PRODUCING¹

Materials needed: Seven 7 blocks
Brenner Developmental Gestalt Test of School Readiness Booklet

Directions: Place blocks on table in a random manner. Do not have them in groups.

1. Say: "Here are some blocks. Will you place 4 in my hand?"

Do not make any sign of correctness or incorrectness.

2. Say: "Now give me three blocks."

3. Say: "Now I put them all together and how many do I have?"

If a child produced the wrong responses in 1 or 2 silently correct the mistakes by adding or taking away blocks from those at hand.

NUMBER RECOGNITION

Materials needed: Number recognition dot figures from Brenner Gestalt Test Manual.

Directions: Examiner shows child Number Recognition page 1 of dot figures, and says:

"Here are some groups of dots. I am going to point to a group. How many are here . . . here . . . here?"

Examiner points to groups in an irregular manner. Each group of dots must be asked before going to Number Recognition page 2 and Number Recognition page 3.

Scoring: Check correct identification of all dot groups with same number of dots: all 1's, all 2's, all 3's, all 4's, etc. in column. If one or more groups with the same number of dots are wrong or not answered, check the whole column.

¹ Reprinted from
Brenner, Brenner Gestalt Test, p. 10 - 11.

WINTERHAVEN COPY FORMS

Materials needed: Furnish each child with a plain sheet of paper and pencil with an eraser.
You need the Perceptual Forms Teacher's Test Manual.

Directions for Administration:

Say: "We are going to make some drawings on this paper. To do the drawings I want you to copy these forms (*flip through cards, one at a time, first 4*) on your sheet of paper."

"First, make one like this."

If child asks where he should draw it on the paper tell him, "Draw it on the paper anywhere you think it belongs." Allow the child to position the paper as well as move it while drawing.

Proceed in a similar manner through the succeeding drawings. Use only the circle, cross, square, and triangle with 4½ to 5 year olds.

¹ Reprinted from
Winter Haven Lions Publication Committee. Perceptual Copy Forms, Teacher's Test Manual
(Winter Haven, Florida: Winter Haven Lions Publication, 1966) p. 3.

DRAW A MAN ¹

Materials needed: Paper and pencil with eraser.

Directions:

Say: "On this paper make a picture of a man. Make the very best picture that you can. Take your time and work very carefully."

If a child is excessively avoidant or negative, suggest that he draw: daddy - mother - brother - sister - or self.

Scoring: Ten items are scored. Where more than one detail is mentioned, all details must be present for a score. This applies to 2, 5, 6, 7, 8, 9.

1. Head
2. Eyes, nose, mouth
3. Neck
4. Trunk
5. Two arms
6. Hands with fingers
7. Two legs
8. Clothes: two or more articles
9. Hair and ears
10. Good proportion of body parts.

¹Brenner, Brenner Gestalt Test, p. 16.

IDENTIFICATION OF BODY PARTS¹

Specific Instructions:

Age: All children of school age.

Material: None.

Procedure: Instruct the child to stand facing you. Say to the child:

1. "Touch your shoulders."
2. "Touch your hips."
3. "Touch your head."
4. "Touch your ankles."
5. "Touch your ears."
6. "Touch your feet."
7. "Touch your eyes."
8. "Touch your elbows."
9. "Touch your mouth."

Scoring: A rating is assigned based on the child's over-all performance. Assign the child one of the following ratings.

1. If the child performs adequately throughout.
2. If he shows only slight hesitancy or confusion.
3. If the child shows hesitancy in more than one or two of the commands.
4. If he points to only one of the paired parts.
5. If the child is unable to identify one or more of the parts called for, he shows marked hesitancy (except elbows) or if he "feels around" to find the part.

Observations:

Among the behavior to be considered evaluating the child's responses are the following:
 Is the movement toward the part called for prompt and certain or does he hesitate as though he had to "think out" where the part is located before he begins response? Does he contact the described part accurately and surely or does he move his hand in the general direction of the part and then "feel around" until random contact results? Is he aware of the bilateral relationships of paired parts as shown by prompt bilateral response, touching both members of the pair simultaneously? Some hesitation and confusion may be permitted in response to the command, "Touch your elbows," because of the cross lateral response required of the hands. However, the child should, after some experimentation, be able to solve the problem.

¹Reprinted from
 Roach and Kephart, Purdue PPM Survey, p. 34 - 36.

WALKING BOARD¹

General Rating Considerations

Kephart had recommended that the walking board be laid flat on the floor for initial testing. However, since all of the data collected in the normative study were obtained on a walking board using brackets, it is necessary to collect the performance data on a board similar to the one used in the normative study. Some current research indicates that a board which is just a few inches off the floor may have an effect on performance, particularly among poor performers.

Several normative studies using the walking board as a device for measuring a dynamic balance are reported in the physical education literature. Seashore was probably the first to quantify and standardize the walking board as a test, and he reports that improvement occurs with age and growth. Most of the improvement occurs in the early years where a steady increase in performance with age is shown. At the age eleven or twelve the curve of improvement flattens out and does not rise appreciably again during the "average" lifetime. (Wallon, et. al. recently reported similar findings with a study of French children.)

The scoring criteria for this item in the survey are in no way as detailed or rigorously defined as those used in the earlier studies cited. The primary question to be answered by observation of performance on this item is whether the child has a *general balance problem*. Has he learned to use both sides of his body in the balancing task? Are appropriate muscle groups brought into action when he is faced with losing his balance? Has the child developed enough postural flexibility to meet new situations requiring balance and to transfer and generalize his prior learning in this area from one specific situation to another similar but not identical situation? Does he avoid the task?

Specific Instructions

Administer: No age limitation (norms are for 6-10).

Material: The walking board should be a section of two-by-four board measuring eight to twelve feet long and placed on brackets so that the board is at least six inches off the floor. The four-inch side of the two-by-four is the surface on which the child is asked to walk.

Procedure

The child walks on the four-inch flat surface of the board as he would walk on a fence rail. Be sure the child has plenty of room to use his arms in balancing without a wall, a chair, or other objects. Position the child on the floor at one end of the board. Tell him, "Get up on the board and walk to the other end." When he has come to the far end of the board, say, "Now walk it backward." When he has walked across the board again, say, "Now walk it sidewise." When he has walked sidewise in one direction, say, "Now come back sidewise." Be sure he faces in the same direction as before so that in walking back he uses the opposite foot to lead. Many children will turn 180 degrees so that in the second sidewise task they use the same lead foot that they used in the first sidewise task.

¹Reprinted from Roach and Kephart, PPMS

In each task of the survey, it is desirable to elicit as nearly normal or customary behavior as possible. For this reason the specific task instructions have been left as unstructured as possible. Thus, in the first task, the instruction is, "Walk to the other end." The child is not told how to walk the board nor is he given any hint regarding any approach which he might take to the problem. Should he ask a question concerning method or approach, the standard answer is, "Do it the way you think it should be done." Try not to structure the task in any way for the child.

If the child is unable to start the task under conditions of such lack of structure, a second level of structuring is used. Verbal descriptions of the task and possible methods of approach to the task are given. Here the child is given verbal symbolic structure but is required to translate this symbolic structure into concrete movements.

If he still cannot start, a third level of instruction is used. The examiner demonstrates the performance. In this case the examiner says, "Do it like this." He then gets on the board and walks to the end. In this instance, structuring of the task is supplied through demonstration and the child is permitted to perform by imitation.

If performance is still not elicited, the final level of structuring is used. Here the child's movements are guided in the proper direction. On the walking board the examiner will hold the child's hand to help him balance and, if necessary, will grasp his ankle and guide the foot to the proper position. Structuring is thus provided at the concrete motor level.

Scoring

The child is assigned a rating on each of the three tasks.

Forward

1. If the child walks easily and maintains dynamic body balance throughout.
2. If the child has occasional difficulty but is able to regain balance each time.
3. If the child steps off the board more than once. If he pauses frequently and has difficulty regaining balance.
4. If the child cannot perform or if more than one-fourth of his performance is out of balance.

Backward

1. If the child walks easily and maintains balance throughout without looking behind him.
2. If the child has occasional difficulty but is able to regain balance each time.
3. If the child steps off the board more than twice. If he pauses frequently. If he cannot perform without looking behind him.

Sidewise

1. If the child walks easily in either direction.
2. If the child has occasional difficulty but is able to regain balance each time.
3. If the child steps off the board more than two times in one direction. If he pauses frequently and has difficulty regaining balance.
4. If the child cannot perform. If his performance is markedly out of balance. If his performance in one direction is markedly better than in the other. (Consider difference in performance in the two directions without reference to the level of performance. An obvious difference is indicative of difficulty.)

¹ Reprinted from Roach and Kephart

JUMPING¹

Specific Instruction

Age: All children of school age can be administered all eight tasks.

Materials: None.

Procedure: It is best to administer this item in a room which is relatively free of furniture or other obstacles. Particularly in tasks E through H, the demonstration level of instruction will be needed. The child should not be penalized if he required this additional help with those tasks which are difficult to describe verbally.

Task A (Both Feet)—Instruct the child. "Place both feet together, Jump one step forward." (Describe performance on the test blank if inadequate.)

Task B (Right Foot)—Instruct the child. "Stand on your right foot with your left foot off the floor. Jump one step forward without putting your left foot down." If the child is not able to maintain balance on right side do not discontinue the task but note this behavior. (Describe performance if adequate.)

Task C (Left Foot)—Same as Task B except that the child hops on his left foot keeping the right off the floor.

Task D (Skip)—Place the child at one side of the room with as much space as possible directly in front of him. Instruct him: "Skip across the room." Make certain the child has enough room to achieve good free rhythmic movement. (Describe performance if adequate.)

Task E (Hop 1/1)—Say to the child: "I want you to hop once on the right foot, then once on the left, once on the right, then on the left, etc." If he stops, say "Keep going." If he pauses markedly between each hop, say "Can you go faster?" If he moves forward as in running or walking, say "Stay in one place and keep hopping." He should sustain this performance for at least thirty seconds. (Describe performance if inadequate.)

Task F (Hop 2/2)—Same as Task E, except the child is instructed to hop twice on the right foot and then twice on the left foot. (Describe performance if inadequate.)

Task G (Hop 2/1)—Say to the child: "Now hop twice with your right foot and once with your left." If he spontaneously begins two with the left and one with the right, reverse the order of G and H in the presentation.

Task H (Hop 1/2)—Same as Task G except that the child is instructed to hop twice on the left foot and once on the right.

Scoring: Each task is evaluated individually as adequate or inadequate. The rating is then based on the number of tasks adequately performed.

1. If the child performs all tasks easily.
2. If the child can alternate sides symmetrically. (Tasks A through F performed adequately)
3. If the child can hop on either foot at will. (Tasks A through E performed adequately)
4. If the child can only perform symmetrically. (Fewer than five tasks performed adequately)

¹Purdue, p. 32-34

READINESS CHECK LIST

Physiological Growth

Yes

No

☐☐

Physically mature for age in size and weight.

☐☐

Indulges in mature behavior (for age) in play and school activities.

☐☐

Appears to have normal vision.

Expressive Behavior

Yes

No

☐☐

Can listen intelligently and follow oral directions without frequent repetitions.

☐☐

Expresses self intelligently in a social situation.

☐☐

Can follow a story when read to, and react with appropriate behavior, or with apparent comprehension.

☐☐

Speaks in a manner appropriate for age level.

☐☐

Speaks in complete sentences.

☐☐

Can express ideas in a meaningful manner.

☐☐

Can relate a story or some incident in a coherent manner.

☐☐

Employs an appropriate vocabulary.

☐☐

Is able to perceive opposites and express these perceptions through language

☐☐

Has an average fund of general information.

QUESTIONNAIRE SENT TO PARENTS

**KINDERGARTEN ROUND-UP
FITZGERALD PUBLIC SCHOOLS
WARREN, MICHIGAN**

We request your cooperation in completing the attached questionnaire. The information will be helpful to your child's teacher in planning the instructional program and in a better understanding of your child so that his/her individual needs will be met.

All personal data is held in strict confidence. It is available only to those professional people who are directly concerned with your child's educational program.

Thank you for your interest and assistance.

(Principal)

(School)

KINDERGARTEN ROUND-UP
PERSONAL DATA AND HEALTH HISTORY

_____ **SCHOOL**

DATE _____
 Year Month Day

NAME _____ **BIRTHDATE** _____
 Last First Middle Year Month Day

ADDRESS _____
 Number Street City Zip Code

TELEPHONE _____ **AGI.** _____
 Years Months

PARENTS _____ **AGE** _____
 Father's Name

_____ **AGE** _____
 Mother's Name

OTHER CHILDREN IN FAMILY

<u>BROTHERS</u>	<u>AGE</u>	<u>SISTERS</u>	<u>AGE</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

1. Is child living with someone other than natural parent?

Name of Person _____

Relation to child _____

2. How many different places has this child lived? Number _____

Comment _____

3. Are there others living in the household? Yes _____ **No** _____

Comment _____

4. Parent Employment Data:

	<u>Father</u>	<u>Mother</u>
Where employed	_____	_____
Type of Work	_____	_____
Hours worked	_____	_____
Has work been regular	Yes _____ No _____	Yes _____ No _____

5. What arrangements for child care have been made during working hours?

6. Was this child a full-term baby Yes _____ No _____

Normal delivery _____ Explain _____

7. At what age did this child:

a) being to speak _____

b) get first tooth _____

c) walk alone without support _____

d) become toilet trained _____

8. Are there any difficulties with this child's toilet habits? Yes _____ No _____

Comment _____

9. Are there any difficulties with this child's eating habits? Yes _____ No _____

Comment _____

10. Does this child sleep all night in his own bed? Yes _____ No _____

Comment _____

11. Does this child have any unusual sleep habits? Yes _____ No _____

Comment _____

12. Does this child have any major fears, worries, or temper tantrums? Yes _____ No _____

Comment _____

13. Does this child need help getting dressed? Yes _____ No _____

Comment _____

14. Is this child's speech understood by persons outside the immediate family?

Yes _____ No _____

15. Has it been necessary for the child to be separated from his parents as a result of visits, hospitalizations, divorce, death, etc.? Yes _____ No _____

Comment _____

16. Does this child still take afternoon naps? Yes _____ No _____

Comment _____

17. How do you discipline your child?

Comment _____

18. Does this child have an opportunity to play with other children his/her own age?

Yes _____ No _____ Comment _____

19. Is there anything you feel we should know about your child to help us in understanding him/her better?

20. Has this child attended:

Nursery School Yes _____ No _____

Church Schools Yes _____ No _____

21. What experiences has this child had?

Zoo Yes _____ No _____

Circus Yes _____ No _____

Downtown Detroit Yes _____ No _____

Farm Yes _____ No _____

Public Library Yes _____ No _____

Bus Ride Yes _____ No _____

Train Ride Yes _____ No _____

Airplane Ride Yes _____ No _____

Vacation Trips Yes _____ No _____

Where _____

22. Do you read to your child? Yes _____ No _____ How Often _____

23. What musical experiences has your child had? _____

24. Underline all of the following terms which best describe the behavior of your child:

Shy	Aggressive	Tactful	Happy
Boisterous	Dejected	Apprehensive	Serene
Rough	Nervous	Humorous	Worrying Type
Stubborn	Gentle	Sensitive	Temperamental
Demonstrative	Destructive	Constructive	Creative
Sad	Physically Active	Quiet/Withdrawn	Physically Passive

25. Does this child have any unusual physical characteristics? Yes _____ No _____
Comment _____
26. Has this child had any serious accidents, illness, or operations? Yes _____ No _____
Comment _____
27. Has this child had any high fevers? Yes _____ No _____
How many degrees? _____ For how long a period of time _____
28. Are you aware of any problems related to:
a) Vision Yes _____ No _____
b) Hearing Yes _____ No _____
c) Allergies Yes _____ No _____
29. Does this child have any nervous habits? Yes _____ No _____
Comment _____
30. Is this child subject to convulsions or fainting spells? Yes _____ No _____
Comment _____

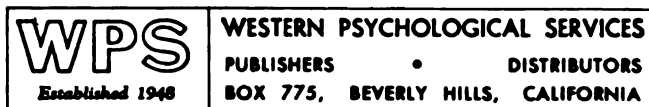
THE ANTON BRENNER DEVELOPMENTAL GESTALT TEST OF SCHOOL READINESS

PROTOCOL BOOKLET

by

Anton Brenner, Ph. D.

Published By



last	first	initial	Test Date:	year	month
Teacher			Birth Date:	year	month
Grade: K - 1 - 2 - 3 (circle)			Chronological Date:	year	month
Tel. No.					
er's Name	Father's Name		Father's Occupation		

Number Producing

	+	-
3		
5		
8		

Number Recognition

	+	-
•		
••		
•••		
••••		
•••••		
••••••		
•••••••		

III. Ten Dot Gestalt

	+	-
1. H. Top		
2. H. Center		
3. H. Bottom		
4. V. Left		
5. V. Center		
6. V. Right		
7. D. L-R		
8. D. R-L		
9. Form		
Total		

IV. Sentence Gestalt

	+	-	0
1. F			
2. R			
3. E			
4. D			
5. Space			
6. I			
7. S			
8. Space			
9. H			
10. E			
11. R			
12. E			
Total			

V. Draw-A-Man

	+	-
1. Head		
2. Eyes-nose-mouth		
3. Neck		
4. Trunk		
5. Two arms		
6. Hands and fingers		
7. Two legs		
8. Clothes (2 min.)		
9. Hair and ears		
10. Proportion		
Total		

BGT TOTAL SCORE

1. Total Plus (+) I + II + III + IV + V	
2. Add	40
3. Sub-total	
4. Total Minus (-) + I + II + III + IV + V	
5. Subtract from sub-total	
6. BGT TOTAL SCORE	

(Zero Scores Are Not Used)

Use Table 1 in Manual to convert BGT Total Score to Readiness Evaluation.

SCHOOL READINESS EVALUATION (Circle)	LOW	AVERAGE	HIGH
BGT TOTAL SCORES			
A - H ACHIEVEMENT-ABILITY SCALE:	SCORE	VALUE (Letter)	
I - P SOCIAL-EMOTIONAL BEHAVIOR SCALE:	SCORE	VALUE (Letter)	

ventions:

ents:

mmendations:

Examiner

Date

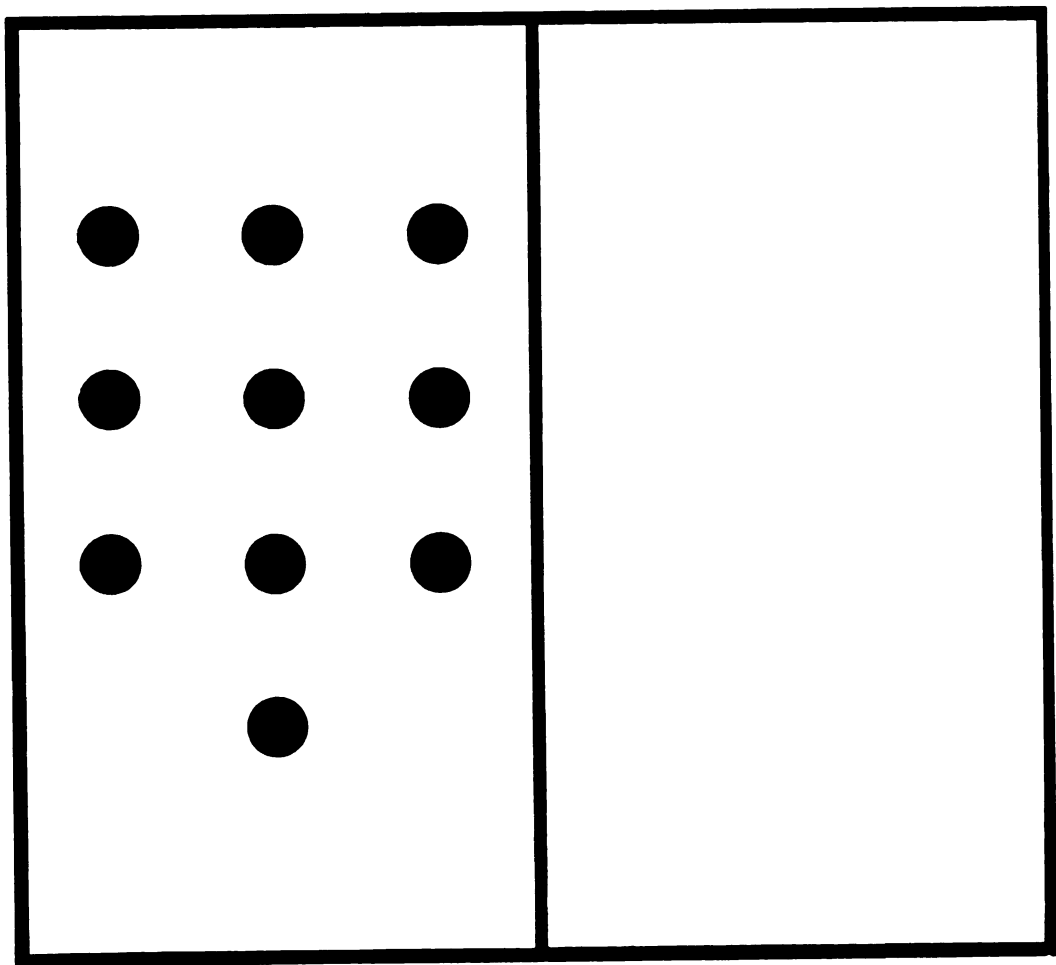
READINESS RATING SCALES:
ACHIEVEMENT — ABILITY: SOCIAL-EMOTIONAL BEHAVIOR

DIRECTIONS: Circle the number most descriptive of the child for each aspect of behavior or trait. A circled "1" is the lowest rating, a circled "5" is the highest rating.

SCORING: The sum of the circled ratings A-H is the *Achievement-Ability Rating*. The sum of the circled ratings I-P is the *Social-Emotional Behavior Rating*. If circles are connected by lines, a profile is constructed, showing relative values. Ratings are converted to values by use of the table below.

Scores:	8 - 13	14 - 19	20 - 26	27 - 33	34 - 40
Values:	Inadequate	Fair	Average	Good	Excellent
Letter Values:	E	D	C	B	A

A-H ACHIEVEMENT-ABILITY SCALE		Score	Value (Letter)
I-P SOCIAL-EMOTIONAL BEHAVIOR SCALE		Score	Value (Letter)
A. Gives up easily 1	2	Makes reasonable efforts 3	Persistent and absorbed 5
B. Depends on adults 1	2	Needs some help 3	Very independent 5
C. Poor thinking 1	2	Average thinking 3	Superior thinking 5
D. Never methodical 1	2	Usually methodical 3	Always methodical 5
E. Low reading achiever 1	2	Average reading achiever 3	High reading achiever 5
F. Low number work achiever 1	2	Average number work achiever 3	High number work achiever 5
G. Lacks hand-eye coordination 1	2	Fair hand-eye coordination 3	Good hand-eye coordination 5
H. Poor environmental adjustments 1	2	Aware of environmental problems 3	Responds and alert to environmental problems 5
I. Inconsiderate, unconcerned 1	2	Sympathetic 3	Thoughtful, considerate 5
J. Often irresponsible, undependable 1	2	Usually responsible, dependable 3	Always responsible, dependable 5
K. Lacks goal direction 1	2	Usually is goal directed 3	Always highly goal directed 5
L. Lacks self-confidence 1	2	Is confident 3	High degree of self-confidence 5
M. Easily upset 1	2	Fairly stable 3	Copes well with most situations 5
N. Little interest in learning 1	2	Interest in some learning areas 3	High interest in learning 5
O. Little motivation 1	2	Fair motivation 3	High motivation 5
P. Lacks cooperation 1	2	Average cooperation 3	High cooperation 5



Fred is here

Metropolitan Readiness Tests

by GERT J. METROPOLITAN, M.A., Ph.D., UNIVERSITY OF CALIFORNIA, BERKELEY

NAME _____ BOY ___ GIRL ___ DATE OF TESTING _____
Year Month Day

TEACHER _____ SCHOOL _____ DATE OF BIRTH _____
Year Month Day

CITY _____ COUNTY _____ STATE _____ PUPIL'S AGE Yrs _____ Mos. _____

GRADE _____ NUMBER OF MONTHS KINDERGARTEN TRAINING _____

TEST	RAW SCORE
1. WORD MEANING	
2. LISTENING	
3. MATCHING	
4. ALPHABET	
5. NUMBERS	
6. COPYING	
Total Score, Tests 1-6	
Percentile Rank	
Letter Rating	

Readiness status, recommendation, other scores, remarks:

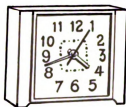
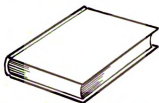


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Test 1 Word Meaning

a



b



c



1

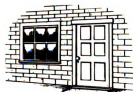
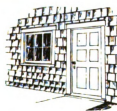
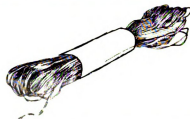


2



3





11



12



13



14



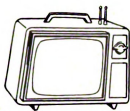
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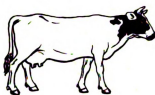
16



a



b



1



2



3



4



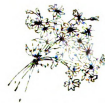
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6



7



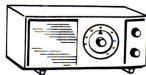
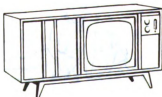
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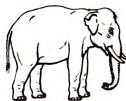


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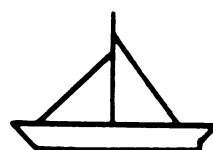
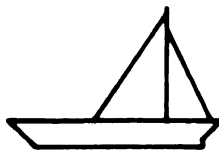
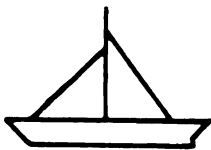


10





a



b

GO

GO

OG

ON

1

WALK

WALK

WAKL

TALK

2

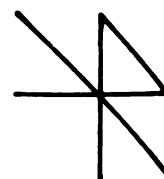
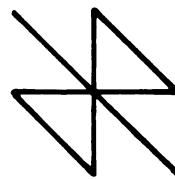
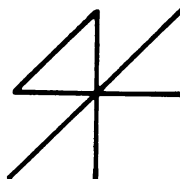
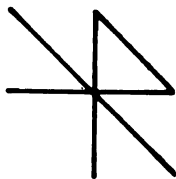
STOP

TOPS

STOP

2TOP

3



4



5

drab

bard

darb

drab

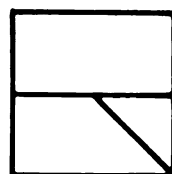
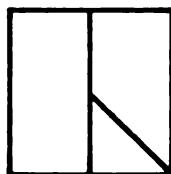
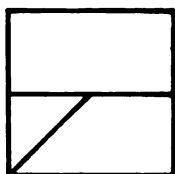
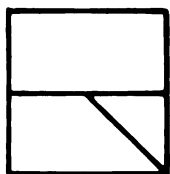
6

STREET

STREET

TREATS

STREAM



park

prak

park

karp

winter

writer

winter

winret

TELEPHONE

TELEPHONE

TELEGRAM

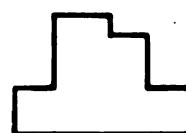
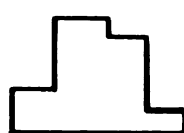
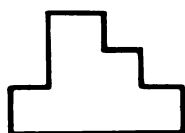
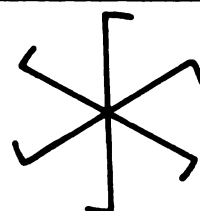
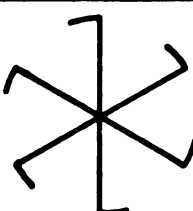
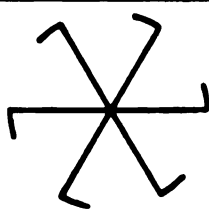
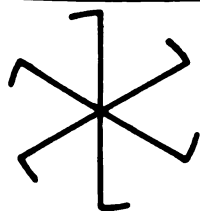
ELEPHANT

grad

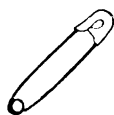
grab

yard

grad



1



y s n i

2



o e y g

3



i m s c

4



q a z k

5



u m e c

6



q b e z

7



v p h x

8



j t g c

9



f a n h

10



f s a r

11



u y p n

12



d w f g

13



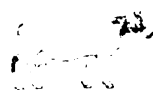
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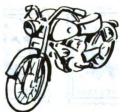
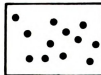
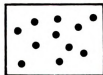
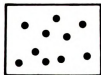
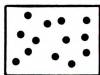


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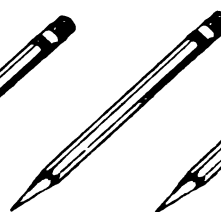
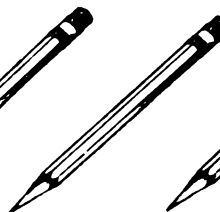
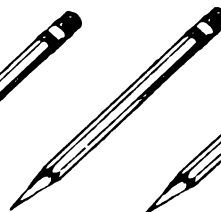
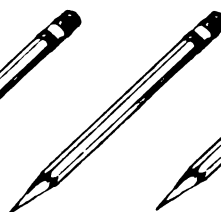
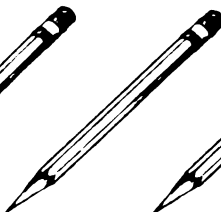
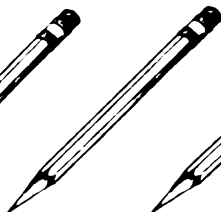
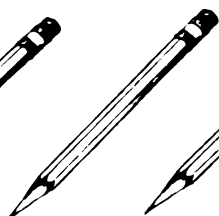
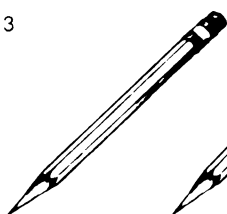
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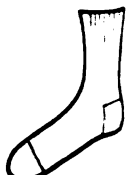
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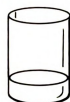
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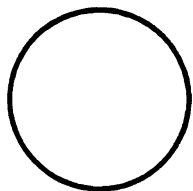


Test 6

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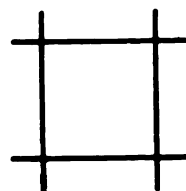
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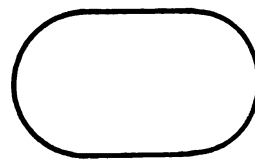
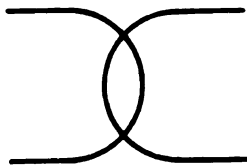
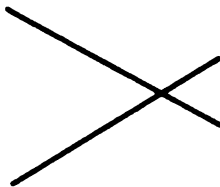
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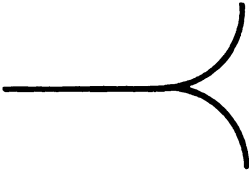
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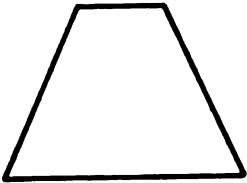
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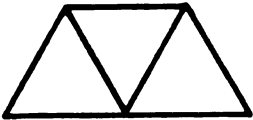
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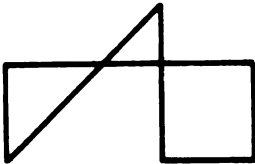
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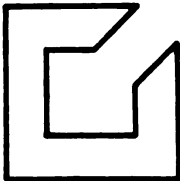
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This space is to be used for drawing a man.

DRAW-A-MAN
TEST

RATING

FORM A



PEABODY PICTURE VOCABULARY TEST

INDIVIDUAL TEST RECORD



NAME _____ SEX: M F GRADE _____
(Last) (First) (Initial) (circle)

SCHOOL _____ (or address) _____ TEACHER _____ (or parent or phone) _____

CALCULATION

DERIVED SCORES

YEAR MONTH DAY

Ceiling item _____
 Errors _____
 Raw score _____

Mental Age (M. A.) _____
Intelligence quotient (I.Q.) _____
Percentile (% ile) _____

Date _____
Born _____
Age _____

EXAMINER _____ TIME _____ CODE _____

JAN. 1 FEB. 2 MARCH 3 APRIL 4 MAY 5 JUNE 6 JULY 7 AUG. 8 SEPT. 9 OCT. 10 NOV. 11 DEC. 12

BEST BEHAVIOR

samples needed:	_____only 1	_____2 or 3	_____over 3
ype of response:	_____Subject pointed	_____S. called numbers	_____Examiner pointed
apport:	_____easily attained	_____slowly attained	_____poor rapport
uessing:	_____prone to guess	_____guessed when asked	_____resisted guessing
peed of response:	_____fast	_____average	_____slow
erbalization:	_____talkative	_____average	_____taciturn
ttention span:	_____distractible	_____average	_____very attentive
erseveration:	_____none noted	_____some	_____frequent
eed for praise:	_____little needed	_____some needed	_____much needed
ther test behavior:			

PHYSICAL CHARACTERISTICS

Motor activity:	<input type="checkbox"/> hyperactive	<input type="checkbox"/> average	<input type="checkbox"/> hypoactive
Adaptation:	<input type="checkbox"/> none	<input type="checkbox"/> slight	<input type="checkbox"/> heavy
Stimulation:	<input type="checkbox"/> normal	<input type="checkbox"/> walks with support	<input type="checkbox"/> none
Speech:	<input type="checkbox"/> intelligible	<input type="checkbox"/> fairly intelligible	<input type="checkbox"/> unintelligible
Hearing: necessity to repeat stimulus words	<input type="checkbox"/> never	<input type="checkbox"/> seldom	<input type="checkbox"/> often
	<input type="checkbox"/> S. wore hearing aid	<input type="checkbox"/> S. watched examiner's lips and face closely	
Position: distance of eyes from page	<input type="checkbox"/> under 8"	<input type="checkbox"/> average (8"-20")	<input type="checkbox"/> over 20"
	<input type="checkbox"/> S. wore glasses	<input type="checkbox"/> S. owned but did not wear glasses during test.	
Other physical characteristics:			

OTHER INFORMATION (previous tests, dates, scores etc.; teacher estimates of vocabulary, intelligence, achievement; school or work record)

NAME _____

Item Resp. Key Word

- 1 _____(4) car
- 2 _____(3) cow
- 3 _____(1) baby
- 4 _____(2) girl
- 5 _____(1) ball
- 6 _____(3) block
- 7 _____(2) clown
- 8 _____(1) key
- 9 _____(4) can
- 10 _____(2) chicken
- 11 _____(4) blowing
- 12 _____(2) fan
- 13 _____(1) digging
- 14 _____(1) skirt
- 15 _____(4) catching
- 16 _____(1) drum
- 17 _____(3) leaf
- 18 _____(4) tying
- 19 _____(1) fence
- 20 _____(2) bat
- 21 _____(4) bee
- 22 _____(3) bush
- 23 _____(1) pouring
- 24 _____(1) sewing
- 25 _____(4) wiener
- 26 _____(2) teacher
- 27 _____(3) building
- 28 _____(3) arrow
- 29 _____(2) kangaroo
- 30 _____(3) accident
- 31 _____(3) nest
- 32 _____(4) caboose
- 33 _____(1) envelope
- 34 _____(2) picking
- 35 _____(1) badge
- 36 _____(3) goggles
- 37 _____(2) peacock
- 38 _____(3) queen
- 39 _____(4) coach
- 40 _____(1) whip
- 41 _____(4) net
- 42 _____(4) freckle
- 43 _____(3) eagle
- 44 _____(2) twist
- 45 _____(4) shining
- 46 _____(2) dial
- 47 _____(2) yawning
- 48 _____(2) tumble
- 49 _____(1) signal
- 50 _____(1) capsule

Item Resp. Key Word

- 51 _____(4) submarine
- 52 _____(4) thermos
- 53 _____(3) projector
- 54 _____(4) group
- 55 _____(3) tackling
- 56 _____(1) transportation
- 57 _____(1) counter
- 58 _____(2) ceremony
- 59 _____(3) pod
- 60 _____(4) bronco
- 61 _____(3) directing
- 62 _____(4) funnel
- 63 _____(2) delight
- 64 _____(3) lecturer
- 65 _____(2) communication
- 66 _____(4) archer
- 67 _____(1) stadium
- 68 _____(1) excavate
- 69 _____(4) assaulting
- 70 _____(1) stunt
- 71 _____(1) meringue
- 72 _____(3) appliance
- 73 _____(4) chemist
- 74 _____(3) arctic
- 75 _____(4) destruction
- 76 _____(3) porter
- 77 _____(2) coast
- 78 _____(4) hoisting
- 79 _____(1) wailing
- 80 _____(2) coil
- 81 _____(3) kayak
- 82 _____(2) sentry
- 83 _____(4) furrow
- 84 _____(1) beam
- 85 _____(3) fragment
- 86 _____(2) hovering
- 87 _____(3) bereavement
- 88 _____(4) crag
- 89 _____(2) tantrum
- 90 _____(1) submerge
- 91 _____(3) descend
- 92 _____(2) hassock
- 93 _____(1) canine
- 94 _____(1) probing
- 95 _____(1) angling
- 96 _____(3) appraising
- 97 _____(4) confining
- 98 _____(4) precipitation
- 99 _____(1) gable
- 100 _____(1) amphibian

Item Resp. Key Word

- 101 _____(3) graduated
- 102 _____(2) hieroglyphic
- 103 _____(1) orate
- 104 _____(3) cascade
- 105 _____(4) illumination
- 106 _____(1) nape
- 107 _____(2) genealogist
- 108 _____(2) embossed
- 109 _____(4) mercantile
- 110 _____(2) encumbered
- 111 _____(4) entice
- 112 _____(3) concentric
- 113 _____(3) vitreous
- 114 _____(1) sibling
- 115 _____(2) machete
- 116 _____(4) waif
- 117 _____(1) cornice
- 118 _____(3) timorous
- 119 _____(1) fettered
- 120 _____(2) tartan
- 121 _____(3) sulky
- 122 _____(4) obelisk
- 123 _____(2) ellipse
- 124 _____(2) entomology
- 125 _____(4) bumptious
- 126 _____(2) dormer
- 127 _____(2) coniferous
- 128 _____(4) consternation
- 129 _____(3) obese
- 130 _____(4) gauntlet
- 131 _____(1) inclement
- 132 _____(1) cupola
- 133 _____(2) obliterate
- 134 _____(3) burnishing
- 135 _____(1) bovine
- 136 _____(4) eminence
- 137 _____(3) legume
- 138 _____(4) senile
- 139 _____(2) deleterious
- 140 _____(4) raze
- 141 _____(2) ambulation
- 142 _____(1) cravat
- 143 _____(2) impale
- 144 _____(4) marsupial
- 145 _____(3) predatory
- 146 _____(1) incertitude
- 147 _____(2) imbibe
- 148 _____(3) homunculus
- 149 _____(4) cryptogam
- 150 _____(3) pensile

APPENDIX B

THE KINDERGARTEN PROGRAM

**HANDBOOK FOR
PLANNING ACTIVITY CENTERS
IN A
SELF-SELECTION KINDERGARTEN PROGRAM**



Goals of a Self-Selection Program

In a self-selection program the goals for each child are based upon the belief in (1) the worth, value, and dignity of each individual and (2) recognition that meaningful interaction with others is a basic need.

The teacher then guides the child through critical and creative thinking into (1) selecting and setting worthwhile goals for himself, (2) arriving at purposes that will give direction to his behavior, and (3) planning and carrying out the necessary actions to realize these goals in terms of his own purposes.

The ultimate goal for the child is the acquiring of self-discipline, learning how to make his own decisions, and knowing whether his behavior is acceptable to others.

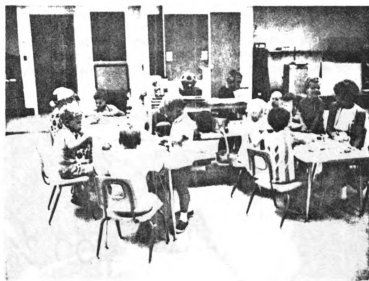
The Role of the Teacher

The self-selection classroom provides for a more individualized approach to learning with the emphasis placed on learning through discovery. The teacher prepares the learning environment, demonstrates, and then observes and offers guidance when needed. The teacher carefully plans and arranges the environment to ensure that opportunities are available for specific skill development while the children interact with the materials she has set out for them to select from each day.

Having carefully planned areas of interesting activities in various centers around the room to develop motor skills, eye-hand coordination skills, visual skills, auditory skills, language and cognitive skills, the teacher allows the child the freedom to choose and select activities according to his own interests and abilities.

The teacher constantly acts as a "facilitator of learning". When she sees a child having difficulty, she acts as a "direct interventionist" and interacts with the child to modify the instructional activity to insure the child's success at the task.

The teacher provides a balance between structured and creative activities in which the child is free to express himself.



Planning the Learning Activities

In a self-selection classroom the teacher structures the environment so that the learning activities are in line with the theories of child development. The learning activities are planned on the basis of the needs of the child and the processes involved in the learning process.

Child's Learning Processes:¹

Perceive (Awareness-Sensory Input)

See
Hear with
Touch under-
Taste,etc. standi ng

Think (Explore)

Recall Analyze
Review Interpret
Compare Generalize
Combine Infer

Try (Improvise, Organize, Communicate)

Try new ideas in
action; see if they
produce results

Related Teacher Activities:

Show

Show the students what you
want them to learn through
use of:
objects real experiences
pictures recordings
stories films
charts diagrams

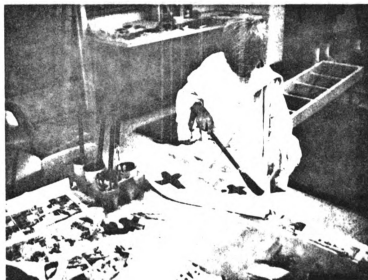
Discuss

Raise questions
Pose problems
Seek reasons
Consider various points
of view

Apply

Plan activities
which require students
to try out ideas.

The teacher acts as a diagnostic teacher and deliberately plans to relate the steps in her lessons to the child's learning processes. She plans alternate activities to allow for individual differences in learning among the children within her class.



¹Teacher-Trainer Manual, Salt Lake City:Church of Jesus Christ of L.D.S., 1969, p. 10.

Three types of activities are available in the self-selection classroom, (1) independent activities with materials that are self-correcting and give immediate feedback as the child interacts with them, (2) creative or expressive activities where the child is free to experiment or express himself in a variety of ways and, (3) planned learning activities where the child and the teacher interact with each other.

In evaluating these learning activities the teacher uses the following guidelines:¹

1. Did the activities relate to the (a) main idea and (b) specific behavioral objectives?

2. Was anything done to determine what the child already knew? This involves preassessment to insure that activities match the readiness of the child to be involved. Were alternatives available to alter the plan if necessary?

3. In planning the learning activities what was done to make the activities meaningful in view of---

a. Child's Learning Procedures

1. perceive---awareness
2. think---explore
3. try---improvise, organize, communicate

b. Teacher Activities

1. show
2. discuss
3. apply---verbalize to guide original thinking,

4. What evaluation was built into the lesson? Was the objective accomplished?

In planning her learning activities the teacher may use the following outline:

1. General Purpose or Main Idea
2. Specific behavioral objectives
3. Preassessment
4. Alternative activities to accomodate differences
5. Learning activities
6. Evaluation

The following pages present some sample activities that are planned for a learning center that may be included in a self-selection classroom.

GROSS MOTOR ACTIVITY

General Purpose: To develop balance and coordination of movement of large muscles.

Behavioral Objectives:

1. The child will be able to travel in various ways through an obstacle course consisting of various apparatus with a minimum of help.
2. The child will be able to crawl across a low ladder, stepping on each step without falling.
3. The child will be able to balance on a pair of "boot straps" and walk the distance of approximately nine feet without stepping off.
4. The child will be able to jump on the inner-tube trampoline without losing his balance.
5. The child will be able to tell in words when he is traveling low, high, above, below, or between objects in the obstacle course.

Preassessment:

The walking board may be used as a test to discover children that have a great deal of difficulty with balance and coordination.

Alternate Activities:

If the child repeatedly loses his balance on the apparatus the teacher may try activities to develop balance while sitting on the floor, such as, the seat pivot, rolling sit-ups, etc.

Learning Activity:

Show: Children may be asked to demonstrate various ways to travel the maze or obstacle course.

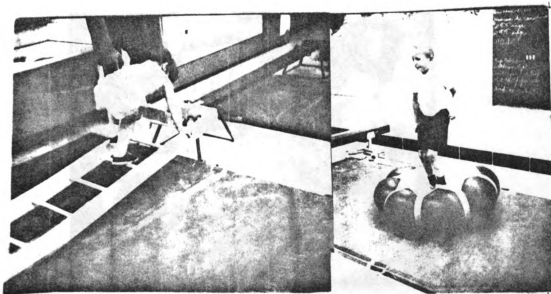
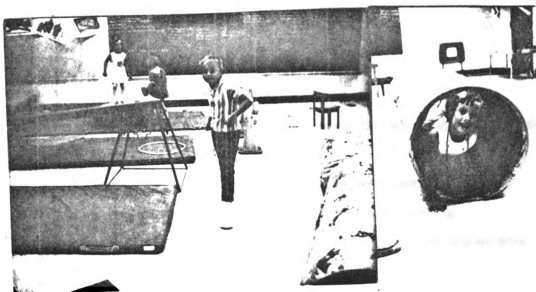
Discuss: The children should be encouraged to describe the demonstrated activities in verbal terms, using vocabulary such as low, high, above, below or between.

Apply: The children will travel the obstacle course in various ways.

Evaluation:

The teacher will observe children that have difficulty with balance and coordination as they travel the obstacle course.





FINE MOTOR ACTIVITY**Manipulative Skills**

General Purpose: To develop fine motor coordination through the use of manipulative materials.

Behavioral Objectives:

1. The children will be able to join pieces of wood together with plastic nuts and bolts.
2. The children will be able to verbally describe what they are making.

Preassessment: The teacher may ask the child to demonstrate how to screw the nuts and bolts together.

Alternative Activities:

Children who have difficulty may participate by screwing covers on cans or larger sized toys that involve screwing and unscrewing.

Learning Activity:

Show: The children will screw the nut onto the bolt attaching pieces of wood.

Discuss: The children will identify and discuss the materials used--nuts, bolts, and wood.

Apply: Using the nuts and bolts, the children build an object such as an airplane or a table; or they may merely link several pieces of wood together.

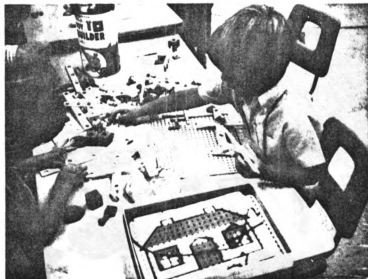
Evaluation:

The teacher may observe the following:

Did the children successfully screw a nut on a bolt?

Did the children successfully attach two pieces of wood together using nuts and bolts?

Did the children successfully build an object of his choice or possibly teacher's suggestion?



MANIPULATIVE SKILLS ACTIVITY

General Purpose: To provide the child with a means for motor expression and to develop eye hand coordination through creative exploration with various art media.

Objectives: The child will experiment with letters, shapes, and animal sponges and a variety of paint colors.

Preassessment:

The child will be asked the following questions to determine what he already knows about the activity:

What do you usually paint with?

Do you know what this is? (Hold up a sponge cut in the shape of a letter or animal.)

How do you think we could use these to paint with?

Alternative Activities;

There may be other tables set up in the art center with brush painting, clay, and/or cutting and pasting activities.

Learning Activities:

Show: Demonstrate using the sponges to make prints.

Discuss: While the child is dipping the sponges and printing, the teacher will encourage the child to tell what color paint he is using and name the shape, letter, or animal.

Apply: The child will use the various shaped sponges (circle, squares, triangles and various letter shapes) to make his own picture.

Evaluation: Observe only. This activity is one for creative exploration.



EYE-HAND COORDINATION ACTIVITY**Manipulative Skills**

General Purpose: To develop eye-hand coordination and finger dexterity through manipulative materials.

Behavioral Objective The child will be able to lace the shoe string in and out of the lacing from without missing any holes.

Preassessment: The child may be asked to attempt to lace with the Montessori lacing frames or other larger lacing toy.

Alternate Activities: If the child has difficulty he may string large beads or place large pegs in the large pegboard.

Learning Activities:

Show: The teacher may demonstrate or ask the child to show how he would lace the various shape frames.

Discuss: Can you name these shapes? Tell me how you would lace this? (The teacher may also include color words and counting.)

Apply: The child will lace as many frames as he wishes.

Evaluation: This will be done by observation either during the task or by looking at the completed frames.



MANIPULATIVE SKILLS ACTIVITY

General Purpose: To develop eye-hand coordination, finger dexterity, and the visual skills through manipulative materials.

Behavioral Objectives:

1. The child will be able to glue beans on the card to form each letter of his name.
2. The child will be able to recognize his name.
3. The child will name the letters in his name.

Preassessment: Can you find your name on the name chart? Have the child locate his own name.

Alternative Activities:

The child may also be asked to make his name with magnetic letters and name the letters.

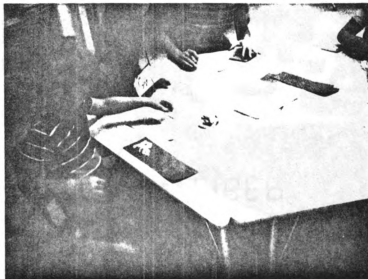
Learning Activities:

Show: The teacher will print the child's name for him on a card as the child watches.

Discuss: The teacher will encourage the child to identify each letter as it is written. When cards are finished the child will be asked to find his own name when it is among other name cards.

Apply: The child will glue the beans over the letters of his name making the name stand out from the colored card.

Evaluation: Evaluation is built into the activity as the teacher observes the child forming the letters.



VISUAL SKILLS ACTIVITY

General Purpose: To develop visual discrimination through tactile and visual inspection.

Behavioral Objectives:

1. The child will trace around the shapes with his finger and count the sides.
2. The child will count the different shapes.
3. The child will verbally name the basic shapes such as circle, square, triangle, star, etc.
4. The child will be able to move the ball to find the proper opening for the proper shape and place the shape in the ball.

Preassessment:

Hold up the shapes: Can you tell me what shape this is?
Can you trace what shape this is?
Can you feel the shape in the air?
What do you think you should do with the shapes and the ball?

Alternative Activities: If the child does not know the basic shapes have him hold them, feel them and talk about them. If the child does know the shapes, he will work with and discuss the more complex shapes.

Learning Activities:

Show: The child will demonstrate, with the help of the teacher, how he places the shape in the proper opening.

Discuss: How many shapes can you show and name?

Apply: The child will hold the shape, and find the proper opening to place it in the ball.

Evaluation:

1. Did the child place all of the shapes in the ball without failure?
2. A posting box may be used to see if the child recognizes a circle, square, and triangle with other games.



VISUAL DISCRIMINATION ACTIVITY

General Purpose: To help develop the concept of visual discrimination through sensory motor manipulation of parquetry designs.

Objectives: The children will match the color shapes to the design card and place the block directly on the card. Fine motor coordination will be developed by the manipulation of the small block?

Preassessment: What shape is the block? Can you find something in the room that is the same shape as this block? Find an object in the room that is the same color?

Alternative Activities: The children will begin the activity with only two shapes on the design cards and progress to cards with several shapes.

Learning Activities:

Show: The children will use the design cards and the different shape parquetry blocks.

Discuss: Does your design match the card? What two shapes do you need to make the shape on the card?

Apply: The child will match the block shapes on the design card and later try to reproduce the design next to the picture rather than directly on the card.

Evaluation: The teacher will be able to evaluate the child's progress if he is able to manipulate the blocks when placing on the design cards. The teacher may also observe if the child can match the blocks on the design cards or reproduce the design by looking at the card and making the design next to the card.



AUDITORY SKILLS ACTIVITY

General Purpose: To provide auditory discrimination of sounds heard in the child's community and associate these sounds with pictures.

Objective: The children will identify sounds they hear on the recording by saying the word and pointing to the picture which identifies it.

Preassessment: The teacher may show the children the pictures and ask: What is this a picture of? What kind of sound does it make? Can you make its sound?

Alternative Activities: The teacher can ask the children what sounds they hear around the classroom, around the farm and near their own home.

Learning Activities:

Show: The teacher sets up the phonograph and earphones and demonstrates the use of the listening post. The children are instructed to listen to find the sounds that go with the pictures.

Discuss: The teacher should encourage the children to discuss each picture, the objects used and the sound.

Apply: The children will listen to the sounds and point to the picture. Then they will say the name of the object which makes the sound. If a tape recorder is available the children may record sounds around the room and make their own cards to illustrate the sounds.

Evaluation: The teacher can keep a record of how many sounds each child made and how well they described the thing that made the sound.



LANGUAGE ACTIVITY

General Purpose: To provide experience in expressing oneself verbally through characterization and dramatization with puppets.

- Objectives:**
1. The children will retell, create, or extend a story sequence to indicate a beginning, a midpoint and an end.
 2. The children will vary their voice intonation when portraying different roles with the puppets.
 3. The children will use expressive language patterns.

Preassessment: Ask questions such as ; How would you make your voice sound as if you were "Daddy Bear", "Baby Bear", "Mother Bear"?

Alternate Activities: The children may dramatize the story with out the use of the puppets.

Learning Activities:

Show: Read or tell a short story .

Discuss: Have children indicate comprehension through follow-up questions:

1. Who were the main characters?
2. What was the first thing that happened, next, last?
3. Why did the character do particular things?
4. How did he feel? How would he talk?

Apply: Allow children to partake in different characters to dramatize the story with puppets. Guide and emphasize the correct sequence to reconstruct the story.

Evaluation:

1. Note the children's language patterns observing: use of descriptive adjectives, expressive voice quality, and number of varied words.

2. Note sequence portrayed in the dramatization.



1.*

2.

3.*

8.

Garte.

KINDERGARTEN MATERIALS LIST

I. Materials for General Movement Skill¹

- | | | |
|------------------|---------------------------|------------|
| 1.* Walking Beam | 4.* Boot Straps | 7.* Tunnel |
| 2. Mats | 5.* Wooden Ladder | |
| 3.* Large Balls | 6.* Inner Tube Trampoline | |

8. Records for rhythmical activities

Choose records similar to those on the following list:

- | | | |
|---|------------------------------|---|
| A. Physical Fitness and
Self Expression Songs
1-12" 33 1/3 R.P.M. | \$7.95 | Education Record Sales
157 Chambers Street
New York, New York 10007 |
| B. Animal Rhythmics
1-12" 33 1/3 R.P.M. | \$7.95 | " |
| C. Classroom Rhythms
(animal)
1-12" 33 1/3 R.P.M. | \$5.95 | " |
| D. Classroom Rhythms
(interpretive)
1-12" 33 1/3 R.P.M. | \$5.95 | " |
| E. Childcraft Records
1-12" 33 1/3 R.P.M.
14 record in series | \$1.98 each
\$22.72 Total | |
| F. Creative Rhythms Album
4-10" 78 R.P.M.
4 albums in series
The Circus
Visit to the Farm
The Seasons
Visit to the Park | \$30.00 Total | |

¹Starred items are highly recommended by previous kindergarten teachers that have used these materials.

- | | | | |
|-----|--|------------------------|--|
| G. | Counting Games and
Rhythms 1-10" 33
1/3 R.P.M. | \$4.24 | Education Record Sales
157 Chambers Street
New York, New York 10007 |
| H. | Honor Your Partner
Albums - Album 7
Basic Rhythms 3-12"
78 R.P.M. | \$10.00 | " |
| | Album 11 - Marches
4-12" 78 R.P.M. | \$12.00 | " |
| | Album 12 - Rope
Skipping,
Ball Bouncing
4-12" 78 R.P.M. | \$12.00 | " |
| I. | Sing 'N Do
3-7" 45 R.P.M.
Albums 1 through 6 | \$6.95 each
\$38.10 | Newman Visual Ed. Inc.
album 2023 Easter Ave. S.E.
Grand Rapids, Michigan
49507 |
| J.* | Developing Body-Space
Perceptual Motor Skills
Album 1 Body Image
Album 2 Laterality &
Directionality | \$4.98
\$4.98 | " |
| K. | Rhythm Time (71613)
Scott & Wood
3 records | \$7.93 | Webster Division
McGraw-Hill Book Company |
| L. | Adventures in Rhythm
(8273) 1-10" LP | \$4.15 | Folkways Scholastic
Records
906 Sylvan Avenue
Englewood Cliffs, N.J.
97632 |
| M.* | The Development of Body
Awareness and Position
in Space
Album 605 - Records &
Guide | \$5.95 | Educational Activities
Box 392
Freeport Long Island,
New York 11520 |
| N.* | Exploring Perceptual Motor
Needs of Primary Level
Children
Album 606-7 Records and
Guide | \$11.90 | " |

II. Materials for Manipulative Skills

- | | | | |
|-----|--|---------|--|
| 1.* | Construction Blocks | | |
| 2. | Nested Blocks, Nested Barrels, etc. | | |
| 3. | Rig-O-Jig | | |
| 4. | Montessori type materials | | |
| 5.* | Large Beads and Laces
No. 47 | \$6.50 | Elementary Teaching Aids
Math-Master Labs, Inc.
Big Spring, Texas |
| 6.* | Developmental Learning
Materials, Pegboards and
Peg Design Cards | | |
| | No. M128 (pegboard) | \$1.50 | DLM |
| | No. M129 (40 pegs) | \$2.75 | 3505 N. Ashland Avenue |
| | No. P150 (200 designs) | \$12.50 | Chicago, Illinois |
| | Large Parquetry | | |
| | No. W113 | \$2.50 | |
| | No. P114 (designs) | \$3.75 | |
| | Colored Inch Cubes | | |
| | No. W110 | \$4.50 | |
| | No. P11 (designs) | \$3.25 | |
| 7. | Visual Motor Perceptual
Teaching Materials
(Kit of manipulative
materials--games) | \$65.00 | Teaching Resources, Inc.
334 Baylston St.
Boston, Massachusetts
02116 |
| 8. | Erie Program Perceptual
Motor Teaching Materials
(Kit of Manipulative
materials--individual-
ized) | \$77.00 | " |
| 9. | FRI Perceptual Motor
Development--Fairbanks-
Robinson (individualized) | \$79.00 | " |
| 10. | Five Chalkboard Templates
9" x 11" Single Set | \$15.00 | Programs to Accelerate
School Success
P.A.S.S., Inc.
Box 1004
Minneapolis, Minn. 55440 |

- | | | | |
|-----|---|----------------------|--|
| 11. | School Skill Tracing Board
Complete set (pattern, sheets,
tracing board, and plastic
cover) | \$27.75 | P.A.S.S., Inc.
Box 1004
Minneapolis, Minn. 55440 |
| 12. | Readiness for Learning
McLeod
Teacher's Guide
Workbooks | 1.35
1.35 | J. B. Lippincott
Educational Pub. Div.
E. Washington Square
Philadelphia, Pa. 19105 |
| 13. | Stencil Boards
No. P104 (Shape Stencils)
No. P105 (Animal Stencils)
No. P106 (Farm & Trans.) | 3.50
3.50
3.50 | D. L. M. Materials
3505 N. Ashland Avenue
Chicago, Ill. 60657 |

III. Materials for Visual Skills

- | | | | |
|-----|--|--------------------------------------|---|
| 1. | Wooden Jig-saw Puzzles | | Creative Playthings, Inc.
Princeton, New Jersey |
| 2.* | TRY
Task I, Task II, Task III
1 Special Examination Set | \$14.96 | Noble and Noble Pub. Inc.
750 3rd Avenue
New York, New York 10017 |
| 3. | Three dimensional letters | | Creative Playthings, Inc. |
| 4.* | Developmental Learning Materials
People Puzzles -No. P101
Shape Puzzles -No. P103
Letter Constancy-No. P125
Alphabet Cards -No. P109 | \$4.50
\$4.50
\$3.25
\$5.25 | DLM
3505 N. Ashland Avenue
Chicago, Ill. |
| 5. | Materials to develop letter
knowledge | | The Learning Center
Elementary School Dept.
Princeton, N.J. 08540 |

Language Development Laboratory

Alphabet includes:

- 1 set Masonite Kinesthetic letters
Upper and Lower case
- 1 Letter molding kit--26 plastic molds
Molding compound 5 lbs.
- 2 Wooden word making strips
- 1 Box rigid lower case letters
- 1 Set wood stand up letters
Upper and Lower case
- 1 Box interlocking plastic
Wordmaking letters
- 1 Teacher's manual
EK 4250

\$79.50

- | | | |
|--------------------------|---------|--------------------------|
| 6. Filmstrips: | \$47.00 | Educational Record Sales |
| Visual Perception Skills | | 157 Chambers St. |
| Visual Memory | | New York, New York 10007 |
| Visual Constancy | | |
| Visual Discrimination | | |
| Figure Ground Perception | | |
| Visualization | | |
| Visual Matching | | |

IV. Materials for Auditory Skills

- | | | |
|---------------------------------|---------|---------------------------|
| 1. Kindergarten Rhymes No. 7003 | | Teacher's Publishing Co. |
| Flannel Cutouts & Book | \$5.95 | P.O. Box 1206 |
| | | Darien, Connecticut 06820 |
| 2. Sounds I Can Hear | | Scott, Foresman & Co. |
| 02765-66 | | 1900 E. Lake Avenue |
| Set of 4 Albums | \$15.00 | Glenview, Ill. 60025 |
| 3. Auditory Familiar Sounds | | |
| No. T139-C | \$4.25 | DLM |
| Auditory Training | | 3505 N. Ashland Avenue |
| No. T138-C | \$3.25 | Chicago, Illinois |
| 4. Getting Ready to Read | | |
| Manual | \$.96 | Houghton Mifflin |
| Starter Set of Objects | \$2.40 | 2 Park St. |
| Animated Key Cards | \$3.60 | Boston, Massachusetts |
| 5. Time for Rhyme No. 30026 | | |
| Language Auditory | \$5.95 | Teachers Publishing Co. |
| 6. Talking Time | | Webster Division |
| Scott-Thompson | \$3.76 | McGraw-Hill Book Co. |
| | | Manchester Road |
| | | Manchester, Missouri |
| | | 63011 |
| 7. Listening with Mr. Bunny | | |
| Big Ears | | Educational Record Sales |
| 6 records | | 157 Chambers St. |
| 12" 33 1/3 R.P.M. | \$23.95 | New York, New York 10007 |

V. Materials for Language and Speech

- | | | |
|--|----------------|---|
| 1.* Sounds & Patterns of Language
Bill Martin
Easel Display Board
6 Background Scenes
Magnetized Characters & Language
Patterns - Set | \$129.00 | Holt, Rinehart & Winston
383 Madison Avenue
New York, New York
10017 |
| 2. Choral Speaking & Speech
Improvement (book) | \$2.25 | Teachers Publishing Co.
P.O. Box 1206
Darien, Conn. 06820 |
| 3. Manipulative Language Arts
Kindergarten | \$1.95 | " |
| 4. Various Library Books for Children | | |
| 5.* Language Experience in Reading
Teachers Resource Guide
Unit 1
Early Childhood Education
Roach, Van Allen | each
\$8.25 | Encyclopedia Britannica
Educational Corporation
425 N. Michigan Avenue
Chicago, Ill. 60611 |
| 6. See Quees Sequence Story
Boards | \$1.75 | Creative Playthings, Inc.
Princeton, New Jersey |
| 7.* Experiential Development Prog.
Program A, You & Your Family
1 big book, 20 pupils books | \$18.00 | Benefic Press
1900 N. Narragansett
Chicago, Ill. 60639 |
| 8. Story Records for Listening
Comprehension | | Cheviot Corporation
Department 641
Box 34485
Los Angeles, Calif. 90034 |
| A. The Story How-Vol 4
CC616 3 records
Single Album | \$5.98 | |
| B. Stories for Creative
Learning CC620
3 rec. 7" 33 1/3 R.P.M. | \$5.98 | " |
| C. Storytime Favorite Audio
Books C301 2 rec.
16" 33 1/3 R.P.M. | \$2.35 | National Council of
Teachers of English
508 S. Sixth Street
Champaign, Ill. |

- | | | |
|----|--|----------------------------------|
| D. | Encyclopedia Britannic Films
of Disney-Reading Readiness
Communication Skills Kit
Record, Film, Books | Encyclopedia Britannica
Films |
| E. | Golden Shape Books | Odyssey Press |
| | Book and Record .69 | 850 Third Avenue |
| | Bear Book .69 | New York, New York 10022 |
| | Cat Book .69 | |
| | Lion Book .69 | |
| | Elephant Book .69 | |

VI. Materials for Cognitive Skills

- | | | |
|-----|--|--|
| 1. | Early Childhood Curriculum Kit,
Cella Lavatelli | Center for Media Dev.,
Inc.
American Science & Eng.
Boston, Massachusetts |
| 2.* | Play Trays and Classification
Pictures | General Learning Corp.
Early Learning Division |
| | No. 502 Foods Card Set \$6.45 | 3 East 54th Street |
| | No. 504 Clothing Card Set \$5.45 | New York, New York 10022 |
| 3. | Association Picture Cards | DLM |
| | No. P124 (set 1) \$1.00 | 3505 N. Ashland Avenue |
| | No. P156 (set 2) \$1.00 | Chicago, Illinois |
| | Motor Expressive Language
Picture Cards I & II | |
| | No. 159 (set 1) \$1.00 | |
| | No. 160 (set 2) \$1.00 | |
| | Sequential Picture Cards | |
| | No. 127 (set 1) \$1.00 | |
| | No. 161 (set 2) \$3.00 | |
| | No. 162 (set 3) \$3.00 | |
| 4.* | Beginning Experiences in
Number Relations Through
Language | Educational Record Sales
157 Chambers Street
New York, New York |
| | 1 rec. 12" 33 1/3 R.P.M. \$4.98 | 10007 |

- | | |
|--|---|
| 5. Introduction to Sets & Numbers
No. 1503
This flannelboard kit introduces
the basic concepts of sets \$3.00 | School Teaching Aids &
Supplies
Models of Industry, Inc.
2100 Fifth Street
Berkeley, California |
| 6.* Sterns Structural Arithmetic
Kindergarten Kit \$36.00 | Houghton Mifflin
1900 S. Batavia Avenue
Geneva, Ill. 60134 |

VII. Materials for "Moving Into Drama" Program

Books

- | | |
|--|--|
| 1. Movement Education
for Children-Lorena Porter \$1.00 | American Assoc. of
Elementary Kindergarten
Nursery Educators
NEA Center
1201 Sixteenth St.
Washington, D.C. 20036 |
| 2. Exploring Movement \$1.95 | Educational Activities,
Inc.
Freeport, New York 11520 |
| 3.* Daily Sensorimotor Training
Activities-A Handbook for
Teachers and Parents of
Preschool Children, William
Broly, Geraldine Konacki,
Kathy Ludy \$2.98 | " |
| 4.* Development Sequences of
Perceptual Motor Tasks-
Bryant Cratty \$1.50 | " |
| 5.* Learning Through Movement
Betty Rowen \$2.95 | " |
| 6.* Music, Movement, and Mime
Vera Gray, Rachel Percival \$2.60 | Oxford University Press
New York, New York |
| 7.* Listen and Help Tell the
Story-Bernice Carlson \$4.95 | Abington Press |
| 8.* Words and Action, Role
Playing Problem Solving
Pictures-George Shaftel
and Fannie Shaftel \$18.00 | Holt, Rinehart & Winston
New York, New York |

Records

1.* Learning Basic Skills Through Music, Vol. I AR514	\$5.95	Educational Activities, Inc. Freeport, New York 11520
2.* Learning Basic Skills Through Music, Vol. II AR522	\$5.95	"
3. Learning Basic Skills Through Music, Building Vocabulary AR521	\$5.95	"
4. Come Dance With Me Virginia Tanner	\$14.95	Hector Record Company Waldwick, New Jersey
5. Dance-A-Story		Ginn and Company
About Little Duck	\$3.33	450 W. Algonquin Rd.
About Noah's Ark	\$2.31	Arlington Hts., Ill.
About the Magic Mountain	\$2.31	60005
About Balloons	\$2.31	
About the Brave Hunter	\$2.31	
About the Toy Tree	\$2.31	
About Flappy and Floppy	\$2.31	
About At the Beach	\$2.31	

DETAILED LESSON PLAN FOR PERCEPTUAL-MOTOR PROBLEM SOLVING--"CIRCLES"

Main Idea: A circle is a geometric figure without any corners and is "round."

Behavioral Objective: Each child will demonstrate that he understands that a circle is round by: 1. making a circle with a group of children, 2. traveling the "road" in a circular motion, and 3. making a picture book of things that are round.

Preassessment: Ask: "What figure do you know that has no corners?"

Learning Activities

1. Recognizing and making a circle with a group of children to illustrate the concept of round.

2. Travel the "road" in a circular motion.

3. Finding other things in the room that are round like a circle---perceptual constancy.

4. Making circles with templates.

Teaching Activities

1. **Show:** Ask all of the children to stand in a circle. Give no instructions.

Discuss: Is this round? How can we make it round like a circle?

Apply: Children hold hands close together like a "football huddle," then step backwards to "blow the circle up."

2. **Show:** How could you travel our "road" in circles? (Make a road on the floor using masking tape.) A child demonstrates.

Discuss: How was this different from the circle we made? Who can travel the road in circles in a different manner? How were these ways alike? How were they different?

Apply: Different children demonstrate a variety of ways to travel in circles.

3. **Show:** Place flannel circles, squares and triangles on a flannel board. A child picks the circles.

Discuss: How many other things in the room can you find that are round like a circle? How are they alike? ---different?

Apply: Children find things that are round.

4. **Show:** Template

Discuss: How can you use this to make a circle? Can you draw other things that are round?

Apply: Children use the template to make the circle, then draw something that is round inside the circle. They cut out the circle and fasten them all together to make a "Round Book."

APPENDIX C

IMPLEMENTATION PROCEDURES

APPENDIX C

CHART C-1.--Phases of implementation.

1968-9	In-service training for teachers. Voluntary Participants College Credit Option	May Kindergarten Roundup Diagnostic of Kindergarteners for placement
1969-	Continued Monthly In-service Voluntary K-3 teachers	Classroom Implementation 2 Kindergarten teachers 2 total classrooms (total of 40 children in the sample)

Bibliography for Teachers

1. Avery, Marie and Alice Higgins. Help Your Child Learn to Learn. New Jersey: Prentice Hall, 1962.
2. Carlson, Bernice. Listen and Help Tell the Story. Abingdon Press, 1965.
3. Cherry, Claire. Creative Movement for the Developing Child. Feron Press, 1969.
4. Frostig, Marianne and David Horne. The Frostig Program for Development of Visual Perception. Chicago: Teachers Guide, Follett Pub. Co., 1964.
5. Getman, G. N. How to Develop Your Child's Intelligence. Luverne, Minn.: P.A.S.S., Inc., 1962.
6. Getman, G. N. Physiology of Readiness. Luverne, Minn.: P.A.S.S., Inc., 1963.
7. Gray, Vera and Rachel Percival. Music, Movement and Mime for Children. New York: Oxford University Press, 1969.
8. Hartup, Willard W. and Nancy L. Smothergill, eds. The Young Child Reviews of Research. Washington, D.C.: NAEYC, 1967.
9. Hechinger, Fred M., ed. Pre-School Education Today. New York: Doubleday and Co., Inc., 1966.
10. Hunt, McV. J and Maria Montessori. The Montessori Method. New York: Schocken Books, 1964.
11. Kephart, Newell. The Slow Learner in the Classroom. Columbus, Ohio.: Charles E. Merrill Books, Inc., 1960.
12. Kephart, Newell and Eugene Roach. The Perceptual Motor Survey. Columbus, Ohio: Charles E. Merrill Books, Inc., 1966.
13. Lee, Doris M. and R. V. Allen. Learning to Read Through Experience. New York: Appleton-Century-Crofts, 1963.
14. Lewis, N. M. Language, Thought and Personality in Infancy and Childhood. New York: Basic Books, Inc., 1963.
15. Martin, Bill. Sounds of Language Series. New York: Holt, Rinehart and Winston, 1966.

16. McLeod, Pierce. Readiness for Learning. New York: Lippincott Co., 1965.
17. McLeod, Pierce. The Undeveloped Learner. Springfield, Ill.: Charles C. Thomas Pub. Co., 1968.
18. "Operation Home Start." The Reading News Report, II, No. 2 (November, 1967).
19. Orem, R. C., ed. A Montessori Handbook. New York: Capricorn Books, 1966.
20. Pines, Maya. Revolution in Learning--The Years from Birth to Six. New York: Harper and Row, 1967.
21. Porter, Lorena. Movement Education for Children. Washington, D.C.: EKNE, 1969.
22. Radler, D. H. and Newell C. Kephart. Success through Play. New York: Harper and Row, Co., 1960.
23. Rambusch, Nancy McCormack. Learning How to Learn. Baltimore, Md.: Hebcon Press, 1965.
24. Rowen, Betty. Learning Through Movement. Edited by Alice Miel. New York: Teachers College, Columbia University, New York Bureau of Publications, 1963.
25. Shaftel, Fannie and George Shaftel. Words and Actions. New York: Holt, Rinehart and Winston, Inc., 1967.
26. Way, Brian. Development through Drama. Education Today Series. London: Longmans, Green and Co. Ltd., 1969.

Bibliography of Resource Papers¹

1. Rubin, Eli, chairman. "Utilizing Cognitive-Motor Approaches with Learning and Adjustment Problems--A Symposium."
2. Braun, Jean. "Cognitive-Motor Deficits--Definition and Intervention."
3. Llorens, Lela. "Symposium--Utilizing Cognitive-Motor Approaches with Learning and Adjustment Problems--Remediation Procedures."

¹Available from Macomb Co. Intermediate School District.

4. Rice, Patty C. "Motor Training 'Why?'"
5. Rice, Patty C. "Motor Training Handbook."
6. Center Line Clinicians. Chalkboard Activities.
7. Perceptual Constancy from Frostig.
8. Visual Discrimination Activities for Primary Grades.
9. Frostig Training Program for the Development of Visual Perception.
10. Suggestions for Instruction in Area of Visual Skills.
11. Rice, Patty C. "Primary Grade Handbook."
12. Kindergarten Finger Plays.
13. Diagnostic Tests for Kindergarten Procedures for Administering Tests.
14. Child Growth and Development Chart.
15. Tests Correlated with Child Growth and Development Chart.
16. Suggested Sequence for Foundation of Basic Learning Skills.

Monographs

1. Comly, Hunter. The Hyperkinetic Child. Reprinted article. May, 1965.
2. Crutchfield, Marjorie A. "In Practice: The Language Experience Approach to Reading." Elementary English (March, 1966). Reprinted article.
3. Harris, Albert J. Perceptual Difficulties in Reading Disability. Reprinted Article.
4. Stogdill, Charles G. "School Achievement, Learning Difficulties and Mental Health." Canada's Mental Health (September-October, 1965), Supplement #48. Reprinted article.
5. Wiseman. "A Classroom Procedure for Identifying and Remediating Language Problems." Reprinted article.

In-Service Training Workshops I

Workshop I
Saturday, Sept. 28
9:00 - 12:00

I. Review project

Clarify procedures and objectives

A. Discuss importance of early identification and remediation for children that lack basic learning skills

B. Concept of grouping and pacing

1. A look at the kindergarten teacher as a diagnostic teacher

2. Discuss testing as a means for further instruction

II. Overview of theory and practice

A. Six specific areas stressed to provide a foundation of learning skills

1. General movement

2. Manipulative skills--eye-hand coordination

3. Visualization skills

4. Auditory skills

5. Speech and Language

6. Cognitive skills

B. Kindergarten Film Strip by Patty Rice, Macomb Intermediate School District

III. Demonstration with Children
(4 beginning 1st grader)

Testing of Motor skills and Perceptual Motor Activities

IV. Suggest Reading Material

- A. Resource papers¹ on a Cognitive-perceptual-motor survey program I, II, III
- B. "Success Through Play," Kephart and Radler
(Assign section to individuals to present at following sessions--include description and purpose)
 - 1. Angels in Snow Oct. 5
 - 2. Walking Board Oct. 5
 - 3. Balance Board Oct. 5
 - 4. Ball Games Oct. 5
 - 5. Peg Board Oct. 15
 - 6. Chalkboard Oct. 26
- C. Purdue Perceptual Motor Survey, Kephart and Roach

Workshop II
Saturday, Oct. 5
9:00 - 12:00

I. Cognitive-perceptual-motor training?

- A. Discussion groups
 - 1. What is perception?
 - 2. What is cognition?
 - 3. What is intelligence?
- B. Conclusions of discussion groups
- C. Concepts of Intelligence developed by Piaget as related to materials and activities for perceptual development

II. Motor Training

- A. Classification of Importance of Motor Training Programs
 - 1. Comparison of Delacato, Frostig, Kephart, Barsch, Cratty

¹Resource papers listed are mimeographed materials available from Macomb Intermediate School District.

2. Cratty's statement on Motor Research

B. Reports of assigned topics from "Success Through Play"

- | | | |
|----|----------------|-------------------------|
| 1. | Angels in Snow | description and purpose |
| 2. | Walking Board | " |
| 3. | Balance Board | " |
| 4. | Ball Games | " |

C. Need for planned sequence of motor patterning

1. Basic developmental sequence
2. Concept of structure for planning a lesson
 - a. build on concrete
 - b. semi-concrete
 - c. abstract
3. Slide Presentation of Gross Motor Activities
 - a. Level 1 Activities--gross motor and body image
 - b. Level 2 Activities--bilateral
 - c. Level 3 Activities--cross pattern
4. Discussion of the Motor Handbook by Patty Rice
5. Rhythmic work

Suggested Reading Material:

1. Readiness for Learning--teachers edition, Pierce H. McLeod
2. Slow Learner in Classroom, Newel Kephart (Chapter on pegboard and chalkboard)
3. Motor Training "Why?" (mimeographed), Patty Rice
4. Motor Training Handbook--Patty Rice and Sue Chojnacki (mimeographed)
5. Primary Guide for Physical Activities--Rice and Chojnacki (mimeographed)

Workshop III
 October, 15, Tuesday
 3:15 - 4:45

- I. Coordination--Special Movement Patterns for eye-hand coordination and manipulative skills.
 - A. Teach recognition of shapes, sizes, textures, etc. through manipulative materials.
 1. Montessori materials
 2. Nested blocks, pyramids, puzzles
 3. Pegboard activities
 - a. Slides to illustrate block and pegboard patterns
 - b. Report on pegboard from "Success through Play"
 - c. Report from "Slow Learner"
 - B. Tactile Kinesthetic Experience of cutting--sequential steps in teaching cutting and use of scissors.
 - C. Teaching concept of sequencing with use of bead patterns and pictures with various shapes.
 - D. Utilization of basic shapes such as circle, square, triangle, etc., in a variety of activities.
 - E. Group activity--booklets of things that are round, square, etc.

Suggested Reading Material

1. Orem, Montessori Handbook
2. Getman, How to Improve Your Child's Intelligence

Workshop IV
 October 26, Saturday
 9:00 - 12:00

- I. Discussion of Application of Ideas from Previous Workshops
- II. Eye-hand Coordination Development
 - A. Tests for eye-hand coordination
 1. Winterhaven copy forms
 2. Draw-a-Man

3. Perceptual Motor Survey--chalkboard, eye-movement

B. Chalkboard Activities

1. Discussion of the purpose
2. Reports from Success Through Play and Slow Learner
3. Suggested Sequential Development of eye-hand coordination skills through chalkboard activities

- C. Using fingerpaints, large paper, and crayons and other art activities to present the child with a visual counterpart of the movements of his arm and hand.

- D. Adding Rhythm--to aid the child in developing free flowing movement and integration of movement of parts into total posturing adjustments.

1. Rhythm strip pattern cards
2. Scarf dance

E. Frostig Materials

1. Small group discussion

Assignment: discuss and find materials that develop: (a) perceptual constance, (b) position in space, (c) figure-ground, (d) spatial relationship, (e) visual motor coordination.

Suggested Readings:

1. Frostig Manual
2. Getman, Psychology of Readiness
3. Kephart, Slow Learner in the Classroom
4. Rowen, Learning Through Movement
5. Resource paper--chalkboard activities (mimeographed)

Workshop V

November 5, Tuesday
3:15 - 4:45

- I. Discussion of Application of Ideas from Previous Workshop

II. Visual Patterns

- A. Review five areas of Frostig

B. Tests used to Determine Visual Discrimination Skills

1. Murphy and Durrell's research on letter knowledge
2. Examine and explain Lippincott Reading Readiness Test

C. Teaching Activities for Visual Skills

1. Teaching letter knowledge
2. Methods and materials for involving haptic sensory perception in developing accurate visual discrimination.
3. Slides to illustrate visual discrimination materials

Suggested Reading Material:

1. Frostig Training Program for the Development of Visual Perception.
2. Visual Discrimination Activities (mimeographed)
3. Suggestions for Instruction in Area of Visual Skills (mimeographed)
4. Harris, Albert J., Perceptual Difficulties in Reading Disability (reprint in mimeograph)

Workshop VI
November 19, Tuesday
3:15 - 4:45

I. Auditory Attention--Discrimination

A. Tests used

1. Wepman Auditory Discrimination Test
2. Aural Coding Test

B. Methods and Materials to Teach Auditory Attention and Discrimination

1. Sequence of auditory skills (Primary Handbook)
2. Sequence of rhythm activities and relation to ear training
3. Use of objects to involve visual skills simultaneously as developing auditory skills.

C. Discussion of Wiseman Article

1. Encoding
2. Decoding
3. Activities

Suggested Reading Materials:

1. Wiseman, "A Classroom Procedure for Identifying and Remediating Language Problems" (reprint, mimeo)
2. Rice, "Primary Grade Handbook" (mimeo)

Workshop VII

December 3, Tuesday

3:15 - 4:45

I. Oral Language Development**A. Discussion of New and Innovative Programs for Kindergarten and Preschool**

1. Karnes Structured Materials Program
2. Berlieter-Engleman Program
3. Moore-Talking Typewriter
4. Weikart Program, Ypsilanti
5. Nimnick Program
6. Marie Hughes Program

B. Auditory Memory

1. Relationship of rhythm to fluent speech
2. Use of poetry, choral reading, and fingerplays to develop auditory memory

Suggested Reading Materials:

1. Kindergarten Finger Plays (mimeo)
2. Maya Pines, Revolution in Learning, The Years from Birth to Six.
3. Karnes, Structured Language Activities

Workshop VIII

December 10, Tuesday

3:15 - 4:45

I. Language and Speech Communication Patterns**A. Review Previous Workshop and discuss continuity and interrelationships between auditory skills and language development.****B. Tests used to assess Language Skills**

1. Receptive
 - a. Auditory memory

- 2. Expressive
 - a. Interview and check list
- C. Language and its Relationship to Perception
 - 1. Lev Vygotsky experiment
 - 2. Review Wiseman discussion
 - 3. Overlay of language relationship
- D. Language-Experience Methods
 - 1. Methods--materials--classroom organization

Suggested Reading Material

- 1. Maya Pines, Reader's Digest, November, 1968
- 2. Allen, R. V. and Doris Lee, Learning to Read Through Experience

Workshop IX
January, Saturday
9:00 - 12:00

- I. Cognitive Behavior
 - A. Basic Assumptions of Intelligence by Piaget
 - B. Discuss Let's Look at First Graders Program
 - 1. Beginning logical concepts
 - 2. Classification
 - 3. Relationship
 - 4. Reasoning skills
 - 5. Cause and effect
 - 6. Inference
 - C. Methods--materials--classroom organization

Workshop X
Tuesday
3:15 - 4:45

- I. Testing--Administering the kindergarten diagnostic test battery
 - A. Organizing the sequence for administering the test
 - B. Procedures to administer the diagnostic tests

Workshop XI
Saturday
9:00 - 12:00

I. Practicum in Testing

- A. Discussion of the theory and practice of testing
- B. Provide practice in test administration by testing each other
- C. Demonstration with student
- D. Teachers test children

Suggested Reading Materials: 2

- 1. Child Growth and Development Chart
- 2. Tests Correlated with Child Growth and Development Chart
- 3. Suggested Sequence for Developing a Foundation of Learning Skills

DETAILED LESSON PLAN FOR WORKSHOP III

Lesson Title: *Coordination of Special Movement Patterns - Manipulative Skills*

Main Idea:

1. Intelligence is essentially a set of developed skills rather than an inherited characteristic.
2. Intellectual skills develop as a result of the child's continuous interaction with the environment.
3. Children are inherently motivated to explore and master their environment.
4. Intellect develops through a sequence of related stages that produce qualitative change in the way children think and are able to deal with the environment.
 - a. Pre-logical thinking (18 mo. to 6-7) concrete images.
 - b. Logical (6-7 to 11-12) more abstract but still needs direct visual experiences.
 - c. A variety of concrete sensory experiences the opportunity for active manipulation of things, and certain kinds of language experiences are all vital factors to foster the child's development from pre-logical concrete thinking.

Behavioral Objective:

1. Teachers will examine concrete materials to use in a sequential program to providing a means for active interaction by visualizing and manipulating objects.
2. Teachers will discuss the materials they presently use and the most effective way to use such material as the inch cube blocks, parquet, wooden beads, peg boards, and wooden puzzles.

Ideas to be Taught

1. Children can visualize an activity better if it is illustrated by a concrete experience first.
2. Letters and geometric figures are equally difficult for the young child to visualize.
3. A child's own experiences influence what he perceives.
4. Encourage divergent thinking.
5. A change in orientation can affect one's ability to perceive.

Learning Activities

Show: Teachers will work in groups on the Visual Discrimination test.

Discuss: a. Problem-1. Manipulation of a cut out circle and triangle provides the insight needed to complete the figure.

b. Problem-2. How would plastic or wooden letters help solve the problem?

c. Problem-3. How does your mind influence what you perceive?

d. Problem-4. Explain your answer. Can there be more than one right answer?

e. Problem-5. If the letters were in a column would you solve the problem easier.

Apply: Teachers complete the test.

6. A child's skill in manipulation develops as he matures and as he has continuous interaction with his environment.

Show: Gessell Institute Preschool cube test.

Discuss: What age levels were illustrated, by the film "Embryology of Human Behavior" for development of grasping the cube? Build Tower? Describe cube test.

Apply: Use of 1" cubes and design cards classroom. Parquet and design cards.

7. Start at a level where children can experience success. Motivation will then come from within the child.

Show: Wooden beads and sequence design pattern made on tag board.

Discuss: Use simple design first with a single pattern on each card.

Apply: In classroom.

8. Cutting is a sensory motor activity that needs to be taught in sequential steps to some kindergarten children.

Show: Sequential step of cutting.

Discuss: *Exceptional Children* March 1967, article on teaching cutting.

RESOURCE PAPER

Handbook for Preschool and Kindergarten

In-Service Training Phase II

The second group of workshops focused on developing:

1. Understanding of the teacher as a diagnostic teacher
2. Organizing the program in the classroom
3. Moving into Drama Activities
 - a. Perceptual Motor Problem Solving
 - b. Expressive or creative movement
 - c. Creative drama
4. Visitations to other Exemplary Programs
 - a. The Ypsilanti Preschool Curriculum Demonstration Project, Ypsilanti, Michigan
 - b. The World of Inquiry School, Rochester, New York
 - c. Creative Drama Program, The Lab School, Evanston, Illinois

LESSON PLAN FOR WORKSHOP TO INTRODUCE THE CONCEPT OF THE DIAGNOSTIC TEACHER

Main Idea: The view of the teacher as a diagnostic teacher suggests that teaching is a threefold process which includes preassessment, learning activities, and evaluation.

Behavioral Objectives:

At the conclusion of the lesson, each student will be able to:

1. Define a diagnostic teacher in terms of preassessment, learning activities, and evaluation.
2. Tell how preassessment, learning activities and evaluation are related in teaching and how they relate to the lesson objectives.
3. Describe the relationship of the teacher activities of show, discuss, apply with the parallel student activities in a learning experience.

Preassessment: In the reading program we have tried to function on the diagnostic teacher concept. What does the term diagnostic teacher suggest to you?

Ideas to be Taught

1. The diagnostic teacher uses preassessment to determine in advance what each child's position is in relation to the lesson objective.
2. Learning activities should be planned to follow the student's learning process of perceive, think and try. The teacher activities follow the steps of show, discuss and apply.
3. "Evaluation is the process of comparing lesson objectives with each student's behavior after the learning activities have taken place to determine the degree to which lesson objectives have been reached.

Learning Activities¹

Show: Chart, "Threefold Nature of Teaching."

Discuss: "As you think of teaching, what does the term, *preassessment*, suggest to you?"

"Why is it important that the teacher know what the children know about a lesson?"

Apply: What are some activities we can use to find out what the child knows? (Use sample objectives—List on board)

Show: Chart, "Learning Activities"

Discuss: "What does this chart suggest to you? Why is show the first step in a learning activity? What does discuss mean to you? Why is the application step in a lesson important?"

Apply: Have the teachers suggest the three steps in a lesson for kindergarten children.

Show: Chart, "Threefold Nature of Teaching."

Discuss: "What does the term *evaluation* mean to you? Why is evaluation important?"

Apply: Have the teachers evaluate today's lesson by reading the three lesson objectives and attempt to see if the objectives were met.

¹ Church of Jesus Christ of L.D.S., *Teacher Trainer Manual*, 1968, pp. 51-53.

LESSON PLAN FOR WORKSHOP TO DEVELOP THE CONCEPT OF EXPRESSIVE MOVEMENT

Lesson: Expressive Movement

Main Idea:

1. Expressive movement opportunities should be made available to young children.
2. Movement is a natural means of expression.
3. Vocabulary concepts can be developed better when children are actively involved in the learning experience.
4. Specific skills are taught through both perceptual motor activities and expressive movement.

Behavioral Objective:

1. The teachers will participate in "creative sensory-motor encounters" to serve as a catalyst for instigating these in the classroom.
2. The teachers will discuss and explore means of providing situations for ample expression through movement, music and free dramatics.

Ideas to be Taught

1. Listening activities to develop the skill of "attention" are more effective if the children are actively participating.
2. Children should decide on their own actions.
3. Concepts of Voc. and sequence can be developed through acting out Nursery Rhymes and Poems.
4. Present the Rowen Book on *Learning Through Movement*.
5. Children should learn to express their feelings and ideas through movement by becoming aware of directions and positions in space, and experimenting with the horizontal and vertical while moving with various degrees of speed and weight.

Learning Activities

Show: Read "Little Indian Story" with teacher doing actions.

Discuss: How did the actions help keep your attention? What procedure would you use when doing this activity with children?

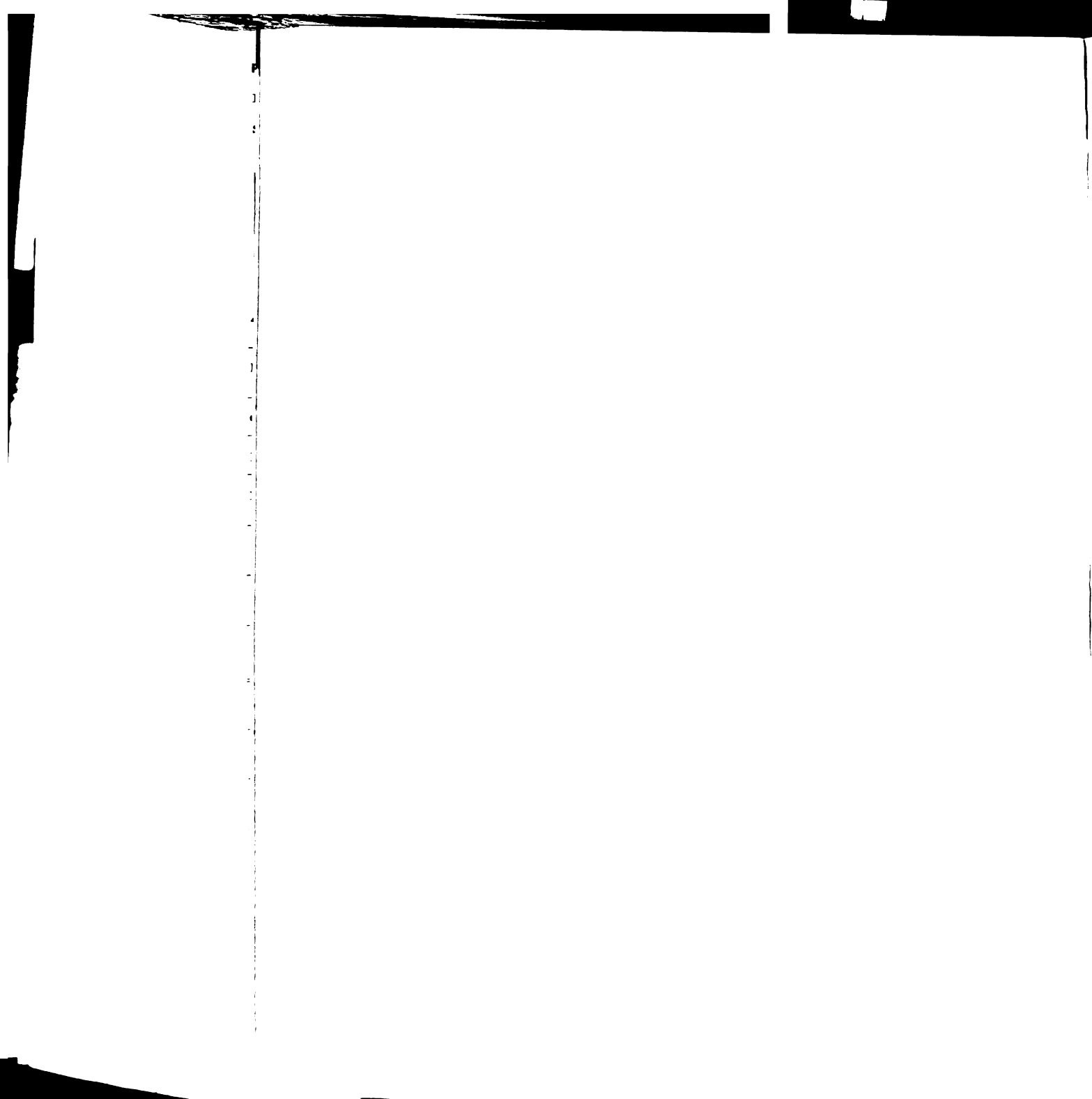
Apply: In classroom.

Show: Teachers work in groups and decide among themselves which nursery rhyme and how to act it out. The other teachers will guess the rhyme.

Discuss: 1. Use of space.

2. Cooperation in group planning.
3. Problem solving in motor modality.
4. Similarities and differences between two groups acting the same rhyme.
5. Development of Voc. and imagery.
6. Various degrees of speed.

Apply: Use with children development of control: 1. Walk-Freeze; 2. relax like rag doll; 3. explore space in bottle.



- 6. Teacher must be aware of the skills that are being developed while using creative activities and providing for free choice activities.**

Show: Film of Europe
Playgrounds to find situations that develop specific skills.

Discuss: Body Awareness, Balance, Space Awareness, Size concepts, Voc. Development, Imagery, various degrees of speed, weight, flow.

Apply: Work on teacher made materials and poems for movement.

CREATIVE MOVEMENT¹

There are certain factors common to all movement.

Weight - The child can move with varying degrees of strength or lightness.

Space -

1. Personal Space

The child's body is surrounded by space in all directions.

2. General Space

When traveling, movements can be made in different directions---

forwards, backwards, sideways, upwards, and downwards.

High levels can be reached by leaning and stretching.

Low levels can be reached by bending or curling up on the floor.

Time -

Movements may be quick or slow or may vary, developing into a rhythmic pattern.

Flow -

The flow of a movement may be free or bound. A movement that is difficult to stop is termed "free". A movement that can be stopped suddenly is termed "bound". To gain control "bound" movements are more often used in a lesson. Control of the body is a taught lesson to young children.

¹Valorie Preston, *A Handbook for Modern Educational Dance* (London: Macdonald and Evans, 1963), p. 3 - 12 passim.

CREATIVE MOVEMENT VIDEO-TAPE DEMONSTRATION LESSON

Teacher I AM
Whole Body Movements

Overview:

The group of children participating in this lesson are widely varied in abilities. Approximately one-third of the class is comprised of very young children chronologically whose actions are immature. They lack initiative and imagination and their movements are often haphazard with little or no thought given to what they are doing. They lack a basic awareness of position in space and their relation to it, and will try to "copy" movements of other children often unsuccessfully. The other two-thirds of the group are average and above average children with the ability to initiate more creative and thoughtful responses which lead the group and help the activity to flow smoothly.

Objectives:

1. To provide opportunities for children to satisfy their desire for creative self-expression.
2. To help children to learn to be more efficient in bodily movements, develop imagination and initiative, and express their reactions to the world in which they live.
3. To provide opportunities for the child to learn to be alert, quick, orderly, and poised.
4. To encourage children to thoughtfully express movements so they are related to what is being said.
5. To make the child aware of his position and his reaction to it.
6. To make the child aware of how he can change his movements in a given space.

Procedure:

Motivation: Show the children a picture of a stick man standing straight with straight back, legs, and arms (emphasis on straight lines in the picture). Discuss how all parts of his body look straight. Can you make your body look just like his? (Children do this.) Show picture of the straight house he lives in and the straight tree and ask children to show how they would be a straight house and tree.

1. Let's say the poem about the Straight Man making our bodies be as straight as each thing we talk about:

We all know a very straight man
Who lives in a very straight house
Right under a very straight tree.
He is straight when he lays on his bed,
And straight when he sits on the floor,
And straight when he kneels on his knee.

He stands straight and tall,
And reaches up toward the sky,
We know what straight is - look at us.¹

2. Ask children what kind of man they could pretend to be that is different from "straight". (Opposites, etc.) The child who suggests an idea must show how to do it. Suggestions for movements:

¹ Claire Cherry, *Creative Movement for the Developing Child* (Palo Alto, Calif.: Fearon Publishing, 1968)

- | | | | |
|-----------------|----------------|----------------|-----------------|
| 1. wiggly man | 2. bouncy man | 3. swaying man | 4. stooping man |
| 5. twirling man | 6. jumping man | 7. rocking man | 8. shaking man |

3. Each time a different movement is done the children say this verse together:

I'm a bent over , bent over, bent over man.
 I try to stand just as straight as I can
 But all I can do is bend and bend
 Because I'm a bent over bent over man.

Materials and Equipment Purchased with
Title I Funds--1968-69

Supplies

Records

- 10 The Development of Body Awareness and Position in Space
- 10 Developing Perceptual-Motor Needs of Primary-Level Children
- 10 Developing Body Image
- 10 Developing Laterality and Directionality
- 6 Sounds I Can Hear Kit
- 1 Listening with Mr. Bunny Big Ears

Manipulative Materials

- Peg Boards and Pegs
- Large Beads and Laces
- Folding Perception Cards
- Sequence Story Boards
- Large Form Puzzles
- Small Form Puzzles
- Geometric Shapes in Color
- Association Cards
- See and Say Puzzles
- Objects--Beginning Sounds
- Animated Key Cards--Phonics
- Chalkboard Templates

Language Development

- 4 Sounds and Patterns of Language Kits
- 3 Words and Action--Pictures
- Language Experiences in Reading
 - 6 Unit I
 - 6 Unit II
- Experiential Development Program
 - 3 Teacher's Big Books B
 - 4 Teacher's Big Books A
- 1 First Talking Storybook Kit

Teacher Reference Books

- 8 The Slow Learner in the Classroom--Kephart
- 10 Success Through Play--Kephart and Radler
- 7 Revolution in Learning--Maya Pines
- 7 Learning Through Movement--Rowen
- 7 A Montessori Handbook
- 6 How to Develop Your Child's Intelligence--Getman
- 3 Perceptual Testing and Training Handbook--Sutbhim
- 2 Perceptual Forms Test
- 20 The Purdue Perceptual-Motor Survey--Roach and Kephart
- 8 Developing Learning Readiness--Getman, Kane, Halgren, and McKee
- 20 Perceptual Training Activities Handbook--Van Witsen
- 15 Readiness for Learning--McLeod (Teacher's Edition)
- 7 Talking Time--Thompson and Scott
- 8 Listening Games--Wagner, Hoseir, Blackman
- 8 Choral Speaking and Speech Improvement--Hamphill
- 8 Manipulative Language Arts--Kindergarten
- 10 Phonics in Listening, Speaking, Reading, Writing--Scott and Thompson

Tests

The Anton Brenner Developmental Gestalt Test of School Readiness
 Frostig Visual Perception Test Booklets
 Developmental Test of Visual-Motor Integration
 The Lippincott Reading Readiness Test
 Wepman Auditory Discrimination Tests
 Metropolitan Readiness Test--Forms A and B

Equipment

- 2 Wollensak Tape Recorders
- 4 Newcomb Earphone Sets
- 2 Overhead Projectors
- 10 Walking Beams
- 4 Mats
- 20 Playground Balls

Materials and Equipment Purchased with
Title I Funds--1969-70

Supplies

- 5 Dance, Sing, and Listen with Miss Nelson and Bruce
- 5 Come Dance with Me--Virginia Tanner
- 15 Learning Basic Skills Through Music, Vol. I
- 15 Learning Basic Skills Through Music, Vol. II
- 5 Learning Basic Skills Through Music Building Vocabulary
- 1 Complete Kit Treasury of Fairy Tales
- 15 Sets Frostig--Move Grow Learn Program
- 4 Match and Check Set 2
- 5 Match and Check Set 3
- 5 Match and Check Set 4
- 5 Sets TRY Plastic Manipulative Materials

Books

- 5 Creative Rhythmic Movement for Children--Andrews
- 5 A Guide to Movement--Hackett and Jenson
- 5 Music Movement and Mime for Children--Gray and Percival
- 5 Listen and Help Tell a Story--Carlson
- 5 Self-Directive Dramatization, Reading and Self Concept--Carlton
- 5 Creative Movement for the Developing Child--Cherry

Equipment

- 4 Filmstrip projectors
- 6 Earphone sets
- 4 Record players

Tests

Anton Brenner Developmental Gestalt Test
Vineland Social Maturity Scale

Visitations Made to Gain First-hand Infor-
mation for Developing the Kindergarten
Program in this Study

Diagnostic Testing

1. Language Disorder Clinic, Columbian-Presbyterian Medical Center, N.Y. Katrina DeHirsch
2. Purdue Achievement Center, Purdue University, Indiana
Newell Kephart

Program Development

1. Child Development Lab, Champaign, Ill.
Queenie B. Mills
2. Institute for Research on Exceptional Children,
Champaign, Ill.
 - a. Karnes Structured Materials Program
Genevieve Painter and Dr. Karnes
 - b. Bereiter-Englemann Program
3. Curriculum Demonstration Project, Ypsilanti, Michigan
David Weikart
4. New York City Schools
 - a. "More Effective Schools Program," P.S. 307
 - b. "Let's Look at First Graders Program," P.S. 138
5. Montessori Preschool and Kindergarten, Sacred Heart Academy, Grosse Point, Michigan
6. Drama Program, Lab Elementary School, Evanston, Ill.
7. World of Inquiry School, Rochester, N.Y.
8. British Infant Schools, London, England
9. Preschools and Kindergartens, Denmark

Budget

Funded by Title I, Public Law 89-10, Project No. 212-P9

<u>School Year</u>	<u>1968-69</u>	<u>1969-70</u>
Perception Salaries	\$ 800.00	\$1,293.60
Substitutes	500.00	1,200.00
Instructional Supplies	1,561.26	840.00
Library Materials and Supplies	465.00	200.00
Contracted Services	200.00	200.00
Travel, Conferences, etc.		1,000.00
Furniture and Equipment	<u>1,235.00</u>	<u>1,160.00</u>
Total	\$4,761.26	\$5,893.60

APPENDIX D

**POLAR COORDINATE GRAPHS OF INDIVIDUAL CHILDREN'S
GROWTH DURING PARTICIPATION IN THE
KINDERGARTEN PROGRAM**

APPENDIX D

POLAR COORDINATE GRAPHS OF INDIVIDUAL
CHILDREN'S GROWTH DURING PARTICIPA-
TION IN THE KINDERGARTEN PROGRAM

Key for Reading the Polar Coordinate Graphs
of Individual Children's Growth

An individual radius on the graph was assigned to show the rank order in quartile ratings for each selected dimension. The lower quartile, being placed near the center of the circle, thus, gave a clear illustration of the growth as the points progressed out toward the perimeter of the circle.

The pre-test data is represented in green. The yellow indicates the post-test data.

The following tables show the range of scores associated with the ratings for the Self-Concept Test, Brenner Gestalt Developmental Test, Metropolitan Readiness Test, and the Peabody Picture Vocabulary Test.

<u>Self-Concept Test</u>	
<u>Raw Score</u>	<u>Rating</u>
20 - 39	4
40 - 44	3
45 - 49	2
50 - 52	1

<u>Metropolitan Readiness Test (MRT)</u>	
<u>Raw Score</u>	<u>Rating</u>
0 - 23	4
24 - 44	3
45 - 63	2
64 - 76	1
77 +	1+

**Brenner Gestalt Developmental
Test (BGDT)**

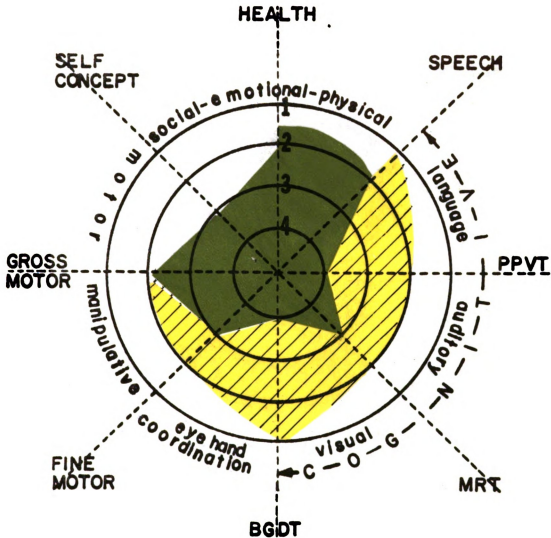
Raw Score	Rating
0 - 14	4
15 - 33	3
34 - 44	2
45 - 80	1

**Peabody Picture Vocabulary
Test (PPVT)**

Percentile ratings provided on the norm tables for the test were used as the percentile rating differs depending on the age of the child.

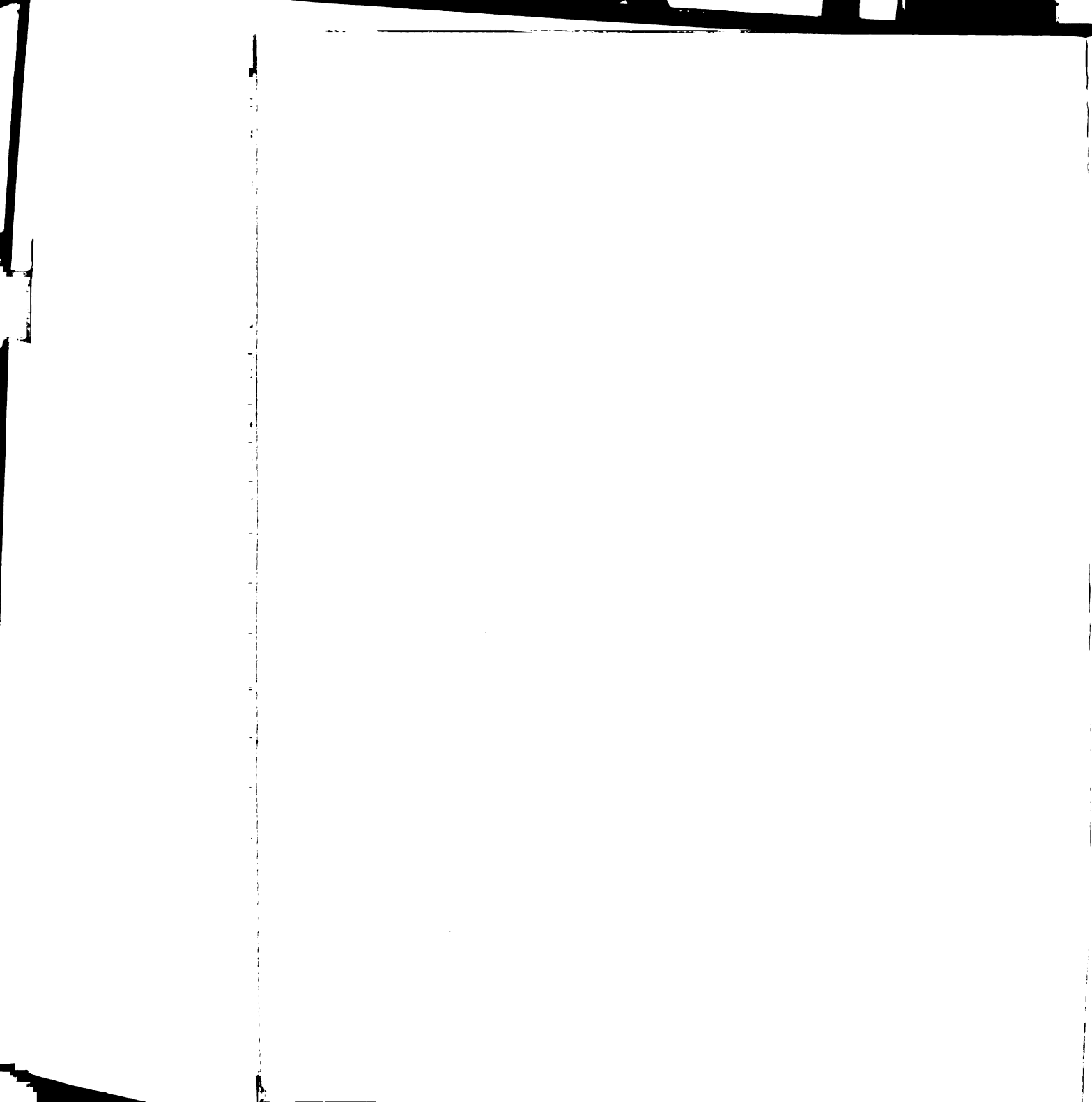
CLASS I
CHILD IA

B. 12-24-63



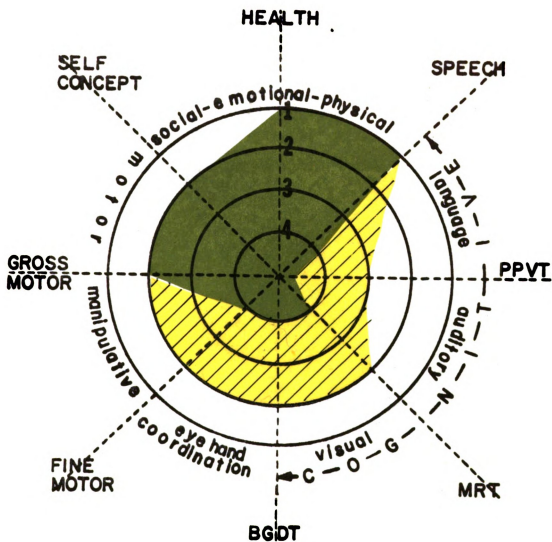
SCORES

	PRE	POST
MRT	29	58
PPVT	50	59
BGD	13	52*
SC	43	



CLASS I
CHILD ID

B. 6-22-64



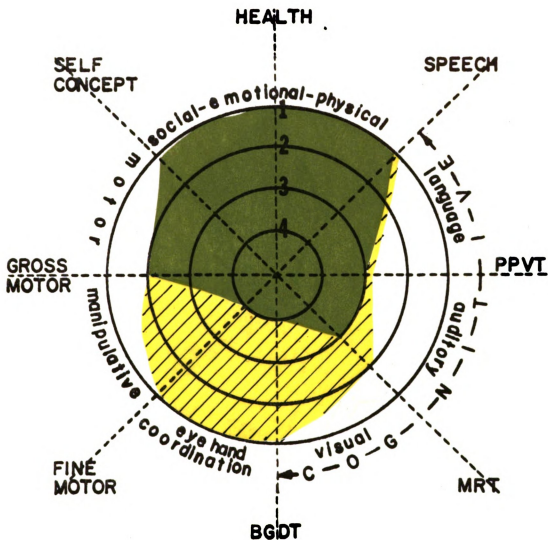
SCORES

		POST
MRT	10	50
PPVT	39	55*
BGD	8	37
SC	49	

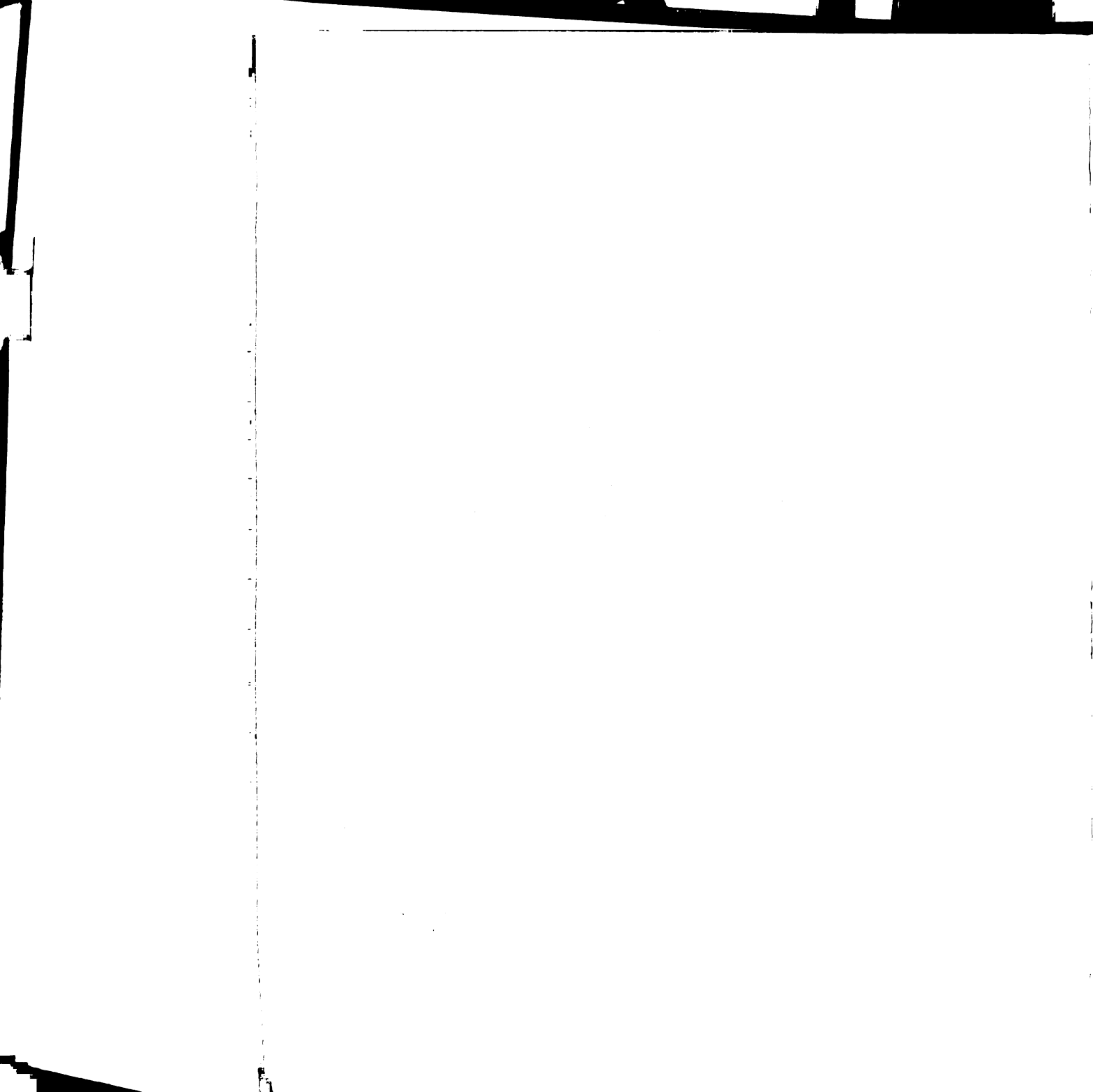
	SCORES	
	PRE	POST
MRT	19	41
PPVT	34	47
BGDT	10	40
SC	51	

CLASS I
CHILD IG

B. 3-29-64

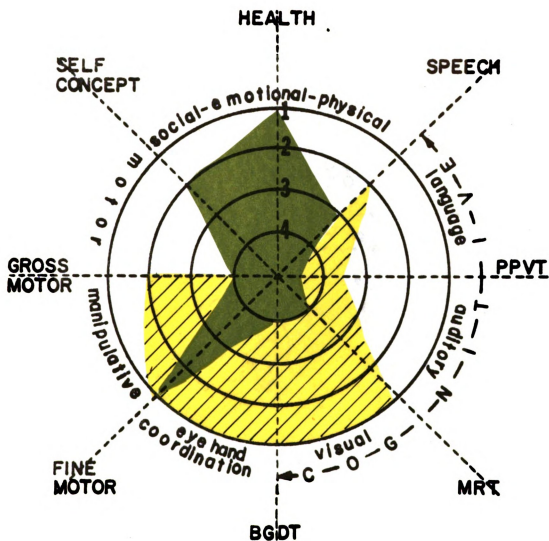


	SCORES	
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MRT	29	58
PPVT	58	57
BGD	8	60*
SC	52	



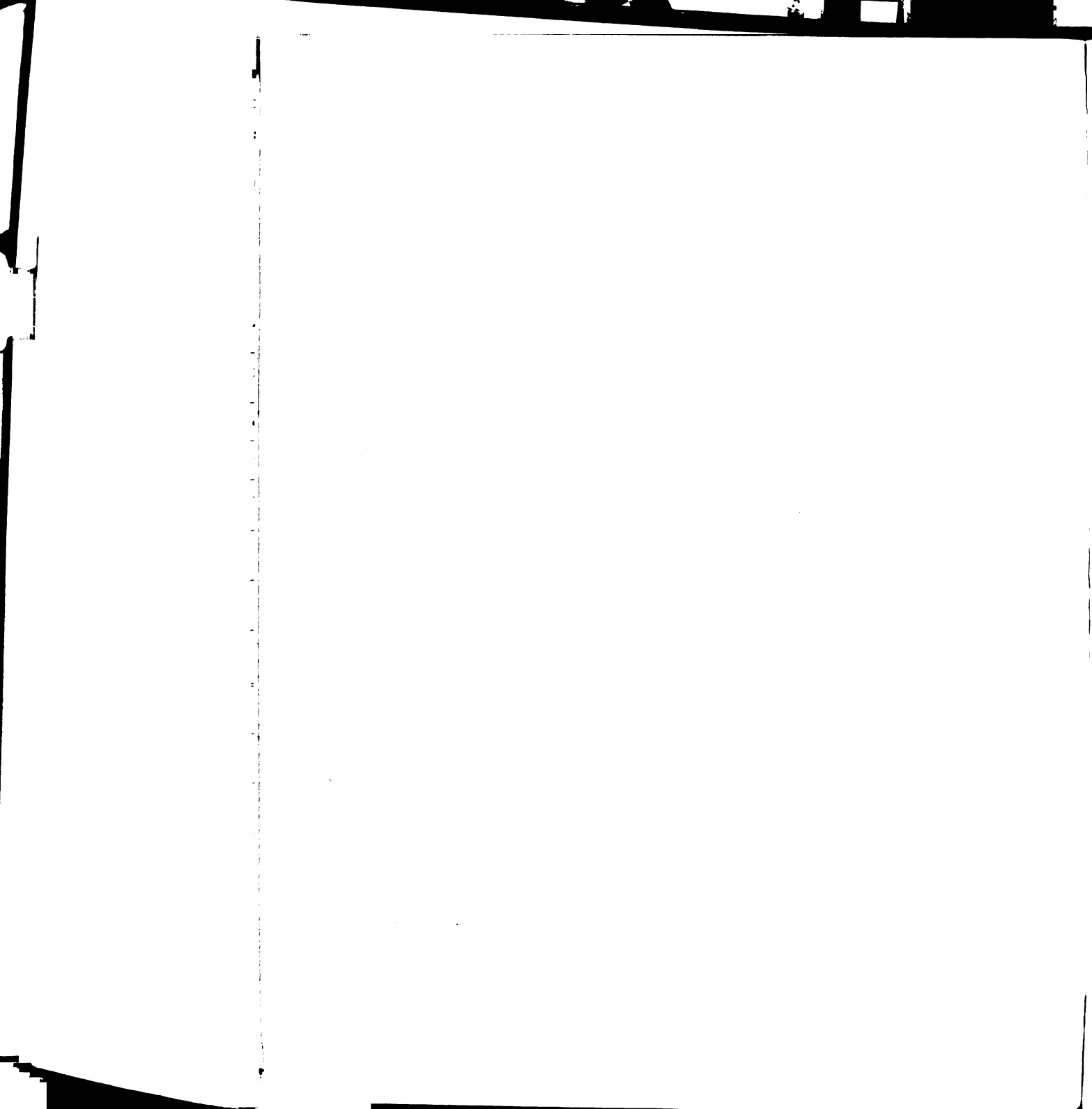
CLASS I
CHILD I

B. 7-4-64



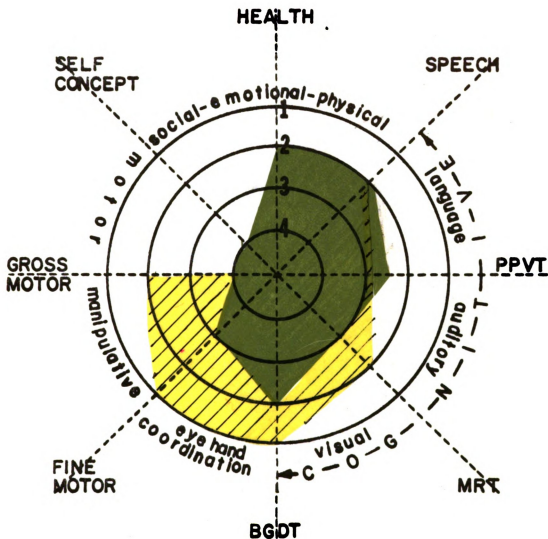
SCORES

		<u>POST</u>
MRT	28	65
PPVT	36	52*
BGD	16	66*
SC	45	



CLASS I
CHILD IJ

B. 5-14-64

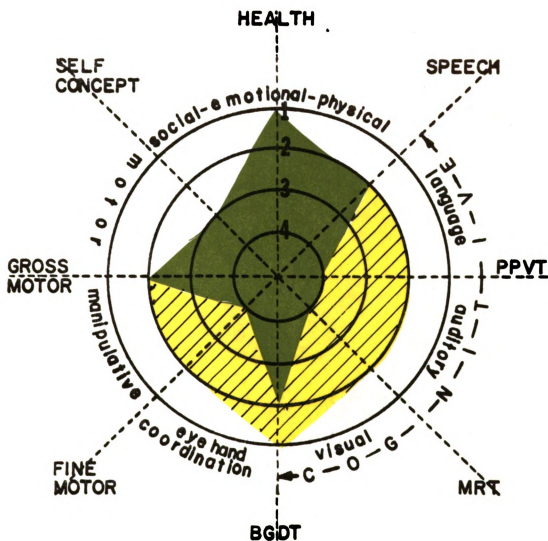



SCORES

		POST
MRT	29	48
PPVT	54	56
BGDT	36	66
SC	38	

CLASS I
CHILD IK

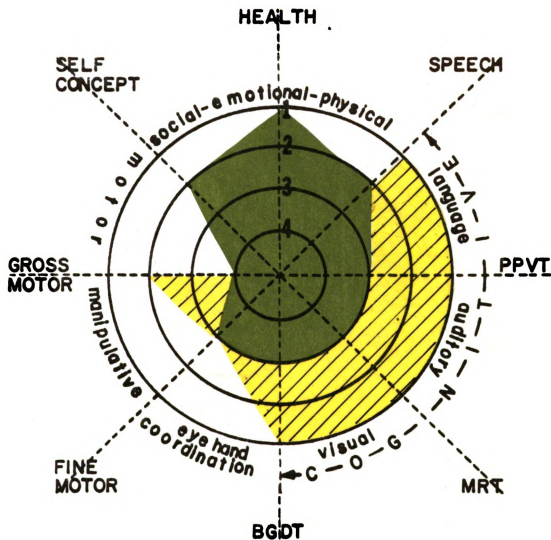
B. 10-17-64



	SCORES	
		POST
MRT	23	62
PPVT	44	72*
BGD	34	70*
SC	43	

CLASS I
CHILD IN

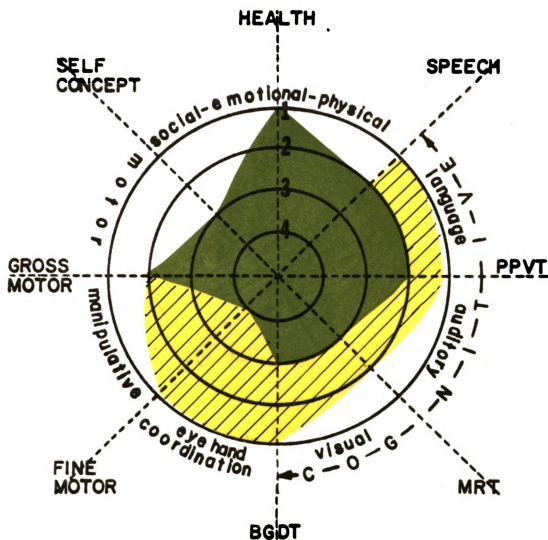
B. 8-10-64



	SCORES	
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MRT	27	72
PPVT	51	66*
BGD	32	68*
SC	45	

CLASS I
CHILD IP

B. 8-19-64

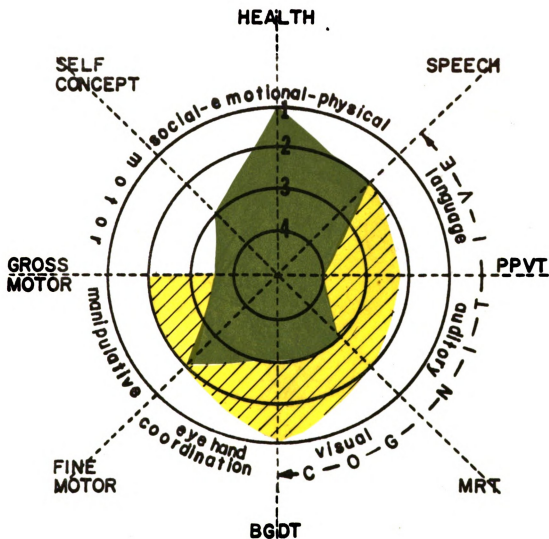


SCORES

		POST
MRT	32	58
PPVT	56	62
BGDT	21	52
SC	41	

CLASS I
CHILD IQ

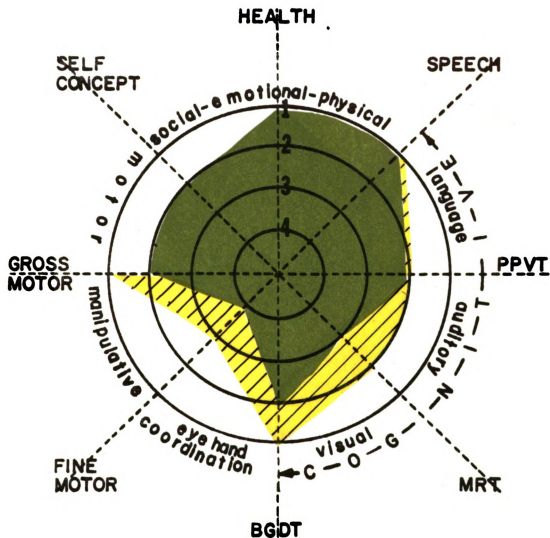
B. 3-22-64



	SCORES	
	PRE	POST
MRT	38	50
PPVT	51	58
BGD	24	60*
SC	41	

CLASS I
CHILD IR

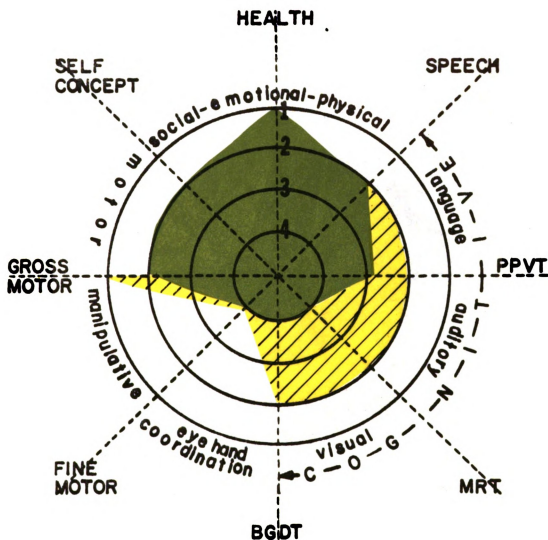
B. 1-14-64



	SCORES	
	PRE	POST
MRT	32	49
PPVT	60	67
BGDT	37	64
SC	47	

CLASS I
CHILD IS

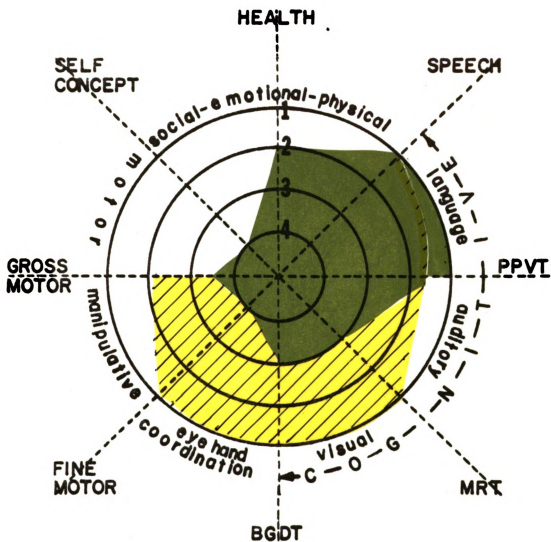
B. 12-27-63



	SCORES	
		POST
MRT	18	53
PPVT	57	59
BGD	10	38
SC	47	

CLASS II
CHILD II B

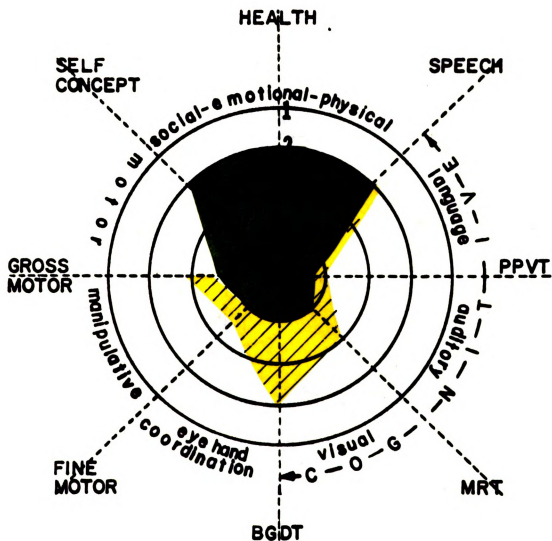
B. 9-8-64



	SCORES	
	<div style="background-color: black; width: 20px; height: 10px;"></div>	POST
MRT	28	65
PPVT	63	59
BGD	19	58*
SC	37	

CLASS I
CHILD IE

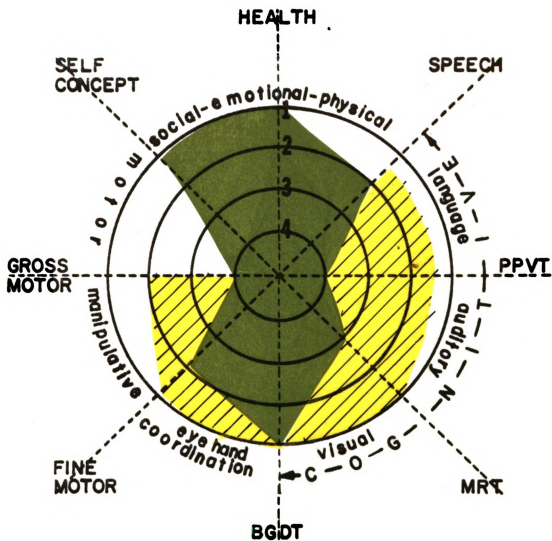
B. 2-8-64



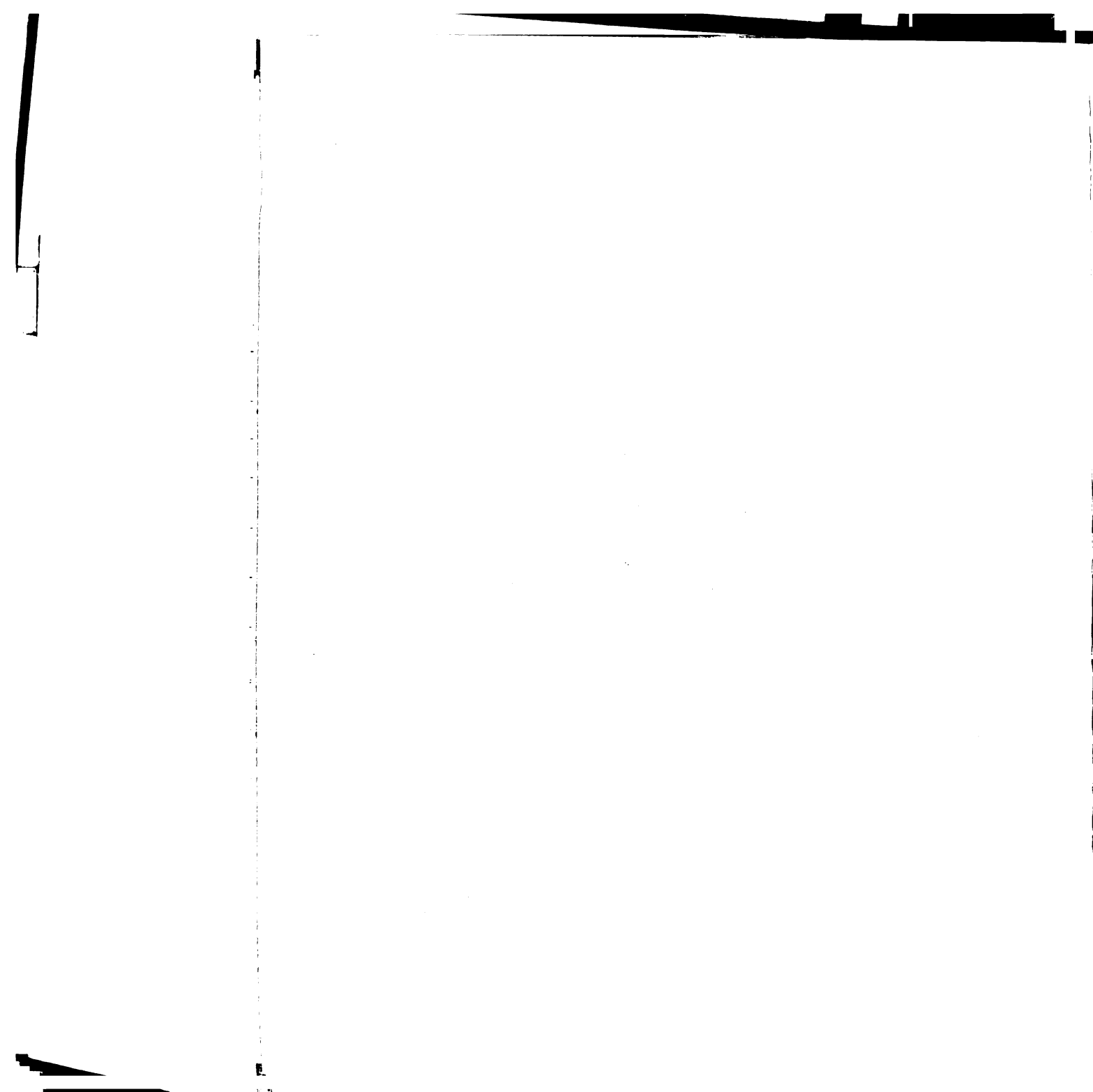
	SCORES	
		POST
MRT	17	44
PPVT	48	51
BGD	8	34
SC	47	

CLASS II
CHILD III

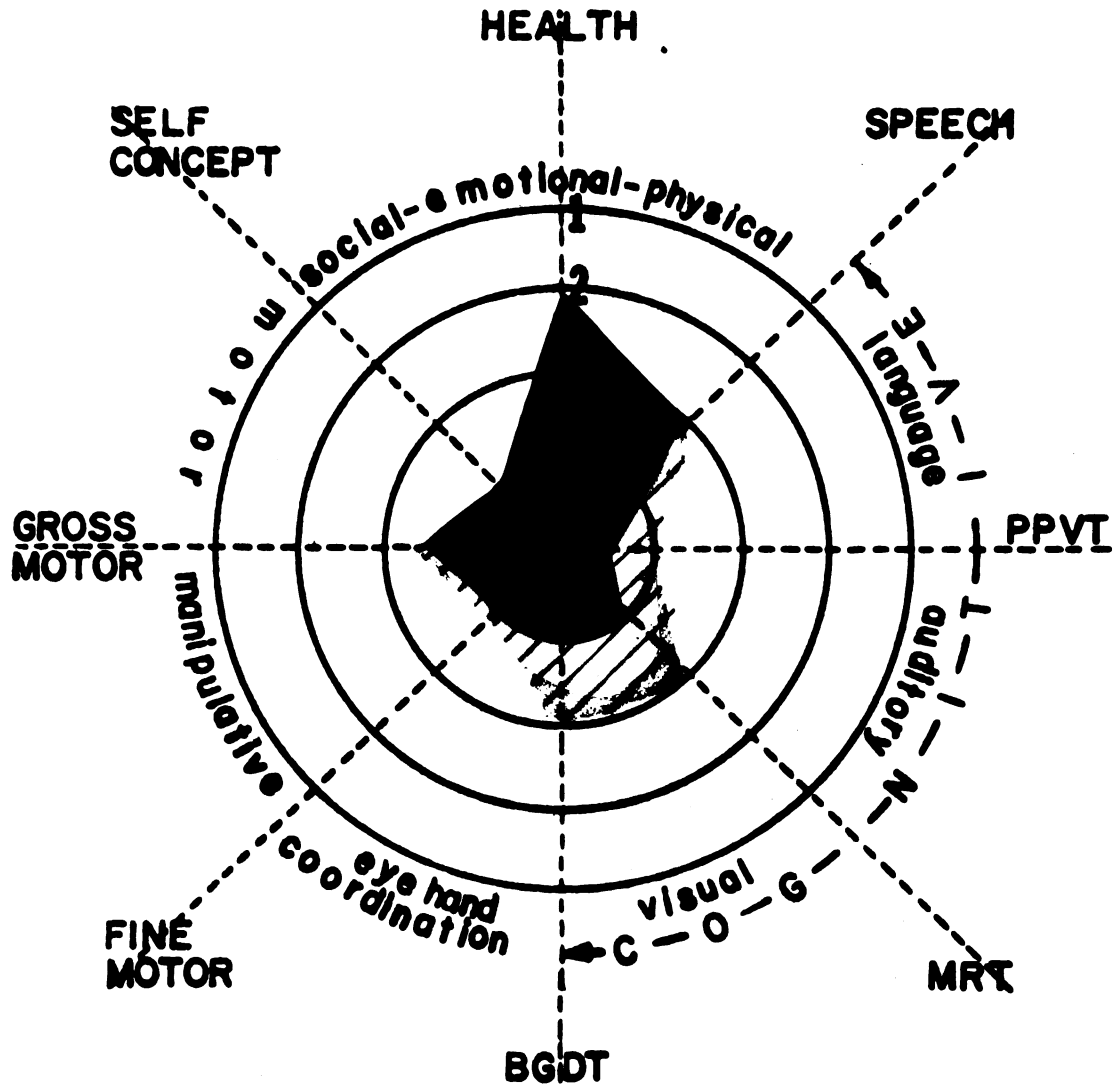
B. 1-30-64



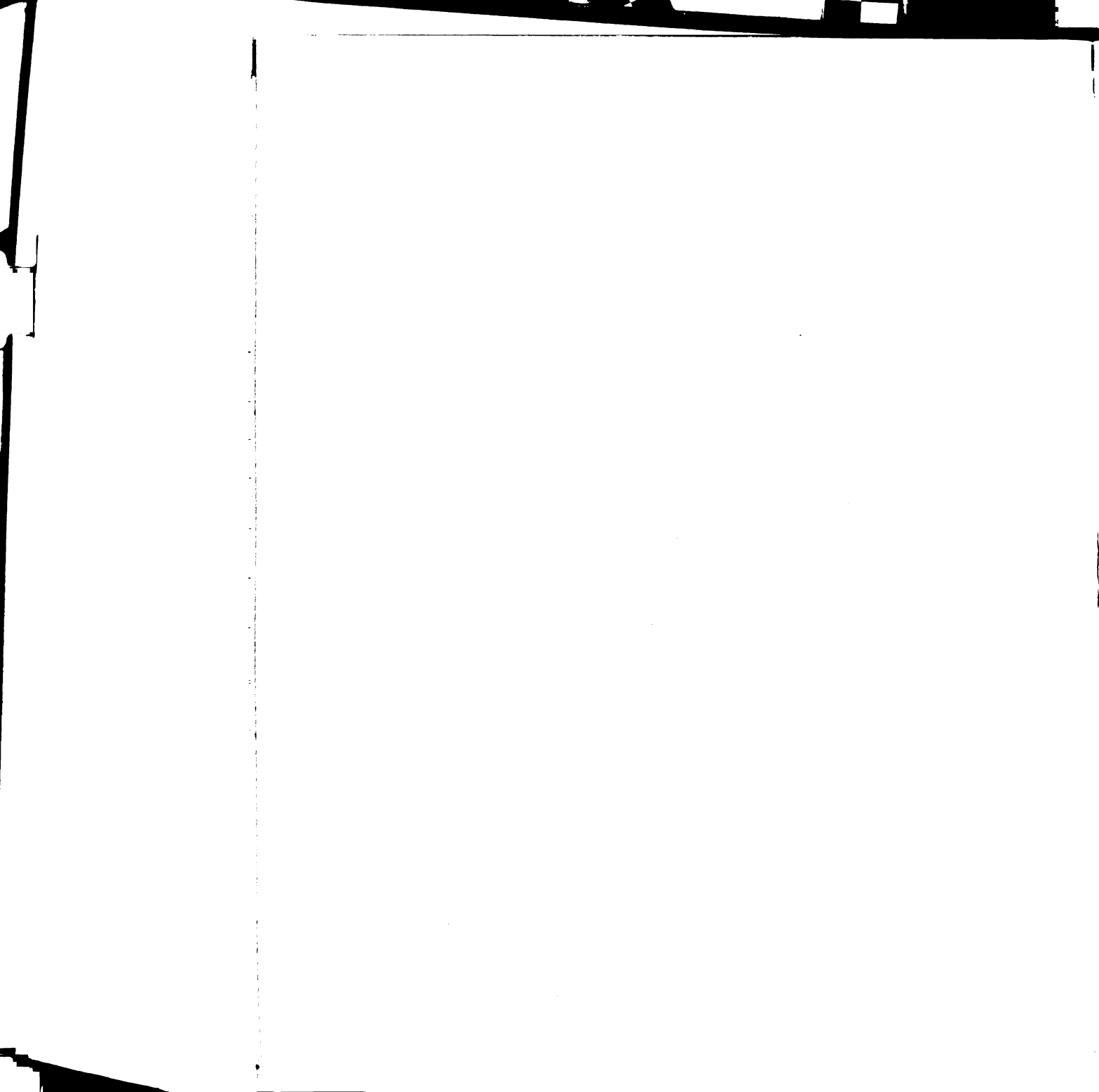
	SCORES	
		POST
MRT	38	71
PPVT	51	60
BGD	53	60
SC	52	



CLASS II
 CHILD IIH
 B. 3-22-64

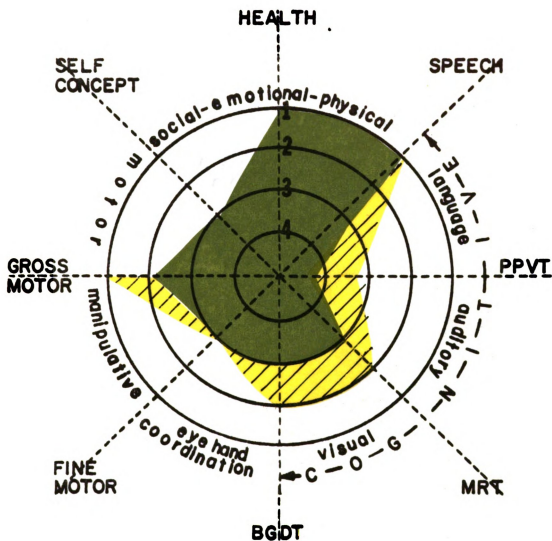


SCORES		
	<div style="width: 20px; height: 10px; background-color: black;"></div>	POST
MRT	<u>17</u>	<u>32</u>
PPVT	<u>29</u>	<u>48*</u>
BGD	<u>11</u>	<u>20</u>
SC	<u>37</u>	<u> </u>



CLASS II
CHILD II I

B. 6-5-64

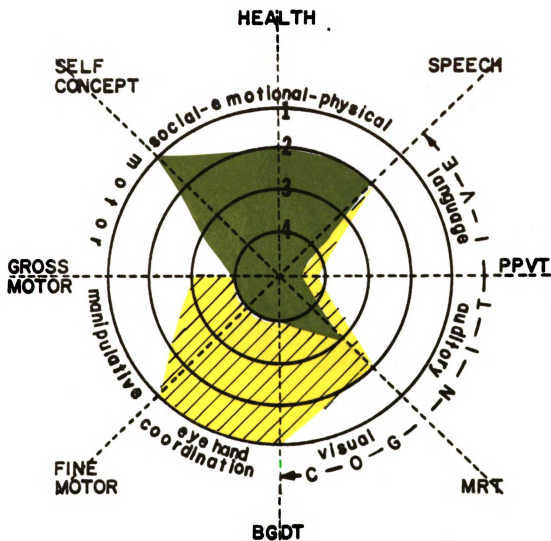


SCORES

		POST
MRT	24	61
PPVT	43	53
BGD	16	42
SC	42	

CLASS II
CHILD IIIJ

B. 9-24-63

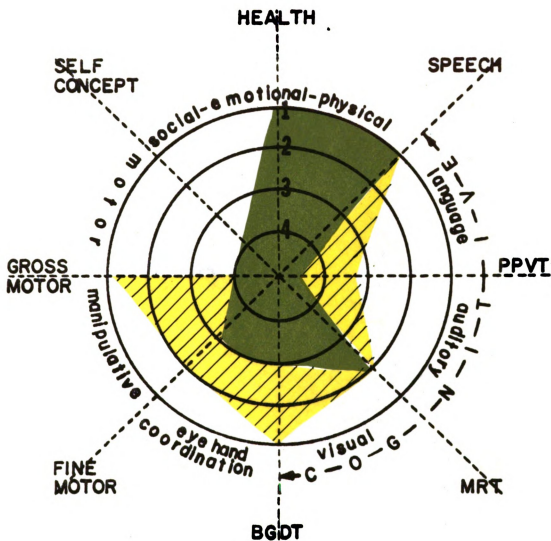


SCORES

		POST
MRT	38	58
PPVT	36	48
BGD	4	50*
SC	50	

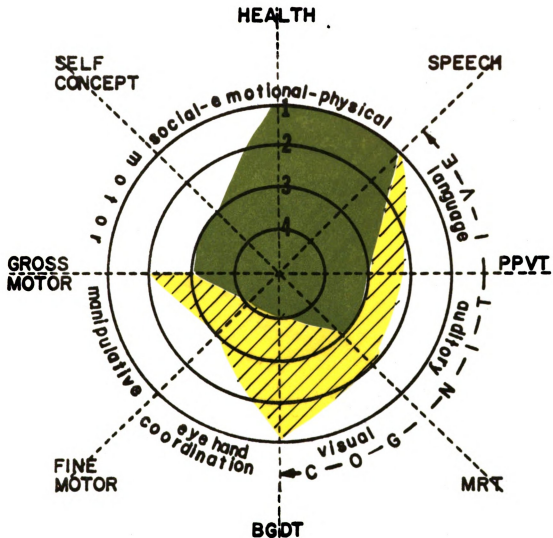
CLASS II
CHILD III

B. 3-4-64



SCORES

		POST
MRT	45	55
PPVT	32	54*
BGD	32	69*
SC		

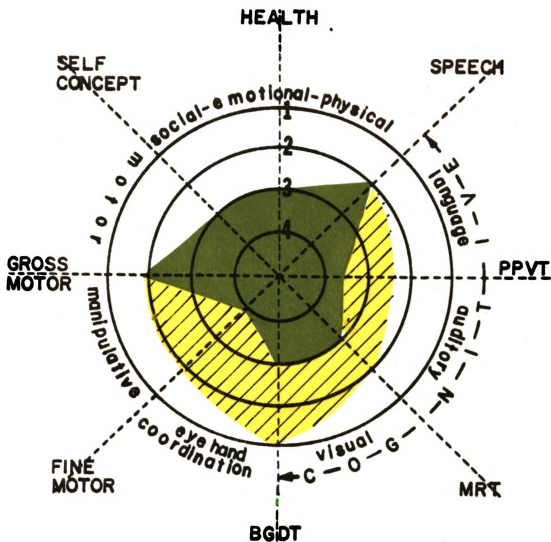


SCORES

		Post
MRT	29	58
PPVT	52	58
BGD	14	59*
SC	42	

CLASS II
CHILD IIQ

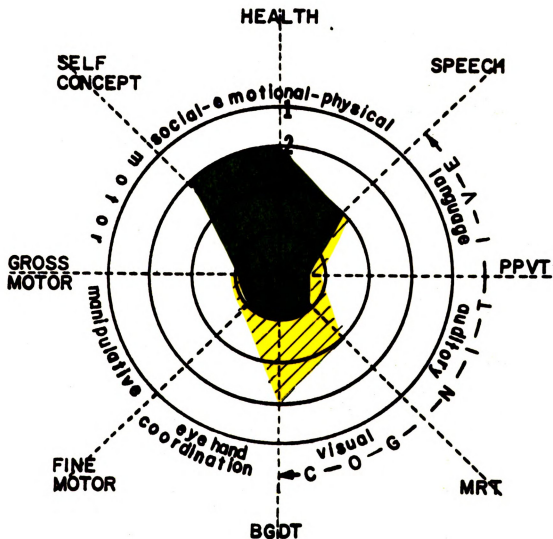
B. 10-10-64



	SCORES	
	<div style="background-color: black; width: 20px; height: 10px;"></div>	50 50.5
MRT	25	49
PPVT	49	58
BGD	15	51*
SC	41	

CLASS II
CHILD IIU

B. 2-13-64



	SCORES	
		POST
MRT	19	44
PPVT	41	42
BGD	8	41*
SC	47	

FREQUENCY DISTRIBUTION CHART
BROWN IDS SELF-CONCEPT REFERENT TEST

CLASS I AM

Discrete Class Limits	Cont. Limits	Midpoint	f_i	Less Than Cum	More Than Cum
18 - 22	22.5	20	0	0	19
23 - 27	27.5	25	0	0	19
28 - 32	32.5	30	0	0	19
33 - 37	37.5	35	1	1	18
38 - 42	42.5	40	3	4	15
43 - 47	47.5	45	9	13	6
48 - 52	52.5	50	6	19	0

$n = 19$ Mean = 45 Mode = 52** Range = 36 - 52
No. of items = 52

CLASS II PM

Discrete Class Limits	Cont. Limits	Midpoint	f_i	Less Than Cum	More Than Cum
18 - 22	22.5	20	1	1	20
23 - 27	27.5	25	0	1	20
28 - 32	32.5	30	1	2	19
33 - 37	37.5	35	3	5	16
38 - 42	42.5	40	3	8	13
43 - 47	47.5	45	5	13	8
48 - 52	52.5	50	8	21	0

$n = 20^*$ Mean = 43.6 Mode = 52 Range = 20 - 52
No. of items = 52

- * One child in the class of 21 was not administered the self-concept test.

**Mode indicates specific item mode rather than range mode.

FREQUENCY DISTRIBUTION CHART
METROPOLITAN READINESS TEST
CLASS I AM PRE-TEST

Discrete Class Limits	Cont. Limits	Midpoint	f _i	Less Than Cum	More Than Cum
LC/NUC:			arr	rep	ae
AUTHOR: main entry Rice, Patty Coon 1966- <i>673113</i>			set	ac	av
			dup		
			call no.		
			copies		
			vols.		
TITLE: Development, implementation, and evaluation of a "moving into drama" kindergarten program to develop basic learning skills and language.			18	18	18
place publisher yr. publ. E. Lansing MSU:Phd thesis, Dept. of Elementary Education 1971			10	9	9
dealer			12	7	7
fund RES			15	4	4
series destination			17	2	2
QUESTIONS: approved by: notifies: price cat. no. item GIFTS AND EXCHANGE			18	1	1
K O - nothing found ✓ - item found E 1 - entry found or - orig ed found Y 2 - diff ed, loc, av tr - translation			18	1	1
series:			19	0	0
cbf br mus series verification bpr bib nat pc bfp dr bib SF - use pbip biblio SF - do not use pw bib fr ckl fb brinkmans csr bnb belg sets br bip lib esp uls fr bip fichero nst 50-60 61-65 gr bip bulg knig nst 66-69 publ cat mag nemz bib blurb bib r s rom dare: it bip bnt Searcher:			31.368 Median = 29 29 S.D. = 11.1		
9-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70-74 75-79 80-84 85-89					

HISTOGRAM OF THE
METROPOLITAN READINESS TEST PRE-TEST

FIGURE D.1

n = 21 $\Sigma x_{21} = 770$ $\bar{x} = 36.667$ Median = 35
Mode = 29 S.D. = 14.8

Age Group	Frequency (f)
0-14	0
15-19	3
20-24	1
25-29	4
30-34	2
35-39	3
40-44	3
45-49	2
50-54	1
55-59	0
60-64	1
65-69	0
70-74	0
75-79	1
80-84	0

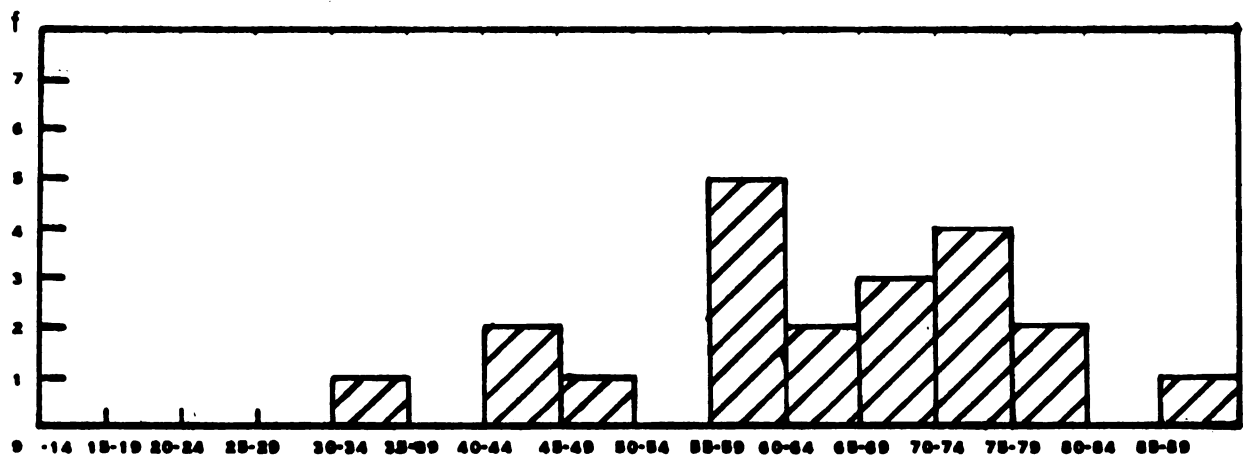
FIGURE D.2

FREQUENCY DISTRIBUTION CHART
METROPOLITAN READINESS TEST
CLASS II PM POST-TEST

Discrete Class Limits	Cont. Limits	Midpoint	f_i	Less Than Cum	More Than Cum
9 - 14	14.5	12			
15 - 19	19.5	17			
20 - 24	24.5	22			
25 - 29	29.5	27	0	0	21
30 - 34	34.5	32	1	1	20
35 - 39	39.5	37	0	1	20
40 - 44	44.5	42	2	3	18
45 - 49	49.5	47	1	4	17
50 - 54	54.5	52	0	4	17
55 - 59	59.5	57	5	9	12
60 - 64	64.5	62	2	11	10
65 - 69	69.5	67	3	14	7
70 - 74	74.5	72	4	18	3
75 - 79	79.5	77	2	20	1
80 - 84	84.5	82	0	20	1
85 - 89	89.5	87	1	21	0
90 - 94	94.5	92			

$n = 21$ $\Sigma x_{21} = 1301$ $\bar{x} = 61.95$ Median = 61
 Mode = 65 and 70 S.D. = 13.29

CLASS II PM



HISTOGRAM OF THE
METROPOLITAN READINESS TEST POST-TEST

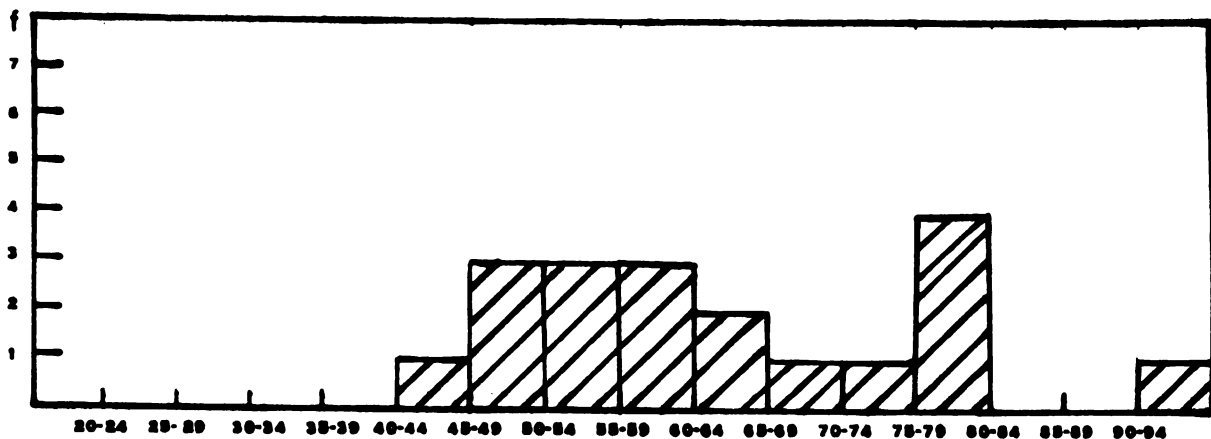
FIGURE D. 3

FREQUENCY DISTRIBUTION CHART
METROPOLITAN READINESS TEST
CLASS I AM POST-TEST

Discrete Class Limits	Cont. Limits	Midpoint	f_i	Less Than Cum	More Than Cum
9 - 14	14.5	12			
15 - 19	19.5	17			
20 - 24	24.5	22			
25 - 29	29.5	27			
30 - 34	34.5	32			
35 - 39	39.5	37	0	0	19
40 - 44	44.5	42	1	1	18
45 - 49	49.5	47	3	4	15
50 - 54	54.5	52	3	7	12
55 - 59	59.5	57	3	10	9
60 - 64	64.5	62	2	12	7
65 - 69	69.5	67	1	13	6
70 - 74	74.5	72	1	14	5
75 - 79	79.5	77	4	18	1
80 - 84	84.5	82	0	18	1
85 - 89	89.5	87	0	18	1
90 - 94	94.5	92	1	19	0

n = 19 $\Sigma x_{19} = 1173$ $\bar{x} = 61.73$ Median = 59
Mode = 58 S.D. = 13.9158

CLASS 1 AM



HISTOGRAM OF THE METROPOLITAN READINESS TEST POST-TEST

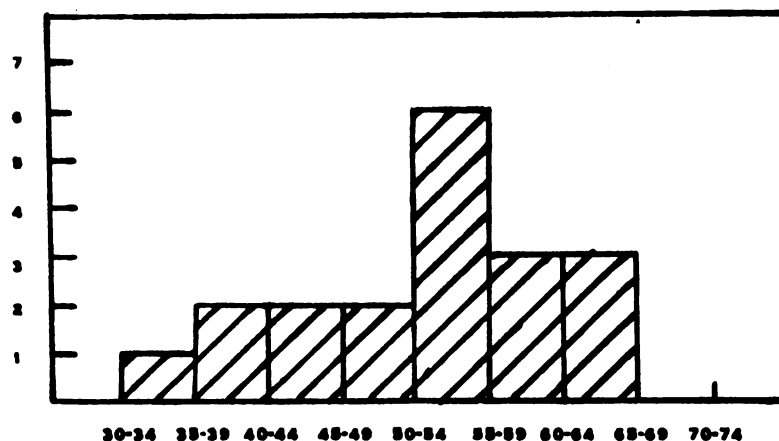
FIGURE D.4

FREQUENCY DISTRIBUTION CHART
PEABODY PICTURE VOCABULARY
CLASS I AM PRE-TEST

Discrete Class Limits	Cont. Limits	Midpoint	f_i	Less Than Cum	More Than Cum
25 - 29	29.5	27	0	0	19
30 - 34	34.5	32	1	1	18
35 - 39	39.5	37	2	3	16
40 - 44	44.5	42	2	5	14
45 - 49	49.5	47	2	7	12
50 - 54	54.5	52	6	13	6
55 - 59	59.5	57	3	16	3
60 - 64	64.5	62	3	19	0
65 - 69	69.5	67			
70 - 74	74.5	72			

$n = 19$ $\Sigma x_{19} = 951$ $\bar{x} = 50.05$ Median = 51
 Mode = 51 S.D. = 8.14

CLASS I AM



HISTOGRAM OF THE
PEABODY PICTURE VOCABULARY PRE-TEST

FIGURE D.5

FREQUENCY DISTRIBUTION CHART
PEABODY PICTURE VOCABULARY
CLASS I AM POST-TEST

Discrete Class Limits	Cont. Limits	Midpoint	f_i	Less Than Cum	More Than Cum
25 - 29	29.5	27			
30 - 34	34.5	32			
35 - 39	39.5	37			
40 - 44	44.5	42	0	0	19
45 - 49	49.5	47	2	2	17
50 - 54	54.5	52	1	3	16
55 - 59	59.5	57	11	14	5
60 - 64	64.5	62	1	15	4
65 - 69	69.5	67	3	18	1
70 - 74	74.5	72	1	19	0

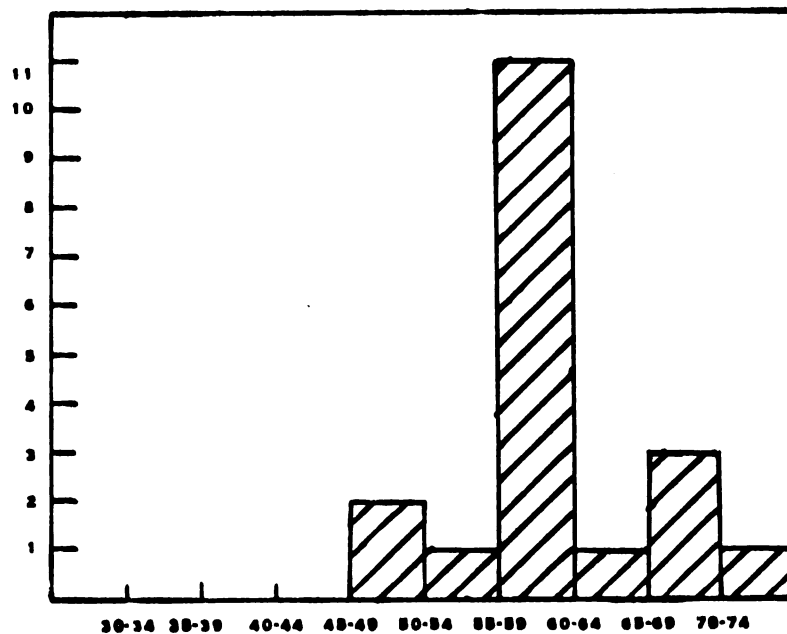
$n = 19$

$\Sigma x_{19} = 1202$

$\bar{x} = 58.68$
Mode = 59

Median = 59
S.D. = 6.28

CLASS I AM



HISTOGRAM OF THE
PEABODY PICTURE VOCABULARY POST-TEST

FIGURE D.6

FREQUENCY DISTRIBUTION CHART
PEABODY PICTURE VOCABULARY
CLASS II PM PRE-TEST

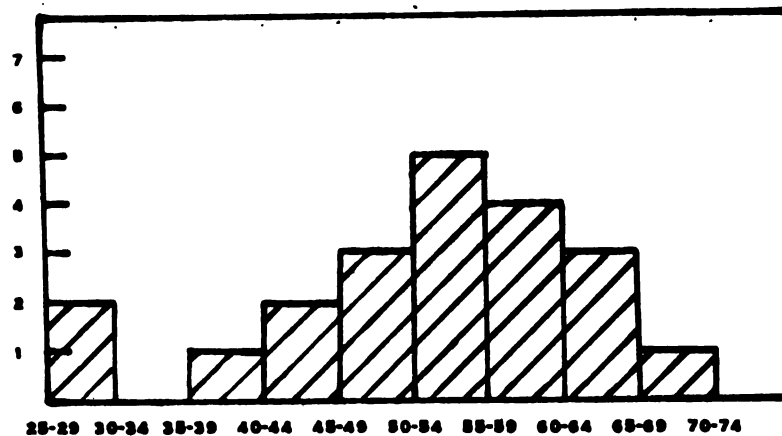
Discrete Class Limits	Cont. Limits	Midpoint	f_i	Less Than Cum	More Than Cum
25 - 29	29.5	27	2	2	19
30 - 34	34.5	32	0	2	19
35 - 39	39.5	37	1	3	18
40 - 44	44.5	42	2	5	16
45 - 49	49.5	47	3	8	13
50 - 54	54.5	52	5	13	8
55 - 59	59.5	57	4	17	4
60 - 64	64.5	62	1	20	1
65 - 69	69.5	67	1	21	0
70 - 74	74.5	72			

$n = 21$

$\Sigma x_{21} = 1075$

$\bar{x} = 51.19$ Median = 52
Mode = 52 and 54 S.D. = 10.21

CLASS II PM



HISTOGRAM OF THE
PEABODY PICTURE VOCABULARY PRE-TEST

FIGURE D.7

FREQUENCY DISTRIBUTION CHART
PEABODY PICTURE VOCABULARY
CLASS 11 PM POST-TEST

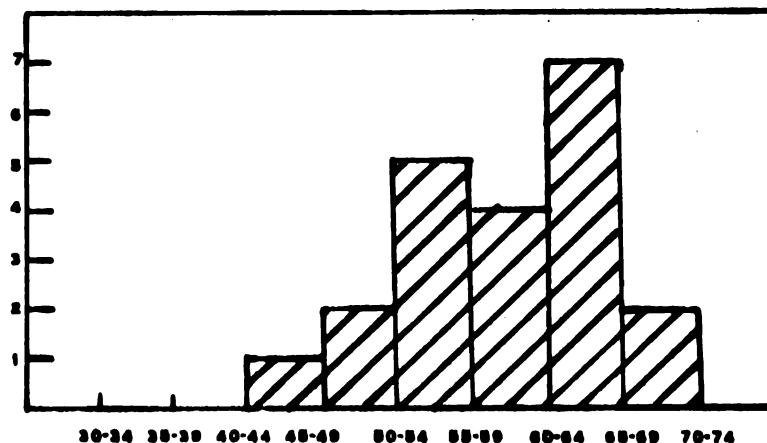
Discrete Class Limits	Cont. Limits	Midpoint	f_i	Less Than Cum	More Than Cum
25 - 29	29.5	27			
30 - 34	34.5	32			
35 - 39	39.5	37	0	0	21
40 - 44	44.5	42	1	1	20
45 - 49	49.5	47	2	3	18
50 - 54	54.5	52	5	8	13
55 - 59	59.5	57	4	12	9
60 - 64	64.5	62	7	19	2
65 - 69	69.5	67	2	21	0
70 - 74	74.5	72			

$n = 21$

$\Sigma x_{21} = 1202$ $\bar{x} = 57.238$
Mode = 58

Median = 58
S.D. = 6.818

CLASS 11 PM



HISTOGRAM OF THE
PEABODY PICTURE VOCABULARY POST-TEST

FIGURE D.8

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