A REVIEW OF PRE-SCHOOL EDUCATION
FOR CULTURALLY DISADVANTAGED CHILDREN

A RESEARCH PAPER
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CHAPTER I

INTRODUCTION

Education in the United States in the last few years has taken many new directions. It has been realized that all children do not learn at the same rate, and classes for the gifted and the mentally retarded, remedial classes, and other special groupings have come to be increasingly more common in schools across the country.

It has also been realized by educators that children from impoverished homes, children termed culturally disadvantaged, as a group have consistently shown failure and retardation in school in comparison to children from higher socio-economic groups. Much research was conducted to determine the cause for this failure and retardation. From this, research has been developed to determine the effects of an intervention program of beginning school earlier than the usual five or six years of age, for children designated culturally disadvantaged.

The purpose of this paper is to bring together information from several studies concerned with pre-school education for the culturally disadvantaged. It is an attempt to relate ideas and methods which have succeeded in this area and those which have not. There have been numerous studies in this area, and a condensation of several of these will give a clearer view of the present significant findings and the directions along which future research should proceed.
CHAPTER II

A REVIEW OF THE RESEARCH

This chapter will report on definitions of terms used in the paper, on a theory of learning which is the basis of much of the research in the area of pre-school education, on a comparison of mental retardation and cultural retardation, and on the studies concerned with pre-school education for disadvantaged children.

Definitions

There are several terms used throughout this paper which are vital to the understanding of the research. Some of the terms are not easily defined because there are many aspects to them. An explanation of some of the major terms, as they apply to this paper, follows.

Culturally Disadvantaged

First is the term culturally disadvantaged. This is often used interchangeably with the term culturally deprived, but this author prefers the former term. Each person who grows up in any society has a culture, therefore, the term culturally deprived actually is not correct. This is an important consideration in working with these children. They have a culture, but it puts them at a disadvantage because it is different in many ways from the predominant middle class culture. Fred Hechinger describes the culturally disadvantaged child well when he says, "all the evidence today indicates that children from a home background that not only is economically and socially at the lowest level but lacks family orientation toward formal learning are virtually ex-
cluded from success in school." (6, p. 2).

These children do not receive the encouragement and home preparation for school that middle class children usually do. Often there are no books in the house, and the child has never been read to or held a book by the time he enters school. His verbal language is usually also very deficient by middle class (school) standards. He probably has little chance to talk at home, and no good adult patterns to follow. Yet he is expected to succeed in schools with middle class values and expectations which are totally foreign to him.

Mental Retardation

The term mental retardation should also be considered. The children in the studies were not termed mentally retarded, but many of them functioned as such and tested as such. There are many definitions of mental retardation, and this fact can cause confusion at times.

One definition of mental retardation has been based on IQ test scores. Scores below seventy on both the Stanford-Binet and the WISC intelligence tests have been designated as showing mental deficiency. (11, p. 32). However, these are arbitrary cutoff points, and the standard of the environment in which the child lives must be taken into account.

A new definition of mental retardation has been given in a manual published by the American Association on Mental Deficiency with the support of the National Institute of Mental Health. This definition has become the most widely accepted one so far. "Mental retardation refers to subaverage general intellectual functioning which originates during the developmental period and is associated with impairment in adaptive behavior." (6, p. 34).
As is explained later in this paper, the largest number of retarded children living in the community belong to the cultural-familial cluster and tend to come from the lower socio-economic groups, or the culturally disadvantaged. Therefore, mental retardation is an important aspect in the study of pre-school education for the disadvantaged. **Cognitive Development**

Cognitive development or learning is another important concept in this paper. Again, there is no clear-cut definition of this. The position which is probably most influential in research today is that which sees "cognitive growth as the development of representation systems, increasingly more powerful, for dealing with future encounters of the organism with reality." (5, p. 1). This definition characterizes the view of Piaget, among others.

Cognitive learning is also termed "the development of understanding or insight". (13, p. 325). It is differentiated from automatic learning which is seen as habit formation. Many psychologists take a middle-of-the-road attitude toward distinctions between the two types of learning. They put insightful learning on a continuum, from behaviors which require no representational thinking, such as closing the eyes when a blast of air is anticipated, to behaviors which seem totally dependent on cognitive understandings, such as writing a book. (13, p. 326).

Cognitive development or learning is vital to a pre-school program. It is basic to the acquisition of higher types of learnings and thought processes required in school. This type of development is greatly deficient among young culturally disadvantaged children.
The Process of Learning According to Piaget

There are many theories of learning which have been proposed by a variety of experts. For the purposes of this paper, the theory of a Swiss psychologist, Jean Piaget, will be utilized.

During the last fifty years, Piaget has done some very interesting and unique research into the development of human intelligence. His findings are gaining acceptance all over the world.

According to Dr. Robert Sylwester, Associate Professor of Education at the University of Oregon, "much of the emphasis on early childhood education and the instigation of the Head Start programs are attributed to the work of this famous psychologist." (14, p. 59). Piaget discovered that learning is not simply adding to previous knowledge. Instead, an individual assimilates his environment to conform with his biological systems and at the same time accommodates himself to his environment. This is a continual process, and there is always a search for equilibrium between the two.

Piaget's theory is developmental. He found certain stages which human beings pass on the way to becoming intelligent adults. However, these stages are not just the addition of a quantity of knowledge and experience, but "as a result of its intercourse with the environment during the formative years, the central nervous system constantly forms levels of integration which are both quantitatively and qualitatively different from the synthesis out of which they evolved." (13, p. 356). Piaget sees intellectual development as the progressive disappearance of thought into new higher-order systems.

Culturally disadvantaged children generally miss the stimulation...
in their formative years that develops new higher-order levels. Thus when they enter school for the first time at age five or six, they are behind in intellectual development. Pre-school education could be a way of giving these children the stimulation necessary for the continuous developmental integration of the biological system with the environment to produce progressively higher-order thought systems. Without such education (stimulation), deprived children often remain at lower levels during their pre-school years and consequently are behind their middle class peers when they begin kindergarten and first grade.

Although no definite curriculum has developed as the result of Piaget's work, three basic teaching implications have been formulated which apply to all areas and levels of education and which are also pertinent to the discussion of education for disadvantaged preschoolers. (13, p. 363).

The first implication is "that we learn by doing, that we learn about the world we live in only by actively interacting with it". (13, p. 363). Disadvantaged children often see little outside their own immediate neighborhood before they enter school. Pre-school can give them concrete experiences with material that middle class youngsters are familiar with and which are basic to success in school, such as the opportunity to look at pictures in books and be able to talk about what they see and feel.

The second implication of Piaget's theory says that continuous interaction with peers is one of the basic ways a person learns. Preschool education classes can give disadvantaged children a chance to share ideas and feelings. Often these children are seriously lacking
in verbal skills, partly because there is little oral communication among family members and hence verbalization is not a major part of their lives.

The third implication is that any new learning involves a step-by-step process. Middle class children are learning things in their pre-school years that are requisite to what they will learn in school. Pre-school education for the disadvantaged can help the children with steps they might miss at home, but that are vital to the acquisition of higher-order systems they are expected to learn in school.

Piaget's work is not a cure-all for the problems in education today. There are many more areas that need to be explored. However, his theories are very significant in the planning and construction of pre-school classes for the disadvantaged.

**Cultural Deprivation and Mental Retardation**

In the field of mental retardation it has been repeatedly observed that mental deficiency often tends to run in families, especially when there is no known brain damage or congenital defect. According to the Robisons, "the largest single group of mildly retarded children in institutions and by far the majority of retarded children living in the community belong to the cultural-familial cluster." (13, p. 208). Most of these children tend to come from the lower socioeconomic segments of society. While none of the studies reviewed in this paper were specifically concerned with lowering the number of mentally retarded children, progress in each study was determined in large part by IQ test scores. IQ test scores are also used to classify children as mentally retarded. Many of the children that took part
and are taking part in these studies would be termed mentally retarded according to their initial test scores. They come from backgrounds conducive to cultural-familial retardation. After a pre-school program many of these children test in the "normal" group. If their increases in IQ points are maintained during their regular school years, perhaps some who would have been labeled mentally retarded without pre-school education will continue to function at higher levels.

Research Studies

There have been many experimental classes for culturally disadvantaged pre-school children, as well as other experiments to determine the way they learn. In the following sections are reviews of selected experiments. Some of them have developed into continuing, full time classes for pre-schoolers while others lasted only two or three years.

Completed Studies

Some research studies last only a few years. These studies test specific methods or curriculum areas. They are vital in the accumulation of materials and methods which are successful in pre-school classes. Hopefully, they pave the way for continuing classes in the community in which they were conducted.

A comparison of a traditional and an experimental pre-school. Pre-school education, in and of its self, is not a new idea. There have been nursery schools and child care centers for many years. However, it is a new idea to use pre-schools to offset regular school failure among the disadvantaged. This study compared the results of a traditional pre-school program with a highly structured, experimental
pre-school. (10, pp. 667-677).

In each of the programs, a morning and an afternoon session were held, with fifteen children in each session. There were three teachers for each program.

The major goals of the traditional program were to promote the personal, social, and general motor development of the children. (10, p. 668). It included incidental and informal learning. The children were encouraged to talk and ask questions, and the teachers made an effort to stimulate an interest in their surroundings. There were music, art, and story sessions each week. In addition, there were indoor and outdoor play sessions, juice time, rest, and show and tell.

The experimental program was highly structured. There were basic concepts and specific learning tasks chosen because their mastery is normally considered requisite to successful academic performance in early elementary school. The content was to be learned in a game format using manipulative, multisensory materials, but structured to require concurrent verbal responses. The major goal was to get proper match between the child's present cognitive development and a specific learning task and to pace and sequence such tasks to insure developmental learning. The children gain motivation for further learning through success experiences. (10, p. 668).

Both classes of the experimental program were divided into three groups according to Binet IQ scores, with one teacher for each group. Each group stayed with one teacher for three, twenty-minute, structured learning periods devoted to math concepts, language arts and reading readiness, and social studies and science. The whole class
came together for music and directed play, which stressed motor-visual activities. The concepts taught during the three structured periods were reinforced during the times the class was together in one group.

The subjects for the study were all old enough that they would enter regular kindergarten the year after the pre-school. There were three groups in each class, divided according to IQ -- 100+, 90-99, and 70-89. Approximately 67% of the children were Negro and 33% Caucasian.

Pre-tests and post-tests were given to all the children. Intelligence was tested by the 1960 Stanford-Binet, language development by the Illinois Test of Psycholinguistic Abilities, and visual perception by the Marianne Frostig Developmental Test of Visual Perception. The Metropolitan Readiness Test was also given as a post-test for school readiness.

The results of the study can best be shown by the following tables and figures given by the reporters of the study.

**TABLE 1**

**INITIAL COMPOSITION OF THE TWO GROUPS**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean CA</th>
<th>Mean EA</th>
<th>Mean Binet IQ</th>
<th>Race</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Caucasians</td>
<td>Negro</td>
</tr>
<tr>
<td>Traditional</td>
<td>28</td>
<td>52.3</td>
<td>50.0</td>
<td>94.5</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Experimental</td>
<td>27</td>
<td>51.9</td>
<td>50.3</td>
<td>96.0</td>
<td>9</td>
<td>18</td>
</tr>
</tbody>
</table>

*(10, p. 671)*

Note:

As can be seen, the groups were very closely matched in all areas at the beginning of the study.
In the experimental group no one failed to gain points, and no one lost any points. The authors felt that active physical involvement by the children and teacher to gain mastery of a concept, followed by appropriate verbalizations required of the children by the teacher were significant factors in bringing about the gains.
TABLE 4a
DIFFERENCE SCORES BETWEEN TEST 1 AND TEST 2 ON TOTAL ITPA

<table>
<thead>
<tr>
<th></th>
<th>Test 1</th>
<th></th>
<th>Test 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>E</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 6 5 4 3 2 1 0</td>
<td></td>
<td></td>
<td>2 1 0 1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>Months Below CA</td>
<td></td>
<td></td>
<td>Months Months</td>
<td>Below Above</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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</table>

a(10, p. 674)

bSignificant difference between Test 1 and Test 2 at .05 level.

TABLE 5*
MEAN FROSTIG PERCEPTUAL QUOTIENTS

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Test 1</th>
<th>Test 2</th>
<th>Difference</th>
<th>t Value</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>26</td>
<td>76.5</td>
<td>84.9</td>
<td>8.4</td>
<td>4.23</td>
<td>.001</td>
</tr>
<tr>
<td>Experimental</td>
<td>27</td>
<td>80.7</td>
<td>99.1</td>
<td>18.4</td>
<td>6.90</td>
<td>.001</td>
</tr>
<tr>
<td>Difference</td>
<td>4.2</td>
<td>14.2</td>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t Value</td>
<td>1.69</td>
<td>4.36</td>
<td>2.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of Significance</td>
<td>NS</td>
<td>.001</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(10, p. 675)

Note:

Frostig suggests that children whose scores fall in the lowest quartile (below 90) will have difficulty in adjusting to school and recommends remedial training. 96% (25) of the traditional group and 78% (21) of the experimental group were below 90 on the first test. On the second test, 77% (20) of the traditional group were still below 90, while only 25% (7) of the experimental group were below this point. (10, p. 675)
TABLE 6*

METROPOLITAN READINESS TESTS MEAN RAW SCORES

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Reading</th>
<th>Number</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>27</td>
<td>36.9</td>
<td>5.9</td>
<td>43.8</td>
</tr>
<tr>
<td>Experimental</td>
<td>26</td>
<td>40.7</td>
<td>10.7</td>
<td>54.7</td>
</tr>
<tr>
<td>Difference</td>
<td></td>
<td>3.8</td>
<td>4.8</td>
<td>10.9</td>
</tr>
<tr>
<td>t Value</td>
<td></td>
<td>1.56</td>
<td>4.36</td>
<td>2.77</td>
</tr>
<tr>
<td>Level of Significance</td>
<td></td>
<td>NS</td>
<td>.001</td>
<td>.01</td>
</tr>
</tbody>
</table>

*(10, p. 675)

It is clear from the data in these tables that while the traditional group showed progress, the experimental group made significantly higher gains. It is concluded by the authors that these higher gains are the direct result of connecting cognitive development and verbal expression through structured learning situations. *(10, p. 677)*

The development and evaluation of a diagnostically based curriculum for pre-school psycho-socially deprived children. Another study, published in 1967, was conducted by personnel from Indiana University, Bloomington, Indiana, and Emory University, Atlanta, Georgia, with the aid of a grant from the Department of Health, Education, and Welfare. It attempted to study the results of a specific curriculum and teaching method with culturally disadvantaged children from central and southern Indiana. *(9)*.

The subjects for this study were 142 five-year-old children who scored between fifty and eighty-five on the Stanford-Binet Intelligence Test. There were three studies which took place over a period of three years. In each study, fifteen children were placed in either an
experimental pre-school group, a kindergarten contrast group, or an at-home contrast group.

There were eighty-two boys and sixty girls in the three studies. There was no contact with the parents of the children in any of the studies and no attempt to modify the schools where they sent to first grade. Almost all of the children were from a severely psycho-socially deprived background.

The major purpose of this program was to determine whether a diagnostically-based kindergarten curriculum and its concomitant teaching strategies would increase the intellectual, language, motor, and socialization abilities of a group of children to a greater extent than traditional kindergarten or no kindergarten at all. The study also aimed to determine which techniques and instruments would be most useful in improving the deficits shown by these children. (9, p. 8).

The general heading for the problem the children in the study faced is psycho-social deprivation. It is characterized by a poor psychological climate in the home combined with a low socioeconomic level. Symptoms include dependence on social relief agencies, low educational level of the parents, low moral standards such as indicated by police records and prostitution, child abuse, emotional instability of the parents, and a low intellectual level in the parents. (9, p. 25).

The study included ten groups, with approximately fourteen in each group, from the most severely disadvantaged families that could be located among several communities in central and southern Indiana. When the study began, there was no provision for free public kindergarten in the State of Indiana, and none existed in any of the communities involved. Three groups were placed in the experimental kinder-
garten, three groups in the non-experimental kindergarten, and four groups in the at-home category.

According to the Warner-Meeker-Ells (1949) Index of Status Characteristics, 11.5% of the children rated in the upper-lower class range, 33% in the borderline between upper-lower and lower-lower, and 55.5% clearly were in the lower-lower range. 20% of the families had no adult male at home. 33% of the mothers worked at unskilled jobs. Most of the homes were shacks with an average of seven people living in four rooms. 40% of the homes had no indoor toilet, and 25% had no running water. (9, p. 30).

The investigators felt that, judging both from published descriptions of Appalachian populations and their own experiences, the children in this study showed similar problems and characteristics to hardcore Appalachian poor found in the isolated rural regions of the Border States and the South.

The 143 children in the study had 263 elder siblings in school, 80% of which were having moderate to severe academic difficulty. About 50% of the older siblings sixteen years or older had dropped out of school.

The curriculum of the study was planned to promote the personal-social adjustment of each child. A relatively formal teaching-learning structure was used to promote cognitive development. Language and cognition, number concepts, time concepts, fine and gross motor development, visual and auditory perception, socialization, self-concepts, attention, concentration, and aesthetic values were all part of the curriculum.

The experimental groups made significant Binet IQ gains over
the regular kindergarten group, who, in turn, did better than the at-home group. On the Columbia Mental Maturity Scale both the experimental and the regular kindergarten groups significantly exceeded the at-home group. The mean IQ for both the experimental and regular kindergarten groups shifted from around the middle of borderline retardation range to normal classification on both the Binet and the Columbia Mental Maturity Scale. The at-home group remained within the borderline retardation range. The evidence suggests strongly that the experimental curriculum was more effective in increasing intelligence than the traditional kindergarten. It completely supports the fact that a year of pre-school for the disadvantaged is much more beneficial than staying home.

Since this experimental study was carried out three times over three years, additional data is available on the children from the study who have completed either first and second grade or first grade. It was found that the Binet IQ for both kindergarten groups was stable through the first grade. Greater Binet IQ gains were made during the first grade by the at-home groups than either of the kindergarten groups. By the time the children from the first year's study had finished the second grade, all the subgroups were classified within the normal range by both the Stanford-Binet and the Columbia Mental Maturity Scale. Further longitudinal testing would seem to be suggested by this last statement, since long-term improvements are the major goal rather than improvement for only one or two years.

A Proposed Program

The Frank Porter Graham Child Development Project is proposed by the University of North Carolina at Chapel Hill and members of the
community there. It is intended to provide a continuous program covering the first twelve years of life, with day care facilities for babies and young children and an elementary school for older children. It was proposed as a result of problems encountered in trying to bring together in the same schools children from faculty and professional families with those culturally deprived children of the less fortunate families. (12, see published article for page numbers).

Surveys showed that the care of children of working mothers in available day-care areas was probably greatly responsible for their apathy and intellectual handicaps in school. Many people felt that the most effective approach would be to begin programs as early as infancy as preventive measures rather than treatment later on.

The Center is also seen as a basic research program. Longitudinal research of children over a twelve-year period will be a vital part of the program.

As proposed, this program will consist of two basic units, a day-care facility for 240 infants and children of working mothers and a school for 550 primary and elementary children. In both units children will be chosen from all segments of the community.

Children will be admitted during the mother's pregnancy. They will begin attendance at whatever time their mothers return to work. Children admitted will be expected to continue through the age limit, and all children of a family will be encouraged to enroll.

The purposes of the proposed program are stated as: "(1) to help break the cycles of retardation, poverty, and disease which exist in sizable segments of the community, by providing an opportunity for optimum development during the crucial formative years, and (2) to
develop an understanding of the antecedents of a wide variety of behavior patterns pertinent to educational achievement, mental and physical health." (12). The Center will strive to enrich the environment and experience of the children and give them the much needed stimulation of conversation.

The program calls for helping the children motivate themselves to achieve by providing high expectations, giving aid in attaining their goals, and sincere praise for success. It is hoped this will be the beginning of long-range goals they will develop in the future.

The program proposes to work extensively with the families of the children enrolled in the Center. It is expected that the children will develop differently in many ways from their family. Guidance will be given the parents to help them overcome the conflicts and to insure their support of the program.

The research programs of the Center will be many and varied. In addition to the longitudinal study, some short-term studies will be carried out by many departments of the University. As an example, it is planned to follow the development of children along the lines given by Piaget and an attempt will be made to influence the ages at which children reach the stages of intellectual development he describes.

The Frank Porter Graham Child Development Center is still in the planning stage, but it promises to become a significant source of data concerning how best to provide for the optimum growth and health of disadvantaged infant, pre-school, and elementary-school children and to learn what effects such care can make.

Studies in Progress

There are numerous studies concerning pre-school education for
the disadvantaged now in progress. Some are scheduled to end at a
certain time, but others are continuing programs. Many of the ongoing
programs are financed by the federal government. They furnish much-
needed longitudinal information, as well as, most importantly, providing
opportunities for pre-school education for disadvantaged children year
after year.

The Head Start Program. In the United States there are forty
million children under age ten, and at least eight million of these are
poor and vulnerable to their environment. At the present time, there
are only 218,000 children of ages three, four, and five enrolled in
year-round Head Start programs and 475,000 of similar age in pre-school
programs under Title I of the Elementary and Secondary Education Act.
(1, p. 7).

Head Start was created in the summer of 1965. In the fall of
1967, a program called Follow Through began. This is a plan to link
Head Start with the elementary grades. It now serves 15,500 children.
A third program called Parent-Child Center, dealing with children 0-3,
is just coming into being. All of these programs are federally suppor-
ted.

All the programs are to involve the parents in decision making,
program planning, and operation. Parents are invited to the schools
and noticed by the teachers. For the first time their opinions and
advice are sought and this often gives them a new sense of worth.

One of the major problems of the Head Start Program is the lack
of trained personnel. Summer training programs are in progress, (8,
p. 9), and as the program continues this problem should lessen.

The Head Start Program has been the most publicized pre-school
program. It has helped to make many Americans aware that pre-school education for the disadvantaged exists.

New York State Education Department longitudinal study. The New York State Education Department and eight cooperating school districts have begun a four-year longitudinal study of the effectiveness of academic-year programs for disadvantaged pre-schoolers. A report has been made of the results of the first two years of the study. (2, pp. 111-119).

Effectiveness of the study was defined in terms of five goals for the pre-school: (1) increased capacity to learn, (2) greater language development, (3) better self concept, (4) increased motor development, and (5) more positive attitudes toward school. (2, p. 111).

The eight school districts all agreed on these goals, but each was free to develop their own program and curriculum. Each school district was encouraged to develop their curriculum in a way they believed would best prepare the children for future school success. It was assumed that both language and cognitive development are vital to this success.

The children in the study were designated as culturally disadvantaged on the basis of their father’s occupational rating on the Warner Scale. If there was no father at home, the mother’s occupation or the general economic condition of the family was used.

The children in the study were screened by personnel from the local school districts. They were also tested with the Stanford-Binet and Peabody Picture Vocabulary Test. Random assignment to an experimental or a control group was then made.

All but one of the eight school districts operated on a half-day schedule of 2½ hours. They included free play, snack time, outdoor
play, rest periods, and group activities such as games, stories, singing, dancing, identifying colors, naming days of the week, and other such things.

In three districts there were specific additions to this basic program. In one, the children were given individual work with reading readiness materials and carried through pre-primers and primers as they were able. In another district, half the children used Bereiter and Engelmann's Language Pattern Drills, and the other half participated in small group discussions designed to build language skills. In the third district, half the children came in very small groups for only an hour a day and were given regular exposure to the Edison Responsive Environment Machine, the "talking typewriter." The rest of the children in this district were given a "modified Montessori" program. (2, p. 112).

To evaluate the program, the Stanford-Binet and the Peabody Picture Vocabulary Test were given again at the end of the pre-school along with the Illinois Test of Psycholinguistic Abilities. The most effective pre-school programs proved to be those with the most specific and structured cognitive activities. The program using reading readiness materials made the greatest number of significant differences over the two-year period. The group using Bereiter and Engelmann and group discussions made the biggest gain and the largest differential between experimentals and controls on the Stanford-Binet. The talking typewriter was not effective and neither were groups stressing interaction between advantaged and disadvantaged children.

The pre-school experience was less effective for disadvantaged nonwhites than whites, although both were significantly improved in comparison to their control counterparts. The Metropolitan Readiness
Tests were given to the first year's children during their kindergarten year to determine the effects the pre-school had after a year. It was found that the kindergarten experience sustained the benefits of the pre-school but did not build upon them.

Two implications seem clear from this portion of the study.

First, more attention must be given to the content of the pre-school program, especially in the development and evaluation of cognitive activities. Second, special programming for the disadvantaged must be carried into the kindergarten and primary grades to make the value of the pre-school lasting. (2, p. 119).

The DARCEE Demonstration and Research Center for Early Education.

The DARCEE program had its beginnings prior to 1961. (3, p. 1). It began with a special ten-week intervention period with a group of deprived youngsters just before their entrance to first grade. At this time it had not been shown conclusively that pre-school education could offset the progressive retardation characteristically shown by deprived children. The results of the ten-week intervention period were such that Gray and Klaus began to plan a new project which would begin much earlier, provide many more experiences, and involve the mothers of the children a great deal.

This study has led to the DARCEE Early Training Project. The general aim of the program was developmental rather than remedial. (3, p. 2). Four groups of children were set up. Three groups were composed of sixty-five deprived children born in a small southern city in 1958. One of these groups had three summers of pre-school plus weekly visits from a specially trained home visitor. Her job was to involve the child and his mother in activities similar to those at
the summer pre-school. The second group had similar experiences except that they only had two years of summer pre-school. The home visitor continued to see both groups during the first grade.

The third group was a local control group. A fourth group in a city sixty miles away was used as a further control group in order to check the diffusion effects of the pre-school in its own city.

It was felt that one of the things these children lacked was a positive identification with adults. Therefore, each group of twenty pre-schoolers in the summer sessions had a head teacher plus three or four assistant teachers. The staff was about equally balanced as to sex and race.

One of the main concerns of the summer programs was achievement motivation and such related characteristics as the ability to persist and to delay gratification. It was found that gross motor abilities were one good way to develop the children's motivation to excel.

While great effort was made to obtain groups as nearly alike as possible, it was felt by the researchers that the group that had two summer sessions was favored in both family income and the number of fathers present in the home over the first group. Because of these differences the relative effectiveness of the two lengths of time they were in pre-school can not be specifically determined.

Similar results to those of the Binet were shown on the Peabody Picture Vocabulary Test. On both, the first group went ahead of the other groups during its year in pre-school. When the second experimental group had finished a year of pre-school they had surpassed the first group and continued to do so throughout. On the WISC the experimentals were superior to the controls on six sub-tests, but all of the groups
were especially low on the vocabulary subtests. On the ITPA the profiles of the experimentals and the controls are very close. The lowest score for both was on the Auditory Vocal Automatic which requires the sounding of final consonants. The lower-class southern Negro subculture from which the children come is characterized by omission of final consonants in speaking. The children apparently have learned this pattern.

TABLE 7*
STATUS IN MAY, 1962, OF FOUR EARLY TRAINING PROJECT GROUPS USED IN 1966 ANALYSES

<table>
<thead>
<tr>
<th></th>
<th>T1 Experimental</th>
<th>T2 Experimental</th>
<th>T3 Local Control</th>
<th>T4 Distal Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA (mo.)</td>
<td>45</td>
<td>46</td>
<td>47</td>
<td>45</td>
</tr>
<tr>
<td>Binet MA (mo.)</td>
<td>39</td>
<td>42</td>
<td>41</td>
<td>40</td>
</tr>
<tr>
<td>Binet IQ</td>
<td>86</td>
<td>91</td>
<td>87</td>
<td>88</td>
</tr>
<tr>
<td>PPVT MA</td>
<td>30</td>
<td>30</td>
<td>28</td>
<td>32</td>
</tr>
<tr>
<td>PPVT (raw score)</td>
<td>19</td>
<td>20</td>
<td>18</td>
<td>22</td>
</tr>
</tbody>
</table>

*(3, p. 8)

TABLE 8*
BINET MA SCORES FOR ETF TRAINING AND CONTROL GROUPS

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>May</td>
<td>Aug</td>
<td>May</td>
<td>Aug</td>
<td>May</td>
</tr>
<tr>
<td>T1</td>
<td>39</td>
<td>49</td>
<td>54</td>
<td>58</td>
<td>66</td>
</tr>
<tr>
<td>T2</td>
<td>42</td>
<td>45</td>
<td>53</td>
<td>59</td>
<td>69</td>
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<td>44</td>
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<td>53</td>
<td>59</td>
</tr>
<tr>
<td>T4</td>
<td>40</td>
<td>42</td>
<td>49</td>
<td>50</td>
<td>58</td>
</tr>
</tbody>
</table>

*(3, p. 10)

bBinet MA scores are given in months.
Tests have been given to determine any significant improvement maintained in the first grade by the experimental groups. The Metropolitan Achievement Test was given. The two experimental groups scored a little higher than the local control group and at around the same point as the distal control group. None of the differences between the two experimental and the two control groups is significant statistically.

It was found that only one child from the local control group had no direct or indirect contact with any family in either of the two experimental groups. It is believed that this contact is responsible for the fact that the local control group generally performed better than the distal control group.

The researchers believe that their data show that an extensive, concentrated pre-school structured for deprived children can have lasting effects when the children enter the first grade. Also they feel that the nature of public school must be changed to further the motivational and cognitive skills taught in the pre-school. (3, p. 21).

Most of the children from the study attend all Negro schools with almost all Negro teachers. The children live in the same segregated communities. Their schools deal mainly with children who have had no preschool. A small comparison was made with nine children who transferred to previously all-white schools and nine children, matched on IQ, who stayed in all Negro schools. Although such small numbers of subjects do not give a balanced picture, it was noted that all differences favored the children who transferred.

The DARCE Early Training Center did not end with the three preschool summer sessions just reported upon. The knowledge and data gained in this research is being used as a basis for further research.
for effective means of overcoming the problems of the disadvantaged children in school.

It was found in the Early Training Project that the younger siblings of the experimental groups, when compared to the younger siblings of the control groups, showed a significant 14 point Binet differential in the experimental siblings' favor. The researchers hypothesized that the home visitors' contacts with the mothers of the experimental children enabled the mothers to be more effective in structuring the activities of all the younger children in the home. (11, p. 4).

To test this hypothesis, a study composed of four groups was set up. In one group the mother comes to the center once a week for a program of skill development which leads to actual participation in a classroom in a teaching role. In addition one of her children attends the center five days a week, and a home visitor helps the mother to use her newly learned skills at home.

In the second group, only the child visits the center, with the same program of the children in the first group. The third group has only weekly visits by a home teacher who works with the mother. The fourth group has no planned intervention. (11, p. 5)

The results now available indicate that a significant change can be made over a short period of intervention. Several of the mothers have become interested in furthering their education. Tests of the younger siblings were not yet available to determine the diffusion of the intervention program in the family.

The DARCEE Center is also conducting research to determine methods of training teachers for pre-school education programs. (8, pp. 9-13). Attention has been turned to the preparation of people to train sub-
professionals as aids. Many short-term programs such as eight-week Head Start Teacher Training Programs, training conferences, and consultation services are also being carried on.

Another study being carried on in connection with the Early Training Project is what actually happens to these disadvantaged children at home. (14, pp. 14-17). It has been found that the same behavior may receive unpredictable results, one time being encouraged and then, under the same circumstances, punished. Other things such as family goals and the amount of positive reinforcement given the children are being studied in the home environment.

The DARCEE Center is valuable in that it provides a basis for ongoing research projects in many areas of pre-school education. It has not been satisfied with only conducting pre-school classes. It has done research and planning in many areas related to the success of intervention programs for disadvantaged children. It is gathering great amounts of data over several years which will serve as guides and references to other proposed intervention programs.
CHAPTER III

SUMMARY

The studies cited in this paper are not the only research that has been conducted or is being conducted in the area of pre-school education for disadvantaged children. The studies cited are, however, representative of what is being attempted, and what has been accomplished to date.

Work in this area was actually begun over twenty-five years ago by George Stoddard. His group found evidence they felt justified the use of nursery schools to combat cultural deprivation. (7, p. 25). This work was severely criticized by those who would not accept the idea that IQ's could change, and not until the sixties have there been a great many programs and research in this area.

The studies of pre-school education for the disadvantaged have shown that it is possible to raise the level of functioning of these children significantly. It is possible to aid these children gain developmental processes necessary for the intellectual requirements of the public schools they will attend.

There are many areas of pre-school education which need further study and research. The main goal of any intervention program for the disadvantaged is to help them help themselves. The school setting, is not all that must be altered. The home and the community are also being studied to determine how changes there can help young children of poverty and deprivation succeed in school and in life.
CHAPTER IV

CONCLUSIONS

There are several conclusions which can be made from this review of research of pre-school education. There are also several points which need to be further considered in determining what place pre-school education for the disadvantaged will have in the total educational system.

The Future of Pre-School Education

The first consideration is the future of pre-school education for the disadvantaged. It does not seem likely that pre-school education will come under the jurisdiction of Public School Boards in the near future. There are still school systems which do not have a kindergarten program. In the last few years, money for the public schools has become a national concern, and few school systems could afford the inclusion of an extensive pre-school program.

In the near future, pre-school programs will most probably continue to be under the jurisdiction of educators at universities, financed with federal grants and aids. There has been too much gained and too much further to be researched to let all pre-school programs halt, and there is no indication that this will happen.

Caution must be taken, however, to insure quality, according to the present findings, in any pre-school program. Bringing these children to school at the age of three or four will not insure that anything significant will come about. Programs receiving federal aid should be
checked for proper procedures, and all effort should be made to publish findings to aid those setting up and running programs.

The Format of Pre-School Education Programs

It seems clear from the research that the most effective preschool programs were those which were highly structured. Every aspect of each activity should be considered to determine its worth in obtaining higher operational or cognitive levels or in motivating the children to succeed. This requires detailed study and research. Obviously some things will work better than others. All areas of learning should be utilized. As many of the senses as possible should be used to gain mastery of the concepts taught.

There is no clear-cut curriculum that is best for all disadvantaged preschoolers. Language and vocabulary development are among the weakest areas of these children. These areas should be stressed by all preschool programs. The Bereiter and Engelmann Language Pattern Drills and group discussions were found effective in one study. (See page 21). Perhaps the Level I Peabody Kit might also prove valuable in language development. Many programs may want to develop their own language development system, but they should be guided by what has been successful in the past.

There are many other areas with which a preschool program should concern itself. Color is an important part of life, and these children should begin to learn to distinguish colors and to know their names. The preschoolers need to learn that there is order in life, a fact which probably will not be evident to them from the jumbled, unorderedly lives they lead. (3, P. 4). A set routine, sorting and
classifying objects and pictures, and learning sequences will help to put order in their lives.

The pre-schoolers need a wide variety of experiences that will help to give them a clearer picture of what life is like outside their neighborhoods. New experiences must be led up to gradually, though. The children must know what to look for in a new environmental experience or it will be of little value. As an example, a teacher should not decide to take her pre-schoolers to a farm without extensive discussion and observation of pictures of what will be seen there first.

Some pre-school programs had periods for reading readiness, arithmetic, social studies, and science. These areas can readily be brought in as part of the basic language development program, with the major stress on vocabulary.

Other areas such as art and music will most certainly be part of any pre-school program. They should be structured as the other areas are and can be very helpful in ingraining the concepts taught in the more formal learning periods.

Any one developing a pre-school program should look at the research and then devise a plan that takes into account the particular characteristics of the children with which they will work. A vital part of any educational plan is flexibility.

The Education of Teachers for Pre-Schools

Not much has been said about educating teachers for pre-school classes. Most of the research reviewed used regular elementary teachers, university instructors, and college students as teachers and others with less education as assistants. The DAHD program is researching
methods for training assistants and has summer programs to train Head Start teachers. There is no college program reported in this author's research that prepares teachers especially to teach pre-school, disadvantaged children. There is little evidence yet as to exactly what should be in such a teacher preparation program. The question was raised as to whether experienced teachers should be trained for this work or those just out of college, and there is also the possibility of an undergraduate course of study in this field. (8, p. 9). There are probably advantages and disadvantages to preparing people from each group.

A program to prepare teachers for pre-school education, no matter what experience they have had, would seem to require certain essentials. First, a thorough study of early childhood development, with heavy concentration on the theories of Piaget, would be necessary. Courses on the nature of cultural deprivation would be vital. These should include theories as to the causation factors, continuing factors, and future of cultural deprivation.

Although not all disadvantaged children are Negro, a great percentage are. Therefore, courses in Negro history (and other races' histories if they are prevalent in the disadvantaged population of the area) should also be a part of this preparation program. These should give the teachers knowledge vital to successful interaction with the children they teach and their families.

Methods courses geared to this level would also be part of teacher preparation. At this time, methods are still in the experimental stage, but there are guidelines to follow. Susan Gray and others have given many suggestions that could be incorporated into a methods course. (4).
Other specific courses, similar to regular teacher education programs but geared to pre-school disadvantaged children, would also be included in the preparation of teachers of disadvantaged pre-schoolers. Actual experience with these children and a period of supervised practice teaching would be further requirements in the teacher preparation program.

**Extending Special Programs for the Disadvantaged Into the Regular School**

Although there is little research as to the continuing effects pre-school has on regular school attainments, what is available seems to indicate that gains made in pre-school are not built on in the regular public school. (See pages 22 and 25). It was indicated in these studies that the program of the regular school may need to be revised to accommodate culturally disadvantaged children and their needs. The schools deal largely with children who have had no pre-school experience. (3, p. 25) They are not geared for children who have greater cognitive development and achievement motivation.

Integrated schools would seem to be geared to a higher level as indicated by the nine children in the DAREE program who transferred to integrated schools and showed favorable results. (See page 25). Integration would have to be accomplished by the public school systems and new goals set for these children which would enable them to compete and succeed where they have previously failed.

The Head Start Program with its Follow Through years and the Frank Graham Porter Center which proposes intervention in the elementary school can provide guides for programs in the public schools.
However, public schools will not build programs to build on pre-school education until there is such education available in the area. As new pre-school programs are begun, it would seem feasible to recommend further intervention programs in the regular school also.

**Intervention Programs with the Families Of Disadvantaged Pre-Schoolers**

Some of the programs in this author's research included visitations and education of the family of the pre-schoolers. Present data indicates that this may be extremely beneficial both to the child and his family. The Frank Porter Graham Child Center proposes to involve the families of the children in their program, and the DANCE program is performing a separate study on the effects of family intervention. It is felt that this will help to break the cycles of deprivation that exist in these families. Also it is hoped that in this way families of the children will be more supportive of the education program. If these children gain as it is expected they will, they would come to have different ideas and objectives in their life than their parents. This could be a serious conflict which would be detrimental to both the children and the parents. Educating the family as well as the child should help to overcome this conflict.

Another reason for educating the families of these children is that they spend a great deal of time together. The family could reinforce the school learnings if the parents understood the objectives and knew some things they could do to further their children's learning. Family education will not bring all the members up to high intellectual functioning, but it can help to raise the children's intellectual achievements.
Conclusions

There is enough evidence now to conclude several things about pre-school programs for disadvantaged children. One conclusion that can be made is that pre-school education can raise IQ test scores significantly, even enough to raise a child from a mentally retarded classification to a normal classification. Among such young children, IQ scores alone are not taken as conclusive evidence of mental retardation, but these children are prime candidates for the perpetuation of cultural-familial retardation. Pre-school education can give them the stimulation they need to break the chains of poverty and deprivation.

A second conclusion that can be made is that pre-school education can improve the social adjustments of these children with their peers. The pre-school gives them the opportunity to work and play together. One of Piaget's main points is that interaction with peers is one of the most successful learning methods.

Thirdly, it can be concluded that pre-school programs improve the general adult-child relationships of the children. These may be severely deficient where children are left under their older siblings' supervision or under no supervision while their parents work. Especially in the programs with a high adult-child ratio is a better relationship accomplished.

A fourth conclusion is that pre-school can provide guidance for the step-by-step development as proposed by Piaget. Extensive, structured programs can help the children develop at the rate described by Piaget. More work is needed to determine just how much and how long intervention should take place for optimum development, but there is
statistical evidence to show changes can occur.

Lastly, it is concluded that pre-school education can increase the desire of the children to learn and achieve. This is vital to further acquisitions of knowledge. Children who are helped to succeed can be motivated to higher goals and higher achievements.

Further studies in this area will undoubtedly reveal information which changes the outlook of pre-school education for the disadvantaged. Hopefully there will be many more such programs until they are no longer needed for a culturally deprived group because this group has been entirely educated and freed from their deprivation and poverty. Until such a time there is a need for extensive studies, for the revision of existing systems of education, and for the extension of pre-school programs to as many children as can benefit from them.
BIBLIOGRAPHY

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