

ED 024 473

PS 001 368

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Preschool Programs and the Intellectual Development of Disadvantaged Children.

ERIC Clearinghouse on Early Childhood Education, Urbana, Ill.

Pub Date 68

Note- 14p.

EDRS Price MF-\$0.25 HC-\$0.80

Descriptors- *Compensatory Education Programs, *Culturally Disadvantaged, Educationally Disadvantaged, Enrichment Programs, *Intellectual Development, Low Achievement Factors, *Preschool Children, Preschool Learning, *Preschool Programs

Identifiers- *Head Start

Evidence indicates that disadvantaged children are intellectually inferior to middle class children at the time they enter school, and as school continues, the gap widens. The environment of the disadvantaged child lacks much of the opportunity and stimulation for intellectual growth present in the middle and upper class environments and generally necessary for academic success in school. Compensatory preschool education for the disadvantaged child has been created to alleviate the gap, at least partially. Project Head Start was the first wide-scale attempt to promote the intellectual growth of the disadvantaged preschooler. Some early evaluations of the Head Start program indicated which aspects of any such program contribute the most to substantial intellectual growth; namely, (1) a warm, supportive, and stimulating teacher; (2) a task-oriented program approach, (3) an academically oriented program format; and (4) an emphasis on verbal development. (WD)

ED0 24473

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PRESCHOOL PROGRAMS
AND THE
INTELLECTUAL DEVELOPMENT
OF
DISADVANTAGED CHILDREN

PS 001868

Occasional Paper
Early Childhood Education ERIC
College of Education The University of Illinois
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This paper is based on part of a first draft of a monographic review of evaluative studies of compensatory preschool and Head Start programs by Roslyn A. O'Brien done under the supervision of Professor J. McVicker Hunt.

Distributed by the University of Illinois Press, Urbana, Illinois 61801

*Preschool Programs and the Intellectual Development
of Disadvantaged Children*

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1968

CULTURAL DISADVANTAGEMENT AND INTELLECTUAL DEVELOPMENT

It has been found that disadvantaged children are intellectually inferior to middle-class children from the time that they enter school. As school continues, the gap between the two groups widens. In a study by Arthur R. Jensen, for example, lower-class children were found to have an average IQ in the 90-100 range at school entrance; the average fell to the 70-85 range at high school age. This growing difference in measured intelligence and in school achievement may be interpreted in various ways; for example, as the emergence of inherited factors which were not at first apparent or as the result of the continuing influence of an unfavorable environment. In the last decades, the work of Jean Piaget, J. McVicker Hunt, and others has undercut the earlier, traditional view of intelligence as primarily determined by heredity and charted some of the effects of experience on intelligence. As a result, intellectual development is now believed to result to a considerable extent from transactions between the child and his environment. Without the child's having opportunities to sense different sights and sounds and to manipulate objects, his intellect does not develop.

Of particular importance, according to this view, is the motivational basis of intellectual behavior. The lower-class child has been frequently characterized as lacking in curiosity, as poorly motivated for success in school learning, and as tending to withdraw from the learning and the school situation. Evidence from laboratory studies, for example, Edward B. Zigler's, does indeed show that the motivation underlying learning differs for poor and middle-class children. Disadvantaged children work better if the reward is material (for example, candy), whereas their middle-class age-mates work better if the reward consists of knowing when they are right. Evidence from animal studies described by Harry F. Harlow, Daniel E. Berlyne, and other psychologists shows that curiosity is displayed when animals are both free from basic needs

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(hunger, pain, anxiety) and placed in surroundings that are basically familiar, yet have some novel aspects. It could well be that the very real presence of want, the limited, crowded environment, and the lack of environmental order experienced by the poor child prevent the development of the motivation underlying intellectual behavior and growth. This motivation is assumed to be more easily established early in childhood.

Other environmental factors are also involved in the poor child's slower intellectual development. The larger number of children in each family and the larger proportion of working and absent parents among lower-class people tends to reduce the amount of adult attention these children receive. The lack of toys curtails the opportunity for achievement as well as for sensory-motor experiences. Identification with a parent or an ethnic group seen as a failure may have a substantial negative influence on the child's self-image and, consequently, on his ability to learn. Many teachers and researchers working with minority group children have noted their low level of self-esteem.

Finally, a most serious effect of lower-class environment is that on linguistic development. The cumulative deficit in measured intelligence is generally greater for verbal than for non-verbal intelligence. Whether or not the use of a lower-class dialect (with its nonstandard forms, such as "ain't," smaller vocabulary, larger number of homonyms, doubled grammatical markers, and grammatical structure which is less varied than standard English) is an intellectual liability remains to be determined; however, most teaching and the overwhelming majority of published material approximates standard English. The lower-class child's lack of knowledge of this written language is obviously a great handicap in school work. Courtney B. Cazden concludes, from a review of experiments in language development and social class, that the most important factor in speech development is simply the sheer number of well-formed sentences to which the child is exposed.

The disadvantaged child comes to the school with a problem in language development. He may have already developed an attitude of

expecting failure. Most important, he lacks both the motivation to learn about his world and the background of mastery of concepts that will make later learning possible. The child's early development necessarily determines to a substantial degree how much profit he can derive from later experiences. Compensatory preschool education for the disadvantaged child is an attempt to provide those enriched learning experiences which may better prepare the child for entry into grade school and to catch and alter his development before the motivational bases for intellectual activity have become largely established.

PROGRAMS FOR THE CULTURALLY DISADVANTAGED

In the past, intellectual development was thought to occur largely by a process of maturation. Nursery schools (predominantly for middle-class children) were places where children could play, free from parental restrictions and in an environment of social-emotional health. Though well equipped, these nursery schools seldom made a deliberate attempt to stimulate intellectual growth since such an attempt would have been considered harmful, at worst, or futile, at best. With the exception of a few experimental schools and a larger number of Montessori schools, nursery schools have been organized on this pattern.

Project Head Start was the first attempt at widescale application of the new notion that intellectual development can be deliberately fostered in early childhood. Although the program had many other aims (to promote physical and emotional health, to help provide a focus for community development), we will deal only with the aim of promoting intellectual growth.

Study of about fifty evaluations of summer, 1965, Head Start programs carried out for the Office of Economic Opportunity and of many

other reports, both objective and subjective, leads to the conclusion that although many interesting data have been collected, little can be said about the effects of the total program on the intellectual development of the children.

Many of the studies have grave methodological problems which make the results more suggestive than definitive. Moreover, the differences in strategy, design, and testing among the research programs and in the children, educational methods, and teachers from place to place make generalization difficult. One generalization that can be made is that at least some children in some programs made non-trivial intellectual gains. The appropriate question then becomes not, "Does Head Start promote intellectual growth?" but, rather, "What are the characteristics of the conditions under which the greatest growth occurs?" Among the many characteristics which seem to be important, those for which there is most support will be looked at.

TEACHER CHARACTERISTICS

One of the most important findings of the Head Start research was that intellectual growth is greatly influenced by the kind of teacher in the classroom. John A. Pierce-Jones found that the characteristics of the teachers' styles of teaching accounted for about 40% of the variance in gains in the tested intelligence of a group of Head Start children.

Among the favorable teacher factors were "stimulating intellectual development" and "teacher warmth and supportiveness." The teachers' backgrounds and attitudes were also found to be important. Leon Eisenberg and C. Keith Connors found that teachers who valued intellectual activity highly and who were rated as flexible, varied in their behavior, and warm produced the most intellectual growth. These teachers spent more time communicating with the children and less time

either playing or enforcing obedience. O. J. Harvey and his co-workers found that Head Start teachers in one program varied along a dimension of intellectual style ranging from abstract to concrete. (Abstract intellectual style involves flexibility, tolerance of ambiguity, and ability to place oneself in another's role; it is closely connected with intellectuality). In a later study, of kindergarten and first grade children, it was found that children taught by such teachers were more achieving as well as cooperative, involved, active, and dependent. Further support for the importance of the characteristics of teachers comes from another finding that children taught by teachers who actively intervened in the educational process made greater intellectual gains than those taught by *laissez-faire* or non-interventionist methods. The importance of the teacher's characteristics has also been discovered by researchers working outside of Project Head Start. Fred L. Stodtbeck studied intellectual gains in eight classrooms for disadvantaged preschool children. The teacher in the highest gains group was found to be warm, active and talkative. In the poorest gains groups, one teacher was therapeutically oriented, given to much mothering but little teaching; the other had a warm, permissive play atmosphere, with little teacher intervention.

Although the permissive atmosphere of the traditional nursery school may help the development of middle-class children, poor children are simply unable to initiate the interaction with their surroundings that results in intellectual growth. The poor child can benefit most from his preschool experience if the teacher initiates this interaction and motivates him to explore his environment and to learn. At the same time, the teacher must be warm and supportive, both to provide freedom from anxiety, thereby making exploration possible, and to reinforce intellectual achievement. This approach can help to break the vicious circle of the child's low self-esteem and his consequent retreat from those engagements with the world without which he cannot build an orderly view of reality. In addition, the presence of a warm, intellectually oriented teacher can provide an appropriate model for identification which can orient the child to the world of ideas.

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These data on teacher characteristics lead one to abandon the traditional dichotomy of teaching styles — warm, permissive, child-centered versus cold, authoritarian (implying intervention), and teacher-centered. Desirable teacher characteristics cross these traditional lines since a good teacher of disadvantaged preschool children combines both warmth and active intervention.

The concept of task-centered teaching, introduced by Oscar A. Oeser, may be helpful in thinking about combining these characteristics. The behaviour of the task-centered teacher is determined by the needs of the situation. A successful preschool teacher of the disadvantaged would define the task as promoting intellectual development and then proceed accordingly. Thus, although the teacher might well determine which activity each child is engaged in at any time or might demand certain behaviour such as listening or answering, these controlling behaviours would be demanded by the situation rather than by the teacher's personal need for control or orderliness. At the same time, the child's attention would be directed to the task at hand, rather than to the teacher's idiosyncracies. The adoption of the task-oriented approach should free the situation from both the negativity of the authoritarian style and the powerlessness of the permissive approach. Moreover, the expression of praise and acknowledgment of achievement may be more compatible with the task-centered approach than with the permissive one.

PROGRAM ORIENTATION CHARACTERISTICS

Data from two research programs on preschool education for disadvantaged children support the idea that an academic orientation and a task-centered approach are desirable. One is the direct verbal instruction method developed by Carl E. Bereiter and Siegfried E. Engelmann.

Children in this program receive several short periods of instruction each day, in groups of five or six children. The lessons are carefully preprogrammed, with particular emphasis on the logical structure of what is being taught. The children are required to make repeated inferences from an initially presented statement.

Not given much attention in the writing about this method, however, is the question of motivation. An observer reported that the children appeared to be pulled into responding by the generated excitement. Also, the teacher placed the lesson in the context of a game in which he threatened or pretended to threaten not to present each question because it was "too hard." When the children asked for and were given it, they replied immediately and triumphantly with the correct response (small steps ensure success); the teacher pretended great surprise and commented on their cleverness. This ritual appeared well-learned, and the pace of the interaction was very fast.

Although the relationship between teacher and pupil in the direct verbal method does not seem warm in the traditional sense, it appears very positive. The children presumably derive a sense of competence from their success in problems posed as difficult. Thus, the traditionally protective attitude of the nursery school teacher is replaced by enthusiastic interaction which is both constructive and gratifying. Proper use of this technique presumably demands a large amount of teacher warmth and acceptance, even though this is not in the same form as the warmth of the traditional nursery school. Furthermore, the approach taken by the teachers of this program should ensure that a failure of the children to learn demonstrates only the breakdown of proper programming of the lesson, an attitude that seems quite compatible with acceptance of lower-class children.

This program of direct verbal instruction appears to be successful, since children who have entered with severe retardation in language and mild retardation in intelligence have been found to perform at the level appropriate to their grade level in language and at above this in math after experiencing the program.

Another program which has been shown to be effective is David P. Weikart's Perry Preschool Project. Unlike many other programs for the disadvantaged preschool child, this project has been repeatedly and exhaustively studied. Intellectual gains have been demonstrated for three successive intakes of children, and the program's benefits have been detectable three years after it is experienced. Like the direct verbal instruction method, this program makes use of team teaching and of carefully sequenced activities. However, although the teacher's rate of talking is very great (called verbal bombardment), the child is not required to respond at the high rate of the Bereiter-Engelmann program. Indeed, the child's response is often nonverbal or only partly verbal.

It should be noted that most of the programs reported in the literature on compensatory education contain many of the same activities, such as free play, juice time, and story time. Special procedures are imposed on this basic pattern, often involving only a short period of each day or half-day at the preschool.

LANGUAGE PROGRAM CHARACTERISTICS

A well-known, academically oriented approach to preschool education is the Montessori method. In this approach, the child is encouraged to work with carefully graded sensory and preacademic materials, which themselves impose structure on the teaching situation. The teacher is, ideally, an expert in observing children, noting when they encounter difficulties in using the materials, guiding the child to the materials, and demonstrating the proper use of them. The teacher does not intervene so long as the child is coping successfully, since the learning situation is viewed chiefly as the transaction between child and materials. Presumably the skill of the teacher in intervening at the point of frustration can make a great difference to the success of the method both from the point

of view of encouraging intellectual growth and of the development of the relationship between the child and adults. Douglas Holmes and Monica B. Holmes compared a Montessori with a "typical" Head Start program and found that the typical Head Start program produced greater intellectual growth. Judith Jensen and Lawrence Kohlberg found the opposite. In this second Montessori school, however, a language program and a dramatic play program were added to the orthodox Montessori method. It seems that an undiluted Montessori approach is not optimal for disadvantaged children, but the approach may be a useful technique when combined with others. In particular, some emphasis on language, as shown here or found in the verbal bombardment of the Perry Preschool Project, the direct verbal instruction of the Bereiter-Engelmann project, the talkativeness of Fred L. Strodtbeck's highest gains teacher, and the greater time spent in communicating of successful Head Start teachers, appears to be crucial.

Many techniques for stimulating verbal development and for increasing the child's exposure to well-formed sentences have been used. In the program at the Institute of Developmental Studies, New York Medical College, stories are tape-recorded and can be listened to repeatedly; the Bell and Howell Language Master is also used. At the Children's Center at Syracuse University, verbalization is deliberately reinforced to encourage language development. Many reports of Head Start programs note that a short field trip or having a pet in the class room stimulated verbal expression, while paraphernalia such as telephones, tape-recorders, and costumes have also been found valuable. Some directors recommend inclusion of an art program. A unique approach taken by one Head Start program to the encouragement of verbal expression was the placing of a record player in the home of each child. Three educational records were loaned to the family each week. Although no objective evaluation of the worth of this technique was made, teachers judged it to be very valuable. The use of individual lessons to correct diagnosed language difficulties has also been found to be advantageous, as has the addition of special cognitive activities characterized by a high level of verbal interaction.

SUMMARY AND CONCLUSIONS

Disadvantaged children have been found to start school with a level of intellectual development lower than middle-class children and to show less intellectual growth than their peers in successive school years. This is due at least in part, to their poor grasp of standard English, their negative self-concept, and, particularly, their lack of the motivation to master their environment and to learn. Although the Head Start program as a whole cannot be clearly seen to have induced greater intellectual gains than would have otherwise taken place, it is clear that some children in some Head Start programs made greater gains than others and that for at least these children, Head Start produced non-trivial intellectual growth. Analysis of which factors lead to demonstrable intellectual growth suggests that programs are successful when they are oriented towards teaching rather than towards playing, when the teachers are intellectually oriented and warm, and when the teachers actively intervene in the educational process. Emphasis on verbal development or a high rate of verbal stimulation, or both also appear to be valuable. These findings are supported by evidence from preschool programs for disadvantaged children undertaken outside the framework of Project Head Start as well as from Head Start data. The introduction of the concept of task-centered teaching has demonstrated that the warmth traditionally associated with permissive teaching styles and the intervention associated with authoritarian teaching are quite compatible.

It can be seen that the data on teacher and program characteristics are in line with the view of the nature of cognitive growth outlined in the beginning of this paper. Courtney B. Cazden proposes that the poor child's language deficit results from inadequate exposure to well-formed sentences; successful programs for disadvantaged children include a high rate of verbal interaction or, at least, of verbal input. J. McVicker Hunt emphasizes the importance of the motivation underlying intellectual behaviour and growth and proposes that the development of this

motivation is defective in disadvantaged children; successful programs have teachers who initiate the child's interaction with the environment, thus circumventing the child's lack of spontaneous motivation. Animal research points to the necessity of providing a secure environment before exploration will occur; successful teachers provide the warmth and acceptance necessary to allow the child to confront and explore the unknown world of objects or concepts. Many workers have noted the low level of self-esteem of poor children; successful programs make use of graded experiences of increasing difficulty or complexity or novelty (to ensure success) and have teachers who praise, encourage, or otherwise communicate his success to the child.

Although much yet remains to be discovered about the details of the optimal environment for intellectual growth in young disadvantaged children, perhaps enough has already been found to enable us to sketch in broad outline some of the teacher and program characteristics likely to encourage this growth.