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ABSTRACT

This report, one of several background papers for a comprehensive policy study of early childhood education, examines the effects of preschool experience on Illinois children from low income families. The 1980 U. S. Census for Illinois identified 81,959 preschool-age children (3 to 5 years old) from poverty-level families; 54 of these young children were not enrolled in a preschool program. A review of the literature in this paper focuses on factors which enable children to experience early success in school and which continue to have an effect on the quality of education a child receives in his later school years. Substantive descriptions of seven studies of preschool programs designed to serve children from low-income families are included. Highlighted are the outcomes of the early 1965 Project Head Start, the Follow Through program study in 1982, the 1978 study for the Educational Testing Service of Head Start programs, Cornell University's Consortium for Longitudinal Studies report in 1978, the still ongoing Illinois model program for the Early Prevention of School Failure Project, the 1982 Philadelphia School District study, and the Perry Preschool Project of 1984. A summary of these studies reporting preschool effects on various age groups of low income children shows that, during the preschool years, children demonstrate improved intellectual capacity, i.e., higher I.Q. scores. These initial gains, while not sustained beyond the second grade, appear to inhibit special education placement and give the children a short-term advantage in academic success during the first years of schooling. Throughout the elementary school years, the preschool participants demonstrate improved scholastic achievement and reduced frequency of special education placement. Finally, during the high school years and beyond, preschool participants have a lower rate of delinquency and/or criminal charges, a higher rate of high school graduation, and a higher rate of employment a year after graduation. (DST)

THE EFFECTIVENESS OF PRESCHOOL FOR CHILDREN FROM LOW-INCOME FAMILIES: A REVIEW OF THE LITERATURE

ILLINOIS STATE BOARD OF EDUCATION

Walter W. Naumer, Jr., Chairman
Illinois State Board of Education

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January, 1985

FOREWORD

In response to the Illinois State Board of Education, staff were directed to conduct a comprehensive study of early childhood education. This report on the effectiveness of preschool programs for children from low-income families was prepared by Edith Helmich, M.A., from the Research and Statistics Section, Department of Planning, Research and Evaluation. The interpretations and conclusions expressed herein do not necessarily reflect the position or policy of the State Board of Education.

Ted Sanders
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Introduction

The preschool years provide the foundation that children bring to school as kindergarten or first grade students. This critical experience with formal education is the first step in a journey through the elementary and secondary schools. Unfortunately, too many children are experiencing difficulties during this progression: below-average achievement, grade retention, behavior difficulties in the school environment and, eventually, a lack of commitment to education so that far too many leave school prior to high school graduation.

Concern with these problems and other related issues has been the basis for a comprehensive study of early childhood education by the Illinois State Board of Education. One focus of this effort has been to identify those factors which enable children to experience success in school from the very first years and which continue to have an effect on the quality of education a child receives during the elementary and secondary school years. During this process, differential needs for specific groups of children have been identified.

This report examines the effects of preschool experiences on children from low-income families, a group that has experienced disproportionate difficulty with formal schooling. In Illinois, the 1980 U.S. Census identified 308,325 school-age children (6 to 17 years old) from families with incomes below the poverty level (as defined by federal standards). Preschool children (3 to 5 years old) from poverty-level families numbered 81,959; 54% of these young children were not enrolled in a preschool program. Numerous research reports have established a relationship between poverty and school problems.

A report written for the U.S. Bureau of Education for the Handicapped by Farran, Haskins and Gallagher stated that poverty creates problems that interfere with the proper development of children, a conclusion that generates little or no argument either from the educational community or the public. Farran et al., however, contended that poverty's effect is so overwhelming to normal development that mild mental retardation is a frequent outcome. Poverty factors believed to contribute to the high incidence of mild retardation among children from low-income families included health, social and psychological problems. For example, poverty may preclude the provision of adequate prenatal care for the mother and be followed by inadequate nutrition during childhood and/or the lack of proper immunizations and medical care for the child. Equally important are social and psychological problems which are commonly found in families with low incomes: unemployed parents, substandard housing, and limited financial resources which provide few opportunities for enrichment activities outside the home. These conditions often lead to environments which are not only deficient in physical comforts but which foster marital discord, authoritative discipline, and a feeling of resignation or hopelessness about the future.

In terms of educational readiness for school learning activities, the children often lack social skills, vocabulary which is dependent on adult interaction or exposure to community resources, and familiarity with toys and games which develop cognitive skills. Farran et. al., indeed, described an environment that holds little promise for fostering optimum development for children during their early years prior to school entrance at age five.

Intervention in the lives of young children to prevent the consequences of adverse environments is not new and has existed for centuries. Specific programs designed to enrich the environments and foster normal development for low-income children, however, are relatively recent in the public school system. During the 1930s and 1940s, studies by Stoddard, Skeels and Skodak implied that the quality of the earliest environment had an effect on later adolescent and adult characteristics (Clarke, 1984). Although lacking a research base, the idea that preschool education programs were influential in preventing later school and social problems was promoted by Willman in 1932 (Clarke, 1984).

Since those early studies, recognition of the educational needs of low-income children has resulted in a number of attempts to compensate for early deprivation in childhood by providing preschool programs designed to enrich and foster the development of children. In 1964, Swift reported that:

> . . .the effectiveness of a given (preschool program). . .will depend on. . .its provision of experiences which supplement rather than duplicate experiences (the child) is receiving elsewhere.

Results from subsequent preschool intervention programs have been closely scrutinized and analyzed by the educational research community.

This report describes the outcomes of selected, modern-day preschool programs reported in the literature. Only substantive studies of programs designed to serve children from low-income homes are included to help insure that the findings will be documented with relevant and meaningful research data. This selectivity is purposeful and is meant to facilitate the development of educational policy for a specific group--children from low-income families.

Review of the Literature

The first large scale attempt to enhance the environment and development of preschool children in low-income homes was a federally funded governmental program entitled "Head Start." In 1965, Head Start programs were initiated nationally for the purposes of improving children's intellectual skills, fostering social and emotional development and helping meet their health and nutritional needs. Major emphasis was placed on parent and community involvement in the programs (Darlington et al., 1981).

Evolving in an era of great optimism and little practical experience on which to base programs, half-a-million children from poverty families were enrolled in Head Start during the first summer of the program (Clarke, 1984). After six to eight week's participation, impressive I.Q. and

achievement gains were reported for children in many Head Start Programs. Subsequent follow-up studies softened these glowing reports, and noted researchers such as Bronfenbrenner (1974) and Lazar and Darlington (1978) found that initial gains were short-term in nature and did not persist over subsequent school years.

A major study of Head Start was conducted in 1979 by Zigler and Valentine. Zigler made the following statement about the program.

> With such environmental sugarplums dancing in our heads, we actually thought we could compensate for the effects of several years of impoverishment as well as inoculate against the future ravages of such impoverishment, all by providing a six- or eight-week summer Head Start experience.

The researchers found, however, that there were two critical success factors identified through the Head Start programs: (1) parent's involvement in training their own children and (2) the necessity for schools to follow the program with further compensatory efforts.

In a review of more than 80 early childhood studies, Datta (1973) reported that the research supported the feasibility of positive effects for low-income children who were participants in preschool programs. Project Head Start was reported to have (1) increased the amount and quality of health care available to young children, (2) increased the amount of parental and community participation in the education of young children, (3) increased the number of children enrolled in preschool instruction, (4) increased the number of teachers with specific training in early childhood education, (5) increased the number of local changes and increased services to children and families, and (6) provided experiences which fostered child development. Direct child effects were reported in increased I.Q.'s, preschool readiness scores and motivation to achieve in school situations. Among these, I.Q. changes were of the least magnitude and motivational changes were of the greatest magnitude. Motivational changes were believed to be most influenced by environment and environmental support. There was no consensus on the "best" curriculum for low-income children although continuity in curriculum type seemed to be important for sustaining performance gains.

Additional data to support the effectiveness of preschool for low-income children was reported in the findings of a study conducted for the Educational Testing Service by Shipman (1978). This analysis of the effects of Head Start programs was based on a longitudinal study of children and mothers from four regionally distinct communities with a substantial proportion of low-income families whose children were eligible for Head Start. All non-physically handicapped, English-speaking children and their mothers were tested the year prior to expected first grade enrollment. These families were followed over a six-year period and comparisons were made on the basis of whether or not the children had attended a Head Start program prior to the first grade. Shipman's findings include the following.

1. The amount of parents' formal schooling had the strongest relationship to the child's scores. Program effects were greater for children whose parents had completed more years of school.

2. Changes in the mother's behavior over time contributed significantly to the child's achievement: educational attainment expectations for the child, use of informative-interactive responses to child's questions, mother's community participation and involvement, greater frequency of newspaper and magazine reading, and provision of more material resources in the home.

3. The child's early orientation to group activities and improved readiness for school tasks had a positive influence on subsequent school performance in reading, mathematics and test scores. Preschool effects contributed to success in the beginning school years.

4. Although there was no apparent effect on third-grade test performance for Head Start participants, the mothers of Head Start participants had higher feelings of effectiveness and attitudes toward education/school than did the mothers of children who did not enroll their eligible children in Head Start. More Head Start mothers had taken courses to further their education.

5. Changes in family interactions contributed significantly to the child's cognitive development. The mother's level of aspiration may have been directly tied to the child's early signs of intellectual alertness. The parents' participation in early educational intervention reduced the amount of alienation toward the educational system, so that the parents provided the child with more adequate and useful images of the school, teacher and student role.

Thus, over the course of several years, the research data consistently reflected short-term cognitive gains and long-term motivational and attitudinal changes for Head Start participants. In response to these findings, a supplemental, government-funded program, "Follow-Through", was initiated to extend the preschool intervention for Head Start participants into the primary grades one through three. Becker and Gersten (1982) found that Follow-Through participants continued to show significantly higher achievement in specific areas of reading, math and science. The key seemed to be that if students learned skills and problem-solving strategies well, they did not lose this knowledge. However, if intervention did not continue into the intermediate grades, low-income students were likely to lose ground against their middle-income peers.

Supportive evidence for the positive effects of preschool continued to accumulate. Twelve members of a Consortium for Longitudinal Studies located at Cornell University contributed to a summary report by Lazar and Darlington (1978) which compared selected educational outcomes for low-income children participating in preschool programs during the early and mid 1960s. Original data from the 60's were combined with follow-up data collected in 1976-77, and these data were analyzed by an independent research group at Cornell University. The secondary analysis was conducted

to evaluate each program separately and results were pooled statistically to determine whether there was a significant overall effect of preschool programs on children's educational performance during later school years.

The conclusion reached was that preschool affected low-income children in ways that were relevant to school performance, but not related to cognitive skills and abilities. For example, I.Q. gains were reported for six-year-old children who had participated in preschool, but these gains were not maintained over the long term. Achievement gains, however, continued to be maintained during the subsequent school years when preschool participants were compared to the control groups. Program children were less likely to be retained in grade and less likely to be assigned to special education classes than were control children. Further, the program children were significantly less likely to be classified as underachievers in their later school careers and were more likely than control children to meet the minimal standards of their schools. In sum, it was concluded that early educational experiences positively affected later school performance independently of the effects of the early background measures.

A well-known and still ongoing early childhood education program developed in Illinois and selected as a model program for national dissemination is the Early Prevention of School Failure Project. Strand and Werner (1981) conducted a study of schools across the nation where this program was "adopted" or replicated for use in other districts. Evaluation of the Early Prevention of School Failure Projects showed positive relationships between student achievement gains and several variables. For example, larger districts with high percentages of low-income and minority students were more likely to show larger gains in student achievement than were small districts with low percentages of low-income and minority students. Further, there was greater gain for high-risk than for moderate risk students and greater gain for districts where parent volunteers were used than for districts that did not use parent volunteers. The program's effectiveness was more pronounced for low-income children, which suggests that their need for the program was greater than that of children from more affluent families.

More recently, preliminary results from a longitudinal study conducted by the Philadelphia School District (1982) reported that the district's Prekindergarten Head Start Program had been effective in raising the educational attainments of low-income children (approximately 2,100 students in grades K-3). Participants in this full-day, ten-month preschool program were exclusively from poverty-level homes. The participants exceeded national achievement norms at kindergarten through third grade in mathematics and at kindergarten through second grade in reading achievement. Participants' scores compared favorably to the district's aggregate norm scores (in most instances, exceeding or equaling district scores), which included a cross section of children from various socioeconomic levels.

Finally, the most recent study regarding preschool, low-income children is from the Perry Preschool Project (Berrueta-Clement et al., 1984). The Perry Preschool Project began in 1962 as an academically oriented program and was modified during the early years to a developmental orientation. Children attended one or two years of preschool classes for 12 1/2 hours per week for

30 weeks each year, and a home visitor met with the mother for 1 1/2 hours per week. The children in the study were selected at age 3 or 4, had IQ's of 60-90, and were from families of low socioeconomic status. The 123 black children in the study were assigned to one of two groups: those who were selected to attend preschool and those who were not. This Michigan program has been evaluated on at least a yearly basis since its beginning 22 years ago. The longitudinal data collected are believed to provide the most comprehensive data on the effects of preschool education for low-income children.

Earlier reports on the study found that during the school years, those children who attended preschool (compared to those with no preschool experience) had, on the average, higher achievement test scores, higher grade-point averages, fewer failing grades, fewer absences, better attitudes and behavior, a higher rate of graduation from high school and a more frequent enrollment in college or vocational training. Further, fewer children with preschool experience were retained in grade and only half as many were placed in special education classes, compared to children with no preschool. Interviews at age 19 revealed that the preschool participants were more likely to be employed or enrolled in post-high-school education, required fewer public assistance resources, had fewer criminal convictions and were less frequently the parents of illegitimate children. The positive nature of these findings is compounded when consideration is given to the fact that after the preschool years, neither those who participated or did not participate in preschool were given special attention in their daily lives. All of the children in the original study group attended the same schools, had the same group of teachers and lived through the same street and neighborhood experiences. The preschool participants seem to have been positively influenced by the preschool experience in their lives for the 15 years that have passed since preschool.

In addition, the latest Perry Preschool report contained a comparative review of seven longitudinal studies on the effects of preschool on low-income children. This review reported the following:

1. Six of the seven studies show that early childhood education can have an immediate and positive effect on children's intellectual performance, i.e., I.Q. scores.

2. Six of the studies show that early childhood education can reduce by half placement in special education classes.

3. Three studies show that early childhood education can help prevent youngsters from dropping out of high school.

4. There is mixed evidence from some of the studies that early childhood education can increase scholastic achievement in various subject areas. Gains in specific subjects are not consistently reported.

5. The Perry Preschool study is the only study, as yet, to show that early childhood education can help reduce or prevent delinquency or teenage pregnancy and help improve the likelihood of employment during the year after high school. It can be added that although the Perry Preschool study is the only one of these studies to conduct a cost-benefit

analysis, the strength of the findings about scholastic placement and high school dropout rates suggests that similar economic benefits would be found in the other studies.

A summary of these seven independently conducted studies reporting documented effects of preschool on various age-groups of low-income children shows that during the early childhood or preschool years, children demonstrate improved intellectual capacity, i.e., higher IQ scores. These initial gains, while not sustained beyond the second grade, appear to inhibit special education placement and give the children a short-term advantage in academic success during the first years of schooling, as compared to children with similar backgrounds who did not attend preschool. Throughout the elementary school years, the preschool participants demonstrate improved scholastic achievement and reduced frequency of special education placement. Finally, during the high school years and beyond, preschool participants have a lower rate of delinquency and/or criminal charges, a higher rate of high school graduation, and a higher rate of employment a year after graduation.

In contrast to the positive effects reported for low-income children who attend preschool programs, McKinnon et al. (1982) reported that middle-class children's school functioning is not affected by preschool attendance. A comparison of the social, motor and academic progress of 201 middle-class children indicated that the children seemed to function at the same level during the primary grades, regardless of preschool background. Apparently, these middle-class children were provided with sufficient and appropriate experiences in the home environment or through family initiated activities to allow for normal child development during the preschool years.

Many factors, such as the higher educational attainments of middle-class parents, more favorable living conditions, higher aspirations for children, and a more stimulating environment (educational toys, planned educational experiences, i.e., trips to museums, zoo, etc.) may explain these differences in the effects of preschool for middle- and low-income children. Regardless of the specific factors involved, however, McKinnon's study supports the belief that low-income children receive greater measurable benefits from preschool than do their more affluent, middle-class peers.

Summary and Analysis

The evolution of preschool programs for low-income children during the twenty years since Head Start Programs were funded by the federal government has resulted in a better understanding of how the early childhood years affect later school performance and post-high-school success. Initially, researchers were seeking to determine whether preschool intervention increased the cognitive capacities, i.e., IQ, of children from poverty environments. Initial reports of the program's failure to sustain such cognitive gains soon gave way to the reports that attitudinal and motivational changes were not only sustained, but were causative factors in long-term educational benefits for low-income children. Further, the resulting educational success has been reported to positively affect the children's social adjustment and later economic success. It would appear

that early success in school tends to increase the probability of continued expectations of success, and, thus, the aspirations and initial capabilities of children are raised sufficiently to generate increased efforts by the children to succeed in school. Basically, a success cycle is initiated to counteract the poverty cycle of despair and hopelessness. Numerous longitudinal studies have reported data to support this effect.

The research leaves no doubt that poverty environments often create conditions that are inadequate for normal child development and can directly affect the children's probability of success during the school years and beyond. Since every environment to which children are exposed is a learning environment, the goal of preschool programs is to create an environment in which the children will learn the type of skills and attitudes which will compensate for the deficiencies of a poverty-based home environment.

These children are clearly at high risk for school failure in terms of both academic and social competencies and are at high risk for later social maladjustment in terms of unemployment, dependency on welfare programs, criminal involvement and, consequently, perpetuation of a low-income socioeconomic status into the next generation. The introduction of a new dimension into the child's poverty environment through participation in a high-quality preschool has direct effects on the child. The stimulation of an enriched environment with sequential learning activities directly expands the child's opportunity to learn new skills and concepts. The child's accomplishments in the program create positive self-concept feelings in the child and are reported to increase the parents' awareness of the child's capabilities. Parents are reported to respond favorably to the school as a result and, further, tend to raise their levels of future aspirations and expectations for the child both in school and beyond. This indirect family effect has been shown to be predictive of greater school success for children.

The effects of poverty are pervasive, and it is important to realize that no single intervention will eliminate the impact of the environmental deprivations which may occur prior to preschool or which continue during the out-of-school hours. However, there is convincing evidence that a high-quality preschool experience can compensate for or modify the effects of poverty by a degree sufficient to positively affect the lives of many children. Provision of preschool programs for low-income children has been shown to be an educationally sound practice that can be expected to increase achievement during the school years and beyond.

Conclusions

Preschool programs for low-income children yield personal benefits for the child and substantial long-term benefits for society. Intervention programs that expose the children to high-quality, enriched learning environments have long-term attitudinal effects that persist during the years of public education and beyond.

Because of the high-risk nature of poverty environments, children from low-income families are particularly receptive and responsive to high-quality preschool programs. Without preschool services, these children are more likely to require special services during the school years that will yield less impressive results and that have been shown to be more costly and disruptive to the educational process.

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