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ABSTRACT

This report documents a preliminary effort to compile, analyze, and present data relevant to the feasibility of implementing a comprehensive preschool program within the St. Louis public school system. Sections of the study aim to provide (1) definition of and perspective on preschool education, (2) determination of the demographic "need" for preschools within St. Louis, (3) review of the preschool literature, (4) results of three separate field investigations, (5) analysis of different theoretical/curricular models of preschools, and (6) presentation of models appropriate to the school system, including examination of the relative merits, deficiencies, costs, and commonalities of two types of preschool: regular-day and extended-day programs. The section devoted to field investigations reports a survey of existing preschool programs in 20 St. Louis suburban school districts, offers insight into the efficacy of a presently operating preschool in reducing grade retention, and reports on observations and ratings of the environments of 15 local preschools. Appendices provide a summary of studies included in the "Persistence of Preschool Effects Report, 1977," a summary of observations performed and other data gathered from 15 St. Louis preschool centers. (RH)

A PROSPECTUS ON PRESCHOOL PROGRAMS

July, 1981

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"THE TEACHERS WANT US ALL TO BE QUIET SO THEY KNOW THAT WE CAN ALL BE QUIET, AND LISTEN TO THEM."

comment by a preschooler to an evaluator who was rating the environment

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INTRODUCTION

This report is a preliminary effort to compile, analyze, and present relevant data as to the appropriateness and feasibility of implementing a comprehensive preschool program within the St. Louis Public School System. The present preschool offerings of the district, though limited in number (9), seem to provide beneficial experiences for their participants. While some information about the programs now in operation will be provided, it was felt that a more extensive examination of the preschool arena needed to be undertaken. This report will address the following general areas: 1) definition and perspective of preschool education, 2) determination of demographic "need" for preschools within St. Louis, 3) review of the preschool literature, 4) the results of three separate field investigations, 5) a context analysis of different theoretical/curricular models of preschools, and 6) presentation of models appropriate to the school system. Hopefully, these considerations, which are of both pedagogic and pragmatic concern, will provide the requisite data for sound decisions regarding the future of preschools in the St. Louis Public School System.

Since World War II phenomenal growth has occurred in the care of young children outside the home. The Office of Child Development estimates that approximately 7.5 million children are presently receiving some type of day-care services in the United States. Historically, day-care services of any type have been most popular during times of national crisis (World Wars) when women were desperately needed in the work force. Since 1970, however, the labor force participation rate of women has increased by 17% without the demands of any specific crisis (Community Development Agency Report, 1980). Table 1 presents national enrollment figures for nursery school and kindergarten from 1968-1978. It is illustrative of the growth in child-care in recent years even though it is of a particular type, and even in spite of the declining birth rate.

TABLE 1

NURSERY SCHOOL AND KINDERGARTEN ENROLLMENT 1968-1978

Number of Children Enrolled in Nursery School and Kingergarten, 1968-1978 .

	Nursery School			Kindergarten		
Year	Public	Private	Both	Public	Private	Both
1968	268,000	554,000	816,000*	2,709,000	559,000	3,268,000
1969	245,000	615,000	860,000	2,682,000	594,000	3,276,000
1970	333,000	763,000	1,096,000	2,647,000	536,000	3,183,000
1971	317,000	749,000	1,066,000	2,689,000	574,000	3,263,000
1972	402,000	881,000	1,283,000	2,636,000	499,000	3,135,000
1973	400,000	924,000	1,324,000	2,582,000	493,000	3,074,000*
1974	423,000	1,184,000	1,607,000	2,726,000	526,000	3,252,000
1975	574,000	1,174,000	1,748,000	2,851,000	542,000	3,393,000
1976	476,000	1,050,000	1,526,000	2,962,000	528,000	3,490,000
1977	562,000	1,056,000	1,618,000	2,665,000	526,000	3,191,000
1978	587,000	1,237,000	1,824,000	2,493,000	496,000	2,989,000

Source: U.S. Department of Commerce. Bureau of the Census. School Enrollment-Social and Economic Characteristics of Students: October, 1978. Current Population Reports. Population Characteristics. Series P-20. No. 335 (Washington, D.C.: Government Printing Office, April, 1979), p. 42.

*These figures, copied accurately from the original table, do not equal the total of public and private enrollment.

According to a recent report by the Community Development Agency, in the city of St. Louis, the labor force participation rate of women has grown by 20% for white females and 35% for black females-approximately 28% overall during the past ten years. In addition, most of the growth in the labor force participation of women has occurred among mothers. For example, in 1950 only 22% of mothers with children under the age of 18 worked. Presently, more than 50% of St. Louis mothers with children under 18 are in the labor force. Women in St. Louis are likely to be working and likely to be in need of some type of day-care services for their children.

The trend towards out-of-the-home care for children has evoked comment amongst both its detractors and supporters. There are those who feel that day-care of any sort is unnecessary, and that indeed the pronounced drift in this direction is portent of the eventual ripping of the very fabric of American society. Others, less apocalyptic, view the growth as natural in light of an evolving, egalitarian, service-oriented society. Regardless of sentiment, however, it is an observable reality that increasing numbers of preschool age children are spending a considerable amount of time outside the home. The extent of the value or benefits of such outside the home experiences for the child, the caretaker of the child, and society in general, has yet to be fully adjudged.

What are kindergarten, preschool, headstart, nursery programs, etc., and how do they differ, if at all? Table 2 provides some general definitions of various types of early childhood programs.

TABLE 2

TYPES OF EARLY CHILDHOOD PROGRAMS

Back yard groups/mobile preschools	Programs for small groups of neighborhood prekindergarten children, conducted in the home of one of the children; may be coordinated by a professional and implemented by paraprofessionals and/or mothers
Child-care centers (or day-care centers)	Programs of four or more hours in duration; may accommodate varying ages, from infants through elementary school age (after school care)
Family day care	Child care provided for a small group of children in the home of the caregiver who may or may not have had training for the role; may accommodate varying ages, from infants through school age (after-school care)
Head Start	Program (under federal support) for "disadvantaged" children prior to entrance in regular public school programs; may be half-day or full day; involves compreshensive services including nutritional and medical care; anticipates parental involvement
Home programs (home visitor)	Programs for the direct instruction of a child and/or the parent (to benefit the child); professional (classroom teacher or other) or trained paraprofessional makes regular home visits; implemented at range of ages, either in connection with or separately from an in-class program
Hospital schools	Program within hospital settings; may involve group attendance in a "classroom" or "playroom" and/or one-to-one teaching of children in their quarters
Kindergarten	Program generally restricted to children under age six for the year prior to entrance into first grade
Laboratory/demonstration schools	Programs within training and/or research settings such as universities, colleges, and institutes
Nursery school	Program provided for children ages two, three, and/or four; typically a half-day program (two to three hours); the term "nursery school" traditionally refers to private or parent cooperative programs rather than to publicly supported programs

TABLE 2 (Cont.)

TYPES OF EARLY CHILDHOOD PROGRAMS

Parent-child center	Programs (under federal support) providing health, education, and social services for impoverished parents and their infants and toddlers
Preprimary	Program generally restricted to children under the age of six or seven for the years prior to entrance into first grade; may encompass what is typically identified to prekindergarten and kindergarten
Primary	Program generally restricted to children ages six, seven, and eight in grades (or equivalents thereof) one, two, and three

The once subtle connotations of the terms "day-care" and "preschool" have suffered somewhat due to their increasing generic usage. Regional and educational differences in interpretation have also served to further obfuscate the meaning of these terms. For the purpose of this report, it is important that some minimum delineation be drawn between the types of programs.

The primary function of day-care programs is to provide custodial care for preschool age children. The form and style of how that care is provided varies greatly. While developmental experiences for the participant children can and often do occur in the day-care setting, these experiences are typically auxiliary to the primary care function. Often, day-care experiences lack the theoretical-based cohesiveness that is reflective of preschool programs.

The primary function of preschool programs is to provide systematic developmental experiences for the participating children. Although in many instances, these programs can also be considered as providing custodial care akin to that of day-care, that care or benefit is of an auxiliary nature. Preschools typically espouse an educational philosophy that is manifested in the structured curriculum of the program.

Simplistically put, the emphasis of preschool programs is on the developmental growth of the participant child, while the emphasis of day-care programs is on the service provided to the caretaker of the child. Within this report, the terms "preschool" and "day-care" will be used somewhat interchangeably. The emphasis is, however, on the formalized educational offerings of preschool. Secondary to that emphasis is a value placed on the custodial care provided as function of preschool education.

Regardless of the label, there seems to be growing agreement and evidence that early childhood educational experiences are beneficial to the participants and

to society in general. The participant child, regardless of curriculum or lack of it, is afforded an opportunity to interact with others outside the home and to hopefully establish the necessary self-confidence for later success in life. Other attitudes that can be fostered in a young child might be equally as important, but yet even more difficult to measure. For example, a child discovering an artistic talent or developing a healthy curiosity about new experiences, could also exact a lifetime's benefit. The parents or caretakers of the young child can be employed or otherwise engaged in productive endeavor while the child is participating in the program. The benefits to society in general are a bit more oblique, but such aspects as reduced schooling cost for children, increased tax revenue from working parents, and reduced delinquency rates, are just a few hypothesized advantages of early childhood education.

In recent years, the federal government through various expenditures, has attempted to improve the lives of low and middle income youngsters. An estimated $715 million in Title XX funds will be expended in 1981. Headstart programs will probably exceed $820 million in 1981. Other funding sources will also contribute to the federal share of day-care type services. While these monies and accompanying programs are not a panacea for the myriad of ills resulting from a diverse social structure, they are thought to make a difference.

Even with recent and more systematic data now available, it is difficult to ascertain if a particular curricular/theoretical approach is superior. The results of most of the early investigations were partially confounded by the philosophical biases of many of the researchers. Also, it now seems to be more apparent that longitudinal data are needed to fully assess the impact of preschool type experiences.

Two basic questions can be generated regarding preschool education: 1) does the

preschool experience make a difference in the life of the participant, and 2) if preschools do make a difference, does it matter which curricular theory is employed? These two questions capture the essence of the pragmatic and pedagogic concern about the preschool experience.

Summary

In this first portion of the report, a brief overview has been presented of the remarkable growth in the care of young children outside the home. It was noted that this growth paralleled that of women's participation in the labor force. Some quasi-operational definitions of "day-care" and "preschool" programs were tendered. Generally agreed upon benefits of early childhood education were discussed, and basic questions about such education were asked. The next section will consist of an investigation as to whether in fact there is demographic need for preschool programs in St. Louis.

NEEDS ASSESSMENT

Decisions in the public sector often do not fit neatly into the same kinds of analytic boxes that are so useful in private market situations. Choices in a public school setting typically involve multi-attribute kinds of outcomes, none of which can be distilled down to anything near resembling a profit. Still, decisions have to be made. A decision as to whether or not to implement a preschool program on a systemwide basis is in part dependent on the identifiable market, and perceived demand for that educational service.

During one of the interviews carried out as part of the preparation for this report, a local expert in day-care related services described St. Louis as, "A need area with a small market". He went on to explain that day-care/preschool services were direly needed, but often those most in need could least afford the cost. So, while the service may be valuable, there was little incentive from a profit motive perspective to institute such kinds of programs.

He also stated a few other observations that he had gleaned from his experience. He noted that the greatest need for day-care services was in the area just north of the city's central corridor. This general area would be bounded on the south by Delmar, on the west by Kingshighway, on the north by Carter, and on the east by Glasgow. He felt that parents preferred centers or schools close to their residences as opposed to close to their place of work. Finally, he indicated that the largest market or need in this area was for care of children under the age of 2, after school care, and summer care.

Much of the following information presented in this part of the report was extracted from two documents: 1) An Analysis of the Provision of Day Care in the City of St. Louis-Community Development Agency, November 1980, and 2) The Need for Day Care in the St, Louis Metro Area-United Way, 1976. Additional data were

provided by the Office of Budget Planning and Development, St. Louis Public Schools.

An obvious determining factor in the need for preschool education is the number of children available to participate in such an experience. Table 3 provides population figures for children ages 0-4 in St. Louis for 1970-1978.

TABLE 3

Number of Children Ages 0-4 in the city of St. Louis, 1970-1978

Year	Total Population	# of Children Ages 0-4	% of Total Population
1970	622,236	49,973	8
1972	600,757	48,931	8
1974	559,000	40,650	7
1976	531,300	38,770	7
1978	511,000	37,610	7

Source: Biostatistical Service, St. Louis City Division of Health

As may be noted in Table 3, the overall number of children in this age range declined by approximately 25% during this eight year period. It can also be noted that the rate of decline slowed somewhat in the more recent years.

Another area of interest for the service provider of preschools is the availability of Title XX funds. Any child who is receiving aid to dependent children (ADC) is automatically eligible for Title XX services, which may include day-care/preschool. While specific information is not available regarding the number of eligible ADC children at preschool age, Table 4 provides some generalized information as to the overall number of ADC families and children in St. Louis.

TABLE 4

Number of ADC Families and Children in City of St. Louis, 1973-1979

Year	No. of Families	No. of Children
1973	24,776	65,063
1974	26,250	66,478
1975	26,985	66,179
1976	27,413	63,039
1977	27,273	62,457
1978	21,721	52,999
1979	20,705	50,544

Source: Missouri Department of Social Services
Division of Family Services

Innumerable factors come into play when attempting to project enrollment figures for preschool. If the school district was to implement an extensive preschool program, such variables as: locations, cost, time of operation, acceptable age(s) of participants, type of program offering, advertising, whether it was a desegregation tool, etc., could all have an effect on the participation rate. Table 5 provides a projected estimate of preschool enrollment through 1985.

TABLE 5

Projected Preschool Enrollment-
Systemwide Implementation, 1981-1985

Year	Resident Births (5 yrs. Previous)*	Entering Preschool (4 yr. olds only)**	Entering Preschool (3 & 4 yr. olds)***	Entering Kindergarten*
81-82	7,871	4,734	7,278	4,117
82-83	8,160	4,587	7,139	4,268
83-84	7,908	4,602	7,150	4,136
84-85	7,933	4,595	7,163	4,149
85-86	7,921	4,630	7,183	4,143

*Source: St. Louis Board of Education Student Enrollment Statistics Five Year Projection-Budget Planning & Development, January 1981.

**Based on a mean class survival ratio of .9016 (the mean survival ratio for 1970-1980) of the projected kindergarten enrollment

***Based on a class survival ratio of .9016 and assumes that only 50% of eligible 3 yr. olds attend preschool

The derivation of the figures in Table 5 was based on a number of presuppositions. First, the projected resident births (5 years previous) and the projected kindergarten enrollment for 1981-1985 were extracted from a table prepared by Division of Budget Planning and Development. Next, the mean class survival ratio (.9016) was calculated for the ten year period from 1970-1980. The survival ratio represents the percentage of the number of students at a given grade level who went on to the next grade level the ensuing year. Lastly, the mean class survival ratio was applied to the projected enrollment figures for kindergarten, thus providing retrospective estimates of the available preschool participants. Only 50% of the projected available 3 year olds were included in the enrollment figures for the systemwide preschool program model that included 3 and 4 year olds. It was assumed that the rate of participation of the younger children would be that much lower.

While Table 5 provides a general estimate as to the number of potential available participants in a preschool program, it cannot fully characterize the relative effects of the demand for such a program. For example, if the school district was to implement a preschool program, it would be difficult to estimate how many participants would be totally new to the preschool education experience, and how many would be just substituting the public school program for some other program. The implementation of the program would create its own differential demand effects.

Summary

General indicators of the need for preschool services within the city of St. Louis would include: total number of preschool age children, increased labor force participation on the part of women, increased numbers of female-headed households, and large concentrations of ADC households. Based on these indicators in conjunction with the projected enrollment data of the Budget Planning & Development Division, there seems to be an adequate demographic need for preschool programs. The next section will provide an overview of the early childhood education literature.

REVIEW OF PRESCHOOL LITERATURE

Historically and traditionally, programs designed for children prior to their first grade experience have tended to emphasize social and emotional development. In recent years the purpose of preschool education has been expanded to also include cognitive development. Morrison (1976) described the aim of these programs, some of them encouraged by the Office of Economic Opportunity, as attempting to break the cycle of poverty by better preparing the child for the educational experiences that are expected of first graders. Increased educational opportunities and a more positive self-image are two of the major objectives of many of these early childhood programs. Takanishi (1979) reported that preschool educators typically are not interested in their students making large IQ score gains. So, in some respects, standardized tests may not be appropriate for evaluating these programs. Exploration of other appraisal techniques follows from Zimiles' (1977) caution that school is an environment that has significant influences on the child's total psychological development. School is viewed then as much more than a practice area for scholastic proficiency. It is an arena for practicing and developing life skills. As the philosophy of preschool education has evolved, generalized problem-solving tasks such as those suggested by Piaget and Bruner, have taken precedence over the more focused achievement of specific skills or academic material.

The present educational arguments for expanding preschools in urban areas are strikingly similar to those advanced a 100 years ago for incorporating kindergartens into the regular school program. That is, both programs were viewed as solutions for some of the educational and social needs of underprivileged students.

The history of early childhood education can be traced backed to the mid 1800's. It was begun by Pestalozzi, Friedrick Froebel, and Maria Montessori. Froebel, a Swiss educator, developed the first kindergartens in Europe in the 1830's and

his teachings came to America in the 1850's. These German-language play-schools were opened throughout the midwest, including St. Louis, by German immigrants. The first private non-Germanic kindergarten opened in Boston in 1860. The entire concept was very popular and the movement grew rapidly.

Often the thrust of the programs was not only the improvement of the child, but a readjustment of the child to the social environment. These changes or molding of the child were deemed necessary because of the "immigrant problem". All of these early educators noted the problems of teaching children with traditional methods; yet, as each was also interested in moving toward a more equal society, they felt that they could justify their approach on altruistic grounds.

According to the book, The Public and the School: Shaping the St. Louis System 1838-1920, St. Louis was at the forefront of the early childhood education movement. In 1873, mostly through the efforts of two individuals, St. Louis became the first public school system to institute kindergartens. The following is a general chronology of the events that led up to that momentous educational decision.

Superintendent William Torry Harris was the first person to see possiblities for kindergartens for the city's (St. Louis) public schools. Harris had come to St. Louis in 1868 after having been chief officer of one of the nation's largest school district. He immediately had "block reports" done and found that some children in poverty areas were only in school a total of three years during their entire educational career. In the hopes that underprivileged students would benefit from additional time in the disciplined and moral school setting, Harris proposed to the Board that the minimum school age of six be lowered.

Instead, the Board decided to raise the minimum age to seven because some schools in some areas were becoming overcrowded. Harris did not give up. The next year he made another bid to lower the minimum age, this time specifically mentioning

the kindergarten idea because it had "valuable hints" for dealing with slum children. His proposal included setting up an experimental kindergarten class to test his theories about it being a solution to some of the city's problems.

The following year, Harris asked for decisive action and no longer pressed for an experimental classroom. He forthrightly advocated kindergartens as a fixed feature of the school system. In his Annual Reports to the Board, he defined the obligation of the system to reach the total population, and stressed that children who grew up "in poverty and crime" required the most immediate attention. He felt that the role of the family was diminishing and that slum families especially had lost control of their children as early as age three.

Susan Blow, a young woman from a prominent local family, entered the movement from another avenue. After having been educated in the finest schools, she felt a "missionary zeal" to somehow aid underprivileged children. She returned to St. Louis after a sojourn of several years in the East and became a substitute in the public school system. Blow learned of Superintendent Harris' desire to start kindergartens, contacted him, and expressed a desire to be a part of the program. With encouragement from Harris, Miss Blow went to New York to study kindergarten methods with Maria Kraus-Boelte, a leader of the movement from Holland.

Together Blow and Kraus-Boelte designed a very complete developmental curriculum for kindergartens, combining social skills with manipulation, manual dexterity, measurement skills, and intellectual activities. They expected that the immediate impact of kindergarten would be to serve as an "antidote" to the evils of city streets, and the long-term influence would be to contribute to a better disciplined and mechanically skilled work force. On this basis, the kindergarten received the support of the Board and was implemented in most sections of the city. From 1873 to 1880 it grew from an experiment of 68 pupils, conducted

by Susan Blow and 3 unpaid assistants, to a network of 166 paid teachers and 60 unpaid assistants serving 7,828 children.

The parallels between the original impetus for kindergartens, and the resurgence of early childhood education in the 1960's are noteworthy. In both instances, early education experiences were thought to be a panacea for the ills of an inequitable society. In both instances, the foci were on children who grew up in "poverty and crime." The idealistic expectations of Harris and Blow are not too dissimiliar from the original hopes for the Head Start Program.

What are realistic expectations of early education programs? Two recent investigations, The Persistence of Preschool Effects-A National Collaborative Study by Twelve Research Groups-chaired by Irving Lazar, and Young Children Grow Up: The Effects of the Perry Preschool Program on Youths Through Age 15 by L. J. Schweinhart and D. P. Weikart, probably provide the most rigorous examination of the impact of preschool education. The findings of these two studies, as well as others, will be discussed in depth.

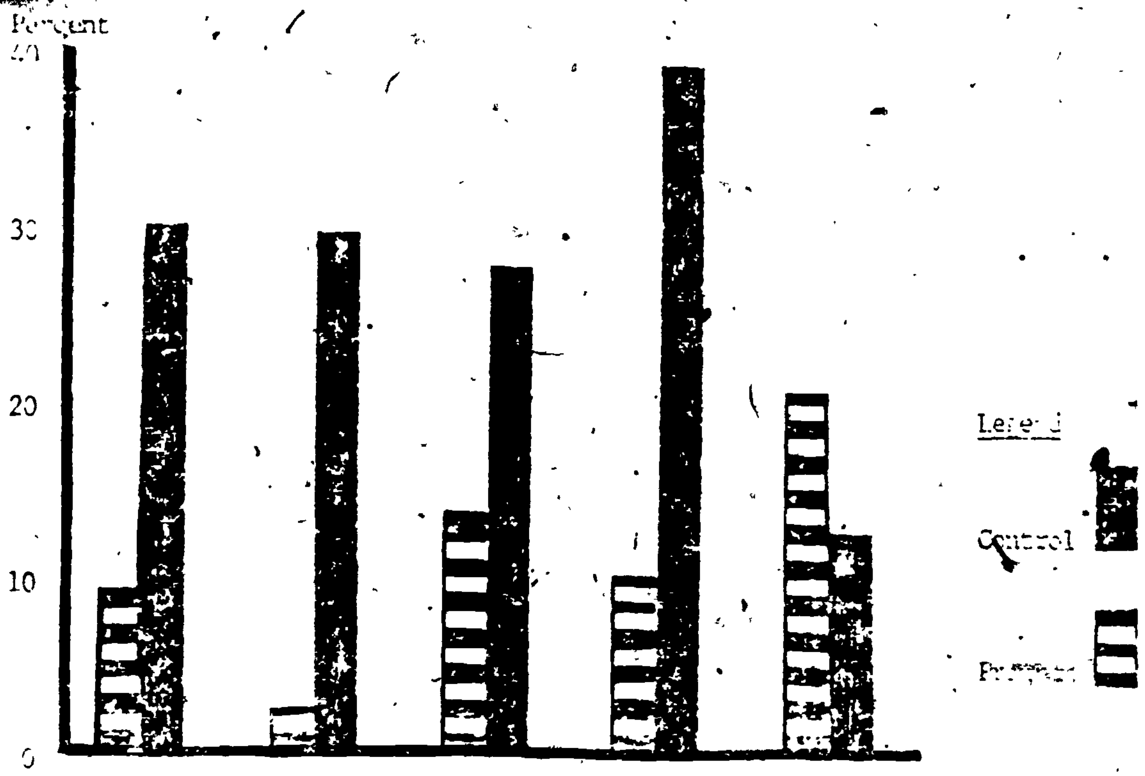
The research study by Lazar which summarized the findings of 14 independent longitudinal studies of low-income children who participated in experimental infant and preschool programs throughout the country provided evidence that: 1) program children were not assigned to special education classes as often as their comparison groups, 2) program children were held back in school less often than their comparison groups, and 3) program children surpass their controls on Stanford Binet IQ scores for at least three years after the end of the program.

The fourteen studies used in the Lazar report shared various characteristics. Most (87%) of the low-income children who participated in the experimental infant and preschool programs were black. The studies were carried out in both urban and rural areas. All of the studies had been carefully planned and included: staff training, program supervision, periodic evaluation, and at least some follow-up

of the involved children. Also, all of the studies had selected in advance a control or comparison group. Appendix I provides a descriptive summary of the studies.

Figures 1 and 2 provide graphic evidence of the effect of five projects upon the level of special education class assignment.

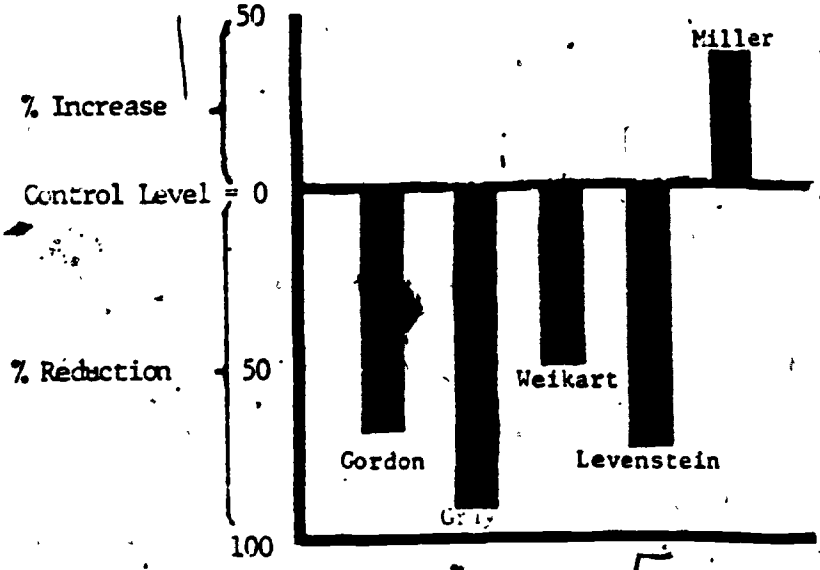
FIGURE 1: PERCENT OF PROGRAM AND CONTROL CHILDREN IN SPECIAL EDUCATION



Totals	Coreon	Gray	Weikart	Levenstein	Miller
Program Children	[illegible]	5	58	69	[illegible]
Control Children	20	17	65	23	16
Significance	.052	.017	.096	.004	.669

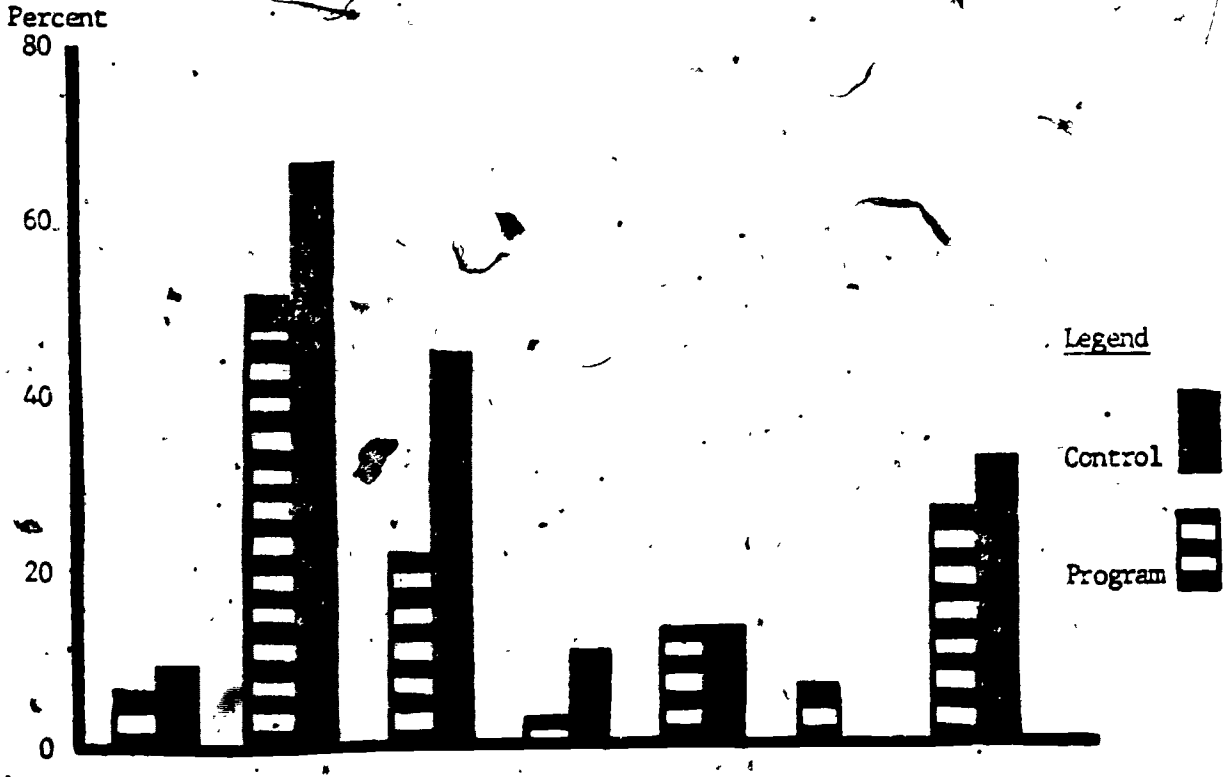
Pooled Significance Level p=<.0002 (two-tailed)

FIGURE 2: PERCENTAGE REDUCTION IN CHILDREN IN SPECIAL EDUCATION



The Miller project was the only one in which a program advantage was not found. Figures 3 and 4 provide information regarding the impact of seven projects upon the rate of grade retention.

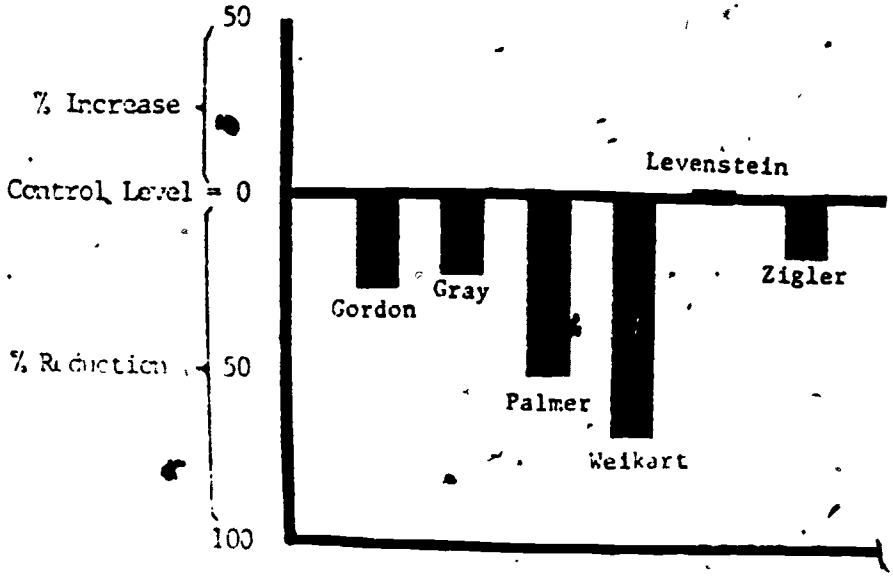
FIGURE 3: PERCENT OF PROGRAM AND CONTROL CHILDREN HELD BACK A GRADE



Totals	Gordon	Gray	Palmer	Weikart	Levenstein	Miller	Zigler
Program Children	70	33	131	58	68	105	79
Control Children	21	12	42	65	23	18	65
Significance	.920	.569	.001	.226	.984	.555	.570

Pooled Significance Level p=<.048 (two-tailed)

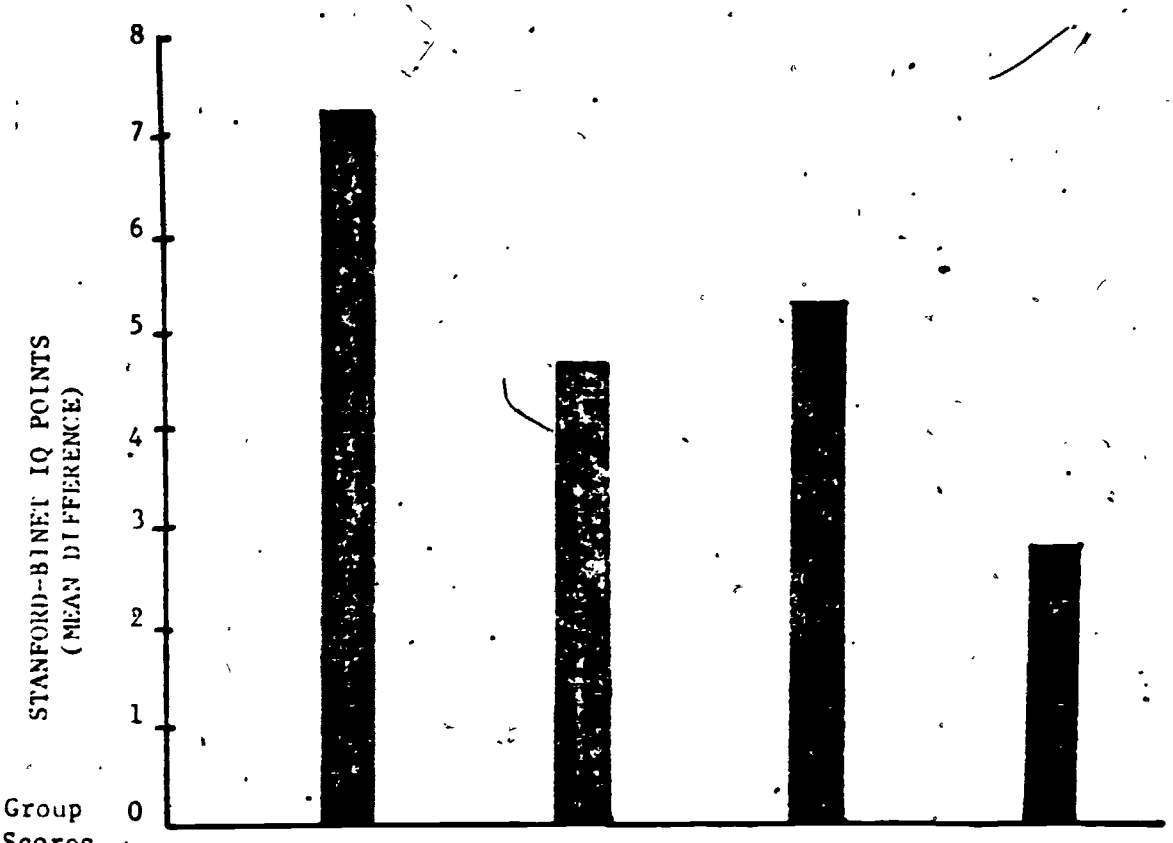
FIGURE 4: PERCENTAGE REDUCTION IN CHILDREN HELD BACK IN GRADE



In all but one study, there was a greater percentage of "failures" among the control than among the program children. While generally the evidence for reduction of grade retentions is not as compelling as that for special education, it does seem to demonstrate that early education can reduce grade retentions.

Figure 5 provides a display of the differences in mean IQ scores for the program and control groups over time.

FIGURE 5: DIFFERENCES IN MEAN IQ SCORES COMPARING PROGRAM AND CONTROL OVER TIME



Pooled Significance Levels (two-tailed)*	$p < .0000$	$p < .0000$	$p < .0000$	$p < .0002$

* When the results are pooled statistically, the differences between program and control children is highly significant at each posttest time period.

The evidence and analysis presented in Figure 5 indicate that early education can provide a measurable increase in IQ scores and that such an impact can last for several years.

As part of the follow-up of the Lazar Report, interviews were administered to project children and parents. A preliminary analysis of these data seems to indicate: 1) a slight tendency for more control than project children to drop out of school, and a trend for control children who drop out to do so at a younger

age than program dropouts, 2) that the educational aspirations of the two groups of children did not differ, and 3) that project children have a better sense of mastery of school work than did control children. Over 90% of the parents who were interviewed indicated positive feelings about the impact of the program on their child.

The Lazar study provides a wealth of information. It can be summarized thusly: low-income children who receive early education experiences are generally better able to meet minimal school requirements and are less likely to require special education classes or to be retained in grade. Because of the consistent positive findings ranging across projects and age ranges of participants, it was hypothesized that there was problably not a "magic age" for the most effective educational intervention. In short, a systematic well-run early education program should improve the ability of low-income children.

Probably the best single longitudinal preschool study of the effects of early educational intervention with disadvantaged children was conducted in Ypsilanti by Schweinhart and Weikart. They found that the experimental group evidenced: 1) improved cognitive ability at school entry, 2) better school achievement, 3) greater commitment to schooling, 4) fewer years spent receiving special education services, and 5) decreased deviant and delinquent behavior.

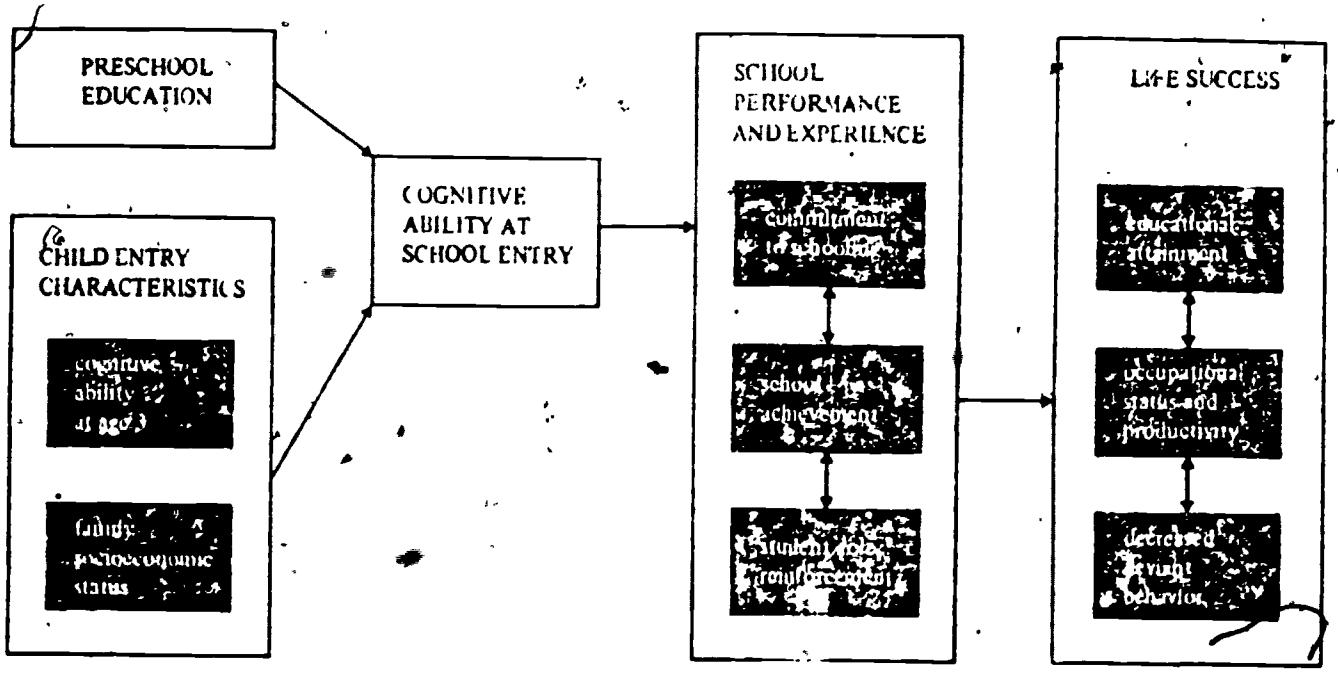
The Schweinhart and Weikart study (hereafter referred to only as Weikart) represents the longest continuous research effort in the country to examine the effects of early educational intervention with disadvantaged children. The study was begun in Ypsilanti, Michigan, in 1962, and is still under way with data being collected from subjects at age 19.

The 123 participants in the projects were selected from five age cohorts born each year between 1958 and 1962. They were black, disadvantaged, and had an

IQ range of 70 to 85. Each child was assigned to an experimental or control group. The experimental group attended a group preschool program 12½ hours a week and was visited along with their mothers at home 1½ hours a week. The classroom teacher-child ratio was approximately 1 to 6.

Weikart posits a causal model for early intervention that is presented in Figure 6.

FIGURE 6 PROPOSED CAUSAL MODEL FOR EARLY INTERVENTION

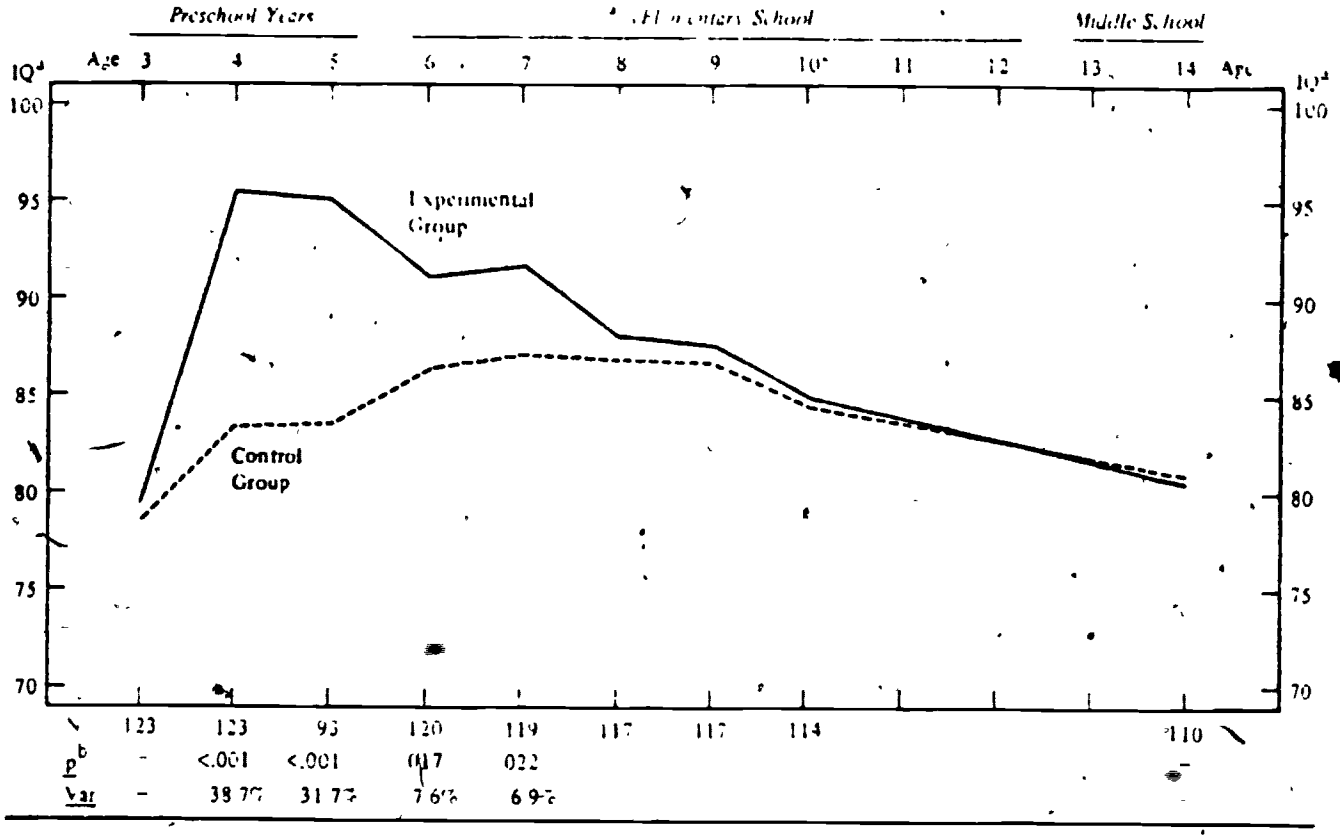


The framework attempts in part to explain the interaction between heredity and environment. It also subtly conveys the Piagetian notion that different environments can influence cognitive ability in different ways. Another way of looking at the model would be to say that typically a child's cognitive ability at school entry is mostly a function of the child's innate ability, and the socioeconomic status of the child's family. If a child participates in a structured preschool educational experience, then another variable can be said to contribute to cognitive ability at school entry. The model provides a useful graphic for envisioning the cumulative aspect of school, as well as life in

general. As noted by Weikart, school success eventually becomes life success as measured by educational attainment, occupational status, and income.

Preschool education improved children's cognitive ability during preschool, kindergarten and first grade. Figure 7 provides a comparison of IQ scores for the two groups from ages 3-14.

FIGURE 7 COGNITIVE ABILITY BY GROUP OVER TIME[a]



[a]Stanford-Binet tests, given at age 3 through 10, have IQs with a national population mean of 100 and a standard deviation of 16 (Terman & Merrill, 1960). WISC tests, given at age 14, have IQs with a national population mean of 100 and a standard deviation of 15 (Wechsler, 1949). The a_t, an index of consistency over time for these tests, was 921.

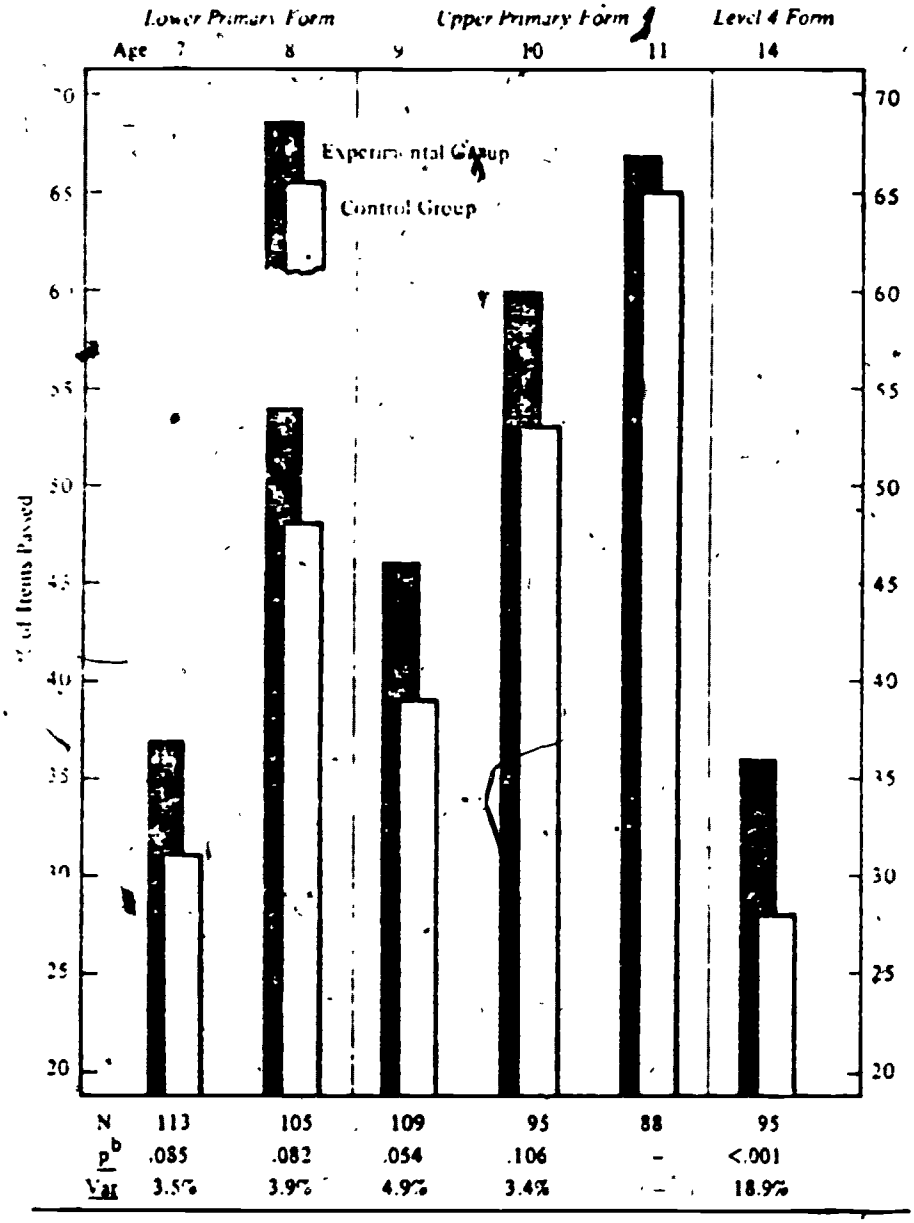
[b]p reported if less than .10, followed by the percent of variance accounted for by group membership

Weikart interprets the initial rise in the IQ of the experimental group as evidence of a highly stimulating preschool environment. He suggests that a higher IQ at school entry will be manifested by more successful performance of scholastic tasks, hence engendering appropriate school-success attitudes. He also notes the 6 point drop in the IQ of both groups during the later years of elementary

school and hypothesizes that it is a function of a stultifying educational environment.

As shown in Figure 8, preschool education contributed to school achievement.

FIGURE 8 TOTAL SCHOOL ACHIEVEMENT BY GROUP OVER TIME[a]



[a]California Achievement Tests (Tiegs & Clark, 1963, 1970) The a_1, an index of the consistency of measurement over time, was .953. The a for the age 14 test (the only one for which a was assessed) was .966.

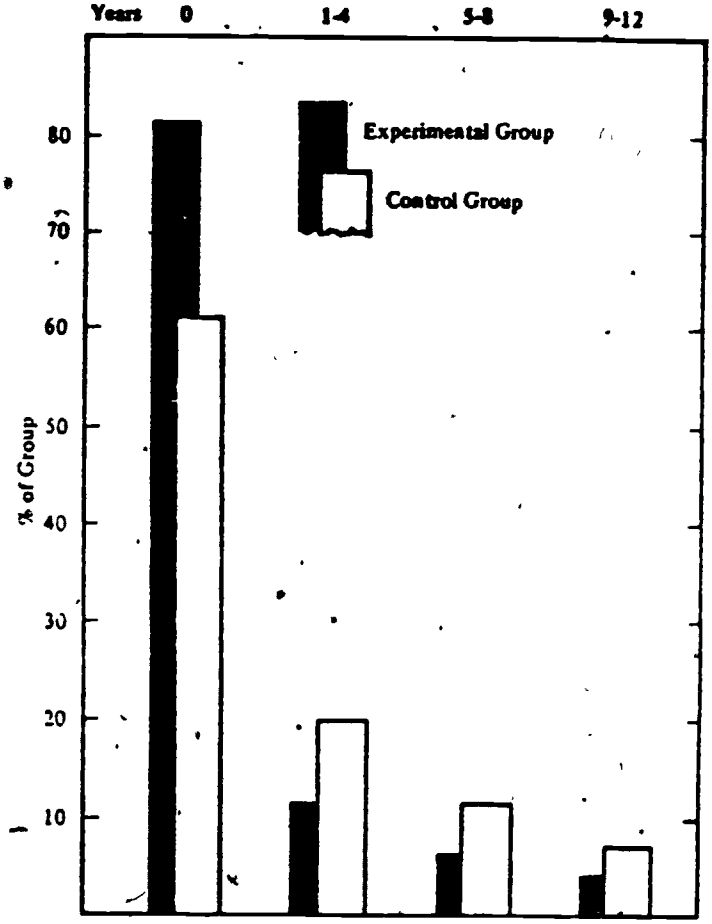
[b]p is reported if less than .10, followed by the percent of variance accounted for by group membership.

At every age the experimental group surpassed the control group in the total percent of items passed on the California Achievement Test. This finding also holds across the individual Reading, Math, and Language achievement tests. The achievement test superiority of the experimental group becomes even more intriguing when it is remembered that from about age 10 onward, the IQ's of the two groups are basically the same.

Preschool education seemed to enhance the participants' commitment to schooling. They were rated as more highly motivated by their K-3rd grade teachers. Self-ratings by the two groups at age 15 showed that the experimental group placed a higher value on schooling, had higher aspirations for college, spent more time on homework, and had a higher self-rating of school ability.

Children who received preschool education required and received fewer years of special education services during the course of their schooling. Figure 9 provides a display of this finding.

FIGURE 9 YEARS IN SPECIAL EDUCATION BY GROUP



	Mean Years	p^a	Var
Experimental Group	.92	.029	5.9%
Control Group	2.10		

[a] p is followed by the percent of variance accounted for by group membership.

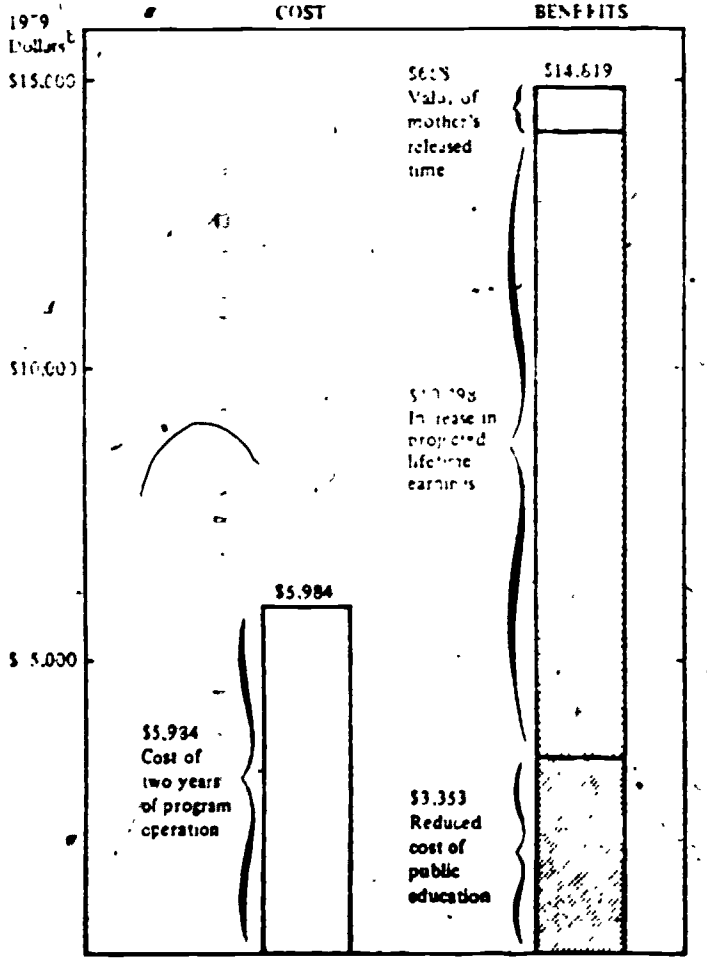
By the end of high school, 19 percent of the experimental group had received special educational services for one year or more, as compared to 39 percent of the control group. There were no differences between the two groups as to the number of years retained in grade.

Based mostly on self-report measures completed by the participants, the experimental or preschool group engaged in less deviant and delinquent behavior than did the control group. The experimental group had more favorably rated conduct by teachers during elementary school. The experimental group reported less

delinquent behavior such as lying about one's age, damaging institutional property, etc. It was also noted at that time that 29 percent of the teenagers who had attended preschool currently had a job, as compared to 16 percent of the teenagers in the control group.

Weikart has conducted various economic analyses of the preschool project. He feels that early intervention programs cost money and are directed at families who can least afford to pay. Hence, a need exists to convince investors of the benefits to society of such an investment. Weikart disaggregates the benefits of preschool education to: 1) reduced costs of education, 2) increased lifetime earnings, and 3) value of mothers' released time. Figure 10 presents a cost/benefit analysis of the preschool project.

FIGURE 10 ECONOMIC COSTS AND BENEFITS PER CHILD OF TWO YEARS OF THE PERRY PRESCHOOL PROGRAM



[a]Based on Weber, Foster, & Weikart, 1978, p. xi.

[b]Consumer Price Index of November, 1979, seasonally adjusted.

The Perry Preschool Project, in a relatively rigorous scientific fashion, has demonstrated the effectiveness of a structured preschool experience. While the initial cognitive advantage of the experimental group was not sustained past age 10, other meaningful correlates of superiority such as school achievement, reduced special education placement, and higher school-oriented motivation, were maintained through to the present.

Preschool education has been criticized on methodological, philosophical, and political grounds.

The initial criticisms of early childhood intervention programs were often on methodological grounds. The difficulty in evaluating the programs typically revolved around the inability of most of the programs to meet any reasonable degree of research prescribed rigor. Often, there were multiple factors, e.g., transiency, length of program exposure, that served to inhibit the detection of effects and assessment of their validity (Cordray, 1976). Given that the goals and objectives of most of the programs were geared towards education rather than research, it is understandable why many could not withstand systematic scrutiny. These criticisms have subsided somewhat since the publication of several longitudinal studies.

The philosophical and political criticisms of preschool intervention are more difficult to disentangle. They have survived and thrived even through to the present. Often, at the root of these criticisms is the ubiquitous "nature vs. nurture" controversy.

Arthur Jensen (1969) is well known for his interpretation of IQ tests. He concluded that early intervention cannot possibly work because it seeks to change IQ, which in his estimation is a function of heredity. He views the eventual IQ equivalence of control and experimental groups in these types of endeavors as evidence that cognitive ability really cannot be altered.

Baratz and Baratz (1971) described early childhood intervention as ethnocentric. They see it as society's way of blaming the victims for their condition. Often, in their opinion, middle class values were foisted upon unsuspecting preschoolers.

Richard de Lone, in the book Small Futures (1978), discusses children in early childhood education from a broader socio-political perspective. He is quite skeptical of the efficacy of early childhood education and public policy in general. De Lone feels that early childhood education is the choice that a liberal society has made in order to reform the structure of inequitable society. According to him, however, the liberal reform still leaves some persons in poverty and others with excess amounts of money. In de Lone's view, the most destructive aspect of poverty for a child is the realization that as an adult, life will probably not be any better.

In part, the criticisms of preschool education depend on the functional intent of the intervention. Often, early education has had to bear the responsibility of ameliorating the "immigrant problem"-whether in 1870 or 1970. Perhaps such a responsibility is an excessive or inappropriate expectation. Perhaps, the early idealism of Harris and Blow and the Headstart Program will be vanquished by the pragmatic fiscal realities of benefit/cost analyses in the 1980's.

Summary

This section of the report provided an overview of early childhood education. The findings of two major investigations conducted by Lazar and Weikart confirm that preschool education can, at a minimum, affect: 1) placement in special education, 2) grade retention, and 3) cognitive ability at school entry. A number of other positive outcomes also seem plausible. The next section will provide information resulting from field investigations of preschool programs in the local area.

FIELD INVESTIGATIONS

In this section of the report, the results of three separate field level investigations are presented. The intent behind these efforts was to provide some comprehensible, practical-oriented data that were relevant to the local environment. In part one, the survey results from 20 local school districts are presented. Part two offers some insight into the efficacy of a preschool, presently operating in the St. Louis School System, in reducing first grade retentions. The third part of this section consists of observations and ratings of the environments of 15 local preschools.

A survey of 20 St. Louis suburban school districts revealed that 14 of these districts had a total of 28 preschool programs within them. Variations existed within and among districts as to types of programs, ages and number of children served, hours per week, parent involvement, funding source, and cost per child.

In order to ascertain the availability and type of early childhood educational services in the metropolitan area, 20 nearby school districts were surveyed. These included: Affton, Bayless, Brentwood, Clayton, Ferguson-Florissant, Hazelwood, Jennings, Kirkwood, Ladue, Lindbergh, Maplewood-Richmond Heights, Mehlville, Normandy, Parkway, Pattonville, Ritenour, Riverview Gardens, University City, Webster Groves, and Wellston.

Each district initially was contacted by phone to determine whether programs for preschool age children existed and to obtain the name of a contact person who could provide the necessary information about the program. At that point, 4 districts indicated that they had no program. A questionnaire was then sent to each contact person to complete (including those which said they had none in the hopes of obtaining some reasons why none existed).

The questionnaire requested data in such areas as: types of programs offered,

ages of children served, numbers of children and parents served, whether parent involvement was required, whether home visits by the staff were required, costs of the program (either tuition or funding), and costs per child.

Questionnaires were returned by 16 districts, 14 of which described their program(s) while 2 commented as to why no program existed. One district had previously stated on the phone that it had a program, but did not return the questionnaire, so no further information about it is known about it. So, while according to phone and questionnaire results, 15 of 20 local school districts have some type of preschool program, Table 6 presents program descriptions for only 14 of those districts.

PRESCHOOL SURVEY OF [redacted] ST. LOUIS SCHOOL DISTRICTS

School District	Existing ECE Program Yes	Existing ECE Program No	Age of Child	Types of Children's Programs	Number Served Parent	Number Served Child	Hours per Week Parent	Hours per Week Child	Parent Involvement Required	Home Visits	Budget	Cost per Child	Misc.
Affton	✓		3-4	E/C/E	Conf.	263	-	15	Voluntary-Room Mothers	No	Self-Sustained Tuition Program		
			3-4	E/C/E Child Care	Conf.	83	-	57.5	Voluntary	No	Self-Sustained Tuition Program		
Bayless		✓ Phone											
Brentwood	✓		3-4	E/C/E	5-10	5	1	9	Yes	Yes	Federal- $3,075 State - 4,600 Local - 4,600		½ day basis this year
Clayton	✓		B-5	Center Membership	130 families		6+	6+	Yes	No	Depends on Length of Membership		
			B-5	Parent - Classes	101 families		Varies, depends on class		Yes	-	Depends on class taken		
			B-5	Individual Services	50 families		Varies, depends on service		Yes	No	Depends on services needed		
			B-5	Lunch Bunch	64 @	64	once a week for lunch together		Yes	No		$30 sem. $50 yr.	
			B-5	Parent Workshops	136	124	Varies, depends on workshops		Yes	No		Varies-$9-20/workshop	
Ferguson-Florissant	✓		B-3	Link-Parent Resource Cen.	200	350	depends on program		[redacted]	Some receive visits		$25/yr.	
			2,3,4	Child Development Centers	their parents ←125		-	53.75	-	-		$35/wk. (2 centers) Title XX (2 centers)	
			B-3	Home Visitors	85	115	1	1	Yes	Yes		Title XX	
			4	Sat. School and Title I Adoption	their parents ←625		-	4	Yes	Yes	Local, Distr., State Fed., Title I $450+		
			3-4	Testing	-	180	Varies		-	Yes	Part of Saturday School $25+		
Hazelwood	✓		4	E/C/E	1300	1300	.5+	9	Yes Workshops	Yes	PL 94-142 Local $123,044	$994.64	Costs are for '81-'82
Jennings	✓		3-4	Jennings Home Start		130	-	1-3	Yes	3yr.-yes 4yr.-no	PL 94-142 HB 474 $48,000	$369.23	
Kirkwood	✓		Pre-K	Head Start	-	40	-	17.5	No	No	Head Start $23,727	$593	
				Title I	-	14	-	17.5	-	-	Title I $31,647	$2,260.50	
Ladue	✓		K-4	Parent-Child Together (PACT)	175	175+	minimum 2-5 mornings		Yes	No		$15-35 tuition	
			5-6	Extended Day Kindergarten	-	65	-	20	Some	No	$70,000	$675/yr.	
Lindbergh		✓ phone											
Maplewood-Richmond Hts.		✓ phone											
Mehlville	✓		3-4	Mehlville Preschool	300	10 screened 92 direct	varies	3yr.-5 4yr.-7.5	Yes (once every five weeks)	Yes	?	?	
Normandy	✓		3-5	Viking Tykes Preschool	14	14	no reg.	16	No	No	School Dist., State	?	Has been in existence 11 yr. Part of high school training program.
Pattonville		✓		(Special School District)									

PRESCHOOL SURVEY OF SUBURBAN ST. LOUIS SCHOOL DISTRICTS

School District	Existing ECE Program Yes	Existing ECE Program No	Age of Child	Types of Children's Programs	Number Served Parent	Number Served Child	Hours per Week Parent	Hours per Week Child	Parent Involvement Required	Home Visits	Budget	Cost per Child	Misc.
Parkway	✓		3-4	Community School Program	-	100	-	5	Bring and pick up	No		$150/yr.	No plans to expand
Ritenour	✓		4	Title I ESEA	96	96	2-3	15	Yes	No	$118,887	$1,238	
			3-4	PL 94-142 Exceptional Pupil Aid	11	11	2-3	12	Yes	No-unless child has no trans.	$30,200	$2,745	
Riverview Gardens		phone & ✓ quest.											No future plans
University City	✓		4	Early Education Center	-	27	-	15	No	No		$600/yr.	Considering Parent/Child (0-3) Prog.
			3-4	Early Learning Center	100	100	1	5	Yes	Yes	PL 94-142 Local EPA	$1,100	
			4	Pre-Kindergarten	120	100	2	1	Yes	Yes	Title I	$1,034	
Webster Groves	✓		3	Webster Groves Early Childhood Center	26	15	1	6	Provide snacks Attendance on field trips	Yes 1hr./wk.			
			4	Webster Groves Early Childhood Center		11	1	9	-	Yes 1hr./wk.	$42,757	$1,644	
Wellston	✓ phone			(No further information)									

The 14 districts with programs that completed the questionnaire reported 28 separate programs. Those programs served more than 4,500 children directly, while an additional 700 children were provided screening services..

Funding sources for the programs vary, with some being self-sustained through tuition, others receiving some combination of federal and/or state monies, and still others depending on some combination of both. The cost per child figure cannot be accurately derived for many districts, although most made a valiant effort to supply that information.

The majority of programs are directed towards preschool age children who are 3, 4, and 5 years of age. Three districts did have programs for children under 36 months.

Some of the programs are child focused, some have a focus on parenting, and others have a primary focus on screening and referral. Children in the child-focused programs, spent 1 to 20 hours involved in their preschool experience. Parents in the parent-focused programs spent from 1 to 9 hours a week in that experience.

This investigation of the availability of preschool programs under the auspices of local school districts confirms that most of the metropolitan districts offer some type of early education experience, though perhaps for specialized purposes or for a relatively small proportion of preschool age population.

Seven to fourteen percent fewer Euclid preschoolers were retained in first grade when compared to other Euclid students and Area II students-in-general.

The second part of the field investigation was an effort to examine a major finding reported in the preschool literature and to determine if the finding could be replicated locally.

Research indicates that early intervention has the positive result of reducing

the number of retentions at grade level. In order to assses the validity of this finding for St. Louis, it was decided to trace students in the school system who had attended the Title I Euclid Preschool Academy in 1976-77 and 1977-78 and discover how many had indeed been retained in grade one. These students were the only ones possible to follow because Euclid is the only system preschool with students old enough to have been able to be retained by 1980-81. A total of 49 students were able to be traced, some of whom had advanced to third grade by 1980-81. (The variance in grade level is due in part to the fact that students are eligible for preschool from ages 3 to 5, thus entering and leaving at different times.) Students were traced by means of enrollment rosters provided by the coordinator of Euclid Preschool Academy, through information gathered during interviews about those students, and through school test data for 1979-80 and 1980-81.

Of the 49 identified students, 12 had been retained in grade one, including one who had been transferred to the special education program. These findings produce a retention rate for Euclid Preschool students at 24% for the grade one level.

In order to establish a generalized comparison group, it was decided to trace all first graders at Euclid School in 1979-80 to determine the retention rate in 1980-81. This school was chosen because the majority of the students in the preschool attended this school, and the school population does not exhibit a high degree of mobility. Students who had been in the preschool program were excluded from the comparison group. Of the 56 students in grade one in 1979-80, 21 were retained in 1980-81. This includes one student who had been transferred to the special education program. These findings produced a retention rate for first graders (1979-80) of 38%. It must also be noted that information was not available as to the number of first graders (1979-80) who might have already been repeating grade one, which tends to make 38% a conservative retention rate.

Also, while this group has been arbitrarily defined as non-preschoolers, there is no way of knowing which if any of these students may have attended a preschool program other than Euclid. Table 7 presents these retention levels.

TABLE 7

FIRST GRADE RETENTION LEVELS
FOR PRESCHOOLERS AND NON-PRESCHOOLERS AT EUCLID SCHOOL

	Preschoolers	Non-Preschoolers	
Retained in 1st Grade	12 (24%)	21 (38%)	33
Not Retained in 1st Grade	37 (76%)	35 (62%)	72
	49	56	105

For purposes of additional comparison, a sample of 150 students was chosen at random from all first graders in Area II, where Euclid and the Preschool Academy are located. Of these 150 first graders in 1979-80, 47 of them were retained in 1980-81, a retention rate of 31%. Again, no data were available to determine how many of these first graders were already repeating grade one. Table 8 presents those retention levels.

TABLE 8

FIRST GRADE RETENTION LEVELS
FOR EUCLID PRESCHOOLERS AND AREA II STUDENTS-IN-GENERAL

	Euclid Preschoolers	Area II Students-In-General	
Retained in 1st grade	12 (24%)	47 (31%)	59
Not retained in 1st grade	37 (76%)	103 (69%)	140
	49	150	199

The statistical comparison of the rate of first grade retention for these 3 groups proved to be inconclusive. There are, of course, confounding factors in the design of this brief effort that serve to attenuate that type of measured impact

of the Euclid preschool experience. As was mentioned earlier, through interviews and school test data, there was good longitudinal information available for the former Euclid preschoolers. For the two comparison groups it was not possible to determine: 1) whether they attended some other preschool, and/or 2) whether they had previously been retained. Both of these factors would serve to minimize the retention difference between the groups. Even in light of these suppressors, it is noteworthy that 7% to 14% fewer Euclid preschoolers were retained in first grade. It is also noteworthy that this study confirmed reduced retention at a specific grade level in contrast to the literature's more global finding of reduced retention of preschoolers up to the age of 15.

Ratings of 15 preschools on 7 relevant dimensions indicated that all evidenced at least minimally acceptable environments, and that most were rated as good. The preschools were relatively homogeneous, although there was some variation as to the level of parental involvement. Most followed the traditional preschool approach.

The third part of the field investigation consisted of observing, rating, and collecting data about the environments of 15 preschool/day-care settings. Table 9 provides a list of the preschools that participated in this part of the study.

TABLE 9

LIST OF PRESCHOOL DAY-CARE SETTINGS OBSERVED WITH THE EARLY CHILDHOOD ENVIRONMENT RATING SCALE

1. Ashland Preschool Center
2. Carver Preschool Center
3. Clark Branch II Preschool Center
4. Downtown Day-Care Center
5. Dunbar Preschool Center
6. Euclid Title I Preschool Academy
7. Field Preschool Parent Cooperative
8. Herzog Preschool Center
9. Jefferson Preschool Center
10. Marshall Preschool Parent Cooperative
11. Mullanphany Title I Preschool Academy
12. New City School
13. O'Fallon Child Care Center
14. Shirley Ann Educationational and Day-Care Center
15. Sigel Title I Preschool Academy

The 15 settings represent a number of different kinds and types of preschools. Three of them are Title I preschool programs, two are church sponsored within public school settings, six are ESAA funded programs, one is sponsored by the Family Support Services, and three require tuition or payment. All of the preschools volunteered to participate in the study and all of the staffs were found to be extremely cooperative and helpful.

It was hoped that through systematic observations of children in the educational setting, that some important contributors to the overall learning milieu could be determined. The details of daily activities in the classroom can be examined and conclusions can be reached about the patterns that are found.

The interest of early childhood education in the physical aspects of the classroom stems mostly from Bloom's (1974) belief that early interaction with a stimulating environment is crucial for development, and that an appropriate environmental design can help manage behavior. Phyfe-Perkins (1980) discusses the child's interaction with the environment and defines three important aspects of the preschool setting: 1) the fixed and semi-fixed features of the environment (doors, windows,

colors, textures, and available space), 2) the amount, variety, type, and display of movable objects and materials, and 3) whether the activity settings include both open and closed structure centers.

For the environmental rating, a scale developed by Harms and Clifford (1980) titled "Early Childhood Environment Rating Scale", was utilized. In addition to the observational rating, specific data were gathered on such items as: student/teacher-aide ratio, educational level of teachers, hours of operation, size of room, parent involvement, and the nature and type of student/teacher interaction.

Harms and Clifford (1980) developed an Early Childhood Environment Rating Scale in order to assess preschool environments. Their definition of environment specifies seven general areas, each of which has specific subscales. The seven areas are: 1) personal care routines of children, 2) furnishings and displays for children, 3) language-reasoning experiences, 4) fine and gross motor activities, 5) creative activities, 6) social development, and 7) adult needs. A brief overview and rationale of the seven areas and their accompanying subscales will follow.

1. Personal Care Routines

Included in the area of personal care routines are many of the normal day to day aspects of any individual's functioning. When working with young children, it is normally assumed that there will be suitable food and rest facilities available. The preschool setting is an excellent time to establish personal habits and acquire the independence necessary to build self confidence. The emphasis that is given to the greeting/departing of each child is an important way of acknowledging the child's individuality. In the subscale of meals/snacks the social experience of conversation availability is investigated as well as further experiences that were first detailed by Kami in the Ypsilanti Early Education Program (1971). These include comparison and classifications when talking about the food.

2. Furnishings and Displays

The subscales that are included in furnishings and displays include looking at the care that is given to the routine care of furniture, the basic learning activity furnishings, the cozy areas available for children, the arrangement of interest centers, and the type and amount of children's work that is on display. Interest centers especially should allow the child the freedom to explore and try new things. Braun and Edwards (1972) note the importance of activities that focus on classification and physical knowledge. Examples of those types of activities for a preschool child would be: the opportunity to watch sand fall from one container to another when it is poured, comparing differences between partially filled containers, and predicting which objects will sink or float. A higher rating is given to interest centers that are arranged so that children can use materials independently.

3. Language-Reasoning Experiences

For rating the language-reasoning experiences, interest is paid to whether the children hear stories daily, tell stories, talk with teachers, and otherwise demonstrate reasoning through verbal expression. Kami (1979) explains that by exchanging opinions with peers and others, the child begins to decenter from his/her egocentric point of view and to coordinate his/her opinion with those of other children. Encouraging the child to think through a problem and to exchange ideas with his/her classmates while developing solutions to "why, how, and what if" questions, would generate high ratings in this area.

4. Fine and Gross Motor Activities

In the areas of fine and gross motor activities, available equipment, space, time, and the type of supervision are observed. Healthy children need periods of activity during the day. This scale evaluates the type of settings that are available both indoors and outdoors for gross motor experiences. Planned safety precautions, adequacy, and flexibility of the equipment are noted. The pieces of equipment

that are available on different levels of skills for the children are important in a preschool setting. The activities are evaluated at a higher rank if they are scheduled daily, both in the morning and afternoon. The fine motor activities that receive a high rating include work with beads, small building toys, puzzles, and scissors that are organized to encourage self-help. The supervision of fine motor activities that is sought here includes the teacher sequencing the the materials to develop fine motor skills. Both Froebel and Montessori advised the manipulation of cubes, cylinders, and spheres in a prescribed fashion.

5. Creative Activities

The creative activities area includes art and the variety of materials available, music and movement, time and space allowed for blocks, provision for sand and water, dramatic play, and the schedule and supervision of these activities. The higher ratings in this area are given when the child is seen as the source of acts rather than as one who can follow the teacher's direction well. These abilities can be exercised fully when the child is in a center where there is free choice with art materials that included three-dimensional materials, and daily music and appropriate toys for sand and water. The child should be allowed to explore things on his/her own when given creative materials and time to investigate what he/she can accomplish. The supervision that is given a high rating in creative activities is once again not teacher-centered, but one that recognizes the child's need to explore independtly and the adult's opportunity to discuss ideas to extend the experience.

6. Social Development

Specific aspects that are assessed in the social development area include: space to be alone for an individual child, free choice schedule and variety of materials, group time, inclusion of cultural awareness in the curriculum, the tone of the center, and the provisions for exceptional children. To receive a high rating the

opportunity for a child to concentrate or relax in a location in the classroom that is protected from intrusion by others should be available. Activities in this section that allow the child time to explore and to select what he/she wants to do during a large portion of the day, with the teacher giving guidance, receive a high rating.

7. Adult Needs

In the adult needs area, the personal and professional needs of the adults who work in the preschool center are examined, together with the amount of participation and interaction with parents. High ratings are given to centers where the adults have comfortable lounge facilities separate from the children's activity areas. Parent needs vary from center to center. Care should be taken to exchange information with them. A high rating can be given to a center where the parents are welcome to eat lunch with the children as well as their planning and evaluation being sought and appreciated by the staff.

Each of the seven general areas just discussed has between 4 and 7 subscales. The following rating scale ranging from 1 to 7 was used to rate each preschool on each of the subscales: 1=inadequate, 3=minimal, 5=good, and 7=excellent. Thus, a summary score could be derived for each preschool on each dimension.

Because two evaluators conducted the observations, it was necessary to determine the reliability between their ratings prior to their making independent visits to preschools. The process included both raters observing the same classroom environment and using the rating scales separately. Ratings were then correlated, using the Pearson r correlation formula. The first coefficient yielded .55, too low to be considered reliable. The raters then discussed the categories where their scores differed and reached a consensus on criteria for each rating, hence further defining what was to be observed. A second classroom was then observed

and rated, following the same procedure as before. This second trial yielded a .78 correlation coefficient. Again, even though differences were slight in most cases, the raters discussed the reasons for the discrepancies. The process was completed a third time and produced a .84 coefficient. It was decided then that the inter-rater reliability was sufficiently high enough to permit the raters to visit rooms independently. There was agreement about the salient observational criteria.

Each of the 15 preschools in the study were rated on the 37 subscales that comprise the 7 general areas of the rating scale. The two investigators who conducted the assessment visited 12 of the preschools separately, the other 3 sites were rated simultaneously. At all but 2 sites, observations and ratings took place in both the morning and afternoon sessions.

An extended summary of the observations and ratings is available in Appendix II. The summary rating scores of the 15 preschools are presented in Table 10. Letters have been substituted for the actual names of the preschools and the order is different than the alphabetical order of Table 9. This was done to protect the anonymity of the participating preschools, as comparisons between individual sites were not of primary interest.

TABLE 10

SUMMARY RATING SCORES OF 15 PRESCHOOLS
ON THE EARLY CHILDHOOD ENVIRONMENT RATING SCALE*

Preschool	Personal Care Routines	Furnishings & Displays	Language/ Reasoning Experiences	Fine & Gross Motor Activities	Creative Activities	Social Development	Adult Needs	Preschool Average
A	5.0	4.2	6.5	4.7	4.6	5.3	6.5	5.3
B	5.4	5.0	6.8	5.8	5.1	6.3	5.8	5.7
C	5.5	4.2	6.3	5.7	5.3	6.0	6.8	5.7
D	5.5	6.8	7.0	6.0	6.0	6.7	5.5	6.2
E	4.6	5.6	5.0	4.8	4.3	4.3	5.3	4.8
F	5.4	4.2	7.0	5.3	4.6	5.0	6.3	5.4
G	5.5	4.2	5.5	5.5	3.9	4.3	5.5	4.9
H	5.4	6.0	5.5	4.8	4.0	4.8	6.3	5.3
I	5.2	4.6	6.5	5.3	5.0	4.5	5.0	5.2
J	6.2	5.0	5.3	4.5	5.9	4.8	6.0	5.4
K	6.4	5.4	6.5	4.3	5.6	5.5	6.0	5.7
L	6.2	6.2	5.8	6.8	5.3	6.8	6.0	6.2
M	6.4	7.0	7.0	7.0	6.7	6.8	6.3	6.7
N	7.0	6.6	7.0	6.5	6.7	6.2	7.0	6.7
O	4.8	3.8	4.8	5.8	5.0	4.0	5.8	4.9
Average	5.6	5.3	6.2	5.5	5.2	5.4	6.0	5.6

*Scores range from 1 (inadequate) to 7 (excellent)

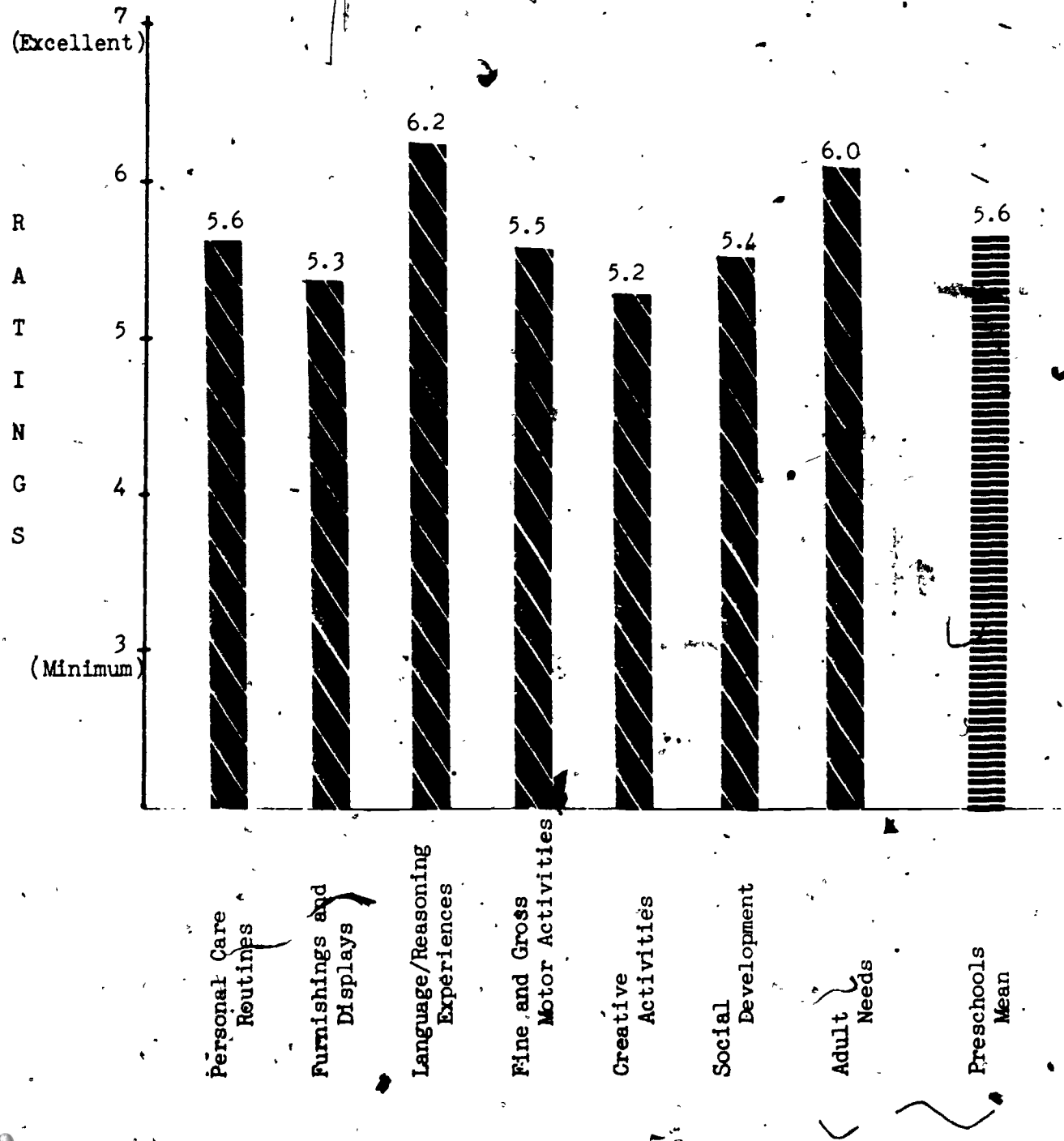
As can be gleaned from Table 10, all of the preschool settings were rated as having above minimal average environments. In fact, most were judged as having good environments both as an average, and on the individual dimensions. The mean ratings for individual preschools ranged from a low of 4.9 to a high of 6.7. The lowest rating for a dimension, furnishings and displays, was 3.8. The highest rating for a dimension was 7.0 and occurred in all of the dimensions

except for creative activities and social development.

Figure 11 provides a graphic display of the average score on each dimension for the fifteen preschools.

FIGURE 11

Averaged Scores of 15 Preschools on Each Dimension of the Early Childhood Environmental Rating Scale



53

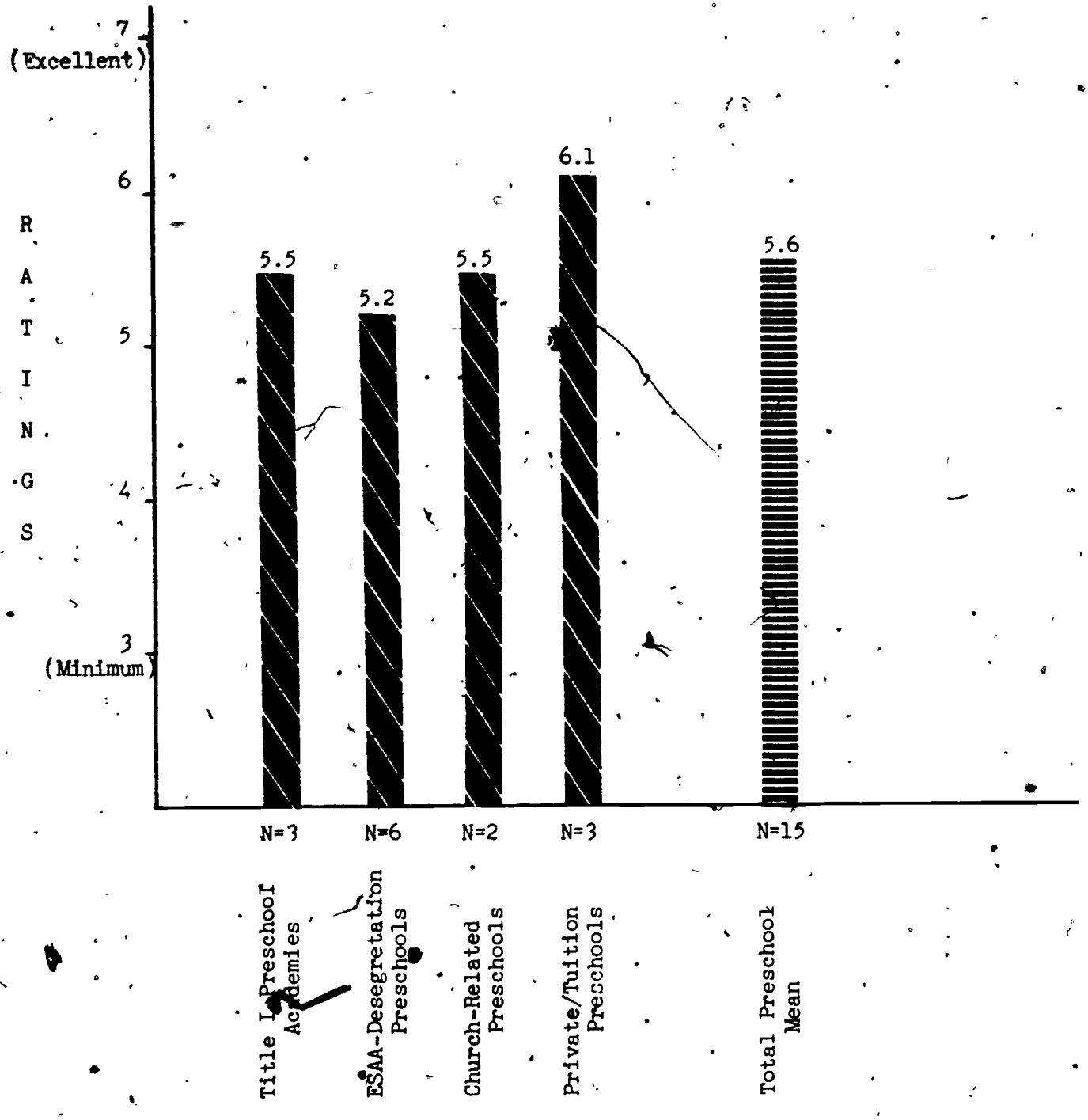
As shown in Figure 11, the 15 preschools averaged the highest rating on the language-reasoning experiences dimension, and the lowest average rating on the creative activities dimension.

It is interesting, if not disheartening, to note that the dimension which is most promulgated in the preschool literature, creative activities, has the lowest average rating. The fact that the language-reasoning experiences dimension has the highest rating is probably indicative of the commonality of the traditional preschool approach.

Figure 12 displays the differences in the environmental ratings of the 4 predominant types of the preschools. The scores of O'Fallon Child-Care Center were omitted from these calculations because it did not readily fall into a category, and to present their data singularly would be a breach of their anonymity. The schools included in each typology are as follows: 1) Title I Preschool Academies include Euclid, Mullanphy, and Sigel, 2) ESAA Funded Preschools include Ashland, Carver, Clark, Dunbar, Herzog, and Jefferson, 3) Church-Related Preschools include Field and Marshall, and 4) Private/Tuition Preschools include Downtown Day-Care, New City, and Shirley Ann Educational and Day-Care.

FIGURE 12

Averaged Scores of Four Types* of Preschools
on the Early Childhood Environmental Rating Scale



*The scores of O'Fallon Child-Care Center were not included.

As seen in Figure 12, the Private/Tuition Preschools had the highest average ratings, while ESAA Funded Preschools had the lowest average ratings. It should be pointed out that all 4 types averaged above the minimum necessary to be considered as having a good preschool environment.

In addition to the observational ratings that were conducted in the 15 preschools, other specific data were also gathered. The intent of this coextensive effort was to augment the more theoretical findings of the rating scale with information of a somewhat more practical nature. The intent also was to be able to derive some kind of mean or modal description of preschools in general. Appendix III provides the complete frequencies for all of the collected data. The following 9 statements provide a view of the "typical" preschool.

1. The average student/teacher-aide ratio was 7.3 to 1.
2. The teacher-aide educational level ranged from an associate degree in early childhood education to a doctorate in education. The most frequent degree was a bachelors.
3. The average room contained 19 children. The class size ranged from 15 to 30.
4. The mean days of operation was 3½ per week and the mean class length was 5.3 hours. Most centers operated 4 days a week and most centers had a class length of 3 hours.
5. The mean estimated size of the room was 891 square feet. If that figure is divided by 19, the average square feet available per child is 47.
6. The majority of centers required home visits.
7. Parents at all centers attended meetings about the center, and sometimes visited and observed the preschool class.
8. The teacher-child interaction at all centers were appropriate and healthy. Teachers appeared genuinely interested in their work, and most children seemed to enjoy the preschool experience.
9. Discipline, when necessary, was not unduly harsh, and was typically accompanied by explanations.

Another substantive area of interest was the degree of parental involvement at the 15 schools. The level of involvement ranged from required-parental participation to the generalized displays of interest expressed in normal parent/teacher interactions. Each preschool had a core group of parents whose contribution of

effort far and away exceeded that of most of the other parents associated with that site.

The programs at the church-sponsored centers require each parent (or a substitute) to actually work in the school for 3 hours a week. Parents were asked to provide lunches for their children, and based on observations, they apparently spent a great deal of time preparing colorful, nutritious, and creative lunches. Parents also had meetings every Friday to discuss completed activities and to plan for the following week. Typically, there also were discussions about any problems at the center and often some time was spent organizing fund-raising events. No home visits were mandated at the church-sponsored centers.

The Title I Preschool Academies required home visits as an integral component of their program. During these visits, prepared packets of activities are given to parents and techniques are imparted to reinforce the skills taught to their children. Parents are also encouraged to volunteer their services during class time, field trips, and presentations. Workshops and seminars on a variety of topics for parents are offered every month.

The 6 ESAA-Desegregation Preschools also have home visits in their program. During visits, activities for reinforcing skills may be discussed along with any personal/social development questions the parent may have. Parents are encouraged to visit special presentations during class.

The parental involvement was less formalized at the preschools where tuition or payment was required. While all of these settings manifested the educative intent necessary to be described as a preschool, they admittedly gave more attention to the custodial-care function than did the previously described preschools. All of them were open and available for classroom participation by parents.

Parents at all sites were involved in an advisory manner in the curriculum and operations of the preschools. All centers provided health/social services referral information for parents. At all centers, parents seem to feel comfortable in discussing family problems with the staff, and in seeking advice during greeting/departure times.

One final observation of the preschools did not readily lend itself to practical forms or other kinds of objective data. In all settings, the individual teacher seemed to be the primary resource. He/she typically exhibited creativity, patience, a non-authoritarian attitude, and engaged in referral activity of various sorts in his/her interactions with parents.

As noted earlier, the 15 preschool settings that were rated in this investigation represent somewhat of a cross section of preschools. There are both similarities and dissimilarities in their motivating rationales, theoretical and practical approaches, their audience or partipants, as well as the funding source or sources to whom they are responsible.

Summary

In this section of the report, results were given for three different investigations. The survey of local school districts indicated that most offered some type of preschool program, and the funding sources of those programs were diverse. The comparison of Euclid preschoolers with two other similiar groups on the rate of retention at the first grade level showed that children who participated in the Euclid preschool were less likely to be retained in first grade. The ratings of 15 preschool settings implied that the environments were relatively homogeneous and that most evidenced the traditionalistic approach. The next section of the report will examine feasible preschool model alternatives within the local context.

PRESCHOOL MODEL CONSIDERATIONS

In this portion of the report, general preschool models and their relative impact will be discussed, as well as the need for a definable philosophic stance to derive appropriate goals and objectives for a preschool program. An attempt will be made to describe the context for decision-making. Various factors which could enhance or minimize any given preschool model will be noted.

No preschool theoretical/curricular model is definitively superior, but there are systematic generalities that seem to enhance the impact of any given model.

Early in this report, two basic questions were asked: 1) does the preschool experience make a difference, and 2) if it does make a difference, does it matter which curricular theory is employed? In the preschool literature, much attention is given to answering the first question, and very little to the second. Similarly, this report has given more attention to the general question of impact than to the specific question of theoretical/curricular superiority. Part of the reluctance in both the literature and this report to address this latter issue is probably a function of the difficulty in disentangling objective veracity from experimenter bias. Simply put, when research espouses a particular position, it is sometimes difficult to determine where bias and data begin and end.

The orientation of preschools varies greatly, though at times it can become difficult to determine how one varies from another. Table 11 presents a comparison of Montessori and Traditional approaches to preschool education.

TABLE 11

COMPARISON OF MONTESSORI AND TRADITIONAL PRESCHOOL APPROACHES

Montessori	Traditional
emphasis on cognitive development	emphasis on social development
teacher has unobtrusive role in classroom	teacher is center of classroom as "controller"
environment and method encourage self-discipline	teacher acts as primary enforcer of discipline
mainly individual instruction	mainly group instruction
mixed age groupings	same age groupings
grouping encourages children to teach and help to each other	most teaching done by teacher
child chooses own work	curriculum structured for child
child discovers own concepts from self-teaching materials	child is guided to concepts by teacher
child works as long as he wishes on chosen project	child generally allotted specific time for work
child sets own learning pace	instruction pace usually set by group norm
child spots own errors from feedback of material	if work is corrected, errors usually pointed out by teacher
child reinforces own learning by repetition of work and internal feelings of success	learning is reinforced externally by repetition, rewards, and punishment
multisensory material for physical exploration	few materials for sensory development
organized program for learning care of self and environment (polishing shoes, cleaning the sink, etc.)	no organized program for self-care instruction - left primarily up to parents
child can work where he chooses, move around, and talk at will (yet not disturb work of others); group work is voluntary	child usually assigned own chair, required to participate, sit still, and listen during group lessons

Formerly, preschool settings were either the academically-oriented model or a nursery school-type discovery model. However, since 1965, a new group of early educators has defined a category of cognitive-discovery models which appears to be the midpoint of the two extremes. A longitudinal study by Bronfenbrenner (1975) indicated that the strongest differences between experimental preschool programs and their control groups were found for the highly-structured, cognitive-oriented programs. Table 12 lists many of the well-known models according to the most fitting category based on the philosophy and focus of the program.

TABLE 12

LIST OF PRESCHOOL MODELS AND ACCOMPANYING ATTRIBUTES

Models	High	Low
ademically-oriented reiter/Englemann (BE) glemann/Becker (DISTAR) shell Applied Behavioral Analysis BA)	-knowledge of shapes, names of numbers and letters, matching of sets -response are adult-oriented -usually score higher on standardized tests (significantly on Stanford-Binet) -children work in small or large groups -textbooks and workbooks usually -direct questioning -supportive of concrete-simple learning -ambition and verbal-social participation -negative feedback	-very little individualized instruction -role-playing -pupil discovery -pupil choice of activities -responses are child-oriented -variety of curriculum areas
gnitive-discovery ikart's High Scope scon Early Education Model (TEEM) mnicht Responsive Model ntessori	-work independently and on a more personalized basis with adults -more arts and craft materials available -more task persistence, questioning -children choose their groups and activities -adults provide friendly supportive comments -some textbooks and workbooks used -more cooperative behavior -more perceptual problem-solving abilities -children accept responsibility for success -supportive of complex-abstract growth -curiosity and inventiveness -mixed age grouping -variety of curriculum areas	-absenteeism -negative feedback -teaching done by teachers

TABLE 12 (cont.)

LIST OF PRESCHOOL MODELS AND ACCOMPANYING ATTRIBUTES

Models	High	Low
scovery nk St. 'ucational Development Center (EDC) 'rsery Schools	-work independently and on a more personalized basis with adults -more arts and craft materials available -more task persistence, questioning -children choose groups and activities -adults provide friendly, supportive comments -role-playing -more cooperative behavior -more perceptual problem-solving abilities -children accept responsibility for success -curiosity and verbal-social participation -responses are child-oriented -variety of curriculum areas	-use of workbooks and textbooks -absenteeism -test-taking abilities -responses are adult-oriented -teaching done by teacher

Source: Derived from "Differential Outcomes of Early Childhood Education" by Joseph Stevens, 1976.

Again, the research comparing the effectiveness of one model vs. another seems at best to be mixed. The most important aspects may be the generalities gleaned from some of the earlier Weikart investigations. He found the important variables to be: level of teacher commitment, high expectation for pupil achievement, careful supervision of staff, systematic planning and evaluation, and team teaching. Harnischfeger also focused on another generality that seemed to make a difference. He found that the amount of time spent in instructional activity relates directly to an individual's mastery of skills in that area. What becomes more and more apparent in the choosing of an appropriate preschool theoretical/curricular model is that the model per se may not matter. What is most important is that a pedagogically sound and systematic program be implemented.

<u>An effective preschool program requires an identifiable philosophy from which its ethos, as well as goals and objectives can be logically derived</u>.

What may be equally as important as the theoretical/curricular approach used in a preschool is the kind of philosophical or assumptive underpinnings upon which the program is based. Answering the simple question of what should be expected of a preschool program within the St. Louis School System is the beginning of such an assumption-defining process. If the St. Louis area is indeed a "need area with a small market", does that fact preclude charging tuition for preschool participants? Can preschools be effective desegregation devices? Should the impetus for the institution of a preschool program be fiscal, humanistic, or perhaps based on some other type of rationale altogether? Only from those kinds of decision/expectation starting points can goals and objectives be logically derived and further defined.

A general philosophy for preschool should include the understanding that children all develop at different times in their lives. Some may be good at reading at four, others might be good at mathematics by eight, some may make good janitors, and others might excel at medicine....all in their own time. To expect a child

to read by the time he/she is in first grade works fine for some, but not for others. Preschool should be a place for development, new learning, and flexing one's cognitive muscles--not failure. The lesson to be taught in preschool should be that learning is ~~fun and can~~ be successfully accomplished. What is the purpose of learning to fail in kindergarten or first grade? Preschool should be a time for students to try out new relationships, to learn how to work with other children, and for making mistakes that are not punished. Children should be allowed the time to contemplate, the chance to reflect upon their own thinking and that of the persons around them. Most importantly, there would not be a formula of activities or expected behaviors that would be identical for each child.

For the participants of such a preschool program there would be movement through learning, first through sensory experiences, then by various activities, and finally through the symbolic representations of real things. The child's interaction with the environment, combined with his/her growing sense of self-mastery would foster the framework for future academic foundations and experiences.

An extension of this kind of developmental emphasis could lead to other more pragmatic endeavors. For example, preschool programs may be the best time to start mainstreaming. Often, preschool programs at the start-up point think of including handicapped children as a big extra, requiring extra funds, training, and back up services (Sauer 1977). That kind of thinking or attitude is enough to prevent full participation of handicapped children in primary preschool programs. According to the Handicapped Children Summary Report prepared by the Division of Special Education, as of May, 1981, there were 333 handicapped children ages 3-5 within the school district's boundaries. Early integration of handicapped children can provide the following opportunities: 1) "normal" children learn facts and reduce their fear, 2) early childhood development of tolerance, and 3) confronts adults with their own fears about the handicapped.

Finally, a specific impetus, rationale, or philosophy for a preschool program could be fiscal. According to a report by the Office of Financial and Budgetary Support Services, for the year ending June 20, 1980, the average cost per elementary pupil was $2,072.02. The average cost per special education pupil was approximately $5,321. Thus, it can be said that in the St. Louis School System the cost of special education is more that double the cost of conventional education. When these figures are viewed in conjunction with research findings that indicate that preschool reduces special education placement and retention at grade level, the budgetary imperative of preschool programs becomes more compelling.

To be most effective, preschool programs probably should be a part of a well-orchestrated educational experience designed for children 3-9 years of age.

Weikart alludes to what he feels are the negative learning experiences of the primary school years, and the corresponding drop in IQ scores for former preschool participants during that time. Perhaps with systematic developmentally-oriented curricula, such losses could be avoided.

Other concerns within and/or outside the control of the school system that can play a pivotal role in the life and effective functioning of preschool programs are: level and type of parental involvement, sources of funding, impinging legislation, and possible conflict with the preschool industry.

In many instances, it is only in a secondary or tertiary manner can the school system really act to guide these factors in a given direction. These factors will be reviewed briefly and their relationship, if any, to a preschool program in the St. Louis Schools will be discussed.

Parental involvement can refer to a wide range of activities including: parental tutoring of the child or using methods learned as a result of training, performing

duties with the school, serving on committees or otherwise acting as a decision-maker concerning school practices, and simply through expressed general interest. Parental participation in the educational experience of the child seems to enhance the child's academic motivation and intellectual development.

At the preschool level, in particular, parental involvement seems to have a beneficial impact on intellectual development. A number of studies have noted success when parents were taught methods of stimulating the cognitive development of their children at home (Bronfenbrenner, 1974; Schaefer and Edgerton, 1974; Honig, 1975). Bronfenbrenner also found that parental involvement at the preschool level was beneficial not only to the target child, but also to his/her siblings. Radin (1971) examined the effect on intellectual growth of different amounts of parental involvement and he found that the group with maximum parental involvement showed the most intellectual growth.

It seems to be clear, that any proposed preschool program should probably include a parental component. The level and type of parental involvement will, of course, vary according to the expressed interest level of a particular group of parents. What is most important is that the preschool program should provide a structured opportunity for parental involvement.

In this era of reduced or restricted resources, the concern of funding for a proposed program is of paramount importance. Some of the possible sources of monies include: Title XX, Title I, PL 94-142, HB 474, Head Start, and tuition payment by parents. The majority of public day-care centers in the St. Louis area receive some financial support through Title XX funds.

Under the Title XX program, authorized in 1974, a state receives funds from the federal government, and is required to put up a matching fund of 25%. To meet this matching amount requirement, a state can use general state revenue or

require that it be provided by the locality receiving services. The day-care services that are presently provided in the city of St. Louis are matched by Community Development Block Grant funds, United Way funds, and general state revenues.

According to a recent issue brief, Child Day Care: The Federal Role (Library of Congress Research Service, Issue Brief #IB81027, updated 3/3/81), Title XX will be included in the proposed block grant program. The impending cap on total funding could result in decreased availability of funds for day-care. Other proposals that could affect a preschool program in St. Louis would be: 1) the elimination of funding for snacks under the child-care feeding program, 2) the establishment of block grant funding for education programs which could affect programs for preschool children, including special programs for handicapped children as well as the educationally deprived, and 3) the elimination of CETA public service jobs. The outlook for external funding may be characterized as somber.

Another factor that could affect a preschool program is legislation. On both the federal and state levels, legislation often cannot be anticipated. While lobbying efforts are typically the most direct way of influencing lawmakers, the results are often not satisfying. There are future laws, not yet thought of, that will affect preschool education.

Forthcoming changes that will be effective in Missouri as of September 1, 1982, are the new early child, pre-kindergarten to grade 3 teacher certification requirements. These new requirements set by the State Department of Elementary and Secondary Education will affect all preschool teachers who were not previously certified. Thus, a preschool program implemented after September of 1982, would likely have a slightly different staffing configuration. Part of the preschool experience is dependent on the staffing. Recent studies (Hess, 1979; Hess et al., 1980; Kagan, 1976; Winetsky, 1978) suggest that child-care staffs are more

permissive than parents, tolerate more aggression, and urge less self-control.

The new certification requirements also seem to be congruent with the Missouri State Board of Education's announced emphasis on early childhood education.

The last factor that could affect a preschool program is somewhat hypothetical, anticipated conflict with the preschool industry. Preschool is big business. In 1979, St. Louis City received over 3.5 million dollars in Title XX monies, and those monies were just for a specific portion of the public day-care market. When the cost of private day-care and other kinds of pre-first grade child-care are added in with the available government funds, the size of the potential market becomes more obvious. It was noted that in some of the interviews conducted for this report, a certain anxiousness or apprehensiveness was apparent on the part of those whose livelihood depended on the day-care business. To these people, the fact that the school system was giving even the slightest consideration to expanding its preschool offerings, was frightening.

Summary

This segment of the report has presented some characteristics of the prevalent theoretical/curricular preschool models. The general finding was that no model evidenced consistent measured superiority over the others. An analysis of various other considerations that could affect the implementation and subsequent efficacy of a preschool program was also offered. It included discussion of the need for a preschool philosophy, parental involvement, funding, legislation, and possible conflict with the preschool industry. In the final section, two suggested preschool models will be presented.

TWO PRESCHOOL MODELS

In this last section of the report, two preschool types are described. The relative merits, deficiencies, and costs of each are discussed, as well as the commonalities. As previously suggested, the primary determinants of what form or type of preschool model is selected should be the philosophy, in conjunction with the purpose, goals, and objectives of the program. The following items will be addressed: hours of operation, generalized food services, staffing and personnel, home visits, and costs.

The two preschool types that are offered for consideration are the regular day preschool which would operate five days a week during the regular school period, and the extended day preschool program which would operate five days a week between the hours of 6:30 a.m. and 6:00 p.m.

The regular day preschool program would be subject to the normal school schedules of vacations, holidays, etc. It would not operate during the summer. The extended day program would not be subject to normal school schedules and would close only on major holidays. It would operate throughout the year, including summer. Participants in both programs would attend both the morning and afternoon sessions.

While both of these programs would provide the systematic developmental experiences that are reflective of preschools, it is apparent that the proposed extended day program places a higher value on also providing functional custodial care. Because of this additional provided service, and the accompanying greater cost of the extended day program, parents would be expected to contribute tuition and/or in-kind service of some sort.

In both models, the preschool curricula should provide appropriately stimulating problem-solving situations to assure cognitive development of the children.

There should be interest centers that would offer fine motor activities such as puzzles, weaving, sewing, building with small blocks, an interest center for artwork where clay, easel painting, crayons and chalk would be available, a block activity area, and a housekeeping center.

There should be a sand table complete with appropriate pouring and sifting containers, a water table with sponges and floating objects, and a book corner with comfortable chairs and cushions and many different kinds of books. There should be a music center where the children could listen to tapes of records and experiment with instruments that have been made at the center.

During the day there would be periods of free play so that individual children could have the chance to explore object permanence, concepts of space and spatial relations, classification, and seriation by themselves. The opportunity for self-expression through language would be incorporated into activities whenever possible. Rather than having the child copy what the teacher has said or repeat a story that has been heard, the child would be encouraged to generate his/her own story and to create new material.

The typical day would be structured but yet convey an unstructured quality. Children would be given a variety of activities in which to participate. Rules would be minimized whenever possible.

The physical plant requirements of the preschool program should be able to be provided in almost any public school setting. The space should be on the ground floor, hopefully with direct access to the outside. It should provide a minimum of 40 square feet per child. It would have adequate room for tables, for interest centers, and for indoor gross motor activity. It would be beneficial if a kitchen and/or a clothing and ironing area can be provided to simulate many home experiences. Child-size bathroom facilities need to be available.

An outdoor area would have space for water, sand, animals and other implements and surfaces for physical activity.

A complete learning experience can be built around food and its preparation. Breakfast, lunch, and a mid-afternoon snack would be available everyday. Preferably, the meals would be fixed in the kitchen adjacent to the day-care rooms. The children would assist in the preparation and would be provided structured experiences in math (counting out plates and silverware), and independence/responsibility development (cleaning up after the meal).

Hope Montessori Academy estimates that the preparing of their own food for the children (210) costs about $1.10 per day for a hot breakfast, a hot lunch, and two snacks. Affton uses school lunches, and Ferguson-Florissant uses school lunches in their Title XX preschools and home-packed lunches in the non-Title XX day-care.

The staffing configuration of the preschool program would vary according to the specific site and the type of program (regular or extended). All preschool programs would be under the supervision of the early childhood education director. Depending on the number of classrooms at a given site, a head teacher or site coordinator would be responsible for the operations. Decisions concerning each center would be decided by the director and an advisory board of parents which would meet at least monthly. The teachers should have a degree in either early childhood or primary grade teaching. The aides should have experience in working with groups of young children. The preschool teacher would have to meet many different needs, both of the children and of the parents. The teacher would go through specific in-service training to increase his/her ability to act as a referral source.

In the extended day preschool which would be open for almost 12 hours, the aides

would cover the beginning and the end of the day. The teachers would lead the children from 8:30 in the morning until 3:00 in the afternoon. It would be necessary to have two groups of aides that would come in each day. One shift would cover the opening, from 6:30 to 12:30 and the next group would work from 12:00 to 6:00. The overlap in time would permit preparation, getting supplies together, etc. The aides could be provided by the training program at Forest Park Community College that trains Child Development Associates. They work in the classrooms at the college and in actual early childhood classrooms. Often they finish the program with their needs both attuned to the children and to the needs of the parents.

In addition to the already described personnel, the preschool program would need to have additional professional assistance. There should be a nurse that visits the centers on a regular basis. A social worker and/or psychologist should be available to consult with teachers and parents about various problems. Most of the costs of the preschool programs implemented by school districts are usually supported by federal or state monies. Some districts are more creative than others in securing the needed funds. For example, the Affton School District charges $40 per week for day-care/early childhood education and meals. The children are picked up and delivered home at the end of the day. Children in grades 1-6 are accepted before and after school for $20 per week. In Ferguson-Florissant the children pay $35 per week for complete day-care and early education. The Ferguson-Florissant program uses Title XX funding in two of their programs and none in the other two.

Hope Montessori preschool gave this general breakdown of expenditures in their budget: salaries-70%, insurance benefits-6%, repairs, maintenance-4%, food-10%, consumable supplies-4%, utilities-3%, and miscellaneous-3%.

Given certain fixed costs, such as utilities, furnishings, maintenance, etc., the

regular preschool program could easily operate at the present school system cost per elementary pupil of $2,072. The extended preschool program would have the additional aide costs which would add approximately $1,200 per pupil costs given a class size between 15 and 20 students. The additional costs of the extended day program would be borne when possible by the parents.

Summary

The final section of this report presented for consideration two operational models (regular and extended day) for preschool programs within the St. Louis School System. In a format that could be considered, "a day in the life of a preschool", these models incorporated most of the noteworthy factors culled from the preschool literature, field investigations, various interviews, and other sundry sources cited within this report.

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Appendix I

SUMMARY OF STUDIES INCLUDED IN THE PERSISTENCE OF PRESCHOOL EFFECTS REPORT-1977

Appendix J

SUMMARY OF STUDIES INCLUDED IN THE PERSISTENCE OF PRESCHOOL EFFECTS REPORT-1977

PROGRAM	PRINCIPAL INVESTIGATOR	LOCATION	TYPE OF DELIVERY SYSTEM*	AGE AT INTERVENTION	YEARS OF PROGRAM
The Philadelphia Project	Dr. Kuno Beller	Philadelphia	center-based	4-6	early '60's
Institute for Developmental Studies	Dr.'s Martin & Cynthia Deutsch	Harlem	center-based	4-8	late '50's early '60's
The Parent Education Program	Dr. Ira Gordon	northern Florida	home-based	3 mo - 3	mid '60's
The Early Training Project	Dr. Susan Gray	Murfreesboro or Columbia, Tenn.	combination	4-5	early '60's
The Family-Oriented Home Visitor Program	Dr. Susan Gray	Nashville, Tenn.	home-based	0, 1	early '70's
Curriculum Comparison Study	Dr. Merle Karnes	Champaign - Urbana, Ill.	center-based	4	mid '60's
The Mother-Child Home Program	Dr. Phyllis Levenstein	Long Island	home-based	2-3	late '60's early '70's
Experimental Variation of Head Start Curricula	Dr. Louise Miller	Louisville, Ky.	center-based combination	4	mid 60's
Harlem Training Project	Dr. Frank Palmer	Harlem	center-based	2-3	mid 60's
Perry Preschool Project	Dr. David Weikart	Ypsilanti, Mich.	combination	3-4	early '60's
Curriculum Demonstration Project	Dr. David Weikart	Ypsilanti, Mich.	combination	4	mid 60's
Carnegie Infant Program	Dr. David Weikart	Ypsilanti, Mich.	home-based	3 mo - 2	late '60's
Micro-Social Learning System	Dr. Myron Woolman	Vineland, N.J.	center-based	4-5	late '60's
Head Start & Follow Through New Haven Study	Dr. Edward Zigler	New Haven, Conn.	center-based	5	mid '60's

*center-based-nursery school type program, somewhat structured curriculum, some parent involvement

home-based-activities directed toward the parent, promoted child development through parent-child interaction

combination-combined above approaches of center-based program coupled with periodic home visits

Appendix II

SUMMARY OF RATINGS OF OBSERVATIONS OF

FIFTEEN CENTERS

Personal Care Routines

1. Greeting/departing
The preschool centers received good to excellent ratings in this area. This meant that a few of them had plans made to [redacted] warm greetings and organized departure with a [redacted] member assigned responsibility for greeting and departure of children. This provision rated a 5 on the the scale. The majority of centers had this plus the parents were greeted as well as the children and shared information during that time. This definition rated a 7.

2. Meals/snacks
The ratings here ranked from 4 through 7.
The ones at the lower-rated definition here had well-balanced meals on regular schedules with the staff members sitting with the children. The higher ratings in this area had everything mentioned so far plus the time was planned as a learning experience. Talk centered on children's interests and events of the day as well as aspects of foods.

3. Nap/rest
Several preschool centers did not have a rest time as part of their day.
One center received a rating of 3. This means that the rest is appropriately scheduled however, there is a problem with supervision, atmosphere or the area used.
Several centers received a rating of 5.
This means that the nap is well supervised and space is adequate and conducive to resting.
Many centers received a rating of 7 here. Everything that was mentioned above to receive a 5 was present plus the children were helped to relax with music or backs were rubbed.

4. Diapering/toileting
A few centers had minimal conditions here and received a rating of 3 or 4. This means that the conditions were inaccessable and not child sized.
Most centers received an excellent rating, a 7.
This means that the toilets were child sized and the sinks were low to promote self-help.

5. Personal grooming
Most of the ratings here were clustered around 4 and 5. This is a low-good to good rating. There were scheduled times for washing hands and grooming routines were used to develop positive self concepts.

Furnishings and Display for Children

6. For routine care
Ratings ranked between 4 through 7.
Only one center received a 4. This means that the maintenance of the room, in this case it was the paint on the walls, needed care.
Several centers received a 5. This indicates that there were sufficient number of pieces of child sized routine care furniture in good repair and the floors and walls were well maintained.
Over half of the centers received a rating of 7. This indicates that everything was there that would rate a 5 plus the furnishings are well cared for. The cubbies are clean, sheets are changed often on the cots and the furnishings do not overcrowd the room.

7. For learning activities
Ratings here ranged from minimal, a 3, through good, a 5, on to and including excellent, a 7. Most centers received a low-good to good in this category.
The center that rated a 3 had the basic learning activity furnishings in good repair.
The centers that received a 5 had the basic learning activities plus sand/water table and woodwork bench that are used weekly. In addition these centers have an easel or art table that is used daily.
The few centers that received a 7 have the full range of learning activities described above and they are used independently by the children since there is adequate labeling through pictures or words to help maintain order.

8. For relaxation and comfort
One center received a 1 defined here as inadequate. There were no cushions, rugs, rocking chairs or upholstered furniture or any "softness" materials for the children.
Many centers received a 3, meaning that there was only a rug in the play space or some upholstered furniture available to the children.
Proceeding to the next ratings there were a couple of centers in each category. To receive a 5, a good rating, the center had a planned cozy area that had a child sized rocker, rug or cushions that could be used for reading or dramatic play.
The couple of centers that received an excellent rating here had the "softness" available in several other areas beside the cozy area. Many soft toys in addition to the cushions or area rugs would be found there.

9. Room arrangement
Ratings ranged from 3, minimal, through 5, good, to 7, excellent.
The one room that received a 3 had one or two interest centers defined, but the centers were not well placed in the room.
Quite a few centers received a rating of 5 which meant that three or more centers were defined and conveniently equipped with adequate shelving and play space provided.
Most centers received a 7. This means that in addition

9. continued
to the above facilities the centers provided a variety of learning experiences. Independent use by children is possible as a result of the design of the centers. Open shelves are labeled or there is a convenient drying space for art work. Additional materials are available to add to or change the centers.

10. Child related display
Many centers received a 5, a good rating, meaning that children's work predominates. The teacher made displays related closely to current activities and the items were displayed on the child's eye level.
The centers that did not rate a 5 had commercial or teacher made displays predominating.
The centers that received a 7 in this category had a variety of materials and topics in the children's work that was displayed. Three dimensional objects such as clay or playdough was displayed as well as flat work.

Language-Reasoning Experiences

11. Understanding of language
(receptive language)
Ratings here were between 5, a good rating, one center received a 6 and the majority of centers received a 7, an excellent rating.
The centers that received a 5 have materials such as books, flannel board materials or picture lotto and other picture card games present for free choice and supervised use. There is also one planned activity such as a story, finger plays or flannel board story daily. In addition to the above activities the rooms that received a 7 also have a teacher who provides a good language model throughout the day.

12. Using language
(expressive language)
Ratings here were between 5, 6, and a large majority received a 7.
The couple of centers that received a 5 had many scheduled activities for using language during free play and group time.
The dozen centers that received an excellent rating of 7 have daily plans that provide a wide variety of activities for using language during free play and group times. Here there are opportunities for expressing thoughts and developing skills in a language plan based on individual needs. The teacher encourages expressive language throughout the day.

13. Using learning concepts
(reasoning)
Ratings were between 3 and 7. The centers that received a 3 have games, which could be same- different, matching or sorting games and sequence cards or size and shape toys. The amount of teacher guidance that was used with these was either absent or nor readily available.
The centers that received a rating of 5 had sufficient games, materials and activities that were available for the children to use by choice and teacher assistance added to the stimulation of the child's reasoning.
The half dozen centers that received the excellent rating of 7 had all of the above and additional reasoning opportunities offered by the chances to learn sequences as in talking about experiences, recalling a story or a cooking project.

14. Informal use of language
Ratings were from the low side of good through the excellent ratings, from 4 through 7.
The centers that received a good rating have frequent staff-child conversations with the children being asked "why, how, what if" questions which require complex answers. Language is used for social interaction.
Several centers were between a good and an excellent rating. To receive an excellent rating the staff makes

14. continued
conscious effort to have an informal conversation with each child everday. Also the staff verbally expands on the ideas the children present. Half a dozen centers received a rating of 7 here.

Fine and Gross Motor Activies

15. Perceptual/fine motor
One center received a 3, a minimal rating, over half received a good rating of 5 and five centers received an excellent rating of 7.
The rating of 3 meant that there were some developmentally appropriate perceptual /fine motor materials such as puzzles, Leggo and small building toys, scissors and crayons available for daily use.
The good rating shows that a variety of developmentally appropriate perceptual/fine motor materials in good repair used daily by the children.
The centers that received a 7 had everything in the category above plus the materials are rotated to maintain interest and the materials are organized to encourage self-help. Also activities are planned to enhance fine motor skills.

16. Supervision
(fine motor skills)
The centers either received a good rating, a 5 or an excellent rating of 7 in general for this section.
The good ratings meant that the the teacher helps and encourages the children to finish puzzles, fit pegs in holes, use scissors and also shows appreciation of children's work.
Over half of the centers received an excellent rating here. This means that in addition to the things listed above for a 5 the teacher guides the children to materials on an appropriate level for success. Learning sequences are provided to develop fine motor skills.

17. Space for gross motor
Ratings here went from a 3, the minimal evaluation to 7, the excellent rating. The biggest concentration of scores is at 5, the good rating.
For the couple of centers that received a 3 there was some space set aside specifically outdoors or indoors for gross motor/physical play.
In the centers that earned a good rating there was adequate space outdoors and some space indoors with planned safety precautions such as cushioning ground cover under climbing equipment or fenced in area.
The four centers that received a 7 had planned, adequate safe, varied, and pleasant space both indoors and outdoors.

18. Gross motor equipment
Ratings ranged from 3, minimal score through 7, excellent score. There were five centers that earned a 3 and four centers that rated a 5.
For a rating of 3 there was some appropriate gross motor equipment, but it was inaccessible or required daily moving or setting up or there was little variety in equipment.
To earn a 5 the gross motor equipment is readily available and sturdy and stimulates a variety of skills.
The three centers that earned a rating of 7 have everything needed for a 5 plus the equipment is imaginative and

18. continued
is frequently rearranged by the staff. There are different pieces of equipment on different levels.

19. Scheduled time for gross motor
Ratings were between low-good to excellent. Over half of the centers received an excellent rating.
For a good rating, a 5, there is a regularly scheduled physical activity time daily, both in the morning and afternoon for the centers that are in operation all day. The nine centers that received a 7 have regularly scheduled daily physical activity times with age appropriate planned physical activity such as playing ball or follow the leader as well as informal play time.

20 Supervision
(gross motor activities)
Ratings here clustered at the 5, the good rating with a few ranking between good and excellent and a couple earning an excellent rating.
For a rating of 5 the supervision is provided near the children and the attention is given mainly to the safety of children.
The excellent ranking meant that the supervisor talks to the children about ideas related to their play and uses the time to help build social skills. When appropriate concepts such as near-far, fast-slow and up-down are introduced.

Creative Activities

21. Art
This is a section where there were ratings in all seven classifications. Therefore, there was not a cluster under any one rating.
The two centers that rated a 1 had few art materials available or the use of the materials was usually directed by the teacher. Art materials were not readily available to be used as a free choice activity.
To receive a 3, as three centers did, some materials were available for free choice, but emphasis was placed on projects that are like an example shown.
The three centers that received a 5, a good rating encourage individual expression with free choice. They have few projects that are like an example shown.
The two centers that earned an excellent rating have a variety of materials available for free choice, including three dimensional materials such as clay. An effort is made to relate the art activities to other experiences.

22. Music/movement
Ratings were between 2 and 7. So they went from low-minimal to excellent. Over half of the centers earned an excellent rating here.
The rating of 2 center had some musical experiences, but not very often.
The four centers that earned a good rating had planned music time for singing, or movement or musical instruments several times weekly.
The nine centers that received a 7 have music daily as either free choice or group activity. There is space and time for music and movement.

23. Blocks
Ratings went from 1, inadequate to 7, excellent.
The center that had not enough space to play with blocks and only a few blocks and accessories rated a 1.
The three centers that received a 3 did not have a special block area set aside. At least two children could play with the blocks at one time.
The two centers that earned a 5 did have a special block area set aside out of traffic. The area was available for at least one hour each day and three children could play at one time.
The five centers that received a 7 have a special block area with suitable surfaces. The blocks are organized with pictures or outlines on the shelves to show where the blocks belong.

24. Sand/water
This is another category where every rating was given to at least one center.
The two centers that received a 1 had no provision for sand or water play.
The centers that received a 3 had some provision for sand or water play outdoors or indoors.
The four centers that had provided for sand and water

24. continued
outdoors or indoors and included toys with this play, received a 5.
The three centers that provided for sand and water play outdoors and indoors and had appropriate toys earned a 7.

25. Dramatic play
Ratings here ranged from 3, minimal facilities to 7, excellent facilities.
The centers that received a 3 have the dramatic play props focused on housekeeping roles.
The two centers that earned a 5 have a variety of dramatic play props including transportation, work, adventure, fantasy.
The five centers that earned an excellent rating had everything needed for a rating of 5 plus trips, pictures and stories are used to enrich dramatic play.

26. Schedule
Ratings ranged between 5, good to 7, excellent.
There were ten centers that earned a 7 here.
The centers that received a 5 have schedules that provide a balance of structure and flexibility. Several activity periods both outdoors and indoors are planned daily in addition to routine activities.
The majority of centers, the ones that received a 7 have a balance of structure and flexibility with smooth transitions between activities. The materials are ready for the next activity before the current activity ends.

27. Supervision
(creative activities)
Ratings here were either 5, 6, or 7.
The five centers that earned a 5 here have supervision provided near the children. Attention is given mainly to safety, cleanliness and the proper use of materials.
The seven centers that earned a 7 have the teacher interacting with the children, discussing ideas and helping with resources to enhance play. This teacher is aware of the balance between the child's need to explore independently and the adult's opportunity to extend learning.

28. Space to be alone
Ratings here went from 3, minimal rate to 7, excellent rate. The eight centers that earned a 3 do not have space especially set aside, but children are allowed to find space to be alone. This can sometimes be done in play equipment or behind furniture.
The center that earned a 5, a good rating, had space set aside for one or two children to play, protected from intrusion by others.
The three centers that earned a 7 have everything in 5 plus play alone activities that are provided as part of the curriculum for development of concentration, independence and relaxation.

29. Free play
(free choice)
Ratings here went from 3, minimal rating through to 7.
The two centers that earned a 3 have some opportunity for free play. Free play is not seen as an educational opportunity.
The five centers that earned a 5 have ample and varied toys, games, and equipment for free play. It is scheduled several times during the day.
The three centers that earned a 7 have ample opportunity for supervised free play outdoors and indoors with a wide range of toys, games, and equipment. Supervision is used as an educational experience.

30. Group time
(other than sleeping, eating)
Ratings are from 3 to 7. They include some that are minimal facilities, to good, to excellent ones.
The three that earned a 3 have some free play, however, all planned activities are done as a whole group.
The one center that earned a 5 has planning done for small group as well as large group activities. Whole group gatherings are limited to short periods.
The half dozen centers that earned a 7 have everything in 5 plus different groups are planned to provide a change of pace throughout the day. One-to-one adult-child activities are included, but free play and small groups predominate.

31. Cultural awareness
One center received a 3, several received a 5 or a 7.
The one that earned a 3 has some ethnic and racial variety in toys and pictorial materials.
The seven centers that received a 5 have a liberal inclusion of multi-racial and non-sexist materials. These may be in dolls, illustrations in story books, and pictorial bulletin board materials.
The six centers that received a 7 have everything in the rating of 5 above plus the curriculum includes cultural awareness. This may be done through planned use of both multi-racial and non-sexist materials. Holidays from other countries, cooking of ethnic foods and different roles for women and men may be included.

32. Tone
Ratings here were either 5, 6, or 7.
The four centers that earned a 5 have a calm but busy atmosphere. The staff and children seem relaxed and cheerful. Adults show warmth and physical contact.
The ten centers that earned a 7 have everything above as in a 5 plus adults prevent problems by careful observation and skillful intervention. The curriculum includes planning for development of social skills.

33. Provision for exceptional children
Ratings go from 3 on through 7.
The one center that earned a 3 did not attempt to assess the degree of need. There was no long range plan for meeting special needs of children.
The six centers that earned a 5 have a staff ~~that~~ assesses the needs of children and makes modifications in the program to meet special needs.
The half dozen centers that received a 7 have everything above to rate a 5 plus individually planned programs for exceptional children involving parents and using professionally trained person as consultant. Referral to support services may be made.

34. Adult personal area
Ratings are found under each number from 3 to 7.
The one center that received a 3 had either separate adult restroom or lounge facilities provided. There was little adult furniture.
The three centers that received a 5 had an adult restroom and lounge area available. The lounge was sometimes used for children's activities. There was adult furniture in the lounge.
The four centers that received a 7 have adult restroom and lounge facilities separate from children's activity areas. There is comfortable adult furniture. Storage for individual personal belongings in the classroom has safety provisions if necessary.

35. Opportunities for professional growth
Ratings here go from good to excellent.
The two centers that rated a 5, a good rating, have a good professional library and current materials on a wide variety of subjects readily available. Regular staff meetings include staff development activities.
The eight centers that received a 7 have everything in the above category plus planned sharing of professional materials among the staff. Inservice training includes workshops and courses. Support is available through scholarships and released time for inservice.

36. Adult meeting area
Ratings go from 4 through 7.
To earn a rating of 5 the seven centers have satisfactory group meeting area and conference space. Dual use does not make scheduling difficult.
The half dozen centers that earned a 7 have everything in the category above plus individual conference area that is separate from the children's activity areas and other dual use.

37. Provisions for parents
Ratings here are either 5, 6, or 7
The four centers that received a 5 exchange parent/staff information at regular intervals through conferences, or newsletters. Parents are welcomed to be part of the program. This is sometimes done by having parents eat lunch with the children or sharing a family custom with the child's class.
The half dozen centers that received a 7 have everything above as needed for a good rating plus the provision of information on parenting, health care and other needs. Parents' input is sought in planning and evaluation of the program. Parents are involved in decision making roles along with the staff. A representative of the parents may be on the board.

Appendix III

SPECIFIC DATA GATHERED FROM OBSERVATIONS OF

FIFTEEN PRESCHOOL CENTERS

Specific Data

1. Number of teacher/aides	eight centers had	2
	five centers had	3
	two centers had	4
2. Who are the adults?	degrees Ed.D.	1
	M.A.	2
	B.A.	9
	A.A.	3
	certification	
	CDA	3
	E.C.E.	4
	associate E.C.E.	4
	parent	5
	non-trained aide	7
	high school student	1
	some college work	1
3. Number of children	ten centers had	15
	four centers had	20
	one center had	24 in one room
		30 in other room
4. Length of class	seven centers	3 hours
	one center	3 hours, 15 minutes
	three centers	5 hours, 30 minutes
Hours:	one center	5 hours or
		7 hours
	one center	10 hours, 15 minutes
	two centers	10 hours, 30 minutes
Days/Week	three centers	3 days/week
	eight centers	4 days/week
	four centers	5 days/week
5. Estimated size of the room	one center uses five rooms-various sizes	
	one center uses two rooms-360 sq. ft. ea	
	one center	540 sq. ft.
	two centers	600 sq. ft.
	three centers	750 sq. ft.
	three centers	800 sq. ft.
	one center	860 sq. ft.
	one center	1200 sq. ft.
	one center	1500 sq. ft.
	one center	1800 sq. ft.
6. Are home visits required?	nine centers	Yes
	six centers	No
When visits are required		2 visits

These are sometime during the school year. Often one at the beginning and one at the end of the year.

Data continued

7. Parents: Do they meet schedules? 14 centers Yes
1 center n/a
Do they come to meetings? 15 centers Yes
Do they watch the class? 12 centers Yes
3 centers No
Do they work on schedule? 8 centers Yes
6 centers n/a
1 center No

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8. Teacher/Child Interaction:
Does teacher work with each child? 15 centers Yes
Are any children receiving only sanctions? 15 centers No
Is the teacher's voice patronizing? 1 center Sometimes
14 centers No
Is there something the children talk to the teacher about? 15 centers Yes
Do the children seem happy? 15 centers Yes

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9. Nature of the discipline:
Is the discipline harsh? 1 center Yes
14 centers No
Do the children have a chance to talk about the incident? 1 center No
14 centers Yes
Does the incident stop the conversation? 1 center Yes
14 centers No