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AUTHOR Madden, Marilou
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ABSTRACT

The Alaska State Department of Education undertook a review of research and literature to determine the optimal starting age or ages for school attendance. This review was occasioned by two events: the proliferation of early childhood education programs in the State and the growing body of research which suggests possible adverse effects of early schooling on young children. A departmental task force was assembled to review the research and to make recommendations. The literature utilized in the review included educational research dating from the early 1930's, medical studies, and the work of developmental psychologists. Research evidence led the task force to three major conclusions. (1) Early schooling, in the form of structured, cognitive training is not warranted for the preschool child. (2) Most children, by age 6, are emotionally and physically developed to the point that they can benefit from some form of institutionalized enrichment program. However, school programs designed for children ages 6-8 should focus on development of academic readiness skills. (3) All children, ages birth-6, benefit from exposure to a variety of environments designed to enrich the child's experiential base. However such enrichment experiences are best provided through the home. (Author/JM)

Assignment Sheet/Cover Sheet

FY 76 Issue Analysis

(Confidential Internal Working Paper)

Title: Optimal starting Age for School Attendance

Category: Education

Assigned Issue Description:

Description: Make a thorough study of available information regarding the effects of various starting ages for school attendance on various types of children. Suggest an optimal starting age (or starting ages) and submit any legislation which might be necessary to implement your conclusions (e.g. changing required attendance ages and state support formulas).

Lead Agency: Education (Madden, Jeffers, Brown, Walker)

Agency Analyst/Respondent:

Other Agencies and Representatives Involved

Agency	Representatives
None	

Due Date: July 5, 1974

Lead Agency Approval:

Commissioner

Date:

FY 76 ISSUE ANALYSIS

OPTIMAL SCHOOL STARTING AGE

August 8, 1974

Prepared by

Marilou Madden

for the

Alaska Department of Education

Marshall L. Lind, Commissioner

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Summary:

The Department of Education has been directed to conduct a review of research and literature to determine the optimal starting age or ages for school attendance. This review was occassioned by two events; the proliferation of early childhood education programs in the State and the growing body of research which suggests possible adverse effects of early schooling on young children. A Departmental Task Force was assembled to review the research and to make recommendations concerning optimal school age. The literature utilized in the review included educational research dating from the early 1930's, medical studies, and the work of developmental psychologists.

Research evidence led the Task Force to three major conclusions:

1. Early schooling, in the form of structured, cognitive training, (reading in particular) is not warranted for the pre-school child. This conclusion would appear to hold true for all children, regardless of social background, physical handicap, or mental ability. Further, research evidence suggests that most children are not developmentally ready for formal instruction until the age of eight, when the visual, auditory, and neuropsychological structures of the child are fully developed.

2. Most children , age six, are emotionally and physically developed to the point that they can benefit from some form of institutionalized enrichment program. However, school programs designed for children ages six through eight should focus on development of academic readiness skills rather than on formal instruction in reading, writing, and mathematics.

3. All children, ages birth through six, benefit from exposure to a variety of environments designed to enrich the child's experiential base. However, because of the strong dependency of such children on the mother and family unit, such enrichment experiences are best provided through the home. For children with significant physical or mental handicaps, special diagnostic and therapeutic services should be provided; again, however, these services should be delivered through the agency of home.

Following these conclusions, the Task Force offers three general recommendations:

1. Formal academic instruction in Alaska's primary school should be delayed until the child reaches the age of eight or later, when the child is found to have the visual, auditory, and neuropsychological maturity necessary to acquire reading skills and to perform abstract reasoning.

2. The first two years of primary school should be directed at providing a firm academic readiness background for children aged six through eight. To accomplish this recommendation, present early primary programs, in most cases, will need to be restructured. The State should assist such restructuring by regulation; by providing incentive grants; through providing information and assistance to educators and parents or through some other strategy which will cause early elementary programs to be more closely aligned with the developmental needs of the enrolled child.

3. Early enrichment efforts should, in most cases, be left to the home and family. The State can assist in such efforts by providing or opening up community, recreational, cultural and historical resources to the child

and his family. In cases where the family is unable to provide for the health, safety, and emotional well being of the growing child, the State should intervene through established health and social services agencies, rather than through the schools.

FY 1976 ISSUE ANALYSIS

OPTIMAL SCHOOL STARTING AGE

Background:

One issue assigned to the Department of Education for analysis deals with the optimal starting age for school attendance. The task given the Department was to "make a thorough study of available information regarding the effects of various starting ages for school attendance on various types of children. Suggest optimal starting age (or starting ages) and submit any legislation which might be necessary to implement...conclusions."[1]

A task force of Department members assembled available research information, educational theoretical discussion and program evaluation materials focusing on the school starting age and its effects. In all, 53 documents, papers, and articles which had relevance to the question were retrieved from various information sources and analyzed by the task force. In addition, the task force brought to bear the combined expertise and experience of Early Childhood Education and Special Education specialists in the Department.

Definitions:

An initial review of the literature revealed a certain confusion in terms used by researchers and theorists in the field of Early Childhood Development. Also, some terms have gradually changed meaning over the years. Indeed, over the past 10 years, the term "school", has taken on a broader meaning, in terms of both focus and target group. Therefore, before moving into a discussion of research findings, it will be necessary to define terms as they will be used throughout the remainder of this paper.

Early Entrance:

Until the advent of large-scale programs directed at pre-primary school children, the term "early entrance" was used with reference to the legal starting age for first grade. In most states, legal school starting age was six, with some late fall month (i.e., October or November) selected as the cut-off date. Thus, older research studies dealing with the effects of early entrance focused on children who:

1. reached the legal starting age at or near the cut-off date; or
2. who, through some local district policy, were admitted well before (i.e., six months or more) their sixth birthday.

The gradual introduction of kindergarten programs as an established part of the regular school program in many school districts broadened the meaning of "early entrance" to include children who entered the school system, through kindergarten, at age five.

Within the past eight to ten years, the meaning has been further enlarged to include children participating in organized pre-kindergarten programs (i.e., Head Start). For all practical purposes, the term "early entrance" in recent literature has come to mean entrance into a structured program at age three or four. However, for the purposes of our discussion, "Early entrance" will be limited to its earlier meaning, that is, entrance into the formal, academic program of the school system at first grade.

Programs which focus on children below the first grade level may be outside of the purview of this paper. However, it will be necessary at times to refer to the literature regarding such programs; therefore, a consideration of definitions to be used is essential to the correct interpretation of our conclusions and recommendations.

Early ...ood Education:

In recent years, the term "early childhood education" has been broadly used to define a variety of programs and theories directed at the pre-primary child. In popular usage, the term refers to any attempt to intervene with the cognitive, physical, or emotional development of the young child, ages birth through seven or eight. Obviously, such a broad usage will not suffice for the question under discussion, since the differences between various child development theories, the approaches used for intervention and the focus of various early childhood programs far outweigh the similarities. For clarity of presentation, therefore, the Task Force has broken down this larger term into three components: "Early Enrichment", "Early Childhood Education", and "Early Schooling".[2]

Early Enrichment is a term used primarily by developmental theorists, particularly those that attribute developmental growth more to environment than to heredity. As used by such writers, the term refers to any attempt, by any individual, institution, or agency, to affect the development of the young child by providing an environment or environments which fulfill the developmental needs of self-expression, language development, exploration, independence, etc. As used in this paper, the term "Early Enrichment" will refer to any attempt to provide stimulating, creative environments for young children, with particular emphasis on the central role of the family unit.

Although most early enrichment centers on the home and child-rearing practices of the family, some familiar examples of early enrichment provided by the larger community exist. Zoos, story hours for young children at public libraries, television programs such as Mr. Rogers' Neighborhood, parks, playgrounds, and public health clinics for young children all can be considered as "early enrichment."

Early Childhood Education, on the other hand, will, for the purposes of this paper,

be used only to describe a systematic attempt, generally on the part of an outside agency working either apart from or in concert with the home, to affect the cognitive, psychometer and/or emotional develo of the young child in an organized manner. The major differences between "E y Enrichment" and "Early Childhood Education", as used in this paper, are:

1. The emphasis in early childhood education programs on a systematic, organized approach; and

2. The assumption of child development responsibilities by agencies outside of the home/family unit.

As will be seen from a discussion of the literature later in the paper, early childhood education programs in general focus more on the cognitive development of the child than on any other developmental aspect. Perhaps the most familiar example of Early Childhood Education is Head Start. In addition, such television programs as Sesame Street, with its emphasis on number concepts and beginning reading, may be characterized as "Early Childhood Education" approaches to child development.

A final variety of early childhood experience may be termed Early Schooling. Early Schooling is more precisely defined than either of the above two terms. For this term, the Task Force follows the definition given by Moore and Moore in their paper, "Early Schooling for All?":

> "Early Schooling...assumes that the teacher and school (as a public or private institution apart from the home) will guide the child's education." [3]

They further state that the term, as used by educators, does "imply some type of scheduled cognitive instruction."[4] Thus, the definition of Early Schooling as used in this paper, refers to a structured program of cognitive instruction

provided by the school system for children between the ages of three and legal school entrance (first grade.) Because of the recency of emphasis on early formal academic training, few f[illegible]or examples of early schooling exist. However, kindergarten programs which focus on cognitive development (as opposed to socialization) may be considered "early schooling." Less familiar, but more concrete examples are the Ypsilanti, Michigan, Perry Preschool Project and the Bereiter/Englemann approach to early learning.

Historic Overview:

As mentioned in the above sections on definitions, questions regarding the effects of early education have differed in focus over the last forty years. Early research studied the effects of early entrance into the formal school program at first grade. While a detailed discussion of the findings of such research studies is reserved for a later section of this paper, one should note here that such studies generally concluded that early starters did not fare as well--academically, socially, or emotionally--as their late-starting counterparts. In addition, some research evidence exists from this early period that early starting had adverse physical consequences, especially in the area of vision and possibly in the area of hearing.

The evidence of early research studies was overshadowed, however, in the early sixties. Two major educational developments led to a renewed interest in child development, especially in the area of cognition. The first development was sparked by the experimental and theoretical work of child psychologists--in particular Benjamin Bloom of the University of Chicago, who held that at least half of the individual's intellectual potential is realized by age four. Bloom writes: "Both types of data (utilized in his research) suggest that in terms of intelligence measured at age 17, about 50% of the development takes place between conception and age four, about 30% between ages four and eight, and about 20% between eight and seventeen." (Bloom, 1964).[5]

The second major development was the widespread nati concern, occasioned primarily by the Civil Rights movement of the sixties bout equal educational opportunity. Studies of the educational achievement of children outside the mainstream of American Society--i.e., blacks, Mexican Americans, Indians, the poor--revealed that such children consistently achieved at levels far below average. Further research on comparable achievement revealed that minority and poor children entered school without the language and cognitive skills common among more advantaged youth. This latter finding, coupled with Bloom's research on the intellectual potential of the young child, spurred interest in early intervention in the development process, culminating in the establishment of the Head Start Program throughout the country.

As originally conceived, Head Start was directed at actualizing the intellectual potential of the disadvantaged child by providing him improved nutrition and health care, enrichment experience , and a formalized program of cognitive training--all of which, it was ass ., would equalize his early development with that of his more advantaged peers.

Although most of the massive research conducted on the effects of Head Start Programs throughout the country (e.g., Westinghouse, 1969) appeared to cast doubts on the effectiveness of the program in meeting its stated goals, especially insofar as increased cognitive achievement is concerned, Head Start and similar programs for the disadvantaged marked the beginning of increased interest in the young child. Parents of all socio-economic classes began to consider pre-primary programs as a necessary option for their children, giving rise to a plethora of programs directed at the young child. By 1972, Newsweek was able to report that "about 40% of all 3 - 5 year-olds in the U. S. are enrolled in some kind of pre-primary program. Altogether, some 5 million American youngsters under the age of 6 are now receiving formal schooling--a figure not far below the nation's college enrollment."[6] During the past two years, this figure has no doubt increased, due, among other things, to the increase in women's participation in the labor market.

The education profession joined parents in their concern for the development of the young child. In 1966, the National Education Association passed a resolution calling for the expansion of the universal public education system. The resolution reads, in part"...the association recommends that opportunity for compensatory education begin at age four for those children who, through economic or social deprivation, may be seriously impeded in their progress through public schools, and consequently, in their participation in a democratic society."[7] To this point, the resolution followed the sociological and educational thinking of the time. However, in perhaps the first call by a major national organization to extend early childhood programs to other socio-economic classes, the resolution goes on to state that "All children should have the opportunity to go to school at public expense beginning at the age of four."[8] (Emphasis added)

The NEA resolution received support in 1971 from the prestigious President's Council on School Finance. Although the Council favored a conservative approach to most areas of public education, it came out strongly in favor of early schooling. In one of its basic recommendations to the state and federal government, the Commission recommended that "the states, local school districts, and non-public agencies continue to move toward the adoption of programs of Early Childhood Education commencing at age 4 and that the federal government provide incentives for this purpose."[9] The Commission's report further states, "We believe that the federal government should encourage the development of Early Childhood Education Programs for all children..." (emphasis added.).[10]

Thus, the Commission's report stands as the first call for federally-sponsored early intervention programs for all of the nation's children.

Late in 1971, the State of California, long a leader in educational innovation and change, became the first state to incorporate the suggestions of the President's Commission and the National Education Association, by submitting to the State

Legislature a plan to extend public schooling to all children ages three and up. Although hailed by many educators and laymen as a significant educational advancement, the California Report on Early Schooling, sparked off the first widespread criticism of early schooling programs. The attack, led by Moore, Moon, and Moore, of the Hewitt Research Center, demanded a careful reappraisal of the premises underlying early education programs. Citing a body of research dating back to the early 30's, the Moores marshalled an impressive array of evidence concerning the doubtful effects of early schooling. The Task Force used these findings as a starting point for their own analysis, the results of which are outlined in detail in the next section of this paper.

Research Findings:

Because of the complexity of the issue at hand, and following from the changing focus of research studies, the results reported in this section of the paper will employ the terminology discussed under Definition, above. The Task Force's primary efforts were directed at gathering information concerning the effects of early entrance and early schooling. For further explanation of these terms the reader is directed to the Definitions Section.

Effects of Early Entrance:

As mentioned above, studies concerning the effects of early entrance into the formal school program date back to the '30's, well before the near-universal acceptance of kindergartens. Thus, research focuses on children who entered first grade before their sixth birthday. In analyzing the results of such research, a few points must be kept in mind. First, the nature of some primary programs, especially for Grade I through III, has changed considerably over the past 30 years. Advances in knowledge concerning the learning process, the introduction of new teaching techniques, and the spread of educational technology have, in many school systems,

worked to make early primary school experiences much less formal and structured than in the past. Second, children of today differ in many ways from their World War II counterparts. The general rise in the nation's standard of living, the increased mobility of the population, and the spread of electronic media expose most children to a wider range of experiences than was previously possible. Thus, in many cases, children today may enter school with a wider repertoire of social and intellectual competencies than did their parents. While these two points may temper the research findings of the past, however, the reader should also note that despite educational advances, much of the school programming in the early primary grades still resembles the self-contained classroom and homogeneous teaching strategies of the past. In addition, although the experiential background of today's children may be richer and more varied than in the past, developmental theorists and experimenters hold that maturation, especially in the area of cognitive development, cannot be hurried. Thus, developmentally at least, today's children may not differ significantly from children in other social eras.

With these points in mind, we will move to a discussion of research findings concerning early school entrance.

Information concerning the effects of early entrance concern three areas: academic achievement effects, social/emotional adjustment, and physical effects. Each area will be considered separately.

Effects of Early Entrance on Academic Achievement:

The earliest research study devoted to the effects of early entrance on academic achievement retrieved by the Task Force was conducted by Bigelow in 1934. She compared the achievement, through Grade IV, of eighty-eight children who had entered first grade before they were chronologically six years of age with a group of thirty-nine children who had entered Grade I between chronological ages of six

and six and four months. Comparisons were based on student scores on the Modern School Achievement Test and on IQ measures derived from the Kuhlmann-Anderson Intelligence Tests. Bigelow's major findings were:

1. If a child is chronologically between six years old and six years and four months old and has an intelligence quotient (IQ) of 110 or over, he is practically certain to succeed in school.

2. If a child is below six years old chronologically and has an intelligence quotient below 110, his chances of success are small.

3. A child less than six years old with an intelligence quotient of over 120 will probably succeed, but personality factors should also be considered."[11]

Haralalnen, in a research study conducted in 1952, concluded that significantly more children who entered school (in this case, kindergarten) at age four years, nine months had difficulty in achievment and adjustment than did children who entered at normal school starting age.[12] King, in a well-known study of early entrance into the Oak Ridge, Tennessee Elementary Schools (1955) concluded:

1. "Younger entrants (i.e., chronologically between five years and eight months old and five yeqrs and eleven months old) will have difficulty attaining up to grade levels in academic skills and a large proportion of them may fall below grade level standards. Older entrants (i.e., chronologically six years old or older) are more likely to achieve up to and beyond grade level standards.

2. A larger number of young entrants will have to repeat a grade.

3. More boys than girls will repeat a grade." [13]

King's findings on sex differences and academic achievement echo an earlier study by Pauley (1951) conducted in the Tulsa, Oklahoma public schools. Pauley found that "boys were very consistent in making lower grades (than girls) even though the (boys) were held back two or three months."[14] He also found that boys outnumbered girls two to one in classes for slow learners. He cites other research supporting his contention that girls are developmentally ready for schooling earlier than boys.

His conclusion: "Much of the research on sex differences indicates that girls should be admitted (to school) at least three or more months younger than boys; or, better, that the entering age for boys be raised three or more months."[15] An article published by Ames and Ilg (1963) recommends that "boys...be fully five and one-half before they start first grade."[16]

Forester (1955) concluded from a study of Montclair, New Jersey students, that the child entering kindergarten must be five years old or older chronologically if he is to have a happy and profitable school career.[17] He cites a 1926 study which concluded that best chances of school success were for those children who were very bright and older when they entered school.

Carter (1956) conducted a longitudinal study of fifty overage and fifty underage school entrants, comparing achievement over five years of school. He concluded that "the chronologically older child appears to have advantage in academic achievement over the younger child when given the same experience." [18]

Baer (1958) studied the comparative achievement of early and late starters over eleven years of schooling. He concluded that "as a group, overage children made better school progress than did underaged children. The overage, from Kindergarten through Grade X , made significantly higher marks in subjects, significantly

higher scores on achievement tests in reading, arithmetic, and social studies, were rated significantly higher on personal traits by teachers, and were significantly more successful in maintaining regular progression from grade to grade."[19] Baer noted that "most underaged children made average school progress...however it should be remembered that both overage and underage children studied here were selected on the basis of intelligence (average IQ of each group about 111). Thus a better than average performance may legitimately be expected for either group on certain of the measures used."[20]

The above studies dealt with academic achievement in general; several other important studies look at one or more special areas of the primary curriculum, primarily reading.

Keister (1941) studied the permanence of reading skills acquired by children with mental ages below six years. The study reached three major conclusions:

1. "It is possible for children who enter Grade I before the age of six to make normal progress in reading during the first year.

2. The skills attained by such underaged children lack permanence and tend to disappear during the summer months between Grades I and II.

3. The loss between Grades I and II is not made up in succeeding years, and these children tend to be permanently retarded to about the same degree as they were at the beginning of Grade II."[21]

Hampleman, in a study of the comparative reading achievements of early and late school starters (1959) found that "these children who started to school at age six years, four months or more, as a group are superior in reading achievement at the sixth-grade level to their younger classmates."[22] He reported that "as a result of this study...school administrators can advise parents that their

children have a considerably better chance for success in reading by starting to school a few months later rather than a few months earlier."[23]

Halliwell and Stein studied achievement in reading related and non-reading related areas of early and late starters in Grades IV and V. They concluded that " it is readily apparent from the data...th the older fourth-grade pupils are significantly superior to the younger fourt. ade pupils in the reading areas and reading-related areas of spelling and language."[24] The study also found that "the difference in arithmetic reasoning between the older and younger groups shows significant superiority for the older pupils...whereas the difference in arithmetic fundamentals between the two groups shows no significant superiority for either group".[25] In this latter finding, concerning achievement in arithmetic fundamentals, this study received some support from a later study (1968) conducted by Ilika comparing the arithmetic achievement of early and late starters. Ilika found that, when compared at grade level, the late entrants had higher mean arithmetic ages than the early entrants. However, when compared by age (rather than grade level), every one of the 10 arithmetic age comparisons used favored the early entrant boys and girls.[26] Ilika quotes from an earlier study by Haines, "Academic advantages accruing from kindergarten experiences are more pronounced in the areas of arithmetic than in reading."[27]

The above studies seem to be unanimous in concluding that early entrance inhibits or retards academic achievement, except perhaps in the area of arithmetic fundamentals. These adverse achievement affects appear to persist over time, even up to Grade X. Given that the primary function of the school is instruction in the academic skills needed for participation in the larger society, it would seem, on the basis of the above evidence, that present early entrance policies are counterproductive. Halliwell and Stein, in their study quoted above, concluded that "(the findings) seem to warrant the conclusion that succumbing to current pressures for an earlier entrance date for first-grade pupils is extremely difficult to justify..."[28]

Aside from the academic achievement effects of early entrance, ever, research has pointed up other areas which, while not the pri ry responsibility of the school system, appear to be affected by entrance a These areas are the social/ emotional development of the child, and, althoug documented, physical side-effects.

Social/Emotional Effects of Early Entrance

Many of the studies on academic achievement cited above also found evidences of social/emotional effects of early entrance. Bigelow (1934) discussed the "mental hygiene" effects of early entrance. She reports that " of the eighty-eight children who entered school below the age of six years, forty-three or 49% were known by teachers and principals to be maladjusted in some way. Among the older group of thirty-nine children who had entered between the ages of six years and six years and four months, inclusive, there were seven cases of maladjustment (18%)."[29] Bigelow adds: "Of course, it is true that the school is in no way responsible for unfortunate home conditions or physical disabilities and that the same conditions may handicap the child a year later. Nevertheless, to thrust such a child into a school situation which is beyond him is to add greatly to his difficulties. This added burden may bring about personality defects which he might otherwise escape."[30]

King's Oak Ridge, Tennessee study also treats personal and emotional adjustment of early entrants. She noted a marked difference between early and late entrants. The early entrance group had a great number of students with: 1) speech defects, 2) nervous indications, and 3) personal and social maladjustments.

She concluded "Younger entrants are likely to show more indications of poor personal and social adjustment in school."[31]

Baer, in his 1958 study, found that for all seven personality traits on which students were rated by teachers annually, "overage students were rated significantly

higher than the underage students."[32] The traits included "participation in group activities", "attitude toward school", "emotional stability", and "initiative".

Ames and Ilg, through their work at the Gessell Institute of Child Development, conclude that " A child struggling to do the work of a grade he is not ready for is not merely an unhappy child. He is often a child frustrated intellectually and academically to the point that he never has a chance to express his true abilities. A child who is overplaced can come to hate school and feel himself a failure, very early in the primary grades." [33]

Klein and Breniman, in a study of mentally gifted children (mental age 7.0 before first of September of the entering year) who were allowed to enter school at a chronologically early age, found that "only one child, of the twenty-four who were permitted to enter early, progressed and achieved comfortably throughout her school life."[34] They concluded that "early admission is harmful to many children educationally, emotionally, and socially." Further, they found that "it appears that no advantages are gained by entering school early (except personal prestige) that waiting a year would not provide better. However, disadvantages occur that may not have shown up if more maturity was present."[35]

Insel and Spencer (1972) studied achievement and behavioral effects of systematic reading instruction of a group of kindergarten children. They reported that "dependency behavior, particularly toward the teacher, was exhibited significantly more frequently in the school using systematic reading readiness training."[36]

In summary, the research cited above seems to indicate that, in addition to possible academic retardation, early entrance may cause, or contribute significantly to, problems in emotional and social adjustment. The studies, conducted on various types of children, over a long period of time, suggest that the early entrant is far more likely than his older counterpart to be retained in one or more early

primary grades, or if not retained, then will function at the lower levels of the class. This experience of academic failure may well be the cause of social and emotional problems throughout the student's school career.

Physical Effects of Early Entrance:

The final area in which adverse effects of early schooling have been noted is physical development. Although much less research exists in this area than in academic and social and emotional effects, some studies point up possible physical damage which may result from early entrance into formal schooling.

Hilgartner (1963) a Texas Opthalmologist, reviewed records for a span of over fifty years. His conclusions were that the ratio of myopia (nearsightedness to farsightedness) had increased over this time span from 1:7 to 2:1; which change paralleled the pattern of earlier and earlier school age entrance in Texas.[37] Carter and McGinnis, (1970), state that "the visual mechanism at 6 years of age is unstable and many children have difficulty in fixating at definite points and in keeping their place in reading. Children at this age make many regressive movements and are inaccurate in moving from one line of print to the next...some children who cannot adjust to the difficulties of near-vision find reading so uncomfortable that they give up trying to learn."[38]

Ames (1967) remarks that "the five-and-one-half year old is more experimental visually than he was six months earlier. His big problem, so far as reading goes, is that he easily loses his visual orientation and thus may often reverse his letters."[39] (emphasis in text.)

Research on physiological development is still in its infancy. However, Moore and Moore, in their paper "Early School for All?" state that "There is research evidence that the brain does not physically mature until the child is eight or ten.

Studies on cognition also reveal a readiness for sustained high cortical thought--such abstract thinking as required in mathmatics, reading, etc.--only after age seven or eight."[40] Wepman (1968) points out that in some children, auditory discrimination and auditory memory--both essential skills for reading mastery--are not well developed until the age of nine.[41]

The above studies show research evidence for only one of the potential harmful physical side effects of early entrance--i.e., nearsightedness. Our present level of knowledge concerning neuropsychological development is too limited to be able to pinpoint with certainty positive or negative effects of early schooling in this developmental area. However, in view of the fact that the young child has a structurally incomplete nervous system until he is at least eight to ten, the possibility exists that early entrance into the formal school program may have adverse affects in this area also.

This possibility, coupled with the demonstrated adverse effects of early entrance in other areas--i.e., academic achievement, social and emotional maturation--should serve to caution parents and educators alike from advocating early school entrance as standard practice.

Special Cases:

We have pointed out in the above sections that research evidence to date does not support early entrance into the formal pre-primary school program for all children. By inference we may also conclude, therefore, that early schooling, as defined earlier in this paper, cannot be warranted for all children. Early schooling, with its emphasis on structured, cognitive instruction, would appear to the Task Force to contain all of the potential ills attributed to early entrance into first grade. That is, if children between the ages of five and five years and eleven

months have been shown by research to have considerable cognitive, emotional, and physical difficulties in handling the academic requirements for reading and arithmetic, it appears reasonable to conclude that children younger than five years of age will experience similar or even more profound difficulties.

Because of the popularity of the early school concept, especially for special groups of children, however, it will be necessary to examine this question in more detail.

Early Schooling and Disadvantaged Children:

We mentioned in an early section of this paper that the early childhood education and early schooling movements in this country were sparked primarily by a concern for the low academic achievements of various types of children labled "disadvantaged." Again, it will be necessary to break down the larger term--"disadvantaged"--more precisely as we discuss effects of early schooling, since the larger term has cultural, racial and economic implications which are too broad for the purposes of our discussion.

Culturally different will be used in this paper in preference to the more common term "culturally deprived", since the latter term implies a cultural vacuum which has been shown by sociologists and other researchers not to exist. Culturally different, in the context of this paper, will be used for children who are born and raised in a cultural milieu which differs in significant respects from that of the dominant culture. Thus, children from families whose primary language is other than English, children reared in technologically backward communities, and children whose primary values and religious orintations differ from that of Western European culture may be considered culturally different.

Economically disadvantaged will be used to describe those children from poverty backgrounds. Here, the primary difference between these children and their middle-

class peers is one of economics rather than cultur[illegible]nguage, etc.

A third category of "disadvantaged" covered in res[illegible] is the geographical isolate. Although this term, per se, has not been [illegible]ely used, it serves to describe those children who are neither culturally or economically different from the middle-class urban child, but who, through their place of residence, are prohibited from having access to the wide variety of enrichment experiences available to children in larger communities.

A final category of "disadvantaged" deserves a special section of this paper, since it deals with those children who have physical or mental handicaps which make them developmentally different from their peer group. The Task Force's decision to consider such children separately is based on the distinction between developmental difference in children and differences which are a result of environment or background. Developmental differences, which affect only the individual, may require a different educational treatment than differences which are the effect of the family or larger social system.

With these definitions in mind, we move to a discussion of the effects of early schooling on various types of children.

Culturally Different. Although much early schooling and early childhood education research focuses on programs designed for the "culturally deprived" (among other types) there is very little research directed at culturally different children. As mentioned above, the term "culturally deprived" assumes a cultural void on the part of the child's family and/or community, which has been shown not to exist. Sociological research has confirmed the existence not of a cultural void, but of many different sub-cultures within the larger culture. Thus, urban ghetto children are not culturally disadvantaged in that they have no home culture at all; instead they may be considered "disadvantaged" because their home culture--and its language,

values, and customs--differs so radically from the cultural framework of middle-class Americans. It is the intensity of this difference rather than the lack of culture which prohibits many such children from achieving in a school environment which is directed at and reinforces the dominant culture.

Early education programs which are built--as have many local Head Start Programs--on the premise that entering children have no, or at best an incomplete, cultural framework, will seek to rectify this presumed lack by bombarding the young student with experiences derived from the dominant culture.

This program philosophy can lead to such extremes as teaching "Three Blind Mice" to children who have, in their own cultural framework, a very different reaction to mice and rats than the average suburban middle-class child.

On the other hand, early childhood programs directed at the "culturally different" child recognize explicitly the existence of the child's home culture and seek to assist the child in becoming secure in two or more cultural settings. Such programs, where they exist, may be characterized more as "early enrichment" than "early education" and generally attempt to heavily involve the parents. Alaska provides a good example of such early enrichment programs in many of the rural Head Start Programs, where activities for young children heavily involve the community and reinforce the traditional cultural set of the child's family, as well as provide experiences in the larger culture aimed at helping the child adjust to school. As mentioned earlier, research on the specific effects of such "bi-cultural" early enrichment programs has been limited. However, the popular success of various village Head Start Programs in Alaska, coupled with the demands of many Native Corporations for increased attention to early childhood education (see A Modest Proposal, published and distributed by the Alaska State-Operated School System, 1973), suggests that such programs may be of benefit to the culturally different child in two ways. First, the emphasis on the home culture seeks to reinforce the

child's positive feelings about his home, his community and himself, by holding up his own culture as a thing of worth and dignity. Second, by introducing the young child to some of the experiences considered commonplace by middle-class children, a foundation is laid upon which later school experiences can build.

For these reasons, the Task Force recommends the continuation of early enrichment experiences for the state's culturally different children, provided that such programs;

1. are based on the child's home culture,
2. heavily involve the family and community,
3. do not introduce systematic cognitive instruction as a formal part of the program, and,
4. are a response to a documented community request for such programs.

On the other hand, the Task Force warns against early childhood education programs for the culturally different which,

1. impose a structured program of cognitive instruction, or
2. which lessen or degrade the impact of the home culture on the developing child.

Economically disadvantaged. Head Start, in its national orientation, is directed primarily at intervening with the development of young children from economically disadvantaged backgrounds, although in many local instances, it extended its focus to include "culturally different" children. In dealing with the economically disadvantaged, Head Start and similar programs used a three-pronged approach. First, emphasis was placed on upgrading the general health of the nation's poorer children by providing free medical diagnosis and treatment to enrolled students, and, in

some cases, their families. Second, Head Start programs concerned themselves with the general safety and welfare of the child by providing clothing, meals, and safe environments, as well as limited parent training and education, especially in the area of child rearing and development. Third, Head Start programs sought to intervene directly with the cognitive development of the economically disadvantaged child both through providing him with "enrichment experiences" common to middle class children and through formalized readiness programs in reading and mathmatics.

Head Start's success in meeting the first two of its objectives--i.e., the fostering of better health and the upgrading of the environments available to young, deprived children--has been little questioned. Even the programs' severest critics concede that adequate health care, nutrition, clothing, safe environments, etc. should be guaranteed all of the nation's youth. It is in its third objective--i.e., raising the academic potential of the nation's poor through intervention in the cognitive development of young children--that Head Start has aroused most criticism. Large scale evaluations of the nationwide program, such as that conducted by Westinghouse in 1969,[42] cast grave doubts on the program's effectiveness in raising the child's academic potential. One reason advanced for these negative findings is that most Head Start Programs measured their effectiveness on the basis of gains (or lack thereof) in the intelligence quotients of their students. Where programs did succeed in raising the I.Q., subsequent follow-up of the students showed that such gains were apparently highly volatile, disappearing in the early primary grades.

However, as Ames and Ilg point out "IQ as such...is an especially poor clue to a child's readiness for school entrance. Whatever the intelligence test measures, it is only a small part of the total personality."[43] School success, suggests many educational researchers and practitioners, depends as largely on a child's positive feelings about himself and his environment as it does on IQ.

Grotberg (1969) presents a position arguing for a broader perspective:

"The problem of the disadvantaged child must go beyond impaired intellectual functioning or cognitive socialization across the board. The acquisition of cognitive competence alone may still leave the child incapable of functioning in society unless he acquires motivational characteristics and patterns. These include an increased sense of control over one's environment, skills in working cooperatively with others, patterns of socially responsible behavior, and techniques for non-destructive resolution of personal and interpersonal problems." [44]

Putting aside Head Start's apparent failure to raise and maintain an increase in the IQs of its students, is there other evidence that the programs has contributed to higher academic achievement on the part of its graduates? Again, the answer appears to be that is has not done so in any significant manner. The Westinghouse report cited above concluded that "Head Start Children, whether from summer or from full year programs, still appear to be considerably below national norms for the standardized tests of language development and scholastic achievement, while performance on school readiness at grade one approaches the national norm."[45]

Reflection on Grotberg's quote, cited above, raises the suspicion that the motivational characteristics and patterns which he deems necessary to functioning in society may not be best transmitted by the school or other agency outside the home. This suspicion gains credence from research on the effects of parental involvement in preschool programs, which found some positive correlation between the degree of parental involvement in the program and the size and stability of the child's academic achievement gains. In fact, there is a growing body of research evidence which points out the superiority of "home-centered" as opposed to "school centered" programs for young children in terms of cognitive gains and emotional effects. Several theoretical reasons are given for this superiority of home-based instruction in the early years. One reason derives from developmental research on the role of

the family, particularly the mother. Moore and Moore contend that "when a child is taken from home for early schooling, or remains at home without loving care from someone he trusts, mental and emotional problems may often be expected which affect his learning, motivation, and behavior."[46] The Moores go on to state that "It is (the) complex, rich, rewarding relationship with the mother in the early years, varied in countless ways by relations with the father and with siblings, that child psychiatrists and many others now believe to underlie the development of character and mental health."[47] The lack of such relationships is termed by child developmentalists as "maternal deprivation" and can occur, to a greater or lesser degree, from removing the child from the home environment even for a significant portion of the day. Researchers in this area of child development have concluded that the susceptibility of the child to maternal deprivation diminishes slowly as the child ages, but that vulnerability between three and five is still serious.

A second reason advanced in support of home-based over school-based early education programs, particularly when such programs are focused on economically disadvantaged children, is stated by Sigel (1971): "For me, it is important to conceptualize not only the growth of the child, but the system within which he is functioning, e.g., to be aware of and to identify the ecological systematic variables ranging from school room equipment. . . to the child's relationship to his own mother."[48] Sigel points out the "need to conceptualize the family as one dynamic system interacting with the nursery school which is a second dynamic system." He warns that these "two sets of behaviors (may be) interacting in a way which precludes the creation and maintenance of change."[49]

Basing early childhood education experience in the home, therefore, would seem to be one way of minimizing the potential conflict for the child between the two systems identified by Sigel.

The lack of evidence to support the conclusion that early education or early schooling programs for disadvantaged children will have positive impact on subsequent academic achievement, coupled with the research evidence cited earlier as to the potential debilitating effects of early schooling in general, prevents the Task Force from recommending the continuation of large-scale intervention programs for the State's economically disadvantaged preschool children. At the same time, the Task Force recognized the importance of the improved child health and welfare resulting from preschool programs directed at poor children. However, in light of research findings and the avowed educational objective of the public school system, it does not appear that the school or other educational system would be the best vehicle for delivering such health and welfare services. Rather, the Task Force would recommend that attempts to improve the well-being of economically disadvantaged children be channeled through the existing health and welfare service agencies of the State.

If the State does have a compelling interst in intervening in the cognitive development of such children, the Task Force recommends that such intervention be centered on the home and family, rather than in the school or other outside agency.

Geographical Isolates:

The question of what effects geographic isolation may have on healthy child development is one of particular importance to Alaska. We have consistently alluded to the fact, throughout this paper, that success in the public school system, as presently organized, depends in large part on the incoming child's familiarity with middle class concepts, values, and artifacts. Clearly, children raised in rural, isolated sections of the state do not have access to the range and types of experience available to most urban Americans. Problems of rural isolation received greatest attention in the Appalachian area of America, where intervention programs,

based on the philosophy of early education programs for culturally and economically disadvantaged children, received much interest and support in the 1960's. As with cultural differences, however, geographic isolation in such programs was considered as only one aspect of the economically deprived child's problem. In a comprehensive overview of research conducted by the Northwest Regional Educational Laboratory for its Family Centered Work Unit of the Rural Education Program, the authors state that "In the area of preschool education in rural environments, a review of the literature has produced little material."[50] One of the few studies of rural areas (Norman and Flanders:1969) summarized the characteristics of culturally and economically deprived Appalachian children as:

1. despondency about the future;
2. passivity, cynicism, defeatism, and open hostility, especially toward school authority,
3. a poor self-image;
4. unclear vocational goals, inadequate motivation for learning about career choices;
5. inability to adjust as needed for adequate personality development."[51]

Before such a characterization is extended to all rural youth, however, it is important to note that Norman and Flanders studied culturally and economically deprived children who, perhaps incidently, resided in rural areas. Thus, it is just as likely that such characteristics are the result of these deprivations as the result of rural living in general.

The Northeast Educational Laboratory Paper,[52] which begins with the premise that early childhood educational experiences are needed or beneficial for rural children, recommends that such programs be home centered. The Task Force, however, does not conclude on the basis of available evidence that early childhood education programs

will benefit all rural children. If it appears in the best interests of the State to attempt to provide enrichment experiences for children residing in rural areas, the Task Force recommends that such efforts be conducted within the family unit rather than in the school.

Such strategies as children's television programs[53] and parent education materials delivered through correspondence study or other channels would seem from the research to be more effective--and less expensive--than in-school programs.

Early Schooling and the Exceptional Child:

During its 1974 session, the Alaska Legislature passed legislation lowering the school entrance age of exceptional children to age three, on a voluntary basis. Under the new legislation, school districts are required to provide special services to preschool handicapped or exceptional children, based on adequate diagnosis and referral.[54] Although guidelines for preschool programs have not yet been completed by the Department of Education, it is anticipated by Departmental staff that preschool services for exceptional children will be largely home-based, targeting on the family as well as the exceptional child. Where warranted, the school may be required to provide special facilities; for example, to crippled or hard-of-hearing preschool children.

Research on the effects of early childhood education programs directed specifically at exceptional children is lacking. However, experts in the area of special education, as well as the medical profession, are unanimous in agreement that early diagnosis and treatment of handicapping conditions is beneficial. While there is some difference of opinion among such experts as to the preferable ages for such diagnosis and treatment, all seem to agree by age three most handicapping conditions may be diagnosed with some accuracy.

Based on expert opinion rather than research evidence, therefore, the Task Force would recommend continuation of early diagnosis and treatment efforts on behalf of physically or mentally handicapped children, provided that such treatment is carried out through the home/family unit wherever possible. Again, however, the Task Force warns against programs for handicapped children which:

1. remove the preschool handicapped child from the home for a significant period of the day, and

2. which intervene in the cognitive developmentof the child through a structured program of academic instruction.

The above recommendation applies only to children classified as exceptional by reason of a physical or mental handicap. However, Alaska special education legislation, including the new section on preschool services, includes the gifted and talented in its definition of "exceptional".

The Task Force chose to consider children who are academically gifted or talented in other areas separately fromhandicapped children because the theory and expert opinion supporting early childhood programs for handicapped children do not necessarily apply to the gifted and talented.

For example, no compelling evidence could be found for early diagnosis of giftedness and talent. Unlike physical and mental handicaps which may worsen if not treated, giftedness and talent do not appear to need early reinforcement to persevere. On the contrary, research supports the conclusion that early schooling, even for the academically able child, has adverse effects. In several of the research studies cited above, one criterion for early admission was high I.Q. or mental age. Yet, even these intellectually superior children fall behind academically. Klein and Benihan, in their study of early admission based on advanced mental age commented that "such children who are selected to enter school early should be something

special, not only at the time of admission, but throughout their lives. They should be the school and community leaders."[55] However, their longitudinal study of mentally gifted children who had entered school early did not show that this was the case. In fact, several of these children later dropped out of school, and most experienced social or emotional problems of some intensity. For this reason, the Task Force recommends that the category of "Academically Gifted" be removed from the statutes dealing with pre-primary programs for exceptional children. Starting the academic training of a child, however bright, at an early age has been demonstrated to be potentially harmful, while there is no research evidence to support the contention that delaying formal instruction until the age of six or later results in educational or emotional harm.

This same recommendation holds true for those children talented in other areas. Research on the effects of early training for talented children is non-existent. However, from the point of view of total child development, it seems reasonable to conclude that early emphasis on specialized training may result in underdevelopment of other areas of the total personality. In addition, studies on the effects of stress and tension on the young child appear to argue against rigorous, formal training at an early age. The history of human genius abounds with examples of extremely talented persons unable to cope with the demands of daily life. Until this subject has received much more careful study, the Task Force recommends against including the talented preschool child under the new legislation.

Conclusions:

Based on the body of research and theory considered by the Task Force during the course of its assignment, the members agreed on the following general conclusions:

1. Early enrichment is shown to be important to all types and classes of children. Full development of the child calls for rich, stimulating environments with which the child can interact, without pressure or fear of failure. At the very least, all children should be guaranteed environments which secure their health, safety, and emotional well being. Because the home is the central environment for the developing child, early enrichment efforts sponsored by agencies apart from the home are less successful than enrichment efforts which center on the family. Research indicates that early enrichment experiences are more beneficial than structured intervention attempts for the child from birth to around six years of age.

2. Beginning around age six, a more structured form of cognitive enrichment appears to be beneficial for most children. A lessening of child dependency on the mother and home around this age suggests that such programs could be conducted by the school, provided that the programs be planned and implemented with a firm view of the developmental needs of the child enrolled. Research citing the adverse academic, emotional, and physical effects of formal instruction suggests that early primary programs (i.e., for children six through eight) focus more on academic readiness skills than on the mechanics of reading, writing, and arithmetic.

3. Evidence proffered by developmental psychologists and medical experts suggest that most children are developmentally prepared for formal cog-

Conclusion: (Continued)

nitive instruction beginning around age eight. By this age, most children have attained the visual, auditory, and neuropsychological sophistication necessary to master reading and to begin more abstract reasoning.

Recommendations

Following from the general conclusions cited above, the Task Force makes the following recommendations concerning Alaska's young children:

1. If the State or its agencies have a compelling interest in intervening in the developmental progress of young children, such intervention should be channeled through the home/family unit of the child, at least until he is six years of age. In most cases, such intervention should take the form of providing or opening up community resources such as parks, libraries, cultural and historical resources--which the child and his family may use on a voluntary basis. Parental education and guidance services, limited television and radio programs directed at the young child, etc., are strategies which may be useful in providing expanded and enriched experiences for the young child. In special cases, where the home environment is patently unable to provide the health, safety, and emotional support to the young child, the State may intervene in a more concentrated manner. Delivery systems for the provision of child health and welfare services presently exist; it is recommended, however, that such services be delivered in a coordinated manner which treats not only the child, but also his primary environment--the home. For children with significant physical or mental handicaps, the State through its expanded special education legislation provides for the delivery of special diagnostic and therapeutic services to children from age three. Again, such services should be delivered through the family and home. However, the Task Force recommends that talented and academically gifted children be removed from the legislation concerning preschool programs for exceptional children.

2. Existing primary school programs should be reexamined in light of the

developmental and medical research cited in the body of this paper. If most children are developmentally unready for formal academic instruction until the age of eight or later, then schools should be encouraged to restructure their early primary programs to lessen the present emphasis on reading and writing in the early grades. Research suggests, and the Task Force recommends, that the first two years of primary school be used to provide academic readiness activities rather than formal academic instruction. Many models for such early primary programs exist and are used successfully throughout the country. The State may either require by regulation that early primary programs throughout Alaska be restructured or provide incentive grants to districts which wish to restructure their programs. In either event, it would appear that the State has the responsibility of informing educators and parents of the dangers inherent in early formal schooling.

3. The Task Force recommends that formal, cognitive instruction for Alaska youth begin during the third year of primary school or around age eight. While much evidence was found in research to suggest that formal instruction before age eight may have adverse effects, no evidence was found to suggest that delaying formal instruction until after that age would retard the eventual achievement of young children.

FOOTNOTES

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