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ABSTRACT

The extra expenditures for students requiring special attention in public schools, e.g., the financially disadvantaged and the culturally different, are estimated. Also provided are cost estimates for professional help given to the mentally gifted and the handicapped students (speech impaired, mentally retarded, emotionally disturbed, deaf, and visually handicapped). The report is divided into (1) an outline of the rationale for selecting the special populations for separate examination, (2) the problems of counting the target groups, (3) some projections of the target populations to the years 1975-76 and 1980-81, (4) the estimates of extra costs associated with different target groups, and (5) the estimates of costs that would have been incurred in 1970-71 for serving all children with special needs. Included are some conclusions about the extent to which present practices fall short of recommended standards of service. Forty tables support and illustrate the text. (For related document, see ED 058 473.) (Author/EA)

Estimates and Projections of Special Target Group Populations in Elementary and Secondary Public Schools

Prepared by
Joseph Froomkin, Inc.

Submitted to The President's Commission on School Finance

THIS IS ONE OF SEVERAL REPORTS PREPARED FOR THIS COMMISSION. TO AID IN OUR DELIBERATIONS, WE HAVE SOUGHT THE BEST QUALIFIED PEOPLE AND INSTITUTIONS TO CONDUCT THE MANY STUDY PROJECTS RELATING TO OUR BROAD MANDATE. COMMISSION STAFF MEMBERS HAVE ALSO PREPARED CERTAIN REPORTS.

WE ARE PUBLISHING THEM ALL SO THAT OTHERS MAY HAVE ACCESS TO THE SAME COMPREHENSIVE ANALYSIS OF THESE SUBJECTS THAT THE COMMISSION SOUGHT TO OBTAIN. IN OUR OWN FINAL REPORT WE WILL NOT BE ABLE TO ADDRESS IN DETAIL EVERY ASPECT OF EACH AREA STUDIED. BUT THOSE WHO SEEK ADDITIONAL INSIGHTS INTO THE COMPLEX PROBLEMS OF EDUCATION IN GENERAL AND SCHOOL FINANCE IN PARTICULAR WILL FIND MUCH CONTAINED IN THESE PROJECT REPORTS.

WE HAVE FOUND MUCH OF VALUE IN THEM FOR OUR OWN DELIBERATIONS. THE FACT THAT WE ARE NOW PUBLISHING THEM, HOWEVER, SHOULD IN NO SENSE BE VIEWED AS ENDORSEMENT OF ANY OR ALL OF THEIR FINDINGS AND CONCLUSIONS. THE COMMISSION HAS REVIEWED THIS REPORT AND THE OTHERS BUT HAS DRAWN ITS OWN CONCLUSIONS AND WILL OFFER ITS OWN RECOMMENDATIONS. THE FINAL REPORT OF THE COMMISSION MAY WELL BE AT VARIANCE WITH OR IN OPPOSITION TO VIEWS AND RECOMMENDATIONS CONTAINED IN THIS AND OTHER PROJECT REPORTS.

Estimates and Projections of Special Target Group Populations in Elementary and Secondary Public Schools

A Report to
The President's Commission on School Finance

by

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Washington, D.C.
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ACKNOWLEDGEMENTS - SOURCES

The projections in this report are based upon:

(1) U. S. Bureau of the Census Decennial Censuses for 1960 and 1970 and the Current Population Reports.

(2) A special, unpublished, analysis of the 1960 Census and Current Population Reports of family income of children under 18 by region and type of residence for 1967 through 1970.

(3) A special tabulation of the 1969 School Staffing Survey, conducted by the U. S. Department of Health, Education, and Welfare, National Center for Educational Statistics. This is referred to as the Staffing Survey or the USOE Survey in the text.

(4) Information from the Department of Health, Education, and Welfare, Office of Civil Rights, and the U. S. Commission on Civil Rights, Mexican-American Studies Division, much of it still unpublished.

(5) The work of the National Educational Finance Project.

(6) Department of Health, Education, and Welfare, Office of Education, Bureau of Education for the Handicapped.

(7) National Health Survey (NHS) conducted jointly by the Bureau of the Census and the Public Health Service.

We are grateful for the cooperation of staff members at the U. S. Bureau of the Census, the National Center for Educational Statistics, National Center for Health Statistics, the Bureau for the Education of the Handicapped, the Office of Civil Rights, and the U. S. Commission on Civil Rights. None of the above are responsible for the interpretation of the data in this report.

EXPENDITURES FOR SPECIAL POPULATIONS IN PUBLIC SCHOOLS

Introduction

The objective of this report is to estimate the extra expenditures for students requiring special attention in public elementary and secondary schools. Most numerous among these are the financially disadvantaged and the culturally different. Hence, the study below presents a variety of estimates of the number of children who come from families with low income, of children with Spanish surnames, and of black children who are in school.

Other groups of students who generally require additional professional help from the school are students afflicted with various handicaps. Estimates of handicapped children are given separately for the different handicaps: speech impaired, mentally retarded, emotionally disturbed, as well as deaf, hard of hearing, blind and visually handicapped children. Finally, this study recapitulates estimates of the prevalence of children at the other end of the spectrum--the mentally gifted, who may require special enrichment programs to develop to their full potential.

The report is divided into five parts. The first part outlines the rationale for selecting the special populations for separate examination. The second part is devoted to the problems of counting the target groups. There is substantial disagreement among different sources about the number of poor children, the number of persons of Spanish origin or Spanish surnames, and even wider disagreement about

how many children are afflicted by some type of handicap. Strangely enough, there is even no agreement on the number of children who are gifted. This study presents a number of eclectic estimates of children in these groups, based on a review of available estimates and the judgment of the writers.

The third part of the study presents projections of the target populations to the years 1975-76 and 1980-81. While apologies are in order for the crudeness of some of the projections, an effort has been made to present the best possible estimates. In some cases, e.g., the projections of children by income, comparatively sophisticated projection techniques have been employed.

The fourth section of the study discusses estimates of extra costs associated with different target groups. The estimates of different studies on this subject are summarized, and estimates of prevailing practices are derived from a special USOE survey. These estimates are synthesized to produce projected service levels which could be used to calculate the requirements for serving all disadvantaged and handicapped children.

The final section of the report presents estimates of the costs which would have been incurred in 1970-71 for serving all children with special needs. It also draws some conclusions about the extent to which present practices fall short of recommended standards of service.

I. Rationale for Identifying Target Groups

Disadvantaged Students - Retention and Achievement

We do not intend to include a lengthy justification for focusing upon low-income of disadvantaged students as a potential target group The persistent dissatisfaction with the American educational system's inability to equalize the achievement of the children of the rich and the children of the poor is accepted as a public policy issue commonly enough to need no more than reiteration.

Rather, given the statistical orientation of the report, we wish to take this opportunity to highlight some data about the conditions which contribute to the perpetuation of low achievement among the poor in the U. S. educational system. For instance, the 1960 Census documented that 37 percent of children aged 10 to 13 whose parents were poor (incomes of under $3,000 per year) were in grades below the mode for their age. By contrast, only 4 percent of children from families with incomes over $7,000 a year were in grades below the mode. At ages 18 and 19, two-thirds of the poor children enrolled in school are still trying to finish high school, and one-third is in college. Among the children of prosperous and more educated parents, over eight in ten are enrolled in college, and fewer than one in six is enrolled in high school.[1]

In 1970, despite all efforts to equalize attainment, attendance rates by level of income for children age three through 17 increased

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[1]U. S. Bureau of the Census, Current Population Reports, Series P. 20, No. 132, "Education of Fathers and Sons" (Washington, D.C.: Government Printing Office, 1965).

monotonically with the income of the parents. Only 80 percent of children from families with less than $3,000 a year were in school, as contrasted to 88 percent of those with incomes above $5,000 (see Table 1). These differences are due to lower rates of attendance at both ends of the educational spectrum. Thus, in October 1969, only 23 percent of 3-5-year-olds in families earning less than $3,000 were enrolled in preprimary school, as contrasted to 38 percent of children whose parents' income exceeded $5,000. The incidence of high school dropouts in families with less than $3,000 was almost three times as high as that in families with over $5,000 (see Table 2).

A 1962 special Census study dealing with the education of fathers and young adults (aged 20 to 24) showed that over three-quarters of school dropouts had fathers who had not completed school. The dynamics underlying this cycle are illustrated by the results of the Equal Opportunity Report. A special reanalysis of the data showed that the achievement of children in school increases as the education of the parent increases (see Table 3). Low achieving students are more likely to drop out from high school than high-achievers.

With achievement highly correlated with retention, under present circumstances the children of poor parents are less likely to graduate from high school, and in some cases even from grade school. The distribution of the educational attainment for persons with low incomes is heavily skewed to few years of schooling by comparison with the total population (see Table 4).

TABLE 1

SCHOOL ENROLLMENT OF FAMILY MEMBERS 3 TO 17 YEARS OLD,
BY FAMILY INCOME FOR THE U.S., OCTOBER 1970

Income	Per Cent Enrolled	Ratio to U.S. Total	Per Cent of Enrolled in Public School	Ratio to U.S. Total
Under $3,000	80.1	.920	96.4	1.100
$3,000 - $5,000	83.4	.958	95.0	1.083
$5,000 and over	88.3	1.014	86.1	.982
Total	87.1	1.000	87.7	1.000

Source: U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 222, "School Enrollment: October 1970," U.S. Government Printing Office, Washington, D. C., 1971, Table 15.

TABLE 2

PRE-PRIMARY AND HIGH SCHOOL ENROLLMENT
IN THE U.S. BY INCOME

Family Income	Per Cent of 3-5 Year Olds Enrolled in Pre-Primary	Per Cent of[a] Population 14-17 Year Olds	Per Cent of[b] Dropouts Age 14-17
Less than $3,000	23.4	7.1	21.9
$3,000 - $4,999	24.2	11.4	23.4
$5,000 and over	37.8	81.5	54.7
Total	34.6	100.0	100.0

[a] Total population is equal to those enrolled in high school plus those who are not enrolled in school.

[b] Dropouts are considered to be those in the population age 14-17 who have not graduated from high school and who are not currently enrolled in school.

Source: U.S. Department of Health, Education and Welfare, Office of Education, Preprimary Enrollment, October 1969, Table 3; U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 222 "School Enrollment: October 1970," U.S. Government Printing Office, Washington, D. C. 1971 Table 15.

TABLE 3

ACHIEVEMENT MEANS OF STUDENTS BY EDUCATIONAL ATTAINMENT OF FATHER ADJUSTED FOR NO-INFORMATION GROUP: FOR SEVERAL GRADES

Fathers' Education Category	Achievement Mean of Students				
	Grade 1	Grade 3	Grade 6	Grade 9	Grade 12
None or some grade school	43.765	43.210	43.934	44.569	45.197
Completed grade school	47.336	47.279	46.415	48.267	58.161
Some high school but did not graduate	49.042	48.178	49.364	49.109	48.962
Graduated from high school	52.711	52.197	52.197	52.147	51.992
Some college but less than four years	54.557	54.780	54.099	54.662	54.323
Four or more years of college	55.817	56.649	55.329	56.461	55.980

Note: For total, Mean 50.0, Standard Deviation 10.

Source: Adapted from Inequality: Studies in Elementary and Secondary Education, eds. Joseph Froomkin and Dennis J. Dugan, Chapter II; C. Marston Case, "A Revision of the Equal Opportunities Survey Estimates of the Relationship Between Child's Achievement and Father's Education," U.S. Department of Health, Education and Welfare, Office of Education, 1969 (mimeographed).

TABLE 4

EDUCATIONAL ATTAINMENT IN 1971 OF PERSONS
14 YEARS OLD AND OVER,
TOTAL POPULATION AND PERSONS BELOW LOW-INCOME LEVEL
IN 1970, BY AGE
(per cent of total in age group)

Age (years)	Elementary 0-8 years	High School 1-3 years	High School 4 years	College 1 year or more	Median Years Completed
TOTAL POPULATION					
14-21	25	42	21	12	10.7
22-34	8	15	44	33	12.6
35-44	16	18	41	25	12.4
45-54	22	18	38	21	12.2
55-64	36	19	28	18	11.3
65 and over	56	14	17	13	8.8
BELOW LOW INCOME					
14-21	36	41	15	8	9.9
22-34	23	28	29	19	11.8
35-44	44	23	24	9	9.7
45-54	53	19	20	9	8.8
55-64	60	17	16	8	8.2
65 and over	70	12	11	7	8.2

Source: U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 81, "Characteristics of Low Income Population, 1970," U.S. Government Printing Office, Washington, D.C., 1971.

Since the low-income population is not evenly distributed between various types of residence, it may be appropriate to note that the low-achieving children are also not evenly distributed by type of residence. If one were to take the suburban average achievement as a standard, one would find that roughly 40 percent of the children in central cities and rural non-farm areas achieve below the lowest quartile of suburban children in ninth grade. Nearly one-half of the children in rural areas are below this cut-off (see Table 5).

Finally, while this study discusses the educational needs of certain minority groups and those from families with low incomes, the correlation between these two conditions is well established (see Table 6).

Minority Students - Retention and Achievement

Another way of identifying pockets of low attainment and low achievement is to look for large concentrations of minority students, i.e., blacks or Spanish-Americans. These students generally come from families which are poorer than those of whites. The differenes in mean family incomes between whites, blacks and Spanish-Americans are shown in Table 7.

As could be expected, the attainment rates of black and Spanish-American adults are lower than those of whites. Currently, the Spanish-Americans lag behind blacks in educational attainment. Spanish-Americans also lag behind blacks in terms of their graduation rates from high school (see Table 8).

TABLE 5

A COMPARISON OF STUDENT ACHIEVEMENT: BASED ON ACHIEVEMENT DISTRIBUTION OF SUBURBAN STUDENTS

Type of Residence	Compared to Suburban Student Achievement		
	Below Lowest Quartile	Below Median	At Upper Quartile
	(per cent)	(per cent)	(per cent)
Central City	39	65	15
Urban Fringe	25	50	25
Outer Urban	28	54	22
Rural Non-Farm	37	62	16
Rural Farm	47	73	10

Source: Based on statistical information taken from unpublished data in the Educational Opportunity Survey, 1966. Achievement measures pertain to 9th grade students and the type of community in which they have lived most of their lives.

TABLE 6

RACE AND SPANISH ORIGIN OF PERSONS, BY LOW-INCOME STATUS IN 1959, 1964, AND 1968 TO 1970

Race	Number below Low-Income Level (thousands)	Per Cent Below Low-Income Level	Per Cent Distribution: Below Low-Income Level	Per Cent Distribution: Above Low-Income Level
1970				
Total	25,522	12.6	100.0	100.0
Spanish origin	2,177	24.3	8.5	3.8
White	17,484	9.9	68.5	90.3
Negro	7,644	33.6	30.0	8.5
Other Races	394	16.3	1.5	1.1
1969				
Total	24,289	12.2	100.0	100.0
Spanish origin	N.A.	N.A.	N.A.	N.A.
White	16,668	9.5	68.6	90.3
Negro	7,214	32.3	29.7	8.6
Other Races	407	17.9	1.7	1.1
1968				
Total	25,389	12.8	100.0	100.0
Spanish origin	N.A.	N.A.	N.A.	N.A.
White	17,395	10.0	68.5	90.8
Negro	7,616	34.7	30.0	8.3
Other Races	378	19.4	1.5	0.9
1964				
Total	36,055	19.0	100.0	100.0
Spanish origin	N.A.	N.A.	N.A.	N.A.
White	24,957	14.9	69.2	92.6
Negro and Other Races[a]	11,098	49.6	30.8	7.4
1959				
Total	39,490	22.0	100.0	100.0
Spanish origin	N.A.	N.A.	N.A.	N.A.
White	28,484	18.1	72.1	93.3
Negro	10,475	55.1	26.5	5.9
Other Races	531	32.2	1.4	0.8

[a] Data for Negroes, separately, are not available in this year.

Source: U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 81, "Characteristics of the Low-Income Population, 1970," U.S. Government Printing Office, Washington, D.C., 1971, Table B.

TABLE 7

MEDIAN FAMILY INCOME BY RACE
FOR SELECTED YEARS 1960-1970
(in current dollars)

	Total	White	Negro and Other Races	Spanish Origin
1960	$5,620	$5,835	$3,233	N.A.
1965	6,957	7,251	3,994	N.A.
1968	8,632	8,937	5,590	N.A.
1969	9,433	9,794	6,190	$6,741[a]
1970	9,867	10,236	6,516	7,334
		(in constant 1970 dollars)		
1960	$7,376	$7,664	$4,236	N.A.
1965	8,559	8,925	4,930	N.A.
1968	9,633	9,972	6,249	N.A.
1969	9,990	10,362	6,568	$7,139[a]
1970	9,867	10,236	6,516	7,334

[a] Estimated from Series P-20, No. 213.

Source: U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 80, "Income in 1970 of Families and Persons in the United States," and Series P-20, No. 224, "Selected Characteristics of Persons and Families of Mexican, Puerto Rican, and other Spanish origin. March 1971." U.S. Government Printing Office, Washington, D. C., 1971.

TABLE 8

EDUCATIONAL ATTAINMENT OF WHITES, NEGROES, PERSONS OF SPANISH ORIGIN, ALL LOW-INCOME PERSONS AGE 25 AND OVER, 1971

Group	Age (years)	Less than 4 Years of High School (per cent)	4 Years of High School or More (per cent)	Median Years of School
White	25-29	20	80	12.7
	30-34	25	75	12.6
	35-44	31	69	12.4
	45-54	38	62	12.3
	55-64	52	48	11.5
	65+	69	31	8.8
Negro	25-29	43	57	12.2
	30-34	46	54	12.1
	35-44	59	41	11.1
	45-54	71	29	9.3
	55-64	83	17	8.1
	65+	89	11	5.9
Spanish	25-29	52	48	11.7
	30-34	58	42	
	35-44	66	34	8.5
	45-54	75	25	
	55-64	84	16	
	65+	85	15	
Low Income	22-34	52	48	11.8
	35-44	67	33	9.7
	45-54	72	28	8.8
	55-64	76	24	8.2
	65+	82	18	8.2

Source: U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 213, "Persons of Spanish Origin in the United States: November, 1969"; No. 224, "Selected Characteristics of Persons and Families of Mexican, Puerto Rican, and other Spanish Origin: March, 1971"; P-20, No. 229, "Educational Attainment: March, 1971"; and Series P-60, No. 81, "Characteristics of the Low Income Population, 1970," U.S. Government Printing Office, Washington, D.C., 1971.

Moreover, the lower achievement of minority groups cannot be explained fully by their lower levels of income. The different mores or cultural values of minority groups affect their persistence and performance in school. For example, although the incomes of Spanish-Americans are often higher than those of blacks, the Spanish-Americans report a lower median attainment.

In an imaginative reanalysis of the Equal Opportunity Report, George Mayeske has identified the key factors which account for most of the differences in attainment of various ethnic groups. The factors isolated are: the effect of status, family background, student attitudes, area of residence, and peer influence. These factors were then related to the achievement scores of students in various ethnic groups. He found that only about half of the difference in scores is due solely to socioeconomic status (income and parents' education). However, achievement scores adjusted to control for the influence of all the social background factors were within 1.2 percent of each other for whites and other races (see Table 9).

These findings are consistent with other studies which indicated that about one-half of the difference in achievement between blacks and whites was accounted for by income variables.[1]

Handicapped Children

The necessity of examining the extra costs of educating children who have handicaps requires even less justification. It should be

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[1]Richard O'Brien, "White and Negro Scholastic Achievement in Relation to Family Income," Inequality: Studies in Elementary and Secondary Education, Department of Health, Education and Welfare, Office of Education, Office of Program Planning and Evaluation, 1969 (mimeographed).

TABLE 9

PER CENT OF DIFFERENCES IN ACHIEVEMENT SCORES OF MINORITY GROUP STUDENTS[a] DUE TO SOCIAL BACKGROUND CONDITIONS

Factors Controlled [b]	Per Cent of Differences
None	24.0
SES	10.9
SES and Family Structure (HB)	9.3
Home Background and Attitudes	9.0
Total Family Background (FB)	8.5
FB and Area of Residence (A)	7.6
FB, A, and Peer Attitudes	1.2

a Oriental, Indian, Negro, Mexican and Puerto Rican

b Mayeske explains his social background conditions in the following manner:

SES - A student with a high SES has parents who come from the higher educational strata, his father is engaged in a professional, managerial, sales or technical job, there are two to three children in the family, about six to ten rooms in their home, they are more likely to reside in the residential area of the city or the suburbs and there are intellectually stimulating materials accessible in the home.

HB - These are the mean differences after considerations of both SES and the students' Family Structure (FSS) have been taken into account.

Differences in Achievement Scores
of Minority Group Students

HB, ATTUD - These are the magnitude of the mean differences after considerations of SES, FSS and the students' Attitude Towards Life (ATTUD) have been taken into account.

FB - These are the magnitude of the mean differences after the indices which we felt represented all aspects of the students' Family Background (FB) had been taken into account. These indices were SES, FSS and a set of four attitudinal and motivational indices.

A - This refers to Area of Residence whether it be South, Far West or North, or Rural-Suburban or Urban.

SO - This refers to five school attributes of the achievement and motivational mix of the students one goes to school with and represents the aggregate effects of schooling. By virtue of its high correlations with the social background of the student body, as defined by their Socio-Economic, Family Structure and Racial-Ethnic Composition, it represents a measure of school and residential segregation.

Source: George W. Mayeske, "On the Explanation of Racial-Ethnic Group Differences in Achievement test scores," U.S. Office of Education (mimeographed).

stressed at the outset that the present classification of handicapped children leaves much to be desired.

This study will deal only with those handicapped children who are likely to attend non-residential public schools. Some children, e.g., the deaf-mute, cannot be accommodated in schools operated by local authorities. They attend state-run residential schools. Some other severely handicapped students are also taught in special state-operated schools and are not included in the discussion below. Others, such as the less severely retarded, are often taught in special classrooms of schools operated by local educational authorities. Borderline cases of mental retardation and other disabilities are often accommodated in ordinary classrooms, with some students receiving additional supportive psychological or instructional services, and some receiving no special services.

There are two problems in estimating the number and level of services required by handicapped children. Some are classified symptomatically, others by type of treatment. Thus some deaf and emotionally disturbed children are reported as such, i.e., symptomatically, and others may be classified as speech handicapped, because of the type of treatment given to them. Also, no figures exist about the degree of handicap for many handicapping conditions, and it may be unrealistic to assume that a hard-of-hearing child with a satisfactory hearing aid needs as much help as one whose hearing is only partially restored.

The Gifted

While a considerable volume of statistics have been collected about students lagging in achievement or handicapped in some way, surprisingly little attention has been paid to enumerating the gifted. According to an authority on the subject, the group labelled as gifted is generally two standard deviations above the mean of the normal distribution of achievement scores, i.e., a Stanford-Binet score of 132 or over.[1] The estimates of incidence are 2-4 percent of the population, with an incidence of 6-12 percent of the school population in more affluent communities. It is generally argued that these children need somewhat different programs to develop to their full potential.

There are indications that, in some districts, 20-25 percent of the gifted children are not identified by teachers. Rigorous screening programs utilizing individual, rather than group, intelligence tests specially designed to identify gifted children are needed for this purpose.

II. Counting Students with Special Needs

Who Are the Poor?[2]

The estimate of what constitutes low-income populations, or the poor, was constructed by Mollie Orshansky of the Social Security Administration. The income cut-offs, varying according to the number of family

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[1]James J. Gallagher, Analysis of Research on the Education of Gifted Children, State of Illinois, Office of the Superintendent of Public Instruction, p. 10.

[2]In its 1970 report on the poverty population, the Bureau of the Census changed the name of the poverty population to the low-income population. The method of defining this group has not changed.

members, were derived from budgets prepared by the U. S. Department of Labor,[1] sufficient to purchase minimum adequate quantities of food, clothing and shelter. Since 1964, when Orshansky developed her poverty index, average incomes have increased quite substantially, and another estimate of the poor population with 125 percent of the low-income level (or cut-off) was published by the U. S. Bureau of the Census in 1970. Persons between the 100 and 125 percent cut-offs were called the near-poor.

To what extent poverty is relative has been widely debated, but not resolved. In a growing economy, the number of poor children defined by a fixed-income cut-off is, of course, likely to decline, as the overall affluence of the population increases. This is shown in Table 10, where estimates of the percentage of poor children goes down from 27 percent in 1959 to 15 percent in 1970. Table 11 presents a figure for the near-poor during the same period, indicating that by expanding the cut-off, another 6 percent of all children are added to the poor category.[2]

Another way of looking at the distribution of poor children is to examine the distribution of children by region and type of residence. Special Census tabulations prepared for this study show the distribution of children from poor families by income of parents for four Census regions, and by three types of residence within region. These are shown in Tables 12 and 13.

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[1]Mollie Orshansky, "Counting the Poor: Another Look at the Poverty Profile," Social Security Bulletin, January 1965, pp. 3-29.

[2]U. S. Bureau of the Census, Current Population Reports, Series P-60, No. 81, "Characteristics of the Low Income Population, 1970" (Washington, D.C.: Government Printing Office, 1971).

TABLE 10

OWN CHILDREN UNDER 18 YEARS OF AGE BELOW LOW-INCOME LEVEL IN U.S. FOR SELECTED YEARS 1959 TO 1970
(in thousands)

	Number of Children	Per Cent of Total
1959	17,208	26.9
1964	15,736	22.7
1968	10,739	15.3
1969	9,821	14.1
1970	10,493	15.0

Source: U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 81,"Characteristics of the Low-Income Population, 1970," U.S. Government Printing Office, Washington, D. C., 1971.

TABLE 11

OWN CHILDREN UNDER 18 YEARS OF AGE BELOW 125 PER CENT OF LOW-INCOME LEVEL IN U.S. FOR SELECTED YEARS 1959 TO 1970
(in thousands)

	Number of Children	Per Cent of Total
1959	24,271	37.9
1964	21,738	31.3
1968	15,080	21.5
1969	14,325	20.5
1970	14,631	20.9

Source: U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 81, "Characteristics of the Low-Income Population, 1970," U.S. Government Printing Office, Washington, D. C., 1971

TABLE 12

PER CENT OF LOW-INCOME CHILDREN UNDER 18 YEARS OF AGE, BY REGION AND TYPE OF DISTRICT, 1970, AND PRINCIPALS' ESTIMATES OF PER CENT OF POOR STUDENTS IN SCHOOL
(per cent of total)

	Low Income	Poor in School
NORTHEAST		
Central Cities	19.4	54.4
Other SMSA	5.2	28.6
Non-SMSA	11.0	41.0
TOTAL	10.8	38.6
NORTH CENTRAL		
Central Cities	16.2	43.9
Other SMSA	4.9	27.9
Non-SMSA	12.4	34.2
TOTAL	10.6	34.3
SOUTH		
Central Cities	20.3	43.3
Other SMSA	12.4	28.5
Non-SMSA	29.3	53.1
TOTAL	23.0	44.2
WEST		
Central Cities	11.8	32.2
Other SMSA	9.1	28.3
Non-SMSA	19.8	35.9
TOTAL	12.2	31.3
All Central Cities	17.5	43.7
All Other SMSA	7.2	28.3
All Non-SMSA	20.5	43.1
TOTAL U.S.	14.8	38.1

Source: U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 76, "24 Million Americans: Poverty in the United States: 1969," Government Printing Office, Washington, D.C., 1970, (unpublished tabulations with adjustments for new SMSAs and difference between type of school district and type of residence); Poor in Schools from the 1969 School Staffing Survey, conducted by U.S. Office of Education, National Center for Educational Statistics.

TABLE 13

CHILDREN IN LOW-INCOME FAMILIES, BELOW $3,000 IN 1960 AND $4,000 IN 1970 by REGION AND TYPE OF DISTRICT
(per cent of all children)

	1960 Family Income Less Than $3,000	1970 Family Income Less Than $4,000
NORTHEAST		
Central Cities	14.8	14.6
Other SMSA	6.2	3.9
Non-SMSA	12.1	7.1
TOTAL	10.5	7.8
NORTH CENTRAL		
Central Cities	12.2	11.3
Other SMSA	6.2	3.3
Non-SMSA	20.2	9.5
TOTAL	13.5	7.7
SOUTH		
Central Cities	22.2	14.7
Other SMSA	17.8	7.6
Non-SMSA	42.1	21.3
TOTAL	31.5	16.3
WEST		
Central Cities	10.6	10.2
Other SMSA	7.5	7.7
Non-SMSA	18.7	13.3
TOTAL	11.1	9.7
All Central Cities	15.6	12.8
All Other SMSA	8.4	5.4
All Non-SMSA	28.6	14.6
TOTAL U.S.	18.0	10.6

Source: U.S. Bureau of the Census; Current Population Reports, Series P-60 No. 76, "24 Million Americans: Poverty in the United States; 1969," Government Printing Office, Washington, D.C., 1970, (unpublished tabulations); and special tabulations of the March 1960 Current Population Survey.

The analysis of children by income of parents brings out the following highlights:

(1) In central city districts, the proportion of children in families with incomes under $3,000 was 15.6 percent in 1960. In 1969, children in families with incomes under $4,000 (an amount roughly equivalent in purchasing power to $3,000 in 1960) was 12.8 percent.

(2) In suburban school districts, some 8.4 percent of school children lived in families with incomes under $3,000. By 1969, 5.4 percent of children were members of families with incomes under $4,000.

(3) In non-metropolitan school districts in 1960, 28.6 percent of children were in families with less than $3,000 income. By 1969, the proportion had gone down to 14.6 percent.

Despite the fact that the total proportion of children in the U. S. in families with incomes under $3,000 was 18 percent in 1960, and declined to 11 percent in families with incomes under $4,000 in 1970, central cities outside the South did not benefit from the reduction in this number of potentially poor. In three out of four regions, the percentage of low-income children scarcely changed in this decade, using the definition above. Only in the South did central city districts show a decline in the proportion of low-income children, using these cut-offs. In suburban school districts, the proportion of low-income school children declined some 40-60 percent in all regions except the West, where it remained roughly constant. The proportion of low-income school children in rural school districts declined by roughly one-half in the North Central area and the South, and declined

by 40 and 12 percent, respectively, in the Northeast and Western regions. In other words, during the 1960's the poor were moving to city districts outside of the South. This migration pattern was declenched by a decline in demand for rural labor in the South and has resulted in rural blacks moving to Southern central cities and pushing Southern black city residents North.

The more precise estimates of children in poverty in 1969, using the accepted definitions appearing in Table 12, can be used to gauge the accuracy of the estimates above.

The extent to which poverty is a relative concept can be illustrated by comparing poverty as estimated by Census with the perception of school principals about the number of poor students in their schools. A special survey by the USOE asked principals to estimate the number of students in their schools whose parents (a) were on welfare or some other public assistance, and (b) had unskilled or low-skilled jobs. While estimates based on the Census place less than a of the population enrolled in school in the poverty category, principals identify roughly 40 percent.

Table 14 shows that 90 percent of the principals whose schools are located in central city poverty areas estimated that over half of their students were poor, and 49 percent estimated that at least nine out of 10 of his pupils were poor. In addition, 35.2 percent of central city school principals whose schools were located outside Census poverty areas as defined in 1960 estimated that over half of the students were poor, and 8 percent felt that 90 percent or more were poverty

TABLE 14

PROPORTION OF CHILDREN FROM HOMES CLASSIFIED AS POOR IN POVERTY AND NON-POVERTY AREA SCHOOLS IN CENTRAL CITIES AS IDENTIFIED BY PRINCIPALS IN 1969.

Per cent of Children Who are Poor	Per cent of Schools	
	In Poverty Areas	Not in Poverty Areas
100	14.9	1.5
90-99	34.3	6.5
80-89	14.5	5.7
70-79	12.9	7.4
60-69	7.3	5.9
50-59	6.3	8.0
40-49	3.6	7.7
30-39	1.8	11.2
20-29	2.5	15.1
10-19	1.2	14.1
1-9	0.4	12.7
0	0.0	3.1
No Response	0.3	1.2
	100.0	100.0

Source: U.S. Department of Health, Education, and Welfare, National Center for Educational Statistics, The 1969 School Staffing Survey, (unpublished tabulation).

students. Obviously, educators place poverty cut-offs at a much higher level than the low-income or poverty definitions of the Census Bureau. Their estimates are compared with the estimates of the Census Bureau in Table 12.

A family is classified as poor if its income falls below a certain level, depending on the number of family members. Thus, income cut-offs vary according to the size of a family and whether it resides in a non-farm or farm area. On a practical level, though, arbitrary income cut-offs are used to allocate government grants such as Title I of the Elementary and Secondary Act. Table 15 below shows what these cut-offs ought to be to make the eligibility in each type of district equal to the number of poor children estimated on the basis of Census data. It shows that, say, a national cut-off of $4,800 will favor all regions except the South, central cities in the Northeast and West, the rural North Central area, and all suburbs except those in the South. It should be realized that these "penalty" estimates are fairly arbitrary. The "poverty" standards are national, and do not take into consideration differences in cost of living by region or type of residence. Hence, all these estimates must be considered approximate.

Negro Students

The estimate of Negro students by type of district was made in a fairly straightforward manner. The total number of Negro students by region as estimated by the Department of Health, Education, and Welfare, Office of Civil Rights, was adjusted to cover the enrollments of black pupils in pre-primary schools which are not reported by local Boards of

TABLE 15

FAMILY INCOME FOR CHILDREN UNDER 18
IN LOW-INCOME POPULATION IMPLICIT
IN CENSUS BUREAU ESTIMATES
BY REGION AND TYPE OF DISTRICT, 1970

	Implicit Maximum Income
NORTHEAST	
Central Cities	$4,608
Other SMSA	4,574
Non-SMSA	4,832
TOTAL	4,645
NORTH CENTRAL	
Central Cities	5,044
Other SMSA	4,774
Non-SMSA	4,584
TOTAL	4,774
SOUTH	
Central Cities	4,871
Other SMSA	5,151
Non-SMSA	4,910
TOTAL	4,953
WEST	
Central Cities	4,421
Other SMSA	4,447
Non-SMSA	4,926
TOTAL	4,645
All Central Cities	4,774
All Other SMSA	4,813
All Non-SMSA	4,827
TOTAL U. S.	4,807

Source: Implied cutoffs are based on the number of poor children and the distribution of children by family income as reported in U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 76, "24 Million Americans - Poverty in the United States: 1969", U.S. Government Printing Office, Washington, D. C. (unpublished tabulations).

Education. It should be noted that an independent estimate of Negro enrollments based on the Staffing Survey by the USOE came within 1 percent of this estimate. The Office of Civil Rights survey was used to distribute the pupils by region and the USOE Staffing Survey was the basis for estimating enrollment of blacks by type of district. The figures so derived are shown in Table 16.

The reasonableness of these estimates was checked in two ways. Negro population by type of residence in 1960 and 1970 from the U. S. Bureau of the Census sources was compared to total Negro enrollment as of 1970 by region and type of residence. Census estimates on Negro enrollment in private schools were used to estimate the total enrolled Negro population. Using school enrollment rates also from the U. S. Bureau of the Census, it was then possible to derive an estimate of total Negro children in the 3-19 age group. The estimate shown in Table 16 was within 1 percent of the Census Bureau count of black children in appropriate age groups.[1]

Spanish-Americans

While the several estimates of the number of black children did not differ, the same statement cannot be made about children of Spanish-American descent. In the first place, the definition of Spanish Americans is not quite clear. The U. S. Bureau of the Census enumerates persons of Spanish origin or descent. A special survey of the U. S.

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[1]U. S. Bureau of the Census, Current Population Reports, Series P-20, No. 222, "School Enrollment: October 1970" (Washington, D.C.: Government Printing Office, 1971), Tables 1, 12, 15 and unpublished tabulations.

TABLE 16

NEGRO POPULATION AND ENROLLMENT IN PUBLIC ELEMENTARY AND SECONDARY SCHOOLS BY TYPE OF SCHOOL DISTRICT AND BY REGION, 1970
(in thousands)

	Population Age 3-19	Enrollment	Per Cent Enrolled	Per Cent of Total Enrollment
All Central Cities	5322	4035	75.8	28.3
All Other SMSA	1276	859	67.3	5.3
All Non-SMSA	2609	2020	77.4	12.8
TOTAL U.S.	9207	6914	75.1	14.9
Northeast	1722	1225	71.1	12.4
North Central	1915	1404	73.3	10.8
South	4861	3769	77.5	25.3
West	709	516	72.8	6.0
TOTAL U.S.	9207	6914	75.1	14.9

Source: Total Population and Public School Enrollment, U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 222, "School Enrollment: October, 1970," U.S. Government Printing Office, Washington, D.C., 1971, Tables 1 and 15; Metropolitan Status from the 1969 School Staffing Survey conducted by U.S. Office of Education, National Center for Educational Statistics, (unpublished tabulations); Regional distribution from the Fall 1970 Elementary and Secondary School Survey conducted by the Department of Health, Education and Welfare, Office of Civil Rights.

Office of Education asked principals to report Spanish-surname students enrolled in public schools, but in parenthesis mentioned only Mexican, Puerto Ricans, and persons of Cuban descent. The Office of Civil Rights, Department of Health, Education, and Welfare, enumerates students with Spanish surnames.

While the U. S. Office of Education and the Office of Civil Rights arrive at fairly close estimates of the total number of Spanish-surname pupils in public schools, their estimates do not agree with those of the U. S. Bureau of the Census. The latter agency places the number of children under 19 who are of Spanish origin at 4.6 million. Those between the ages of 5 and 19 number 3.4 million, and it can be estimated that the 3- and 4-year-olds number another .4 to .5 million. We can only guess at the school participation rates of persons of Spanish descent. Given the educational attainments of adults, which are similar to those of blacks in 1965, we could assume that the attendance rate of persons of Spanish descent was similar to the Negro attendance rate of some five years ago. This would place attendance in 1970 at roughly 3.0 million children of Spanish origin or descent.

The Office of Civil Rights estimates of Spanish-surname students in public schools that year was 2.3 million. USOE in 1969 placed the number at 2.0 million. Both estimates are below the one derived from the Census data.

A possible way to reconcile the Census with the Civil Rights and USOE estimates is to exclude the children of marriages in which the mother is of Spanish origin, but the father is not. Census counts

children of these marriages as of Spanish origin or descent, yet it is likely that they do not have a recognizable Spanish surname. A Census report estimates that about 16 percent of the children of Spanish descent are issue of such marriages.[1] If 16 percent is subtracted from the 3.0 million children of Spanish origin estimated to be enrolled in school, a figure of 2.5 million children with Spanish surnames is derived. The National Catholic Education Association reports that nearly 200 thousand Spanish-surname students are enrolled in Catholic schools.[2] This leaves us with about 2.3 million Spanish-surname students in public elementary and secondary schools, a number which matches the estimates of the Office of Civil Rights. Hence, this estimate was adopted.

We will further assume that children in families where only the mother is of Spanish origin do not usually speak Spanish at home. To get a handle on the bilingual problems of persons with Spanish surnames, the following calculations were performed:

> 3.6 million children under 19 were of Spanish origin or descent;
>
> 3.0 million were probably counted as those with Spanish surnames;
>
> 2.5 million came from families where both parents were Spanish; and
>
> 1.2 million came from homes where Spanish was spoken as the primary language.[3]

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[1]U. S. Bureau of the Census, Current Population Reports, Series P-20, "Persons of Spanish Origin in the United States: November 1969" (Washington, D.C.: Government Printing Office), Table 5.

[2]National Catholic Education Association, Research Department, A Report on U. S. Catholic Schools, 1970-71 (The Association, 1971), p. 36.

[3]U. S. Bureau of the Census, Current Population Reports, Series P-20, No. 213, "Persons of Spanish Origin in the United States: November 1969" (Washington, D.C.: Government Printing Office, 1971), Tables 5 and 11.

Thus, one out of two children with Spanish surnames came from homes where the language was Spanish, and might have difficulty in adjusting to school. It should be noted that the U. S. Census reported that nine out of ten persons of Spanish origin age 10 to 24 could read and write English. In other words, school is reaching the majority of bilingual children, but they are not doing as well in school as they ought to.

The distribution of public school children by region was taken from the fall 1970 Office of Civil Rights survey for the U. S. Since the USOE Staffing Survey is the only source for allocating students by type of school district, it was used for this purpose. Table 17, below, shows our best estimates of the number of Spanish-surname students in public schools by type of district.

Estimates of Special Target Groups

Students needing special attention can be classed in the following categories: (1) those needing additional instruction due to environmental deprivation, or because they are raised in non-standard American homes, thus posing an additional challenge to the school; (2) those who are afflicted by some form of physical handicap, i.e., the deaf and hard-of-hearing, the blind and partially sighted pupils, or crippled students; and (3) those whose handicaps are mental--the emotionally disturbed and the mentally retarded. In many instances, environmentally deprived children are classified with the emotionally disturbed or the mentally retarded because they do not adjust readily to the school environment.

TABLE 17

SPANISH SURNAME ENROLLMENT IN PUBLIC ELEMENTARY AND SECONDARY SCHOOLS BY TYPE OF DISTRICT AND BY REGION, 1970
(in thousands)

	Population Age 3-19	Enrollment	Per cent Enrolled	Per cent of Public School Enrollment
All Central Cities	N.A.	1094	N.A.	7.7
All Other SMSA	N.A.	713	N.A.	4.4
All Non-SMSA	N.A.	468	N.A.	3.0
TOTAL U.S.	3216	2275	70.7	4.9
Northeast	N.A.	425	N.A.	4.3
North Central	N.A.	171	N.A.	1.3
South	N.A.	653	N.A.	9.4
West	N.A.	1026	N.A.	12.0
TOTAL U.S.	3216	2275	70.7	4.9

Source: Spanish Surname population based on U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 213, "Persons of Spanish Origin in the United States, November, 1969," and Series P-20, No. 224, "Selected Characteristics of Persons and Families of Mexican and Puerto Rican and other Spanish Origin: March 1971," Washington, D.C.; Total and regional enrollment as reported by the Fall 1970 Elementary and Secondary School Survey conducted by the Department of Health, Education and Welfare, Office of Civil Rights; distribution by type of school district is based on the 1969 School Staffing Survey conducted by the U.S. Office of Education, National Center for Educational Statistics. (Unpublished tabulations)

Reading Problems

The usual substitute for statistics used to estimate disadvantaged and culturally deprived students in schools is the incidence of reading deficiency. The USOE survey of principals indicates a high correlation between the proportion of poor children within a type of school district and the proportion of children believed to be in need of special reading instruction. The rankings within regions on both these scores are shown in Table 18, along with the percent of total students classified in each group.

The whole matter of reading disability is a vexing one. Most narrowly defined, it is a function of the incidence of dyslexia, a brain dysfunction which impedes some children's ability to read. The prevalence of dyslexia has been estimated at 10 percent of the total school population, yet only a fraction of dyslexic children fail to learn to read. In the population as a whole, it has been estimated that some 15 percent of all children experience difficulty in learning to read.[1]

In all probability, given present practices in American schools, only those children who lag behind grade level are identified as having special needs in reading. Again, this identification is probably not uniform across districts and includes in some cases only those who lag behind the achievement of a given class and in other cases, behind the national norm.

The extent of serious retardation has been documented by the National Center for Health Statistics which "administered reading tests to a representative sample of 7,000 children between the ages of

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[1] Reading Disorders in the United States, a report of the Secretary's (HEW) National Advisory Committee on Dyslexia and Related Reading Disorders, August 1969, p. 8.

TABLE 18

RANKING OF SCHOOL DISTRICTS BY
PER CENT OF STUDENTS WHO ARE POOR
AND WHO HAVE A READING PROBLEM

	Rank within Region			Rank in Total U.S.		
	Poor		Reading	Poor		Reading
	Census	Principals	Problem	Census	Principals	Problem
NORTHEAST						
Central Cities	1	1	1	4	1	1
Other SMSA	3	2	2	11	9	9
Non-SMSA	2	3	3	9	5	8
NORTH CENTRAL						
Central Cities	1	1	1	5	3	3
Other SMSA	3	3	2	12	12	10
Non-SMSA	2	2	3	6.5	7	11
SOUTH						
Central Cities	2	2	2	2	4	4
Other SMSA	3	3	3	6.5	10	6
Non-SMSA	1	1	1	1	2	2
WEST						
Central Cities	2	2	2	8	8	7
Other SMSA	3	3	1	10	11	5
Non-SMSA	1	1	3	3	6	12

Source: U.S. Department of Health, Education and Welfare, Office of Education, National Center for Educational Statistics, The 1969 School Staffing Survey, (Unpublished Tabulation). Correlation of per cent poor and per cent with reading problems is .75i and significant at .01 level for the principals' perception in the Survey; Census estimates of poor are from U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 76, Op. Cit., (Unpublished tabulations).

six and 11. The results, analyzed without reference to mental ability, indicated that 25 percent of the 11-year-olds read at levels two or more years below their grade level (i.e., fifth graders reading at third-grade level or below). Of the 10-year-olds (fourth grade), 16 percent read two years below grade level; of the nine-year-olds (third grade), 12 percent read two years below grade level."[1]

The school principals' estimate of students with special need in the area of reading, as reported by the USOE survey, is somewhat higher. To a large extent it is a reflection of the principals' perception of the remedial services which ought to be offered and the number of children who would be likely to benefit from these programs. Objective measures placing children below a certain attainment into the special need category would probably produce different results. From the Equal Opportunity Survey,[2] one would expect that the highest proportion of children with need would be in the Southern region and in school districts in rural areas. The principals' perception agreed with EOS findings by region, but some central city and suburban principals were more conscious of the reading retardation of students than those outside SMSA's. Yet, in the absence of better figures, we recommend that they be used in planning. They have the preponderant virtue of being an index of need, and help spotlight types of districts where funds if available would be used as intended. The results of the USOE survey appear in Table 19.

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[1] Idem, p. 22.

[2] James S. Coleman, et al., Equality of Educational Opportunity (Washington, D.C.: Government Printing Office, 1966).

TABLE 19

NUMBER AND PER CENT OF CHILDREN WITH READING PROBLEMS AND SPEECH IMPAIRMENTS, BY REGION AND TYPE OF DISTRICT, 1970
(number of students in thousands)

	Reading Problems		Speech Impairments	
	Number	Per cent	Number	Per cent
NORTHEAST				
Central Cities	795	27.79	146	5.11
Other SMSA	632	13.37	220	4.65
Non-SMSA	323	13.95	107	4.63
TOTAL	1750	17.66	473	4.77
NORTH CENTRAL				
Central Cities	706	20.16	161	4.61
Other SMSA	637	13.02	231	4.73
Non-SMSA	585	12.74	154	3.35
TOTAL	1928	14.84	546	4.20
SOUTH				
Central Cities	945	18.88	134	2.68
Other SMSA	508	17.07	126	4.23
Non-SMSA	1519	21.88	208	3.00
TOTAL	2972	19.91	468	3.14
WEST				
Central Cities	465	16.04	120	4.14
Other SMSA	639	17.41	175	4.76
Non-SMSA	239	12.06	59	2.98
TOTAL	1343	15.71	354	4.14
All Central Cities	2911	20.41	561	3.93
All Other SMSA	2416	14.85	752	4.62
All Non-SMSA	2666	16.83	528	3.33
TOTAL U.S.	7993	17.24	1841	3.97

Source: U. S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, The 1969 School Staffing Survey, (unpublished tabulations).

Speech Impairments

The second most numerous group of children with special need, as identified by principals, is that of the speech handicapped. According to Romaine Mackie, the author of a frequently cited study on special education, speech impairment covers problems of "articulation, voice or fluency, some ... problems associated with hearing loss, cleft palate, cerebral paisy, mental retardation and language development ... /and/ problems resulting from cultural differences and environmental deprivation."[1]

This is a much broader definition of speech impairment than the one used by the National Health Survey. NHS limits speech impairment diagnosis to "include stammering, stuttering, absence of larynx, speech or voice defects resulting from surgery and other causes and other ill-defined 'trouble' with speech, ... cases of speech defects, ... due to cleft palate are not included...."[2] While the usual educational definition of speech impairments covers all defects of speech production amenable to therapy, that of the Health Survey is limited to speech problems linked to physiological conditions principally associated with the larynx, the pharyngealoral-nasal system, respiratory mechanisms, and stuttering defects.

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[1]Romaine P. Mackie, Special Education in the United States: Statistics 1948-1966, Teachers College Press, Columbia University, 1969, p. 19.

[2]U. S. Department of Health, Education, and Welfare, Public Health Service, National Center for Health Statistics, Prevalence of Selected Impairments: United States - July 1963-June 1964 (Washington, D.C.: Government Printing Office), pp. 10-11.

Educators identify roughly three times more children as having speech impairment than does the National Health Survey. Insofar as some of the speech defects are psychological in nature, it is probable that a sizeable, albeit unknown, number of emotionally disturbed children are treated as children with speech disorders.

It must also be noted that the incidence of speech impairment is more prevalent among elementary than secondary school children, indicating that language communication problems are often remedied in the elementary school.

NHS' estimated prevalence of speech impairment by region shows the lowest prevalence in the Northeast, and the highest in the South. The principals' perception of need, however, is exactly the reverse and may be influenced by the extent of available services. Since speech impairments cover a variety of pathology, it is difficult to offer alternative estimates which have a sound basis. An estimate which scales prevalence by type of district from national data, modified by NHS regional rates, is offered as a reasonable alternative. Both sets of figures are shown in Tables 19 and 21 and indicate the range of uncertainty in identifying speech defects.

Mentally Retarded

While there is considerable confusion about the definition of such a "soft" handicap as speech impairment, there are fewer differences of opinion with respect to the mentally retarded. Children testing at under 68 points on I.Q. tests are generally classified as mentally retarded, and one would expect their prevalence rates to be fairly constant among regions. It is possible that the areas with poor populations, such

as rural areas and central cities, would show somewhat higher prevalence of mental retardation. This hypothesis is borne out by national figures from the USOE survey. By contrast, the figures for individual regions show wider variations, which ought to be treated with caution. We would recommend using the USOE national prevalence figures by type of district for all regions, especially since they provide an estimate consistent with independent studies of the mentally retarded for the nation as a whole (see Tables 20 and 21).

Our independent attempts to validate differences by region were not successful. The enumeration of retarded children differed quite erratically from state to state. The estimates of mentally retarded children were apparently influenced by state reimbursement formulas, and did not appear to be internally consistent within each region.

Specific Learning Disabilities

Pupils with specific learning disabilities were defined by the USOE Staffing Survey as follows:

> "Pupils with specific learning disabilities exhibit a disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written language. These may be manifested in disorders in listening, thinking, talking, reading, writing, spelling, or arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are due primarily to visual, hearing, or motor handicaps, to mental retardation, emotional disturbance, or to environmental disadvantages."[1]

The national estimate of prevalence used by the USOE Bureau of Education for the Handicapped is 1.0 percent of the school population.[2] The

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[1]The 1969 School Staffing Survey questionnaire, p. 16.

[2]All prevalence figures used by the Bureau of Education for the Handicapped are taken from a mimeographed report entitled "Estimates of Current Manpower Needs in Education for the Handicapped 1968-69."

TABLE 20

ESTIMATED PREVALENCE RATES FOR SELECTED TARGET GROUPS
BY REGION AND TYPE OF DISTRICT
(Percent of Total Enrollment)

Region	Reading Problems	Speech Impaired	Emotionally Disturbed	Crippled Children	Mentally Retarded	Specific Learning Disabilities	Hard-of-Hearing	Deaf	Visually Impaired	Blind	Gifted
NORTHEAST											
Central Cities	27.8	2.97	1.59	.377	2.29	1.0	0.3	0.2	1.5	0.15	3.0
Other SMSA	13.4	3.58	1.19	.416	1.53	1.0	0.3	0.2	1.5	0.15	3.0
Non-SMSA	14.0	2.59	.98	.639	2.41	1.0	0.3	0.2	1.5	0.15	3.0
NORTH CENTRAL											
Central Cities	20.2	3.41	1.59	.380	2.29	1.0	0.3	0.2	1.5	0.15	3.0
Other SMSA	13.0	4.06	1.19	.474	1.53	1.0	0.3	0.2	1.5	0.15	3.0
Non-SMSA	12.7	2.97	.98	.635	2.41	1.0	0.3	0.2	1.5	0.15	3.0
SOUTH											
Central Cities	18.9	5.48	1.59	.380	2.29	1.0	0.3	0.2	1.5	0.15	3.0
Other SMSA	17.1	6.54	1.19	.474	1.53	1.0	0.3	0.2	1.5	0.15	3.0
Non-SMSA	21.9	4.78	.98	.635	2.41	1.0	0.3	0.2	1.5	0.15	3.0
WEST											
Central Cities	16.0	2.94	1.59	.379	2.29	1.0	0.3	0.2	1.5	0.15	3.0
Other SMSA	17.4	4.50	1.19	.474	1.53	1.0	0.3	0.2	1.5	0.15	3.0
Non-SMSA	12.1	2.56	.98	.636	2.41	1.0	0.3	0.2	1.5	0.15	3.0

Source: Rates adapted from various sources. See text.

TABLE 21

NUMBER OF CHILDREN WITH SELECTED HANDICAPPED CONDITIONS IN PUBLIC ELEMENTARY AND SECONDARY SCHOOLS BASED ON PREVALENCE RATES SUGGESTED BY THIS STUDY, BY REGION AND TYPE OF DISTRICT, 1970
(In Thousands)

Region	Reading Problems	Mentally Retarded	Speech Impaired	Specific Learning Disabilities	Emotionally Disturbed	Crippled	Hard-of-Hearing	Deaf	Visually Impaired	Blind	Gifted
NORTHEAST											
Central Cities	795	66	85	29	46	11	9	6	4	.4	86
Other SMSA	632	72	169	47	56	20	14	9	7	.7	142
Non-SMSA	323	56	60	23	23	15	7	5	3	.3	70
TOTAL	1,750	194	314	99	125	46	30	20	14	1.4	298
NORTH CENTRAL											
Central Cities	706	80	119	35	56	13	11	7	5	.5	105
Other SMSA	637	75	199	49	58	23	15	10	7	.7	147
Non-SMSA	585	111	136	46	45	29	14	9	7	.7	138
TOTAL	1,928	266	454	130	159	65	40	26	19	1.9	390
SOUTH											
Central Cities	945	115	274	50	80	19	15	10	8	.8	150
Other SMSA	508	46	195	30	35	14	9	6	4	.4	89
Non-SMSA	1,519	167	332	69	68	44	21	14	10	1.0	208
TOTAL	2,972	328	801	149	183	77	45	30	22	2.2	447
WEST											
Central Cities	465	66	85	29	46	11	9	6	4	.4	87
Other SMSA	639	56	128	37	44	17	11	7	6	.6	110
Non-SMSA	239	48	51	20	19	13	6	4	3	.3	59
TOTAL	1,343	170	264	86	109	41	26	17	13	1.3	256
All Central Cities	2,911	327	563	143	228	54	44	29	21	2.1	428
All Other SMSA	2,416	249	691	163	193	74	49	32	24	2.4	488
All Non-SMSA	2,666	382	579	158	155	101	48	32	23	2.3	475
TOTAL U. S.	7,993	958	1,833	464	576	229	141	93	68	6.8	1,391

Source: For derivation of prevalence rates, see text.

estimates of school principals revealed by the Staffing Survey are much higher, some 2.5 percent nationally, and as high as 3.2 percent in elementary grades.

The term special learning disabilities is so broad as to be practically meaningless. Since dyslexia is included in the definition, it is obvious that even the principals' high estimate is well below the estimated prevalence, which is 10 percent for dyslexia alone.

The inclusion of dyslexia probably results in the double counting of students with reading problems and SLD. Hence, we recommend using a 1 percent incidence for all regions and type of districts (see Tables 20 and 21).

Emotionally Disturbed

The prevalence of emotional disturbances is extremely moot. A review of literature on the prevalence of emotional disturbances in elementary schools cited studies which estimated the prevalence of clinical maladjustments to be as high as 28 percent of all children. The weighted mean for all studies was 10.5 percent. By contrast, the few studies which attempted to identify students in need of referral to an agency placed the proportion of emotionally disturbed at 2.0 percent. This figure has been adopted by many professionals in estimating national prevalence, including the USOE Bureau for the Education of the Handicapped.[1]

For the total U. S., school principals arrived at an estimate of 1.2 percent of all children as needing special services. Since they placed many emotionally disturbed children in other categories, such

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[1]John C. Glidewell and Carolyn S. Swallow, "The Prevalence of Maladjustment in Elementary Schools," A report prepared for the Joint Commission on the Mental Health of Children, University of Chicago, 1968 (mimeographed), Table 1.

as the speech program, this figure can be considered to agree closely to the national estimates. Based on what is known about the incidence of emotional disturbance, which is highest in the cities and lowest in rural areas, we recommend the use of national figures by type of district for all regions (see Tables 20 and 21).

Crippled Children

A number of sources estimate the prevalence of crippled children in the school-age population. Mackie estimates 0.75 percent of all children as crippled or health-impaired to such an extent that they are unable to follow regular school programs. The National Health Survey does not give comparable figures, but by combining its estimates of paralysis, absence of extremities, and health impairment, and by attempting to estimate the limitation of activity for each one of these conditions, we arrive at an estimate roughly one half that of Mackie.[1] School principals have been more conservative in estimating the number of crippled children. They place those with need at 0.2 percent of the population. The Bureau for the Education of the Handicapped estimates prevalence at .5 percent.

Prevalence of Handicapping Conditions in U. S. Population under 17 Years of Age

	Rate per 1,000 Population	
	Prevalence	Limited in Activity
Paralysis	3.8	0.6
Absence of Extremities	9.4	0.9
Impairment	22.8	2.2
Total	36.0	3.7

Source: U. S. Department of Health, Education, and Welfare, Public Health Service, Health Services and Mental Health Administration, Prevalence of Selected Impairments: United States, July 1963-June 1965, (Washington, D.C.: Government Printing Office, 1968).

[1]Mackie, op. cit., p. 20.

We have adopted the 0.5 percent prevalence, and scaled the incidence by type of district for all regions in accordance with the reported prevalence from the USOE survey (see Tables 20 and 21). Moreover, the incidence of crippling disabilities increases with age. The estimates of the USOE survey place prevalence in high school at 50 percent more than in elementary school. This fact is borne out by the generally higher prevalence for advanced-aged groups in the National Health Survey.

Hard-of-Hearing and Deaf

The number of students who are sufficiently hard of hearing (but not completely deaf) to require specialized instruction has been estimated at 8 per thousand of the total population under 17 by the National Health Survey. Of those, only 6 percent were considered to have a limitation of activity.[1] Thus, it would appear that approximately one student per thousand would have an activity limitation due to loss of hearing. The Bureau of Education for the Handicapped estimates a prevalence which is fifty times as high, namely, one half of 1 percent. The USOE survey of school principals places the figure at somewhere between these two estimates, i.e., three-tenths of 1 percent.

A critical overview of hearing disorders claimed that National Health Survey figures underestimated hearing disorders by at least 50 percent.[2] This was due to the rather restrictive definitions used by

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[1] Selected Impairments, pp. 8-10.

[2] Human Communication And Its Disorders: An Overview. A Report prepared and published by the Subcommittee on Human Communication and Its Disorders, National Advisory Neurological Diseases and Strokes Council, 1969, Reprinted by National Institute of Neurological Diseases and Strokes, NINDS Mimeograph No. 10, p. 12.

the National Health Survey, which could have omitted borderline cases of hearing loss. Also excluded are persons who had hearing disorders in one ear, which may cause them a certain amount of discomfort. It is reasonable that persons from both groups might benefit from some counseling and therapy, and thus be included in the category of persons with hearing disorders which impose special requirements for service by the schools.

On balance, we adopted the estimates of the USOE survey. Since the prevalence is so slight, we do not think our purposes would be served by differentiating impacts by region or type of district (see Tables 20 and 21).

In the case of deaf persons, the estimates of the National Health Survey, of experts in the field of handicapped children, and of the USOE survey are all quite close. There are probably two students per thousand who are deaf and require special instruction. The 7.5 per thousand incidence of deafness cited by some authorities includes deaf children in state institutions, as well as deaf children whose handicaps are mitigated by the satisfactory performance of a hearing aid. If one subtracts from that figure the Bureau of Education for the Handicapped estimate of children in institutions as well as the number of deaf children with hearing aids that work, a two per thousand incidence is indicated. It was adopted for all districts and all regions (see Tables 20 and 21).

Partially Sighted (or Visually Impaired) and the Blind

The total rate of prevalence for both blind and partially sighted with vision not corrected by lenses has been estimated at 10 per thousand. Of these, 8.5 per thousand are outside of residential schools. No more

than half of those are receiving special services. With so few persons in the population, the results of the USOE survey are reliable only at the national level. The school principals' estimate of partially sighted pupils is 15 per thousand, and their estimate of the blind is about 1.5 per thousand. Although these figures are higher than those of experts, given the fragmentary information gathered from the National Health Survey, one would tend to accept them, since the incidence of blindness and visual handicaps has been increasing (see Tables 20 and 21).

The Gifted

After the dismal procedure of counting students with various handicaps, estimating the number of gifted children should be pure joy. It is not so, however, since information on prevalence is fragmentary, and the USOE survey of principals' perceptions was very misleading.

The principals' national estimate of 3.2 percent is consistent with other estimates, but the distribution by region or type of residence were not. For instance, it does not appear reasonable that gifted children are concentrated on the East and West Coasts, and, contrary to the evidence adduced in the literature, this survey shows higher prevalence of gifted children in the cities relative to those in the suburbs.

One can only hypothesize that the principals identified those children who required, or could benefit from being offered, courses of study which did not correspond to the regular offerings in the district. Thus, a principal from a district in an affluent area, where a variety of enrichment courses was already offered, did not see the necessity of identifying many students as gifted and requiring special attention. By contrast,

principals in the urban Northeast or suburban West, where finances are tight, were more conscious of special efforts to enrich the curriculum.

Given these circumstances, we would recommend using a 3 percent figure across the board (see Tables 20 and 21). It is probably fairly descriptive of conditions in central cities and rural areas. It probably understates the incidence in suburban areas. But in such areas provisions for the advanced students are commonplace, and the needs based on appropriate averages would probably exaggerate the additional cost of these programs.

III. Projections of Target Groups

The projection of target groups presented below is divided into four parts. First, an estimate of children by income level is presented. Second, a projection of black students is derived for 1975-76 and 1980-81. Third, students of Spanish-American descent are estimated for the same two periods. Finally, a series of adjustments are recommended for projecting prevalence rates of the handicapped and students with special needs.

Projection of Children by Income Level

The projection of the number of children by income level for 1975-76 and 1980-81 was based upon the following: (1) GNP estimates of the U. S. Department of Labor, Bureau of Labor Statistics, for 1980-81 were used (the 1975-76 GNP was interpolated); (2) average family incomes by region and type of residence were estimated for these two time periods, using past relationships of personal incomes to GNP growth in constant prices;

(3) estimates of families with incomes under $3,000, $4,000 and $5,000 in 1967-68 prices were projected for the total U. S.; (4) similar estimates were made by region and type of residence; (5) these two sets of estimates were made consistent at the national level. The number of children in families of given income levels was estimated by calculating the number of children under 18 per family by income level in 1970, and then adjusting this figure by the average decline in the number of children for all families between 1970-71 and 1975-76, and between 1970-71 and 1980-81.

A more detailed description of the methodology is presented below.

Projections of Family Incomes

Projections of family incomes were tied to the projected growth of the gross national product published in The U. S. Economy in 1980, Bulletin 1673, U. S. Department of Labor, 1970. Average family incomes for 1975-76 and 1980-81 were derived by dividing the projected share of GNP accounted for by family income (based on 1967-70 trends) by the estimated number of families in those two years.

This exercise was performed for the total U. S. and for the four regions of the U. S. The level of family incomes by type of residence by region was estimated by trending 1959-69 relationships from special Census tabulations.

The relative rates of change of average incomes in each of the four regions, projected mechanically from past trends, produced strange results indeed. The average family income in the South exceeded that in the West. Another check, that of the trend of personal incomes per capita, indicated a slower rate of change, roughly one half that indicated by the projections of incomes. This trend was adopted, and the resulting

projections of average incomes appear in Table 22. It will be noted that this method also resulted in estimates of family incomes much more equal among the regions in 1975-76 and 1980-81 than in 1969-70.

Projections of Income Distributions

The objectives of this study were to project the distributions of family income at the lower end of the scale. It should be noted in this connection that (1) while income distributions measured by the GINI Index[1] have not changed drastically, there have been some reductions in income inequality for the total U. S. in the course of the past ten years (2) the changes in degree of income inequality have not been the same region by region; rather, a greater equalization is evident in the South and North Central regions, and less in the West and Northeast, and (3) the income distribution in central cities in the Northeast and North Central regions has become more unequal (see Table 23).

Table 23 presents approximate GINI indices for 1959 and 1969. As an indication of precision, fairly rough upper and lower bounds for the GINI Index were computed for the U. S. family income distribution for 1969. The spread between the lower bound (.342) and the upper bound (.352) is about 3 percent. The approximation presented in Table 23 (.348) is, of course, within these bounds. While group means were not available to enable computation of similar bounds in the remaining cases, a similar degree of precision could be expected.

Statistical analysis of the behavior at the lower levels of the family income distribution for the U. S. indicates that it could be

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[1]Definitions of the GINI Index of Concentration may be found in U. S. Bureau of the Census, Trends in the Income of Families and Persons in the United States 1947-1964, Technical Paper No. 17 (Washington, D.C.: Government Printing Office, 1967), pp. 32-36; and Kendall, M. G., The Advanced Theory of Statistics (New York: Hafner Publishing Co., Fifth Edition, 1952), Vol. 1, pp. 43-44.

TABLE 22

MEAN FAMILY INCOME
BY REGION AND TYPE OF RESIDENCE
ESTIMATED 1959, 1969, AND PROJECTED 1975, 1980
(in 1967-68 dollars)

	1959	1969	1975	1980
NORTHEAST				
Central Cities	7,944	9,339	10,948	12,163
Other SMSA	9,430	11,710	13,958	15,769
Non-SMSA	7,383	9,552	11,648	13,423
TOTAL	8,434	10,420	12,513	14,186
NORTH CENTRAL				
Central Cities	8,262	10,055	11,622	12,997
Other SMSA	9,529	12,195	13,966	15,852
Non-SMSA	6,352	8,675	10,766	12,772
TOTAL	7,842	10,265	12,306	14,163
SOUTH				
Central Cities	7,284	9,132	11,015	12,460
Other SMSA	7,976	10,674	12,974	14,963
Non-SMSA	5,042	7,207	9,141	10,910
TOTAL	6,280	8,602	10,765	12,600
WEST				
Central Cities	9,003	10,731	12,011	13,130
Other SMSA	9,230	11,167	12,526	13,735
Non-SMSA	7,105	9,251	11,133	12,893
TOTAL	8,573	10,545	12,061	13,369
All Central Cities	8,032	9,721	11,437	12,721
All Other SMSA	9,122	11,486	13,541	15,250
All Non-SMSA	6,035	8,253	10,308	12,124
TOTAL U. S.	7,639	9,838	11,829	13,537

Source: 1959 and 1969 from U. S. Bureau of the Census. Current Population Survey, March 1960 and 1970 (unpublished tabulations); See text for methods of projection to 1975 and 1980.

TABLE 23

GINI INDICES
ESTIMATED FOR EACH TYPE OF RESIDENCE
WITHIN REGION, 1959 and 1969

	1959	1969
NORTHEAST		
Central Cities	.344	.353
Other SMSA	.356	.324
Non-SMSA	.359	.305
TOTAL	.355	.334
NORTH CENTRAL		
Central Cities	.341	.349
Other SMSA	.329	.290
Non-SMSA	.380	.360
TOTAL	.363	.335
SOUTH		
Central Cities	.401	.378
Other SMSA	.393	.328
Non-SMSA	.456	.373
TOTAL	.436	.370
WEST		
Central Cities	.377	.353
Other SMSA	.360	.325
Non-SMSA	.348	.350
TOTAL	.364	.341
All Central Cities	.365	.357
All Other SMSA	.357	.316
All Non-SMSA	.407	.356
TOTAL U. S.	.386	.348

Source: See text

approximated adequately by fitting a quadratic equation to the distribution of families with incomes under $3,000, $4,000 and $5,000 in 1967-68 dollars. By contrast, the number of families with low incomes by residence, within region, appear to be fairly unstable in the two time periods, when estimates are made by relating them to changes in the average income. Nor does there appear to be any useable relationship between the percentage of families in the lower income ranges and average income. This is due to substantial differences in the distributions, exemplified by the wide variations between the GINI indexes. Under these circumstances, it was decided to estimate the percentage of families below certain income cut-offs on the basis of 1969 distributions by region and type of residence, and adjust them uniformly across regions and types of residence to make them conform to the national estimates. These adjustments were in the order of 10 percent upward for all types of residences. The resulting projections are shown in Table 24.

It should be admitted that we understand neither why GINI coefficients behave the way they do, nor the reasons for the concentration of low-income families in a region or type of residence. It is our intuitive feeling that it would not be realistic to continue to project the polarization of the poor and the rich in central cities, nor that conditions in central cities are likely to improve. In a way we have opted for a steady state projection, which implies some slowing down of immigration of the poor from rural areas. These assumptions are consonant with (1) projections of slower growth for the total U. S. population, and (2) slowing of the exodus from rural areas.[1]

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[1] Froomkin, et al., Projections ..., loc. cit.

TABLE 24

PERCENT OF FAMILIES WITH INCOMES BELOW SELECTED LEVELS, BY REGION AND TYPE OF DISTRICT PROJECTED 1975-76 AND 1980-81 (In 1967-68 dollars)

	1975			1980		
	Percent of Families with Incomes Less than			Percent of Families with Incomes Less than		
	$3,000	$4,000	$5,000	$3,000	$4,000	$5,000
NORTHEAST						
Central Cities	9.9	14.9	20.7	8.7	13.0	18.0
Other SMSA	4.4	7.0	10.2	3.6	5.8	8.5
Non-SMSA	6.8	10.4	14.6	5.7	8.5	11.9
TOTAL	6.6	10.3	14.5	5.6	8.6	12.1
NORTH CENTRAL						
Central Cities	8.8	13.1	18.0	7.7	11.4	15.6
Other SMSA	3.7	5.8	8.4	3.1	4.8	6.9
Non-SMSA	10.8	15.8	21.5	8.8	12.7	17.2
TOTAL	7.3	11.0	15.2	6.0	8.9	12.3
SOUTH						
Central Cities	11.1	16.4	22.4	9.6	14.0	19.1
Other SMSA	6.4	9.7	13.6	5.3	8.0	11.1
Non-SMSA	17.6	24.0	30.8	14.8	20.0	25.6
TOTAL	12.6	17.8	23.5	10.5	14.7	19.3
WEST						
Central Cities	8.6	12.8	17.6	7.8	11.5	15.8
Other SMSA	6.7	10.2	14.3	6.0	9.1	12.7
Non-SMSA	9.7	14.4	19.9	8.1	11.9	16.3
TOTAL	8.0	12.0	16.6	7.0	10.4	14.4
All Central Cities	9.7	14.4	19.9	8.5	12.6	17.3
All Other SMSA	5.1	8.0	11.3	4.4	6.8	9.6
All Non-SMSA	13.1	18.5	24.4	10.9	15.2	20.0
TOTAL U. S.	8.9	13.1	17.9	7.5	10.9	14.9

Source: Based on trends in distribution of families by income . See text.

Estimates of Number of Children

Estimates of children by income were derived by (1) examining the number of children in 1959 and 1969 by family income. The higher the family income, the larger was the number of children per family. This does not mean that the poor don't have more children than the rich. It is just a reflection of the fact that many poor families consist of elderly persons; (2) projecting the number of children per family to 1975-76 and 1980-81; and (3) estimating the number of children per family by income level in 1975 and 1980 on the basis of observed changes in the number of children per family between 1959 and 1969. The estimates for 1959, 1969, 1975 and 1980 are presented in Table 25.

It was further assumed (a) that the same relationship between attendance rates by income and total attendance rates would hold in 1975 and 1980 as in 1970, and (b) that the proportion of children from each income group in public school in relation to the total would also remain constant. Projected enrollments in public school by income within each region and type of district are presented in Table 26.

Projections of Low-Income Children by Type of District

The information for the 1960's is based on U. S. Bureau of the Census definitions of Standard Metropolitan Statistical Areas as of 1960. In order to convert this data to 1970 SMSA definitions, the proportion of children equal to the population reclassification from non-metro areas in 1960 to metro areas in 1970 was imputed to SMSA's. It was then distributed between central cities and suburbs in proportion to the population in these types of residence using 1960 SMSA definitions. Also, the

TABLE 25

NUMBER OF OWN CHILDREN UNDER 18 YEARS OF AGE PER FAMILY
BY INCOME, REGION AND TYPE OF RESIDENCE

Region	Income	1960	1970	1975	1980
NORTHEAST					
Central Cities	Under $3,000	.91	.92	.93	.93
	$3,000-$3,	1.09	1.04	1.02	.99
	$4,000-$4,999	1.29	1.33	1.39	1.45
	$5,000+	1.06	1.07	1.08	1.08
	TOTAL	1.06	1.07	1.08	1.08
Other SMSA	Under $3,000	.83	.77	.74	.71
	$3,000-$3,999	.87	.60	.51	.41
	$4,000-$4,999	1.15	.79	.67	.54
	$5,000+	1.41	1.41	1.41	1.41
	TOTAL	1.33	1.33	1.33	1.33
Non-SMSA	Under $3,000	.87	.73	.67	.61
	$3,000-$3,999	.93	.97	.99	1.01
	$4,000-$4,999	1.42	1.13	1.02	.90
	$5,000+	1.39	1.40	1.41	1.41
	TOTAL	1.29	1.32	1.34	1.35
TOTAL	Under $3,000	.88	.85	.83	.82
	$3,000-$3,999	.99	.89	.95	.80
	$4,000-$4,999	1.28	1.11	1.04	.96
	$5,000+	1.28	1.30	1.31	1.32
	TOTAL	1.22	1.24	1.26	1.28
NORTH CENTRAL					
Central Cities	Under $3,000	.94	.96	.97	.98
	$3,000-$3,999	1.01	1.32	1.53	1.73
	$4,000-$4,999	1.47	1.14	1.01	.88
	$5,000+	1.25	1.33	1.38	1.42
	TOTAL	1.22	1.29	1.33	1.36
Other SMSA	Under $3,000	.96	.71	.63	.55
	$3,000-$3,999	.95	.93	.92	.91
	$4,000-$4,999	1.19	1.05	.99	.93
	$5,000+	1.58	1.53	1.51	1.48
	TOTAL	1.50	1.48	1.47	1.46
Non-SMSA	Under $3,000	.49	.69	.83	.97
	$3,000-$3,999	1.24	.76	.62	.47
	$4,000-$4,999	1.56	1.03	.86	.68
	$5,000+	1.67	1.51	1.44	1.37
	TOTAL	1.37	1.34	1.33	1.31

Number of Own Children Under 18 Years of Age
Per Family By Income, Region, and Type of Residence
Page 2 of 3

Region	Income	1960	1970	1975	1980
NORTH CENTRAL					
TOTAL	Under $3,000	.67	.78	.85	.91
	$3,000-$	1.13	.96	.89	.82
	$4,000-$4,999	1.47	1.07	.93	.78
	$5,000+	1.50	1.47	1.46	1.44
	TOTAL	1.36	1.37	1.38	1.38
SOUTH					
Central Cities	Under $3,000	1.20	1.13	1.10	1.06
	$3,000-$3,999	1.07	1.17	1.23	1.28
	$4,000-$4,999	1.52	1.25	1.14	1.03
	$5,000+	1.28	1.19	1.15	1.11
	TOTAL	1.27	1.19	1.16	1.12
Other SMSA	Under $3,000	1.30	.86	.72	.57
	$3,000-$3,999	1.22	1.11	1.06	1.01
	$4,000-$4,999	1.53	1.13	.99	.84
	$5,000+	1.55	1.43	1.38	1.32
	TOTAL	1.49	1.36	1.30	1.24
Non-SMSA	Under $3,000	1.32	.86	.71	.56
	$3,000-$3,999	1.58	1.23	1.10	.96
	$4,000-$4,999	1.57	1.40	1.33	1.25
	$5,000+	1.50	1.35	1.29	1.22
	TOTAL	1.44	1.25	1.17	1.09
TOTAL	Under $3,000	1.27	.91	.78	.65
	$3,000-$3,999	1.38	1.19	1.11	1.03
	$4,000-$4,999	1.55	1.31	1.21	1.11
	$5,000+	1.44	1.33	1.28	1.23
	TOTAL	1.40	1.26	1.18	1.10
WEST					
Central Cities	Under $3,000	.86	.93	.97	1.01
	$3,000-$3,999	1.13	.95	.88	.80
	$4,000-$4,999	1.43	1.06	.93	.79
	$5,000+	1.24	1.18	1.15	1.12
	TOTAL	1.21	1.14	1.11	1.07
Other SMSA	Under $3,000	.95	1.05	1.11	1.16
	$3,000-$3,999	.80	1.16	1.42	1.68
	$4,000-$4,999	1.73	.80	.59	.37
	$5,000+	1.51	1.47	1.45	1.43
	TOTAL	1.44	1.40	1.38	1.36
Non-SMSA	Under $3,000	1.17	1.01	.94	.87
	$3,000-$3,999	1.31	1.34	1.36	1.37
	$4,000-$4,999	1.76	1.34	1.18	1.02
	$5,000+	1.62	1.53	1.49	1.44
	TOTAL	1.53	1.45	1.41	1.37

Number of Own Children Under 18 Years of Age
Per Family By Income, Region and Type of Residence
Page 3 of 3

Region	Income	1960	1970	1975	1980
WEST					
TOTAL	Under $3,000	1.01	1.01	1.01	1.01
	$3,000-$3,999	1.08	1.15	1.19	1.22
	$4,000-$4,999	1.64	1.04	.85	.66
	$5,000+	1.45	1.40	1.38	1.35
	TOTAL	1.39	1.34	1.32	1.29
All Central Cities	Under $3,000	1.01	1.01	1.01	1.01
	$3,000-$3,999	1.07	1.13	1.16	1.19
	$4,000-$4,999	1.42	1.23	1.15	1.07
	$5,000+	1.20	1.19	1.18	1.18
	TOTAL	1.18	1.18	1.18	1.18
All Other SMSA	Under $3,000	1.04	.86	.79	.71
	$3,000-$3,999	.98	.94	.92	.90
	$4,000-$4,999	1.36	.93	.79	.64
	$5,000+	1.50	1.46	1.44	1.42
	TOTAL	1.43	1.39	1.37	1.35
All Non-SMSA	Under $3,000	1.15	.82	.70	.58
	$3,000-$3,999	1.37	1.09	.98	.87
	$4,000-$4,999	1.56	1.26	1.14	1.02
	$5,000+	1.50	1.43	1.40	1.36
	TOTAL	1.41	1.31	1.27	1.22
TOTAL U.S.	Under $3,000	1.10	.88	.79	.70
	$3,000-$3,999	1.19	1.07	1.02	.96
	$4,000-$4,999	1.48	1.17	1.05	.92
	$5,000+	1.40	1.38	1.37	1.36
	TOTAL	1.34	1.30	1.28	1.26

Source: Special tabulations from U. S. Bureau of the Census, 1960 1 in 1000 sample of 1960 Census of Population, and Current Population Survey, March 1960, and 1970.

TABLE 26

PROJECTED PUBLIC SCHOOL ENROLLMENT BY FAMILY INCOME (IN 1967-68 DOLLARS), BY REGION AND BY TYPE OF RESIDENCE, 1975-76 AND 1980-81
(In Thousands)

Region	Income	1975-76	1980-81
NORTHEAST			
Central Cities	Under $3,000	246	213
	$3,000-$3,999	141	115
	$4,000-$4,999	224	198
	$5,000 and Over	2,259	2,294
	TOTAL	2,870	2,820
Other SMSA	Under $3,000	128	106
	$3,000-$3,999	55	37
	$4,000-$4,999	88	60
	$5,000 and Over	4,951	5,200
	TOTAL	5,222	5,403
Non-SMSA	Under $3,000	86	64
	$3,000-$3,999	68	55
	$4,000-$4,999	82	57
	$5,000 and Over	2,208	2,253
	TOTAL	2,444	2,429
TOTAL	Under $3,000	460	383
	$3,000-$3,999	264	207
	$4,000-$4,999	394	315
	$5,000 and Over	9,418	9,747
	TOTAL	10,536	10,652
NORTH CENTRAL			
Central Cities	Under $3,000	212	169
	$3,000-$3,999	169	144
	$4,000-$4,999	128	86
	$5,000 and Over	2,770	2,645
	TOTAL	3,279	3,044
Other SMSA	Under $3,000	89	68
	$3,000-$3,999	78	65
	$4,000-$4,999	100	80
	$5,000 and Over	5,260	5,496
	TOTAL	5,527	5,709
Non-SMSA	Under $3,000	308	284
	$3,000-$3,999	112	62
	$4,000-$4,999	125	104
	$5,000 and Over	3,849	3,734
	TOTAL	4,444	4,184

Projected Public School Enrollment by Family Income (in 1967-68 Dollars), by Region and by Type of Residence, 1975-76 and 1980-81
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Region	Income	1975-76	1980-81
NORTH CENTRAL TOTAL	Under $3,000	609	521
	$3,000-$3,999	359	271
	$4,000-$4,999	403	270
	$5,000 and Over	11,879	11,875
	TOTAL	13,250	12,937
SOUTH Central Cities	Under $3,000	443	366
	$3,000-$3,999	254	222
	$4,000-$4,999	271	206
	$5,000 and Over	3,994	4,121
	TOTAL	4,962	4,915
Other SMSA	Under $3,000	119	88
	$3,000-$3,999	94	81
	$4,000-$4,999	103	79
	$5,000 and Over	3,060	3,375
	TOTAL	3,376	3,623
Non-SMSA	Under $3,000	736	482
	$3,000-$3,999	433	300
	$4,000-$4,999	548	411
	$5,000 and Over	5,194	5,161
	TOTAL	6,911	6,354
TOTAL	Under $3,000	1,298	936
	$3,000-$3,999	781	603
	$4,000-$4,999	922	696
	$5,000 and Over	12,248	12,657
	TOTAL	15,249	14,892
WEST Central Cities	Under $3,000	215	216
	$3,000-$3,999	105	95
	$4,000-$4,999	111	87
	$5,000 and Over	2,573	2,699
	TOTAL	3,004	3,097
Other SMSA	Under $3,000	222	230
	$3,000-$3,999	154	174
	$4,000-$4,999	73	45
	$5,000 and Over	3,655	4,019
	TOTAL	4,104	4,468

Projected Public School Enrollment by Family Income (in 1967-68 Dollars), by Region and by Type of Residence, 1975-76 and 1980-81
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Region	Income	1975-76	1980-81
WEST			
Non-SMSA	Under $3,000	129	97
	$3,000-$3,999	94	75
	$4,000-$4,999	92	64
	$5,000 and Over	1,648	1,637
	TOTAL	1,963	1,873
TOTAL	Under $3,000	566	543
	$3,000-$3,999	353	344
	$4,000-$4,999	276	196
	$5,000 and Over	7,876	8,355
	TOTAL	9,071	9,438
All Central Cities	Under $3,000	1,116	964
	$3,000-$3,999	669	576
	$4,000-$4,999	734	577
	$5,000 and Over	11,596	11,759
	TOTAL	14,115	13,876
All Other SMSA	Under $3,000	558	492
	$3,000-$3,999	381	357
	$4,000-$4,999	364	264
	$5,000 and Over	16,926	18,090
	TOTAL	18,229	19,203
All Non-SMSA	Under $3,000	1,259	927
	$3,000-$3,999	707	492
	$4,000-$4,999	897	636
	$5,000 and Over	12,899	12,785
	TOTAL	15,762	14,840
TOTAL U. S.	Under $3,000	2,933	2,383
	$3,000-$3,999	1,757	1,425
	$4,000-$4,999	1,995	1,477
	$5,000 and Over	41,421	42,634
	TOTAL	48,106	47,919

Source: Total number in population from projections of children by family income, see text; enrollment rate differential based on U. S. Bureau of the Census, Current Population Reports, Series P-20, No. 222, "School Enrollment, October 1970" (Washington, D.C.: Government Printing Office, 1971), Table 15.

number of children were redistributed to correspond to the type of school district attended. In both the South and the West, residents of suburban areas attend central city school districts. The appropriate proportions were shifted to this type of school district.[1] The new distributions appear in Table 12.

Given these distributions, a calculation was performed to estimate the level of income at which the number of children would equal children in poverty using Census definitions. Between 1969-70 and 1980-81 the average size of the family will decline, due to declines in the birth rates. On the average, families will have 0.2 fewer members. This was taken into consideration in estimating the number of children for this projection. It will be noted that the income cut-offs in constant prices are lower in 1975-76 and 1980-81 than in 1969-70. The results of this calculation are shown in Table 27. It is estimated, thus, that the number of children in poor families will decline from 14 percent of the total in 1969 to 9 percent in 1980.

Projections of Black Students in Public Schools

The projection of black students in public schools is based upon (1) projections of the total non-white population to 1980 prepared by the U. S. Census Bureau; (2) estimates prepared by this study of the population by region and type of residence; (3) the number of children of school age per 1,000 population for blacks as compared to whites; (4) the proportion of blacks expected to be enrolled below college level; and (5) the proportion attending public schools.

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[1] For a rationale see Froomkin, et al., Projections, ... loc. cit., Section 4.

TABLE 27

PROJECTED INCOME CUT-OFFS FOR
CHILDREN IN FAMILIES IN LOW-INCOME POPULATION
BY REGION AND TYPE OF RESIDENCE, 1975 and 1980
(In 1967-68 dollars)

	1975	1980
NORTHEAST		
Central Cities	4,160	4,060
Other SMSA	4,301	4,301
Non-SMSA	4,428	4,362
NORTH CENTRAL		
Central Cities	4,566	4,466
Other SMSA	4,487	4,487
Non-SMSA	4,197	4,197
SOUTH		
Central Cities	4,405	4,338
Other SMSA	4,885	4,952
Non-SMSA	4,521	4,420
WEST		
Central Cities	3,986	3,887
Other SMSA	4,183	4,183
Non-SMSA	4,515	4,449

Source: Number of children per family in U.S. Bureau of Census Current Population Reports, Series P-60, No. 76, "24 Million Americans, Poverty in the United States:1969." Government Printing Office, Washington, D. C. 1970 . Change in number of children as projected in Joseph Fromkin, et. al., Population, op. cit. Section 1; 1969 incomes,

Projections of Total Negro Populations and Allocation by Type of Residence

Projections of non-white population for 1975 and 1980 were published by the U. S. Bureau of the Census in December 1967. The 1967 projections were based on Series C birth rates.[1] In this study (1) we adjusted these projections to correspond to estimates of Negro population in the U. S. Census for 1970; (2) aged the black women 15 to 44 in 1970 to 1975 and 1980; and (3) estimated new birth rates for blacks from 1970 to 1975 and 1976 to 1980 to correspond to the implicit birth rates in the Series E projection (1968).[2] Negro birth rates for the period 1970 to 1980 were estimated to be 16 percent below the Series C projection used by the Census Bureau in 1967.

The allocation of Negro population by region and type of residence was done in accordance with the migration trends between 1960 and 1970. Thus, the number of blacks in non-SMSA areas is expected to decline at the rate of the past decade, i.e., 5 percent. Between 1960 and 1970, roughly 30 percent of all the increase in the black population was in suburban areas, and 75 percent of the increase was channeled to central cities. This trend was projected to 1980. The distribution within region was made according to the shares of the population growth each region absorbed between 1960 and 1970. The results of this allocation appear in Table 28.

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[1]U. S. Bureau of the Census, Current Population Reports, Series P-25, No. 381, "Projections of the Population of the United States by Age, Sex and Color to 1990, with Extensions of Population by Age and Sex to 2015" (Washington, D.C.: Government Printing Office, 1967).

[2]U. S. Bureau of the Census, Current Population Reports, Series P-25, No. 448.

TABLE 28

NEGRO POPULATION BY REGION AND BY TYPE OF RESIDENCE, ESTIMATED 1960 AND 1970 AND PROJECTED 1975 AND 1980

	Number of Persons (in thousands)				Per Cent of Total Population			
	1960	1970	1975	1980	1960	1970	1975	1980
All Central Cities	9,600	12,641	13,911	15,182	16.2	20.3	21.8	23.4
All Other SMSA	2,300	3,512	4,013	4,513	3.9	4.7	4.9	5.0
All Non-SMSA	6,600	6,426	6,349	6,274	10.8	9.6	9.2	8.9
TOTAL U.S.	18,500	22,579	24,273	25,969	10.3	11.1	11.3	11.5
Northeast	2,900	4,342	4,948	5,556	6.5	8.9	9.7	10.5
North Central	3,400	4,572	5,065	5,559	6.6	8.1	8.7	9.2
South	11,200	11,970	12,294	12,617	20.4	19.1	18.5	18.0
West	1,000	1,695	1,966	2,237	3.6	4.9	5.1	5.3
TOTAL U.S.	18,500	22,579	24,273	25,969	10.3	11.1	11.3	11.5

Source: 1960 U.S. Bureau of the Census, Current Population Reports, Series P-23, No. 33, "Trends in Social and Economic Conditions in Metropolitan and Non-Metropolitan areas," 1970 adjusted to U.S. Bureau of the Census, 1970 Census of Population, Series PC(S1)-1, "Distribution of the Negro Population by County," and Series PC(V2)-1, "General Population Characteristics, United States, Advance Report," Washington, D.C., 1971, 1975 and 1980 See text.

Number of Eligible Black Children and Attendance Rates

The total number of black children aged three to 19 was estimated by aging the 1970 population to 1975 and 1980 and estimating that the three- and four-year-olds would be 40 percent of all children under five. The number of black children by type of residence and region was scaled in relation to the total black population. The ratio of black school age children per one hundred population in 1970 and that for all races was calculated by region and type of residence in 1975 and 1980 and then multiplied by the number of children of all races per one hundred population for these two years.[1] These estimates were adjusted to equal the total number of black children in the U. S.

The attendance rates below college were assumed to be the same for Negroes as for the total population. These attendance rates have been converging fast, and given the average attainment of Negro parents in the mid-1970's and 1980, they should be very close together by mid-decade. School attainment projections for the population 25 years and over in 1970, 1975 and 1980 are shown in Table 29. It will be noted that the attainment of the Negro population under 35 in 1980 will be virtually identical to that of the white population in 1970. This will no doubt have some favorable effect not only on Negro attendance rates, but also on their achievement.

The relationship of the rate of attendance of blacks in private schools to that of total enrollment is kept constant. Thus, in 1970 it was estimated that the total private school attendance was 12.9

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[1]Joseph Froomkin, et al., Population, op. cit., Section 1.

TABLE 29

EDUCATIONAL ATTAINMENT OF NEGROES AGE 20 YEARS AND OVER, 1970, 1975, 1980
(Percent of Age Group)

	1970				1975				1980			
Years of Age	Less Than 4 Years of High School	4 Years of High School	College 1 Year or More	Median Years of School Completed	Less Than 4 Years of High School	4 Years of High School	College 1 Year or More	Median Years of School Completed	Less Than 4 Years of High School	4 Years of High School	College 1 Year or More	Median Years of School Completed
20-24	35	43	22	12.3	26	47	27	12.5	17	53	30	12.7
25-29	44	39	17	12.2	35	43	22	12.2	26	47	27	12.5
30-34	50	38	12	12.0	44	39	17	12.0	35	43	22	12.3
35-44	59	29	12	11.2	50	38	12	11.4	44	39	17	12.2
45-54	71	20	9	9.3	65	25	10	10.0	59	29	12	11.2
55-64	83	11	6	7.9	74	16	8	9.5	71	20	9	9.3
65-74	90	5	5	6.1	85	8	7	7.8	83	11	6	7.9
75 and Over	93	4	3	4.6	91	5	5	5.0	90	5	5	6.1

Source: U. S. Bureau of the Census and U. S. Bureau of Labor Statistics, BLS Report No. 394 and Current Population Reports, Series P-23, No. 38, "The Social and Economic Status of Negroes in the United States, 1970 (Washington, D.C.: Government Printing Office). 1975 and 1980 percent distributions are based on changes from 1960 and 1970.

percent of those enrolled in school. Only 4.7 percent of blacks attended private schools. In other words, the blacks were one-third as likely to attend private schools as the U. S. average. The same relationship was kept for 1975 and 1980, when it was assumed that 3.9 percent and 4.2 percent would attend private schools in these respective years. The ratio of enrollment rates for each region and type of district to the U. S. total in 1970 was kept the same for 1975 and 1980. Total population age three to 19 and public school enrollments of blacks appear in Table 30.

Spanish-Americans

There is no Census projection of the total population of Spanish-Americans for the U. S. in 1975 and 1980. Hence, this study prepared independent projections of the total number of children in this target group for 1975 and 1980. The projection was made in two steps. First a projection was made of native-born Spanish-American children, and, second, an estimate was prepared of immigrants from Puerto Rico and Latin-American countries.

The projection of native-born children is based upon (1) the number of women of Spanish descent of child-bearing age, i.e., 15 to 44. The number of women 5 to 34 in 1970 based on CPS estimates was aged to 1975 and 1980;[1] (2) the relative ratio of the number of children per 1,000 Spanish-American women in 1970 to the number of children three to 19 per 1,000 women for the total U. S. population was calculated as of 1970;[2]

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[1]U. S. Bureau of the Census, Current Population Reports, Series P-20, No. 213, "Persons of Spanish Origin in the United States, November 1969," and Series P-20, No. 224, "Selected Characteristics of Persons and Families of Mexican, Puerto Rican and Other Spanish Origin."

[2]Those three- and four-year-olds were presumed to be 40 percent of those under five years of age.

TABLE 30

NEGRO ENROLLMENT IN PUBLIC ELEMENTARY AND SECONDARY SCHOOLS BY TYPE OF DISTRICT AND BY REGION, 1975 AND 1980
(in thousands)

	1975			
	Population Age 3-19	Public School Enrollment	Per Cent Enrolled	Per Cent of Total Public Enrollment
All Central Cities	5753	4516	78.5	32.0
All Other SMSA	1177	815	69.2	4.5
All Non-SMSA	2438	1957	80.3	14.4
TOTAL U.S.	9368	7288	77.8	15.1
Northeast	1895	1400	73.9	13.3
North Central	2046	1557	76.1	11.8
South	4635	3732	80.5	24.5
West	792	599	75.6	6.6
TOTAL U.S.	9368	7288	77.8	15.1
	1980			
All Central Cities	5860	4794	81.8	34.2
All Other SMSA	1236	893	72.2	4.7
All Non-SMSA	2246	1880	83.7	12.7
TOTAL U.S.	9342	7567	81.0	15.8
Northeast	1983	1528	77.0	14.3
North Central	2090	1659	79.4	12.8
South	4430	3719	83.9	25.0
West	839	661	78.8	7.0
TOTAL U.S.	9342	7567	81.0	15.8

Source: School Enrollments based on granth in total enrollment in Joseph Froomkin, et al, Op. Cit.; School age eligible population, see text

and (3) this relationship was projected to 1980 consistent with Series E population projections;[1] (4) the number of women in step 1 was then multiplied by the estimates in step 3 to derive the number of school-eligible children in 1975 and 1980.

The number of immigrant children was computed by estimating the proportion of total immigrants from Latin countries and Puerto Rico as a percentage of total immigration for the last five years. This short period was used because of recent changes in the Immigration Act. It was determined that roughly one-third of all immigrants to the U. S. come from Spanish-speaking countries. This ratio was applied to the distribution of future annual net migration by the U. S. Bureau of the Census for 1971-75 and 1976-80.[2]

Together with the results of the projections for the already resident Spanish population, they add up to the total Spanish-American school-eligible population as shown in Table 31. The attendance rates for this school-eligible population of Spanish-Americans was assumed to lag behind that of the Negroes by five years.

The public school share has been calculated by inference. First the 1970 expected attendance was taken into account, then the attendance estimated by the Office of Civil Rights was subtracted from it. It was thus estimated that 8 percent of Spanish-surnamed population were in private schools. The propensity of Spanish-surnamed persons to attend private schools was thus 66 percent compared to the total population. This ratio was kept constant to 1975 and 1980. The resulting estimates of public school attendance were derived accordingly.

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[1] U. S. Bureau of the Census, op. cit., Series P-25, No. 448.

[2] Ibid., Table A-2.

TABLE 31

PERSONS OF SPANISH ORIGIN OR DESCENT
IN U.S. AGE 0-19, ESTIMATED 1970,
AND PROJECTED 1975 AND 1980
(in thousands)

Age (years)	1970	1975			1980		
	Total	Immigrants	Survivors and New Births	Total	Immigrants	Survivors and New Births	Total
under 5	1167	33	1314	1347	33	1483	1516
5-9	1284	63	1160	1223	63	1305	1368
10-14	1177	64	1281	1345	64	1158	1222
15-19	936	62	1175	1237	62	1342	1404
TOTAL	4564	222	4930	5152	222	5288	5510
3-19	3864	---	----	4344	---	----	4600

Source: 1970 Population estimates from U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 213, "Persons of Spanish Origin in the United States, November 1969," and Series P-20, No. 224, "Selected Characteristics of Persons and Families of Mexican and Puerto Rican and Other Spanish Origin: March 1971," Washington, D.C.: Immigrants of Spanish Origin are estimated to be one-third of annual migration in Series P-25, No. 448, "Projections of the Population of the United States, by age and sex (Interim Revision): 1970 to 2020"; birth rates for persons of Spanish origin follow trends in the above cited publications.

We have no information on the migration patterns of Spanish-surnamed persons. Hence, the distribution by region and type of district for 1970 was kept constant for the whole period. The estimated enrollments are shown in Table 32.

Projection of Handicapped and Gifted Populations

The dynamics of handicapping conditions are not very well understood. In the majority of studies which came to our attention, the proportion of handicapped children is projected as a constant ratio of the school population. We would prefer a number of modifications to this procedure.

Projections of Children with Reading Problems

The pitfalls in estimating the number of children with reading problems, which were mentioned above, make a projection very difficult. A good case could be made to keep this number constant in the future. But this is a counsel of despair, though it could well be followed given the quality of information available on this topic.

It does seem that with the projected increase in the standard of living and educational attainment, one could reasonably expect reading problems and other undesirable educational effects of deprivation to decrease as well. A reasonable assumption would place the reading problems as a function of (1) variability in the ability of all students and (2) deprivation among poor children. Quite possibly the extent of this deprivation is not evenly proportional to the number of poor children as determined by U. S. Bureau of the Census definitions, but bears some relationship to the ethnic or socioeconomic status of a given type of district.

TABLE 32

SPANISH SURNAME ENROLLMENT IN PUBLIC ELEMENTARY AND SECONDARY SCHOOLS BY TYPE OF DISTRICT AND BY REGION, 1975 AND 1980
(in thousands)

	Population Age 3-19	Enrollment	Per Cent Enrolled	Per Cent of Public School Enrollment
	1975			
All Central Cities	N.A.	1291	N.A.	9.1
All Other SMSA	N.A.	842	N.A.	4.6
All Non-SMSA	N.A.	552	N.A.	3.5
TOTAL U.S.	3649	2685	73.6	5.6
Northeast	N.A.	501	N.A.	4.8
North Central	N.A.	202	N.A.	1.5
South	N.A.	771	N.A.	5.1
West	N.A.	1221	N.A.	13.4
TOTAL U.S.	3649	2685	73.6	5.6
	1980			
All Central Cities	N.A.	1399	N.A.	10.1
All Other SMSA	N.A.	911	N.A.	4.7
All Non-SMSA	N.A.	598	N.A.	4.0
TOTAL U.S.	3864	2908	75.3	6.1
Northeast	N.A.	543	N.A.	5.1
North Central	N.A.	219	N.A.	1.7
South	N.A.	835	N.A.	5.6
West	N.A.	1311	N.A.	13.9
TOTAL U.S.	3864	2908	75.3	6.1

Source: See Text

Using these assumptions, we calculated the ratio of children with reading problems to the estimated ratio of poor children by district and region. The ratio was calculated by accepting the USOE survey estimates of the proportion of children with reading problems, subtracting from it 6.7 percent, i.e., the share of children who would be reading below the mean if the distribution of reading ability were in the normal curve, and dividing the remainder by the percent of poor children by type of district within region.

The estimates for 1975-76 and 1980-81 were projected as the sum of (1) adding 6.7 percent of the total and (2) the estimated ratio to poor children by type of district within region. The results of this calculation appear in Table 33. These results are used in Table 35 to project the prevalence rates for this type of problem in 1975-76 and 1980-81.

Other Handicapping Conditions

For the other handicaps, we have tried to adjust for demographic factors, namely, that the proportion of high school students will be higher in 1975 and 1980 than in 1970. These adjustments to the prevalence rates, as well as the new recommended rates for 1975 and 1980, appear in Tables 34 and 35.

The adjustments were made as follows. The incidence rate for elementary grades in 1970 as shown in the USOE survey was multiplied by the proportion of elementary school students in 1975 or 1980 as appropriate. The same procedure was followed for high school incidence rates. The results of both multiplications were added to derive a new

TABLE 33

STUDENTS WITH READING PROBLEMS
PROJECTED TO 1975-76 AND 1980-81
BY REGION AND TYPE OF DISTRICT
(Number of students in thousands)

	1975-76		1980-81	
	Per Cent	Number	Per Cent	Number
NORTHEAST				
Central Cities	22.4	643	19.5	550
Other SMSA	11.7	611	10.4	562
Non-SMSA	11.7	286	10.3	250
TOTAL	14.6	1,540	12.8	1,362
NORTH CENTRAL				
Central Cities	17.9	587	16.1	514
Other SMSA	11.6	641	10.4	594
Non-SMSA	11.5	511	10.8	452
TOTAL	13.1	1,739	11.9	1,560
SOUTH				
Central Cities	16.2	804	14.5	713
Other SMSA	12.9	436	11.1	402
Non-SMSA	17.4	1,203	14.4	915
TOTAL	16.0	2,443	13.6	2,030
WEST				
Central Cities	14.8	445	14.2	440
Other SMSA	17.1	702	16.7	746
Non-SMSA	10.4	204	9.5	178
TOTAL	14.9	1,351	14.5	1,364
All Central Cities	17.6	2,479	15.8	2,217
All Other SMSA	13.1	2,390	12.0	2,304
All Non-SMSA	14.0	2,204	12.1	1,795
TOTAL U. S.	14.7	7,073	13.1	6,316

Source: Based on reduced number of poor children in population. See text.

TABLE 34

ESTIMATED CHANGES OF 1970 PREVALENCE RATES BY TARGET GROUP TO 1975 AND 1980
(Percent 1970 Prevalence)

Region	Speech Impaired		Mentally Retarded		Specific Learning Disabilities		Emotionally Disturbed		Crippled	
	1975	1980	1975	1980	1975	1980	1975	1980	1975	1980
NORTHEAST										
Central Cities	.923	.949	.952	.952	.962	.962	.923	.923	1.000	1.000
Other SMSA	.857	.857	.952	.952	.926	.926	.923	.923	1.059	1.059
Non-SMSA	.878	.902	.952	.952	.962	.962	.923	.923	1.059	1.059
NORTH CENTRAL										
Central Cities	.929	.952	1.000	1.000	.963	.963	1.000	1.000	1.059	1.059
Other SMSA	.905	.929	.952	.952	.962	1.000	1.000	1.000	1.000	1.000
Non-SMSA	.927	.927	.952	.952	.962	.962	.923	.923	1.000	1.000
SOUTH										
Central Cities	.950	.925	.952	.952	.962	.962	.923	.923	.944	.944
Other SMSA	.950	.950	.952	.952	.962	.962	.923	.923	1.059	1.000
Non-SMSA	.950	.925	.952	.952	.962	.962	.923	.923	1.000	1.059
WEST										
Central Cities	1.054	1.054	1.000	1.000	1.040	1.040	1.083	1.083	1.000	1.000
Other SMSA	.905	.929	.952	.952	.926	.963	1.000	1.000	1.059	1.059
Non-SMSA	.884	.884	.952	.952	.926	.926	.923	.923	1.000	1.000

Estimated Changes of 1970 Prevalence Rates by Target Group to 1975 and 1980

Region	Hard-of-Hearing 1975	Hard-of-Hearing 1980	Deaf 1975	Deaf 1980	Visually Impaired 1975	Visually Impaired 1980	Blind 1975	Blind 1980	Gifted 1975	Gifted 1980
NORTHEAST										
Central Cities	1.000	1.000	.833	.833	1.000	1.000	1.000	1.000	1.037	1.030
Other SMSA	1.000	1.000	.833	.833	1.077	1.077	1.000	1.000	1.183	1.168
Non-SMSA	1.000	1.000	.833	.833	1.000	1.000	1.000	1.000	.947	.950
NORTH CENTRAL										
Central Cities	1.000	1.000	1.000	1.000	1.077	1.077	1.000	1.000	1.031	1.028
Other SMSA	1.000	1.000	1.000	1.000	1.000	1.077	1.000	1.000	1.088	1.069
Non-SMSA	1.000	1.000	.833	1.000	1.000	1.000	1.000	1.000	.971	.971
SOUTH										
Central Cities	1.000	1.000	.833	.833	1.000	1.000	1.000	1.000	1.033	1.043
Other SMSA	1.000	1.000	1.000	.833	.929	1.000	1.000	1.000	1.040	1.046
Non-SMSA	1.000	1.000	.833	.833	1.000	1.000	1.000	1.000	1.027	1.036
WEST										
Central Cities	1.000	1.000	1.200	1.200	1.000	1.000	1.000	1.000	.982	.982
Other SMSA	1.000	1.000	1.000	1.000	.929	1.000	1.000	1.000	.974	.976
Non-SMSA	1.000	1.000	.833	.833	1.000	1.000	1.000	1.000	1.082	1.082

Source: Rates are adjusted by different prevalence rates in Elementary and Secondary Schools from the 1969 School Staffing Survey and estimated changes in shares of elementary and secondary school enrollments, see J. Froomkin, et al., Population, op. cit., Section .

TABLE 35

ESTIMATED PREVALENCE RATES FOR SELECTED TARGET GROUPS BY REGION AND TYPE OF DISTRICT, 1975-76 AND 1980-81

Region	Reading Problems		Speech Impairments		Emotionally Disturbed		Crippled		Mentally Retarded	
	1975-76	1980-81	1975-76	1980-81	1975-76	1980-81	1975-76	1980-81	1975-76	1980-81
NORTHEAST										
Central Cities	22.4	19.5	2.74	2.82	1.47	1.47	.377	.377	2.18	2.18
Other SMSA	11.7	10.4	3.07	3.07	1.10	1.10	.441	.441	1.46	1.46
Non-SMSA	11.7	10.3	2.27	2.34	.90	.90	.677	.677	2.29	2.29
NORTH CENTRAL										
Central Cities	17.9	16.1	3.17	3.25	1.59	1.59	.402	.402	2.29	2.29
Other SMSA	11.6	10.4	3.67	3.77	1.19	1.19	.474	.474	1.46	1.46
Non-SMSA	11.5	10.8	2.75	2.75	.90	.90	.635	.635	2.29	2.29
SOUTH										
Central Cities	16.2	14.5	5.21	5.07	1.47	1.47	.359	.359	2.18	2.18
Other SMSA	12.9	11.1	6.21	6.21	1.10	1.10	.502	.474	1.46	1.46
Non-SMSA	17.4	14.4	4.54	4.42	.90	.90	.635	.672	2.29	2.29
WEST										
Central Cities	14.8	14.2	3.10	3.10	1.72	1.72	.379	.379	2.29	2.29
Other SMSA	17.1	16.7	3.17	3.25	1.19	1.19	.502	.502	1.46	1.46
Non-SMSA	10.4	9.5	2.26	2.26	.90	.90	.636	.636	2.29	2.29

Estimated Prevalence Rates for Selected Target Groups by Region and Type of District, 1975-76 and 1980-81
Page 2 of 2

Region	Specific Learning Disabilities		Hard-of-Hearing		Deaf		Visually Impaired		Blind		Gifted	
	1975-76	1980-81	1975-76	1980-81	1975-76	1980-81	1975-76	1980-81	1975-76	1980-81	1975-76	1980-81
NORTHEAST												
Central Cities	.96	.96	.30	.30	.17	.17	1.50	1.50	.15	.15	3.1_	3.09
Other SMSA	.93	.93	.30	.30	.17	.17	1.62	1.62	.15	.15	3.55	3.50
Non-SMSA	.96	.96	.30	.30	.17	.17	1.50	1.50	.15	.15	2.84	2.85
NORTH CENTRAL												
Central Cities	.96	.96	.30	.30	.20	.20	1.62	1.62	.15	.15	3.09	3.08
Other SMSA	.96	1.00	.30	.30	.20	.20	1.50	1.62	.15	.15	3.26	3.21
Non-SMSA	.96	.96	.30	.30	.17	.20	1.50	1.50	.15	.15	2.91	2.91
SOUTH												
Central Cities	.96	.96	.30	.30	.17	.17	1.50	1.50	.15	.15	3.10	3.13
Other SMSA	.96	.96	.30	.30	.20	.17	1.39	1.50	.15	.15	3.12	3.14
Non-SMSA	.96	.96	.30	.30	.17	.17	1.50	1.50	.15	.15	3.08	3.11
WEST												
Central Cities	1.04	1.04	.30	.30	.24	.24	1.50	1.50	.15	.15	2.95	2.95
Other SMSA	.93	.96	.30	.30	.20	.20	1.39	1.50	.15	.15	2.92	2.93
Non-SMSA	.93	.93	.30	.30	.17	.17	1.50	1.50	.15	.15	3.25	3.25

Source: Based on projected change in proportion of students in Elementary and Secondary Schools, Joseph Froomkin, et al., Population, op. cit., Section 4; Reading Problems based on change in percentage of children in low income population.

incidence rate. A ratio was then constructed by dividing the 1975 and 1980 composite rate by the 1968-69 rate, which is also based on the mix of students between elementary and secondary levels.

IV. Additional Costs of Educating Selected Target Groups

The difficulties outlined above in estimating the number of students in these groups are further compounded in calculating the additional costs required to give them a satisfactory educational program. We have had considerable difficulty in estimating the number of children with special need, and were unable to tag each group by degree of disability. It does stand to reason that children with more serious handicaps need more intensive help than those with less serious disabilities. Children who lag more than one standard deviation behind their age group in reading scores may require more (or longer) remedial effort than those whose attainment is close to the mean. Similarly, partially sighted students whose eyesight has been more nearly corrected may require fewer extra services than those whose eyesight is such as to require a special learning environment.

Furthermore, the whole matter of estimating additional costs for a given type of intervention is also moot. If a lagging learner or a handicapped child receives all his instruction in a special classroom, and if the pupil-teacher ratio in that classroom is lower than that in ordinary classrooms, the additional expenditure per child is the cost for that given handicap. However, if a child spends only part of his time in a special classroom and part of the time in the regular classroom, the estimates are harder to make. Is it reasonable to assume that the class size of the ordinary classroom will be increased to compensate

for the absence of handicapped or other children during part of the day? Or should one assume that the full cost of the extra class hours should be calculated as the additional cost, since the size of the regular classroom will not change because a number of children are withdrawn for short periods? The situation becomes even more controversial when children with special problems are either counselled, tutored or coached individually a number of periods every day or every week.

We will summarize below the literature on desired remediation efforts, and will make very rough estimates of the required effort, since the problems mentioned above have not been taken into account by previous studies. We examined the following:

1. Richard A. Rossmiller, James A. Hale, Lloyd E. Frohreich, Educational Programs for Exceptional Children: Resource Configuration and Costs, University of Wisconsin, Madison, Wisconsin, 1970. This special study of the National Education Finance Project is the most often cited source for estimates of costs for exceptional children.

2. Internal estimates of the Department of Health, Education, and Welfare, U. S. Office of Education, Bureau for the Education of the Handicapped.

3. A special tabulation from the U. S. Office of Education showing estimated expenditure per child for various remedial programs.

4. Internal records of the bilingual program of the U. S. Office of Education.

5. American Institute of Research, Exemplary Programs for Handicapped Children, Palo Alto, California, 1969.

6. Special tabulations showing number of staff by type of handicap and type of treatment from the School Staffing Survey, conducted by DHEW, USOE, National Center for Educational Statistics.

7. Reports of a variety of commissions dealing with exceptional children, as well as staff documents supporting these reports.

As a first step to estimating costs, it was necessary to get some idea of the lower pupil-teacher ratios which prevail in the special education situation. The average pupil-teacher ratio for students in special classrooms was estimated from a special tabulation of the USOE Staffing Survey. This tabulation recorded the full-time equivalent of part-time teachers by type of district. The number of students per professional providing instruction on an individual basis was scaled in proportion to the estimates of the Staffing Survey and information gathered from telephone interviews. This information was used to help translate the number of professionals serving different target groups into full-time equivalent personnel, since this particular statistic was not collected by the Staffing Survey.

The Disadvantaged - the Emphasis is Reading

Our discussion of the disadvantaged population has stressed that the problems of these children are multi-faceted. They suffer from a number of handicaps: a less stimulating home environment, nutrition deficiency, lack of awareness of opportunities opened up by education. In a child already burdened by low achievement, these factors often result in lack of motivation to learn.

Programs for the disadvantaged have been mounted to attempt to overcome some of these handicaps. Free breakfast and free lunch programs have attempted to make up for nutritional handicaps. Enrichment programs have been sponsored to broaden the outlook of the children of the poor;

they have been taken on field trips, have been given counselling, etc. The cost of these enrichment programs cannot be estimated precisely. They probably are not too far off the average federal contribution per disadvantaged child, i.e., $160 per participant, discussed below in the analysis of the scope of federal programs.

In addition to enrichment programs, a number of activities undertaken to impose the performance of disadvantaged children have had a decided academic content. It should be stressed that, consciously or otherwise, the successful programs of this sort also contained an important enrichment component. They were organized by persons dedicated to improving the achievement of disadvantaged children. Hence, the atmosphere in their classrooms differed considerably from the chaos and apathy which characterize so many schools where underachieving children are in a majority.

Most academic programs for the disadvantaged concentrate on reading, while others encompass reading and mathematics. Their range in costs is quite wide. Exemplary programs surveyed by the American Institute for Research cost anywhere from $80 to $2,000 per child. The median cost of effective programs was close to $500 per participant.[1] A survey of educational programs for the culturally deprived by Burke, Kelly and Garms indicated a range from 65 percent additional cost to 500 percent. After spending considerable time examining these programs, these authors came to the conclusion that,

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[1]U. S. Department of Health, Education, and Welfare, Office of Education, Office of Program Planning and Evaluation, "A Study of Selected Exemplary Programs for the Education of Disadvantaged Children," a report prepared by American Institutes for Research in the Behavioral Sciences, Palo Alto, California (mimeographed).

based on their sample, "compensatory education generally is not a separate school program appropriate for the cost differential approach to need determination."[1]

Four recently reported programs which seemed to bring up the reading achievement of students quite dramatically in schools in New York, Kansas City, and Los Angeles required some beefing up of the ordinary teaching staff. Increasing the staff by approximately one-third provided the necessary flexibility for the requisite individual attention to students. This would imply additional costs of roughly 20 percent for all students in the low-income school. If only 50 percent of the students benefitted from extra instruction, the extra cost per student would be 40 percent. The author of the study stressed that the attitudes of administrators and principals and the kind of remedial techniques used were more important than the staffing ratios.[2]

Remedial reading instruction classes appear to be part-time affairs with student-teacher ratios of 45 to 1, according to the findings of the School Staffing Survey. If this ratio of professionals were maintained, the extra cost would be approximately 65 percent per student treated. This ratio is adopted below, not because it is right, but because it is the one most likely to be found in practice.

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[1]Arvid J. Burke, James A. Kelly and Walter I. Garms, "Education Programs for the Culturally Deprived," Planning to Finance Education, National Educational Finance Report, Vol. 3, Gainesville, Florida, 1971, p. 99.

[2]George Weber, Inner-City Children Can be Taught to Read: Four Successful Schools, Occasional Papers, No. 18, Council for Basic Education, Washington, D. C., 1971.

Spanish-Surname Americans, Bilingualism and Biculturalism

A considerable minority of children in public schools, some 5 percent, come from families with Spanish-American backgrounds. Some of these are children of former immigrants from Mexico or other Latin-American countries, others are sons and daughters of new arrivals from Puerto Rico, and still others come from Cuba.

In roughly 50 percent of the homes, Spanish or a local dialect is spoken. In many cases, especially for new arrivals from Puerto Rico, Cuba and Mexico, the parents speak little or no English. Furthermore, their children often enter public schools at some level above the first year or two of elementary school, and are exposed to instruction in a language other than their mother tongue after basic language skills have been presented to their classmates.

The problems of Spanish-American students are thus much more complex than meets the eye. The needs of children with Spanish or a local dialect as a mother tongue are most easily and clearly recognized. This condition should not be allowed to overshadow the problem of biculturalism, which may also act as an impediment to some children's progress in school. The social values of Latin-American culture have not meshed too well with the thrust of most elementary and secondary schools. The traditional reticence of many Spanish-surnamed children may project a wrong impression about their ability to teachers not attuned to their background.

Over the last few years, the U. S. Office of Education has sponsored special programs for bilingual and bicultural programs under Title VII of ESEA. Most of these programs are of trend-setting and extremely intensive character. They include a considerable expense for start-up costs in training. In some states the costs are $1,200-$3,000 per student. In those states where the number of children is somewhat larger, the costs range around $500 to $600 per student.

The average expenditure per child for children of non-standard English-speaking parents from federal funds, based on a sample of 700 school districts used to evaluate the impact of federal programs, is $146 from federal funds, not too different for the amount spent on the disadvantaged.

Speech Handicaps

It was pointed out above that students with speech handicaps include not only those with articulation problems, but an undetermined number of children suffering from nervous disorders which affect speech, as well as children who require remedial instruction because of unclear speech due to national or regional origin.

The Bureau for the Education of the Handicapped estimates that 90 percent of the children with special needs in this area receive some service. The same source estimates that the ratio of specialists to students is one teacher for 80 students. With the average class size in the U. S. at 22.5 students, the extra cost of providing a specialist is thus 35 percent more in terms of instructional costs.

The study of Rossmiller, Hale and Froereich, which catalogued costs in 21 districts with exemplary programs for handicapped children, gave a range of expenditures for exceptional children with speech

handicaps of 1.09 to 2.82 times the regular program cost per pupil. The mean cost of the programs was 25 percent above the average, and the median cost was 18 percent.[1]

The NCES School Staffing Survey found that hardly any students with speech impairment were taught in special classes full-time. Roughly 65 percent nationwide received their instruction in special classes part-time. In the suburbs, where the level of service was generally higher, some 70 percent of the children treated were in special classes. There were generally 70 pupils per teacher in special classes. As closely as we could determine, one professional for 75 children provides services for those handled individually, on a part-time basis. Thus, it would appear that an average of 71 children per therapist, somewhat above the recommended average, was the common practice in more affluent areas. This would imply an extra cost of 32 percent.

Mentally Retarded

Currently some 50,000 of the most seriously mentally retarded children are educated in special state-supported institutions. The discussion below does not cover the expenditures of these institutions, many of which are residential. In most school districts, programs for the mentally retarded generally are offered to those considered to be intellectually handicapped and unable, without special help, to benefit from regular school programs. Included in this group are often members of minority groups who test low on tests because of language or dialect difficulties or because they are not adjusting well to the school environment. The Bureau for the Education of the Handicapped recommends

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[1]Rossmiller, op. cit., p. 89.

one teacher to 13 students. Since it is presumed that they would be taught in special classes, the extra cost of treatment can thus be estimated at 72 percent.

Rossmiller and his associates give two separate estimates of costs incurred in programs for mentally retarded. The first one is for the educable mentally retarded, for children with IQ's of 50 to 70 or 75, and the second for the trainable mentally retarded, children with IQ's of 35 to 50. The preferred teacher-pupil ratio cited by the Rossmiller study for the educable mentally retarded are somewhat lower than those of BEH, nine students per teacher in primary school, 11 in intermediate, and 14 and 17 for junior and senior high school. The excess cost to districts for the educable mentally retarded was 92 percent according to the mean, and 82 percent according to the median of the Rossmiller study. For the trainable mentally retarded, the mean is 120 percent and the median 110 percent. Costs for individual programs for the educable mentally retarded ranged from 3.21 times the regular per pupil cost to 1.41 times the cost. The range of costs for the trainable mentally retarded was just as large, from 3.62 times the regular student cost to 1.40 times.[1]

According to the NCES School Staffing Survey, only 67 percent of all mentally retarded students are offered special instruction. It stands to reason to believe that those who are following regular programs are somewhat less retarded than those who benefit from the services which are currently in short supply. Thus, according to the Staffing Survey, currently 64 percent of all retarded children are in special classrooms where the pupil-teacher ratio is 12 students per

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[1]Rossmiller, op. cit., pp. 65, 70.

teacher. The proportion in the suburbs, where the needs of special populations are best served, is 70 percent, and the pupil-teacher ratio is 12 to one. In deriving a staffing rate for the service of all retarded children, we assumed that 70 percent would be in separate classrooms, and the remaining 30 percent would receive the level of service of children with reading problems, an extra professional for 21 students. The cost of this staffing pattern is 86 percent higher than conventional instruction.

Specific Learning Disabilities

The category of specific learning disabilities is even more unclear than mental retardation: hyperactive, brain injured and severely dyslexic children have all been classified under this head. The Bureau for the Education of Handicapped recommends a 20 to one ratio for these children, implying an extra cost of 11 percent.

Rossmiller in his study estimates costs to exceed normal costs by a mean of 1.50 and a median of 1.16 compared to normal costs. He mentions that some of the classes are small, or consist of itinerant services by specialists to small groups of students.[1]

Our analysis of the School Staffing Survey places school practice in line with BEH estimates rather than Rossmiller. Roughly a third of the students were taught in special classes nationwide. In the suburbs, where the service level was higher, the proportion was 39 percent. The pupil-teacher ratio was 18 to one. Furthermore, for the others, roughly one professional for every 30 students was employed, according to the best estimates we could derive from informed opinion. Should this be the case, the extra costs would amount to 55 percent.

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[1]Rossmiller, op. cit., p. 94.

Emotionally Disturbed

The most severely emotionally disturbed are taught in special classrooms, if a sufficiently large number of emotionally disturbed children are to be found in the school. The Bureau for the Education of the Handicapped recommends a class size of eight, an extra instructional cost of 175 percent.

The Rossmiller study places mean extra costs at 2.70 times regular costs for emotionally disturbed students, and median extra costs at 1.83 times.[1] Generally, the recommended class sizes are four students per teacher in pre-kindergarten, five in primary, six in intermediate, and 10 in secondary schools, and a caseload of one to 12 for those taught in regular classes.

The School Staffing Survey shows a class size of 11 students to one teacher in the suburbs. Only 32 percent of those identified as emotionally disturbed receive some sort of attention. Of those served, 45 percent attend special classes. In the suburbs, one in three of all emotionally disturbed receive some attention and of these 54 percent are in special classes. The closest estimate of caseload for the rest is 24 students per professional. This is roughly double the caseload recommended by Rossmiller, but we would expect a lighter caseload in those instances where the less severely emotionally disturbed students were also served. Even with this heavy caseload, the additional cost is roughly equal to regular instruction.

Crippled Children

The Bureau for the Education of the Handicapped estimates that the average class size for crippled and health-impaired students should

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[1]Rossmiller, op. cit., p. 98.

be one teacher for every 15 students. This would imply extra costs of 50 percent.

Rossmiller's study comes out with much higher estimates of incremental cost--a mean of 2.26 and a median of 2.64. The range in individual school districts is extremely wide, with some districts spending only 52 percent more and others 3.64 times more than the regular program cost.

The School Staffing Survey indicates that roughly one-third of all crippled or health-impaired children receive services. Probably, as was pointed out above, a number are only slightly health-impaired and need no special services. In the suburbs, one in nine of all crippled children attend special classes, with 13 pupils per teacher. The rest receive itinerant services, which we have estimated require one case-worker for 21 children. This mix of services would imply that the extra cost for crippled children would be roughly equal to the regular cost.

Hard-of-Hearing

The Bureau for the Education of the Handicapped feels that a 20 to one ratio between students and teachers would be desirable for hard-of-hearing students. This would imply an additional cost of 11 percent.

Rossmiller does not have a comparable figure, and points out that many marginally hard-of-hearing students are taught in classes for children with speech defects.

In all probability, the children reported treated by the School Staffing Survey are more severely hard-of-hearing. In the suburbs, where the proportion of those identified and tested is highest, only 10 percent are in special classes with 11 pupils per teacher, and 90 percent receive itinerant therapy. The estimated caseload is one therapist for 14 children. Thus, the extra cost of treating the more severe cases of the hard-of-hearing is 1.5 times ordinary costs.

Deaf

The recommended class size for deaf children is seven to one, according to the Bureau for the Education of the Handicapped. This would imply an extra cost of 220 percent. Rossmiller's estimates of 2.15 mean extra cost, and 2.99 median cost are close to this figure.[1]

The School Staffing Survey indicates that 74 percent of the deaf children are in special classrooms, and the rest in ordinary classrooms. The number of caseworkers for children is also seven to one. With national staffing patterns (the number of cases in the suburbs is too small) the extra costs would be 2.7 times conventional instruction, somewhere between the median and mean costs mentioned by Rossmiller.

Visually Impaired

Severely visually-impaired students generally benefit from instruction in special classes or from 1½ to 2½ hours a week of remedial instruction in idealized situations.[2] The Bureau for the Education of the Handicapped does not distinguish between blind and visually-impaired students. Our estimates are hence based on practices derived from the Staffing Survey. In the U. S., some 44 percent of all students served attend special classes. The national pupil-teacher ratio is eight to one. The ratio of caseworkers per student is one to 14, and is in line with Rossmiller's recommendations. The extra cost computed for these staffing patterns is 164 percent of ordinary cost.

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[1]Rossmiller, op. cit., p. 75.

[2]Rossmiller, op. cit., p. 79.

Blind Students

Rossmiller estimates extra costs between 2.5 (mean) and 2.0 (median) for blind students. With the idealized number of students per teacher, seven in primary, 10 in intermediate, and 12 in high school, these costs appear reasonable. Nationally, class size for blind students averaged six students per teacher. One-half of the blind are in special classes. In the central cities, about 85 percent of all blind students are in special classes, in the suburbs, 31 percent attend special classes, and only 14 percent in non-SMSA areas. Since there are only 4.7 thousand blind children, concentration plays an important part in the organization of instruction. In this special case, we have assumed that elsewhere one-sixth of the time of a professional is consumed by teaching blind students, and the average cost is 2.7 times more than ordinary expenditure.

Intellectually Gifted Children

The organization of programs for the intellectually gifted is currently a haphazard affair. For instance, in the Rossmiller study only five out of the 21 districts surveyed offered programs with identifiable costs for the gifted. The mean and the median costs for these programs were 12 and 14 percent above ordinary costs.

In the School Staffing Survey, some of the gifted students were served in special classes, either full-time or part-time. Approximately 54 percent of the gifted identified by school principals did benefit from special instruction. The pupil-teacher ratio was 41 to one. The pattern in the suburbs did not differ basically from that

elsewhere. This would imply extra costs of close to 60 percent. Hence, the Rossmiller estimates indicate that current practice falls short of the small pioneering attempts in the districts which offer programs to the gifted. A figure for extra cost anywhere from 12 to 30 percent would be reasonable. Given the present temper of the times, we have opted for the lower figure.

The "enrichment" offered to gifted pupils today is not very intensive. In many instances, gifted pupils are simply accelerated and allowed to skip grades. In elementary and junior high school the recommended approaches to enrichment are to stress the acquisition of principles rather than the memorization of facts, which is increasingly in concert with the preferred practice in most elementary schools. Furthermore, the options for advanced placement courses available in most large American high schools are ideally suited to the needs of gifted children.

The cost differentials for the intellecutally gifted, as well as other handicaps, are summarized in Table 36.

V. Summary and Comparison with Federal Outlays

The estimate of this study for the total extra expenditures for special target groups is $4.1 billion. By far the largest extra expense, $2.5 billion, is associated with the outlays for remediating reading problems. These moneys would be spent mainly to help disadvantaged students. The bulk of the rest of the money needs to be spent on children with handicaps. The summary figures of need are shown in Table 37.

TABLE 36

ADDITIONAL EXPENDITURES FOR INSTRUCTION OF STUDENTS
IN PUBLIC SCHOOLS REQUIRING SPECIAL ATTENTION
(ratio of regular program cost)

Condition	BEH	Rossmiller Mean	Rossmiller Median	This Study
Reading Problems	-	-	-	.650
Gifted	-	.13	.14	.12
Mentally Retarded	.72	1.06	.99	.859
Speech Impaired	.35	.25	.18	.320
Specific Training (Disability)	.11	1.50	1.16	.554
Emotionally Disturbed	1.75	2.70	1.83	.951
Crippled	.50	2.26	2.64	1.027
Hard of Hearing	1.11	2.15	1.99	1.540
Deaf	2.20			2.688
Visually Impaired	1.23	2.98	1.97	1.636
Blind				2.757

Source: BEH Costs estimated from ideal pupil-teacher ratio as given in Bureau of Education for the Handicapped, "Estimates of Current Manpower Needs in Education for the Handicapped, 1968-69," (mimeographed), and Rossmiller, loc. cit. includes current expenditures other than instructions which are related to special programs; this study is based on lower pupil-teacher ratio as explained in text.

TABLE 37

ESTIMATED ADDITIONAL EXPENDITURES FOR
INSTRUCTION OF SPECIAL TARGET GROUPS, 1970-71
(in millions of 1967-68 dollars)

Group	Estimated Cost	
Reading Problems	2,534.9	
Gifted	81.4	
Sub-Total		2,616.3
Mentally Retarded	401.6	
Speech Impaired	286.2	
Specific Learning Disabilities	125.4	
Emotionally Disturbed	267.3	
Crippled	114.7	
Hard of Hearing	105.9	
Deaf	122.0	
Visually Impaired	54.3	
Blind	9.1	
Sub-Total		1,486.5
TOTAL		4,102.8

We have tried to estimate the level of service currently provided to these children. In the case of handicapped children, actual service levels are very close to those recommended by BEH. Hence, the potential coverage can be measured by the ratio of those served to those with special need. For all handicaps, this ratio is 62 percent.

In the case of children with reading disabilities, since we accepted as our need figure the prevailing practice, the equivalent ratio of need met is the number of children in special classrooms and receiving specialized instruction. According to the information from the School Staffing Survey, this ratio is 41 percent.

The role of federal aid to local educational authorities can best be gauged from the information collected by the Consolidated Program Information Report. The figures collected by this report, based on a sample of 400 school districts, were reanalyzed by this study. The number of pupils reached and the average expenditure per pupil are shown in Tables 38 and 39.

It would appear that current federal programs reach some 80 to 90 percent of disadvantaged students. Yet the expenditure per low-income child of $160 is only half ot the $317 current expenditure which reflects the prevailing practice in reading remediation. Thus, the federal government does not provide more than 45 to 48 percent of the funds needed for this purpose.

The role of the federal government in meeting the potential costs of handicapped children in regular schools is even less extensive. Only 350 thousand out of 1,350 thousand handicapped children were reached by the

TABLE 38

NUMBER OF FULL-TIME EQUIVALENT, REGULAR AND SUMMER PARTICIPANTS IN FEDERALLY-AIDED PROGRAMS, 1970, BY REGION AND TYPE OF DISTRICT

Region	Children From Low Income Areas			Handicapped Children			Non-Standard English-Speaking Children		
	Equiv.	Regular	Summer	Equiv.	Regular	Summer	Equiv.	Regular	Summer
NORTHEAST									
Central Cities	725,723	639,081	259,927	18,498	16,688	5,429	47,466	42,230	15,709
Other SMSA	227,663	193,857	101,418	11,974	11,609	1,095	2,009	872	3,412
Non-SMSA	143,556	119,092	73,392	10,892	10,709	549	1,291	1,291	0
TOTAL	1,096,942	952,030	434,737	41,364	39,006	7,073	50,767	44,393	19,121
NORTH CENTRAL									
Central Cities	457,454	387,690	209,293	95,596	90,024	16,716	8,203	7,727	1,429
Other SMSA	232,477	200,836	94,922	27,312	25,550	5,287	0	0	0
Non-SMSA	533,507	470,794	188,139	26,985	25,521	4,391	1,018	1,018	0
TOTAL	1,223,438	1,059,320	492,354	149,893	141,095	26,394	9,221	8,745	1,429
SOUTH									
Central Cities	1,192,658	1,092,470	300,565	67,620	65,298	6,966	45,876	44,272	4,812
Other SMSA	423,078	394,651	85,282	21,974	21,353	1,864	2,757	2,442	945
Non-SMSA	2,295,671	2,106,859	566,436	47,291	45,302	5,966	4,829	4,686	430
TOTAL	3,911,407	3,593,980	952,283	136,885	131,953	14,796	53,462	51,400	6,187
WEST									
Central Cities	374,075	334,913	117,487	10,567	10,054	1,540	7,594	7,467	380
Other SMSA	92,479	81,489	32,969	10,086	10,008	234	6,701	5,752	2,847
Non-SMSA	226,698	210,183	49,546	5,934	5,873	183	3,282	3,844	1,313
TOTAL	693,252	626,585	200,002	26,587	25,935	1,957	17,576	16,063	4,540
All Central Cities	2,749,911	2,454,154	887,272	192,281	182,064	30,651	109,139	101,696	22,330
All Other SMSA	975,697	870,833	314,591	71,347	68,520	8,480	11,467	9,066	7,204
All Non-SMSA	3,199,432	2,906,928	877,513	91,101	87,405	11,089	10,420	9,839	1,743
Total U.S.	6,925,040	6,231,915	2,079,376	354,729	337,989	50,220	131,027	120,601	31,277

Number of Full-Time Equivalent, Regular and Summer Participants in Federally-Aided Programs, 1970, By Region and Type of District
Page 2 of 2.

Region	Migrant Children			Neglected and Delinquent			Dropouts		
	Equiv.	Regular	Summer	Equiv.	Regular	Summer	Equiv.	Regular	Summer
NORTHEAST									
Central Cities	0	0	0	5,900	5,144	2,267	31,406	29,092	6,942
Other SMSA	4,230	3,544	2,059	6,824	5,923	2,704	2,700	2,586	341
Non-SMSA	2,869	2,488	1,144	2,788	2,046	2,225	4,210	3,702	1,523
TOTAL	7,100	6,032	3,203	15,512	13,113	7,196	38,315	35,380	8,806
NORTH CENTRAL									
Central Cities	2,023	1,809	642	4,829	3,718	3,332	17,725	10,912	20,439
Other SMSA	1,809	630	3,538	3,094	2,209	2,655	787	630	471
Non-SMSA	8,759	5,135	10,872	1,927	1,556	1,113	1,369	1,054	945
TOTAL	12,591	7,574	15,052	9,850	7,483	7,100	19,881	12,596	21,855
SOUTH									
Central Cities	22,754	21,509	3,736	6,866	5,828	3,115	18,909	18,544	1,094
Other SMSA	409	0	1,227	2,873	2,277	1,788	640	640	0
Non-SMSA	53,202	50,201	9,003	6,560	5,830	2,191	9,977	9,216	2,283
TOTAL	76,365	71,710	13,966	16,300	13,935	7,094	29,526	28,400	3,377
WEST									
Central Cities	3,094	2,960	402	4,010	3,317	2,078	8,008	6,206	5,405
Other SMSA	9,535	8,111	4,273	2,522	2,034	1,463	3,374	3,086	863
Non-SMSA	21,220	17,111	12,328	1,427	1,427	0	1,679	1,679	0
TOTAL	33,850	28,182	17,003	7,958	6,778	3,541	13,060	10,971	6,268
All Central Cities	27,871	26,278	4,780	21,604	18,007	10,792	76,047	64,754	33,880
All Other SMSA	15,984	12,285	11,097	15,313	12,443	8,610	7,500	6,942	1,675
All Non-SMSA	86,051	74,935	33,347	12,702	10,859	5,529	17,235	15,651	4,751
Total U.S.	129,906	113,498	49,224	49,619	41,309	24,931	100,782	87,347	40,306

Source: Department of Health, Education, and Welfare, Office of Education, Consolidated Program Information Report data file, 1970, Special Analysis to obtain summaries for region and type of district; full-time equivalent participants are computed as all regular participants plus one-third of the summer participants.

TABLE 39

EXPENDITURES PER FULL-TIME EQUIVALENT PARTICIPANT
BY REGION AND TYPE OF DISTRICT, BY TARGET GROUP, 1970

Region	Federal Expenditures: Children From Low Income Areas — Current	Children From Low Income Areas — Total	Handicapped Children — Current	Handicapped Children — Total	Non-Standard Eng.-Speaking Children — Current	Non-Standard Eng.-Speaking Children — Total	Total State and Local Expenditures — Current	Total State and Local Expenditures — Total
NORTHEAST								
Central Cities	152.60	160.04	286.73	325.12	95.39	97.52	1140.36	1256.78
Other SMSA	230.34	242.29	250.54	253.29	544.46	552.92	1294.92	1502.04
Non-SMSA	210.99	215.32	257.80	264.41	119.51	118.51	1199.84	1407.45
TOTAL	176.37	184.35	268.64	288.39	113.79	116.10	1222.86	1391.82
NORTH CENTRAL								
Central Cities	258.12	266.35	47.25	49.43	266.11	268.91	922.79	1047.30
Other SMSA	198.65	207.37	220.59	286.06	0.0	0.0	954.95	1156.62
Non-SMSA	167.86	171.68	244.17	252.36	35.36	35.36	1018.77	1119.07
TOTAL	207.46	213.86	114.29	129.08	246.74	243.24	968.15	1113.63
SOUTH								
Central Cities	131.69	135.29	166.96	179.62	69.64	71.49	607.89	719.09
Other SMSA	146.15	150.39	189.22	205.96	157.95	157.95	527.88	707.84
Non-SMSA	137.38	146.40	230.99	258.59	294.86	304.39	546.66	629.48
TOTAL	136.60	143.45	192.66	211.14	94.51	96.95	567.15	680.38
WEST								
Central Cities	223.85	232.80	293.07	329.41	206.22	209.78	1048.24	1114.07
Other SMSA	291.38	312.97	402.14	428.21	325.32	338.00	1063.00	1214.30
Non-SMSA	181.99	198.17	194.64	197.57	619.50	620.72	932.75	1030.57
TOTAL	219.17	232.17	312.51	337.52	328.79	335.79	1023.60	1126.80
All Central Cities	170.79	176.89	125.99	137.13	105.13	107.29	859.69	964.27
All Other SMSA	192.07	200.82	241.65	276.00	323.35	332.77	961.07	1149.72
All Non-SMSA	148.93	157.38	235.75	253.48	350.09	354.89	797.20	899.17
Total U.S.	163.68	171.25	177.40	194.95	143.71	146.72	871.62	1001.93

Expenditures Per Full-Time Equivalent Participant by Region and Type of District, by Target Group, 1970
Page 2 of 2

Region	Migrant Children		Neglected and Delinquent		Dropouts		Total State and Local Expenditures	
	Current	Total	Current	Total	Current	Total	Current	Total
NORTHEAST								
Central Cities	0.0	0.0	143.73	147.46	234.57	274.24	1149.36	1256.78
Other SMSA	206.36	212.74	251.74	256.58	956.93	955.30	1296.92	1502.04
Non-SMSA	410.20	410.54	118.37	130.93	651.59	651.59	1199.84	1407.45
TOTAL	288.74	292.69	186.76	192.50	331.17	363.71	1222.96	1391.82
NORTH CENTRAL								
Central Cities	304.49	304.49	233.60	237.74	340.14	350.80	992.79	1047.30
Other SMSA	475.31	475.31	178.41	183.90	288.10	275.73	954.95	1156.62
Non-SMSA	166.91	169.08	272.96	279.79	104.45	104.45	1018.77	1119.07
TOTAL	233.41	234.92	224.96	229.14	321.16	330.96	968.15	1113.63
SOUTH								
Central Cities	216.92	230.68	154.37	156.25	88.95	90.95	607.89	719.09
Other SMSA	660.14	679.79	159.06	160.45	262.50	262.50	527.98	707.84
Non-SMSA	225.89	230.16	82.00	83.53	133.50	151.34	546.66	629.48
TOTAL	225.56	232.72	126.13	128.93	107.77	120.87	567.15	680.38
WEST								
Central Cities	144.79	148.92	148.39	152.63	651.12	691.33	1048.24	1114.97
Other SMSA	101.20	102.88	124.52	125.31	127.16	139.42	1063.09	1214.30
Non-SMSA	175.20	176.81	166.08	185.70	13.69	13.69	932.75	1030.57
TOTAL	151.61	153.35	144.12	150.03	433.90	459.40	1023.60	1126.80
All Central Cities	215.27	226.36	168.16	171.63	266.84	292.69	859.69	964.27
All Other SMSA	185.74	188.93	198.78	202.37	451.71	453.98	961.07	1149.72
All Non-SMSA	213.56	216.82	128.48	135.25	246.19	256.51	797.20	899.17
Total U.S.	210.51	215.54	167.47	171.82	277.08	298.52	871.62	1001.93

Source: Department of Health, Education, and Welfare, Office of Education, Consolidated Program Information Report data file, 1970, Special Analysis to obtain summaries for region and type of district.

federal programs. The average outlay of $170 for current expenses was only half of the amount which the conservative estimates of this study set as the average outlay for handicapped children. In other words, federal funds contributed about one-eighth of what is needed to provide services for the handicapped and roughly 20 percent of what was actually spent.

TABLE A1

ENROLLMENTS IN PUBLIC SCHOOLS BY REGION AND TYPE OF DISTRICT
NURSERY THROUGH HIGH SCHOOL, ESTIMATED 1967-68, 1968-69,
1970-71, AND PROJECTED 1975-76, 1980-81
(in thousands)

Region	1967-68	1968-69	1970-71	1975-76	1980-81
NORTHEAST					
Central Cities	2,990	2,981	2,862	2,870	2,820
Other SMSA	4,325	4,559	4,730	5,222	5,403
Non-SMSA	2,090	2,101	2,317	2,444	2,429
TOTAL	9,405	9,641	9,909	10,536	10,652
NORTH CENTRAL					
Central Cities	3,643	3,582	3,502	3,279	3,193
Other SMSA	4,465	4,622	4,892	5,527	5,709
Non-SMSA	4,444	4,525	4,595	4,444	4,184
TOTAL	12,552	12,729	12,989	13,250	13,086
SOUTH					
Central Cities	5,101	5,050	5,003	4,962	4,915
Other SMSA	2,899	3,210	2,977	3,376	3,623
Non-SMSA	6,329	6,498	6,944	6,911	6,354
TOTAL	14,329	14,758	14,924	15,249	14,892
WEST					
Central Cities	2,804	2,821	2,899	3,004	3,097
Other SMSA	3,202	3,277	3,668	4,104	4,468
Non-SMSA	2,158	2,171	1,982	1,963	1,873
TOTAL	8,164	8,269	8,549	9,071	9,438
All Central Cities	14,538	14,434	14,266	14,115	14,025
All Other SMSA	14,891	15,668	16,267	18,229	19,203
All Non-SMSA	15,021	15,295	15,838	15,762	14,850
TOTAL U.S.	44,450	45,397	46,371	48,106	48,068

* U. S. GOVERNMENT PRINTING OFFICE : 1972 O - 459-452

Estimated Changes of 1970 Prevalence Rates by Target Group to 1975 and 1980

Region	Hard-of-Hearing 1975	Hard-of-Hearing 1980	Deaf 1975	Deaf 1980	Visually Impaired 1975	Visually Impaired 1980	Blind 1975	Blind 1980	Gifted 1975	Gifted 1980
NORTHEAST										
Central Cities	1.000	1.000	.833	.833	1.000	1.000	1.000	1.000	1.037	1.030
Other SMSA	1.000	1.000	.833	.833	1.077	1.077	1.000	1.000	1.183	1.168
Non-SMSA	1.000	1.000	.833	.833	1.000	1.000	1.000	1.000	.947	.950
NORTH CENTRAL										
Central Cities	1.000	1.000	1.000	1.000	1.077	1.077	1.000	1.000	1.031	1.028
Other SMSA	1.000	1.000	1.000	1.000	1.000	1.077	1.000	1.000	1.088	1.069
Non-SMSA	1.000	1.000	.833	1.000	1.000	1.000	1.000	1.000	.971	.971
SOUTH										
Central Cities	1.000	1.000	.833	.833	1.000	1.000	1.000	1.000	1.033	1.043
Other SMSA	1.000	1.000	1.000	.833	.929	1.000	1.000	1.000	1.040	1.046
Non-SMSA	1.000	1.000	.833	.833	1.000	1.000	1.000	1.000	1.027	1.036
WEST										
Central Cities	1.000	1.000	1.200	1.200	1.000	1.000	1.000	1.000	.982	.982
Other SMSA	1.000	1.000	1.000	1.000	.929	1.000	1.000	1.000	.974	.976
Non-SMSA	1.000	1.000	.833	.833	1.000	1.000	1.000	1.000	1.082	1.082

Source: Rates are adjusted by different prevalence rates in Elementary and Secondary Schools from the 1969 School Staffing Survey and estimated changes in shares of elementary and secondary school enrollments, see J. Froomkin, et al., Population, op. cit., Section .