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ABSTRACT

The study analyzed data concerning students enrolled in special education classes in Alabama's 130 (67 county and 63 city) public school systems, including student counts by age, grade in school, school district, type of exceptionality, and personnel needs. Analysis indicated a considerable variation among school systems in the distribution of exceptionality types, the proportion of special education students at different age and grade levels, teacher/pupil ratios in special education classes, and the reported need for additional special education teachers. Possible causes for these differences may include random variations, referral patterns, a shortage of well-trained administrators and teachers, community pressures, and discrepancies in classification procedures according to race. The major demographic correlates of general rates of exceptionality included population growth, employment in selected white-collar occupations, income, and residence in urban locales--all of which were found to be positively associated with both the rate of exceptionality and the teacher/pupil ratio. The proportions of the population classified as "black" or residing in urban areas were also highly correlated with several specific categories of exceptionality. Results have implications for testing procedures and interpretation as well as implementation of policy guidelines for placement of students in special education programs. (DB)

AN ANALYSIS OF CHILD COUNT DATA AND PERSONNEL NEEDS IN SPECIAL EDUCATION PROGRAMS IN ALABAMA

PREPARED FOR THE
DIVISION OF SPECIAL EDUCATION SERVICES,
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Abstract

Utilizing data provided by the Alabama Department of Education, as well as that from the 1980 Census of Population, an investigation was undertaken concerning students enrolled in special education classes in the 130 public school systems of Alabama. Data analyzed included student counts by age, grade in school, school district, and type of exceptionality. Personnel needs in special education programs were also examined, both through data submitted by local school officials and through a review of teacher/pupil ratios in special education classes. Throughout the analysis, separate data are presented for both county (N=67) and city school systems (N=63).

The results of the analysis indicated that there is considerable variation among Alabama's school systems in the distribution of various types of exceptionality, the proportion of special education students at different age and grade levels, teacher/pupil ratios in special education classes, and the reported need for additional special education teachers. While random variations from one school system and/or community to another may account for some of these differences, other factors also appear to be operative. These include referral patterns in local school districts, a shortage of well-trained administrators and teachers (i.e., especially in rural areas and in regard to selected specialties), community pressures, and discrepancies in classification procedures according to race.

The major demographic correlates of general rates of exceptionality include population growth, employment in selected white-collar occupations, income, and residence in urban locales--all of which were found to be positively associated with both the rate of exceptionality and the teacher/pupil ratio. The proportion of the population that is classified as "black," as well as the percentage of the population residing in urban areas, are also highly correlated with a number of specific categories of exceptionality. The findings suggest that additional attention should be directed toward such considerations as testing procedures, the interpretation of test results, overdependence on selected evaluation criteria, and the interpretation and implementation of established policy guidelines in the placement of students in special education programs.

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HIGHLIGHTS

~The number of public school students enrolled in special education classes in Alabama increased by approximately one-third during the 1980-89 period. The greatest numerical increases encompassed those with learning disabilities and speech impairments.

~The percentage distribution for the various categories comprising exceptionality has remained relatively stable during the 1980s.

~Approximately 70 percent of the state's special education students are enrolled in county school systems.

~About one-third of all enrollees in special education classes in both county and city school systems are characterized as having learning disabilities. Most of the rest are classified as either speech impaired or educable mentally retarded.

~In excess of 80 percent of the special education enrollees in both county and city systems are between the ages of 6-17. The proportion is slightly higher in both systems for the 6-11 group than those aged 12-17.

~The rate of exceptionality per 1,000 total enrollees in 1989 was 127 in county school systems and 120 in city systems. Differences in rates among the various grade levels are minimal in both systems.

~For both county and city school systems there is substantial variation among the individual districts in the distribution of students according to types of exceptionality, in the proportion observed in the various age groups, and the rate of enrollment at different grade levels. These variations apparently trace to a large number of factors, including referral practices, classification procedures, levels of training among teachers and administrators, testing procedures, the interpretation of test results, and parental/community pressures.

~In December, 1989, personnel in county school systems reported the need for 329 additional special education teachers (a need ratio of 1:9.5), while the stated need in city school systems was 442 (a need ratio of 1:3.5). (The quality of these data in some instances, however, is suspect. This concern will be addressed in a later section of the report.)

~Substantial variation exists among individual county and city school systems in teacher/student ratios in special education classes and in the magnitude of reported personnel needs.

~In terms of general correlates of exceptionality, such major demographic variables as population growth, employment in white-collar occupations, income, and residence in urban locales appear to be at least moderately associated in a positive direction with the overall rate of exceptionality and with teacher/pupil ratios.

~The percentage of the county population classified as "urban," as well as the proportion of the county/city population classified as "black," are both correlated with such specific categories of exceptionality as the educable mentally retarded, the emotionally disabled, those with specific learning disabilities, and the gifted and talented.

AN ANALYSIS OF CHILD COUNT DATA AND PERSONNEL NEEDS IN SPECIAL EDUCATION PROGRAMS IN ALABAMA, 1989

Introduction

The following report presents an analysis of students enrolled in special education programs in the public school systems of Alabama. The review encompasses an examination of 130 school systems, 67 of which are classified as "county systems" and the remaining 63 as "city systems." The data utilized for the research were supplied by the Alabama Department of Education and include student counts by age, race, school district, and type of exceptionality as of December 1, 1989; school enrollment data, by grade, as of that same date; the number of special education teachers (both in-field and out-of-field) by race, sex, school district, and area of specialization (as of December, 1989); and estimates of the number of additional special education teachers that are currently needed, by school district and area of exceptionality. Due to time limitations, it was not possible to analyze variations in types of exceptionality according to race in this phase of the research. All other available data that were deemed to be relevant to the project, however, were subjected to examination.

This project was precipitated by a number of questions regarding special education programs in Alabama. These include the extent to which rates of exceptionality vary from one school system to another, the identification of those districts with exceptionally high/low rates of exceptionality, how enrollment in special education classes varies according to the socioeconomic attributes of the resident population, and the extent to which personnel needs differ from one setting to another. Since a project of this scope had not been previously undertaken in Alabama, the thrust of the research was essentially "fact finding." As such, the attempt is made to identify the major problem areas that exist relative to special education programs in Alabama. This, in turn, will allow state education officials to move toward the amelioration of observed deficiencies in a more organized and informed manner.

Outline of the Report

After a brief discussion of historical trends, the report focuses on a descriptive analysis of the data. Information is provided for county school systems according to the distribution of various types of exceptionality, the age distribution of those enrolled in special education programs, variations in the rate of exceptionality according to grade level, and the projected need for special education personnel (using existing teacher/pupil ratios and reports from school administrators as indicators). City school systems are then subjected to a similar analysis, followed by a

comparison of county school systems and city school systems relative to the dimensions of exceptionality that have been noted above. The paper concludes with an exploratory analysis of the social and demographic correlates of exceptionality in Alabama, including an analysis of variations in teacher/pupil ratios for students enrolled in special education programs. The attempt is then made, albeit rudimentary, to develop a series of causal models addressing both the antecedents of exceptionality and differences in classroom teaching ratios.

General Trends Regarding Exceptionality

The number of public school students enrolled in special education programs in Alabama increased by approximately one-third (or 24,143) during the 1980-89 period (Table 1). The greatest numerical changes encompassed those with specific learning disabilities (+13,757), speech impairments (+6,447), emotional conflicts (+1,896), and mental retardation (-7,916). Although the preschool handicapped numbered 10,115 in 1989, services to those aged 3-5 were not mandated in 1980.

The percentage distribution for the various categories comprising exceptionality has remained basically stable during the 1980-89 period. The only exceptions are the mentally retarded and those with specific learning disabilities. The MR category declined from 46.1 percent of all persons enrolled in special education programs in 1980 to 26.9 percent in 1989 -- an overall drop totaling nearly 25 percent. This is accounted for in large measure by a change in eligibility criteria for placement in classes for the mentally retarded. Formerly, students with a measured intelligence level of 75 or below were eligible for assignment to these classes, but the dividing point is now 70 and below. The SLD category, on the other hand, has increased from 24.4 percent of the special education population to 32.3 percent -- a gain of nearly eight percentage points. At the time of the latest count, just three categories -- the mentally retarded, those with specific learning disabilities, and the speech impaired -- accounted for in excess of 80 percent of all Alabama students who were enrolled in special education programs.

County School Systems

As has been noted, an independent analysis is provided concerning county versus city school systems. This relates partly to the way in which the data were organized (all information, whether from the Alabama Department of Education, Bureau of the Census, or that previously gathered by the researchers, was presented in that format) and partly to questions that were basic to the research (i.e., whether rates of exceptionality and personnel needs might vary across classification categories). While not a perfect indicator (some "county systems" include large cities, for example), county as opposed to city school systems

reflect to some extent the rural-urban variation in the population. As such, they may also reflect differences in philosophies in the conduct of educational programs, as well as differential access to material resources. City school systems in Alabama are typically wealthier than their rural counterparts - a factor that may have a number of consequences for the way in which educational systems are organized. They also tend to be smaller and more homogeneous (i.e., in terms of the socioeconomic characteristics of students) than rural systems.

For individual schools, it is possible to distinguish between those that are located in rural, suburban, and urban locales. City school systems are by definition "urban" but county districts cannot be easily categorized. There is typically a significant amount of overlap in the geographic areas that they encompass, making it impossible to develop a neat system of classification. Utilizing 1980 census data (which indicated that 60 percent of the Alabama population is urban) and school enrollment data (only about one-third of all students were enrolled in city school systems in 1987-88), it is estimated that close to one-half of all enrollees in county schools live in urban areas. In an effort to provide at least some assessment of rural-urban influences, however, individual county systems are examined relative to the overall percentage of the county's population that is classified as either "rural" or "urban" at various points in the analysis.

1. General Enrollment Patterns

As of December 1, 1989, 66,449 students aged 0-21 were enrolled in special education programs in the state's county school systems. Another 10,277 gifted and talented students of that age were enrolled in these same systems, upping the total number of exceptional students to 76,726. The number of enrollees in special education classes in county systems (i.e., 66,449) represents approximately 67 percent of the total number of special students in the state who attend public schools.

2. Distribution by Type of Exceptionality

Approximately one-third of the special students in county school systems in 1989 were characterized by specific learning disabilities, while about one-fourth each were classified as speech impaired and educable mentally retarded (Table 2 and Figure 1). These three categories, therefore, accounted for 83.3 percent of the total enrollment in special education programs in that year. Of those that remain, the developmentally delayed, emotionally disturbed, and trainable mentally retarded, together comprised nearly 13 percent of the total.

The Mobile County school system, with 10,584 special education students, led all other county systems in the number of persons aged 0-21 in special programs.(1) This system was followed by the

Jefferson and Montgomery County systems with 6,765 and 3,817 enrollees, respectively. The ten county systems with the largest number of special needs students are all metropolitan counties; thus, explaining the large frequencies (2). Together, the number in these county systems totaled 34,436 -- or slightly more than 50 percent of all special students participating in county school programs. The Mobile and Jefferson County systems alone accounted for in excess of one-fourth of all enrollees in special education classes in county school systems in 1989.

Substantial variations exist among the sixty-seven county school systems in the distribution of students according to type of exceptionality. In the Barbour County system, for example, nearly one-half (i.e., 46.8 percent) of all special students were classified as developmentally delayed in 1989.(3) There were a number of other county systems, however, that reported an absence of students in that category. In six county systems, most of which are located in urban counties, in excess of 10 percent of all special students were classified as emotionally disturbed, while in thirteen counties (chiefly rural, Black Belt counties) more than 50 percent were categorized as educable mentally retarded. The speech impaired totaled more than 40 percent of special needs students in three county systems (Cleburne, Houston, and Shelby), while those with specific learning disabilities amounted to 50 percent or more of all special enrollees in five counties (Colbert, DeKalb, Lauderdale, Madison, and Marshall). All of these counties, with the exception of Cleburne and DeKalb, are either fairly urbanized or located in metropolitan statistical areas. Less than 10 percent of all special students, however, were classified as speech impaired in the Barbour and Greene counties in 1989 (both rural, south Alabama counties) and as SLD in Bullock, Greene, Macon, Perry, and Sumter counties (all Black Belt counties). (See Table 3 regarding the range of percentages for each of the major categories of exceptionality and for information pertaining to median values.)

Additional analysis revealed that selected social and economic characteristics of the counties within which these systems are located are related to differences in rates within several of the major categories of exceptionality. Thus, the proportions classified as ED and SLD tend to be higher in wealthier socioeconomic districts, while the proportion of EMR students is elevated in poorer districts and in those where a large percentage of the population is classified as black. Similar findings emerged in relation to city school systems. A discussion regarding the findings for cities is presented on page 9.

3. Distribution By Age

Data relative to the age distribution of special education students in county school systems are presented in Tables 3 and 4. In addition, a graphic representation of the data appears in Figure 2. Forty-three percent of all special students were between the

ages of 6-11 in December, 1989, while 39.9 percent were aged 12-17 (Table 4/Figure 2). Slightly less than one-fifth of all special needs students, therefore, were age five or younger and above age 17 in that year.

Considerable variation is observed for the county school systems in the distribution of special students among the various age categories. In the Barbour County system (the highest for any county), 24.5 percent of the total enrolled in special education programs was five years of age, while the percentage of the total of that age in Marengo County (the lowest for any county) was only 0.7.(4) The median value for all county school systems was 8.6 (Table 3). Similar variations emerge relative to the other age groups. For ages 6-11, the range was from 55.8 percent in Shelby County to 25.4 percent in Bullock County (with a median of 45.7)and for ages 12-17 the percentages varied from 62.1 in Marengo County to 31.5 in Cleburne County (with a median of 47.1). Those cases at the top and bottom of the distribution, it should be noted, do not represent "outlyers." Rather, there is a gradual change in the percentage distribution within each of the separate age categories as the transition is made from the highest values to the lowest.

In order to further specify the underlying reasons for these variations, an analysis was undertaken concerning the social and economic characteristics of county school systems vis-a-vis differences in rates at each age level. Using a large data base maintained by one of the researchers, the attempt was made to identify influences within the larger social setting that may impinge on the rate of enrollment. At age five, only one variable appears to possess explanatory power: revenues per student. Thus, the higher the level of support for education within the system generally, the higher the rate of enrollment in special education classes.

An elevated rate of participation in programs for the exceptional for those aged 6-11, on the other hand, is clearly associated with socioeconomic conditions. High income levels, a low incidence of poverty, a high rate of employment, small intact families, and a low proportion of blacks within the total population are all correlated with higher rates of enrollment within this age group. For ages 12-17, however, the findings are just the reverse. The highest rates of enrollment are in school systems located in poorer socioeconomic settings. The same pattern was encountered in regard to city school systems, wherein some possible reasons are suggested for these variations (see page 10).

4. Rate of Exceptionality

Approximately 127 persons were enrolled in special education programs in December, 1989 for every 1,000 students in county school systems. The rate ranged from 151.7 per 1,000 enrollees in

Grade K to 128.6 per 1,000 in grades 7-12. (See Table 5/Figure 3.) There was little variation at the time of the 1989 child count, therefore, in the rate of exceptionality according to grade in school.

There is considerably more variation, however, when rates of exceptionality for each of the county school systems are examined independently. Rates, for example, ranged from 218.4 in Barbour County to just 60.8 in Greene County. The median value (i.e., 115.3), on the other hand, was slanted toward the low end of the range. While the 20 county systems with the highest rates were rather evenly distributed between the rural and urban ends of the continuum, the county systems with the 20 lowest rates tended to be overrepresented by poor, rural counties in the southern portion of the state.

The same pattern emerges for each of the separate grade levels. For Grade K, the rate ranges from 625.0 in Barbour County to just 6.2 in Marengo County.(5) For Jefferson County, the state's most populous county, the rate is 403.1 per 1,000 for Grade K enrollees -- the second highest value of any county system.(6) The rates for grades 1-6 vary from 200.9 in the Cherokee County system to 43.4 in Greene County, while for grades 6-12 the high was registered in the Barbour County system (260.5) while the low (73.7) was again posted in Greene County. (See Table 3 for median values at each grade level.) As in the case of the age distribution (discussed in the preceding section), there is an absence of "outlying cases." The pattern of intercounty variation at each grade level, therefore, is characterized by gradual change from one value to the next.

5. Personnel Needs

An indication of the need for additional teachers in special education programs, albeit limited, can be obtained from data supplied by the Alabama Department of Education. These indicators take the form of the teacher/pupil ratio in special education classes (i.e., as of December 1, 1989) and the number of new teachers that are needed in special education programs as reported by local school personnel. Neither provides definitive information relative to the true magnitude of the need. Teacher/pupil ratios vary widely, for example, based on the particular category of exceptionality that is under consideration. Reported needs, furthermore, are based heavily on the individual predispositions and perceptions of those who develop the estimates and supply the requested information.

The number of special education teachers in Alabama's county school systems totaled 3,093 in 1989. This number comprised 66.3 percent of all special education teachers in the state in that year. As noted earlier, special education students in county school systems constituted approximately 67 percent of the total

number of exceptional students served in the state.

As indicated in Table 6, the teacher/pupil ratio for special education classes in county school systems was 1:21.5 in 1989. Ratios, varied from a high of 1:36.7 in the Barbour County system to a low of 1:15.1 in Marion County (Table 3). In addition to Barbour County, three other systems posted ratios in excess of 1:30 (Blount, Cherokee, and Shelby), while 35 other systems exhibited ratios ranging from 1:20 to 1:30. The median for all county school systems was 1:20.4.

Based on data collected from local school personnel in December, 1989, 329 additional special education teachers are needed in the state's 67 county systems. This translates to one new teacher for every 9.5 teachers that are currently employed. (Table 6.) While 22 of the county systems reported an absence of need for new personnel, need ratios in those that did ranged from 1:0.7 in the Wilcox County system (one of the poorest systems in the state) to 1:47 in the Tuscaloosa County system (located in the fifth most populous county in Alabama). (See Table 3.) In 14 counties (or in excess of one-fifth of the county districts) the need ratio was greater than 1:5, while in 24 systems (38 percent of the total) it was higher than 1:8. The median value for all systems was 1:7.3

City School Systems

1. General Enrollment Patterns

Approximately 33,000 persons were enrolled in special education programs in Alabama's 63 city school systems in December, 1989. Another 7,550 were participants in programs for the gifted and talented, bringing total enrollment in programs for the exceptional to 40,442. Of all students in special education classes in Alabama in 1989, 33.1 percent were enrolled in the state's city school systems.

2. Distribution by Type of Exceptionality

Of the various categories of exceptionality, more students in city school systems were classified as having specific learning disabilities than any other (i.e., 10,459, for 31.8 percent of the total). This was followed by the speech impaired (9,551, for 29.0 percent) and the educable mentally retarded (7,321, or 22.3 percent). Together, these three categories totaled 27,331 students, comprising 83.1 percent of all students enrolled in special education programs. The only other areas with enrollments exceeding 1.0 percent of the total were emotionally disturbed (7.0 percent), developmentally delayed (3.0 percent), and trainable mentally retarded (2.8 percent). Thus, nearly 96 percent of all participants in special education were enrolled in just six major programs. (See Table 2 and Figure 1.)

The Birmingham school system, with 5,504 participants (or 16.7 percent of the total), led all city systems in the number enrolled in special education programs. The Birmingham system was followed by Huntsville (with another 3,410), Tuscaloosa (1,574), Dothan (1,310), and Gadsden (1,243). Together, participants in special education programs in these five metropolitan systems totaled 13,041 -- a number which comprised approximately 40 percent of all special students in city systems. The ten city systems with the highest enrollments (all metropolitan except one) totaled 17,258 and accounted for nearly 53 percent of all special students in city districts. In contrast, the ten city systems with the smallest enrollments together totaled only 1,380 special students and composed just 4.2 percent of all such students in these 63 systems.

As with county systems, significant differences exist in city districts in the distribution or special students among the various categories of exceptionality. In eleven city school systems, for example, the proportion of all special education students classified as developmentally delayed was in excess of 10 percent in December, 1989. Twenty-eight city systems, however, reported that no students had been placed in this category on the basis of their primary classification.(7) Approximately 76 percent of the special education students within the Department of Youth Services (the statewide detention system for delinquent youth) were classified as emotionally disturbed, while the percentage was in excess of 10 (ranging from 10.6 percent to 15.7) in six other city districts (Athens, Decatur, Gadsden, Hoover, Midfield and Scottsboro). Several city systems (i.e., 10), in contrast, reported that no students were classified as emotionally disturbed at the time of the last child count.

Similar differences exist relative to other categories of exceptionality. For the educable mentally retarded, the range is from 61.8 percent of all special students in the Roanoke system to just 1.7 percent in the Mountain Brook system (a district that is located in one of the most affluent suburbs in the state). For the speech impaired, the percentages varied from 63.4 of all special education students in Carbon Hill to 10.7 in Huntsville (excluding the Alabama Department of Youth Services, which reported no students in that category). Finally, the proportion of special students classified as having specific learning disabilities ranged from 63.0 percent in the Huntsville system (the center of a large metropolitan complex) to 10.0 percent in the Florala system (located in a rural county in south Alabama). Once again, this generalization excludes the Alabama Department of Youth Services, which posted a SLD enrollment of 7.9 percent). (For information regarding the range of percentages for each of the major categories of exceptionality, as well as data concerning median values, see Table 3).

As was true for county school systems, the distribution of those assigned to specific categories of exceptionality among the

various city systems is generally characterized by continuous variation. Regardless of the type of exceptionality, therefore, there are few cases that deviate from the dominant pattern of incremental change.

For three categories of exceptionality -- the developmentally delayed, the emotionally disturbed, and the speech impaired -- the variations in rates across various school systems appear to be more or less random. Systems with a high rate in the EMR classification, on the other hand, tend to be located in cities populated by persons of low socioeconomic status and to have a high percentage of the population that is black. The opposite pattern holds for systems wherein the rate classified as SLD is elevated. These systems are most frequently located in cities that have a low black population, yet rank high relative to various socioeconomic criteria (e.g., income, employment in white-collar occupations, etc.)

3. Distribution by Age

Information relative to the age distribution of special students in city school systems is presented in Tables 3 and 4, along with Figure 2. Those aged 6-11 predominate (i.e., 45.0 percent of all special education students aged 0-21), followed closely by those aged 12-17 (38.0 percent). (Table 4.) Together, these two age groups accounted for 83.0 percent of all special education enrollees aged 0-21 in 1989. Of the remaining special students, those five years of age (totaling 7.6 percent) and those aged 18-21 (7.1 percent) accounted for most of the rest.

Just as there was considerable variation among the county school systems in the percentage distribution of special education students within the various age categories, the same pattern is characteristic of city school systems. In December, 1989, the proportion at age five (i.e., of all special students aged 5-17) varied from 28.3 percent in the Oneonta system to 0.9 percent in the Birmingham system (excluding the Department of Youth Services where the student population is limited to those between the ages of 10 and 18). (See Table 3.) For those aged 6-11, the range from high to low (again excluding the Department of Youth Services) was 22 percentage points, with Vestavia Hills (an affluent suburban system located near Birmingham) possessing the highest percentage (62.8) and Attalla (a small system in metropolitan Etowah County) with the lowest (40.4). For the remaining category (i.e., those aged 12-17), the Bessemer system (other than the Department of Youth Services) exhibited the highest percentage (with 55.5 percent of all special students in that category), while Carbon Hill (at 26.7 percent) registered the lowest. The percentage in this age range for the Department of Youth Services was 99.7, but this also constitutes the major age group served by this agency. (In addition to these data, information relative to median values for each age group are also presented in Table 3.)

The striking variations among city school systems relative to rates of exceptionality within the various age groups are associated in part with differences in the social and economic characteristics of the cities (or suburbs) within which those districts are located. Thus, the cities with systems with high rates of exceptionality for those aged 6-11 generally rank higher in terms of socioeconomic criteria (i.e., education, income, employment in white-collar occupations, etc.), as well as educational funding levels (including both local support and revenues/expenditures per pupil), than those with low rates of exceptionality. The opposite pattern emerges, however, for students aged 12-17. For this age group, the districts with higher proportions classified as exceptional tend to be located in cities/suburbs that have larger black populations, more persons at the lower socioeconomic status levels, and to be characterized by heavier dependence on federal support for educational programs. The variations across systems at age 5 are less reflective of differences in the socioeconomic setting, although there appears to be a slight tendency for elevated rates to be associated with residence in the state's more prosperous cities.

Although it is difficult to explain these findings, they may trace partly to variations in types of exceptionality across different socioeconomic settings. While prosperous locales report more SLD students and fewer EMR students, for example, the pattern is just the reverse among poorer systems. EMR students generally remain in the initial program in which they are placed, but those classified as SLD exhibit a greater tendency to return to regular education classes. This would serve to reduce the proportion that is classified as exceptional at the higher grade levels in more affluent systems vis-a-vis the proportion that is found in poorer school systems. There may be a tendency, furthermore, for EMR students to be identified at an older age than students with other types of exceptionality, particularly in less affluent school districts.

4. Rate of Exceptionality

The number of special education students in Alabama's city school systems in December, 1989 totaled approximately 120 per 1,000 enrollees. The differences among the various grade levels are minimal, with the rate ranging from 125.7 per 1,000 in Grade K to 116.8 in grades 7-12. (See Table 5 and Figure 3).

Once again, however, there are significant differences among the various city systems in the rate of enrollment in special education classes. For all grade levels (i.e., K-12), the range in 1989 (excluding the Department of Youth Services) was from 196.3 special students per 1,000 enrollees in the Midfield system (a small, relatively prosperous suburb of Birmingham) to just 75.6 per 1,000 in the Demopolis district (located in the Black Belt). (The rate for the Department of Youth Services was 662.9.) The median

value for K-12 enrollment, at 118.2 (again excluding Youth Services), was at the lower end of this range. On the surface, there does not appear to be a clearly defined pattern regarding the characteristics of systems with a high rate of special enrollment as opposed to those that are low. There may be a tendency, however, for larger city systems to exhibit slightly higher levels of exceptionality than their smaller counterparts.

Significant variations in rates are also observed within each of the individual grade levels (Table 3). At Grade K, enrollment in special education classes in 1989 ranged from 507.0 per 1,000 total enrollees in the Carbon Hill system to only 12.5 in the Birmingham system (with a median of 148.9); for grades 1-6, from 208.1 in Opp to 71.2 in Demopolis (median = 121.2); and for grades 7-12, from 415.1 in Florala to 64.8 in Oneonta (median = 102.0). (For the Department of Youth Services, the rate for grades 7-12 was 660.6, while that for grades 1-6 was zero due to limited enrollment in this age range).

There is considerable, variation, therefore, in the rate of exceptionality in Alabama -- both across various school systems and at particular grade levels. Presumably, in addition to the operation of random factors in the distribution of students categorized as exceptional, classification practices -- along with other social patterns -- combine to explain at least some of these differences. This question will be explored in later sections of the report.

5. Personnel Needs

Nearly 1,600 teachers were employed in the state's city school systems in 1990, representing 33.7 percent of all special education teachers in Alabama's public schools in that year. Special students enrolled in city systems, as noted earlier, comprised 33.1 percent of the total number of special education students in the state. Overall, therefore, the percentage distribution of teachers to students in county systems as compared to that in city systems shows only minimal variation.

The teacher/pupil ratio in city systems in 1989-90 (including Youth Services) was 1:20.9 (Table 6). Thirty-five of the state's 63 city systems, however, registered ratios higher than that level. Carbon Hill led all other city districts with a ratio of 1:40.3, while two others (Andalusia and Florala) exhibited ratios in excess of one teacher for every 30-39 students. The lowest ratio was in the Demopolis system (1:12.2), with 28 others recording teacher/pupil ratios of less than that for all city systems combined. The median value, on the other hand, was 1:21.4 (Table 3).

Variations from one system to another relative to the classification of those served undoubtedly explain some of the

patterns noted above. The differences between systems are of such magnitude, however, that other factors also appear to be operative.

The overall need ratio for city systems in 1990 was 1:3.5 (Table 6). This ratio is based on a suggested total of 442 additional special education teachers. While 28 city systems did not indicate a need for new teaching personnel, seven systems (including Birmingham) were characterized by need ratios of 1:1 or greater. The Department of Youth Services led all systems with a ratio of 1:0.1, followed by Thomasville (1:0.6), Oxford (1:0.8), Homewood (1:0.9), and Athens, Birmingham, and Linden (each at 1:1). The median level of reported need, excluding Youth Services, was 1:7.4 (Table 3).

The data reported for some of these systems, however, are suspect. Particularly noteworthy are the totals given for the Birmingham system -- one of the largest school districts in the state. In this system, 283 special education teachers are currently employed, but the number needed is also listed at that same level.(8) Removing this system from the tabulations reduces the need ratio reported in Table 6 from 1:3.5 to 1:8, bringing it essentially in line with the value for county systems.

Comparison of Patterns of Exceptionality -- County School Systems Versus City Systems

County schools and city schools have been considered separately in the discussion thus far. The data presented in Tables 2-6, however, allow for direct comparisons between county and city school systems according to several major dimensions of exceptionality -- including specific handicapping conditions, the age distribution of those enrolled in special education programs, enrollment rates at various grade levels, and personnel needs.

In regard to specific types of exceptionality, the variations in proportional representation between county school systems and city systems are minimal and do not appear to be significant (Table 2). A slightly larger proportion of students in county school systems than in cities were classified as educable mentally retarded in 1989 (24.1 versus 22.3), while a slightly higher percentage in city school systems than in counties were characterized by speech impairments (29.0 percent vis-a-vis 26.6). This, however, essentially represents the extent of the variation.

Basically the same pattern is observed relative to age distribution, the teacher/pupil ratio, and the rate of exceptionality (Tables 4 - 6). Again, the variations between cities and counties are minimal and are not deemed to be of significant magnitude. The only substantial difference appears to be the discrepancy in need ratios (see Table 6), but this pattern is largely explained by the aberrant data (discussed earlier) that were reported for the Birmingham school system. Overall,

therefore, the general patterns that emerge across county and city school systems are remarkably similar.

Correlates of Selected Dimensions of Exceptionality

This portion of the analysis is exploratory and involves a considerable degree of speculation. Utilizing two dimensions of exceptionality--the rate of exceptional students per 1,000 enrollees and the teacher/pupil ratio for those enrolled in classes for the exceptional (i.e., all categories except the gifted and talented)--an attempt is made to identify factors within the social and economic setting that are associated with variations in the provision of services for this segment of the student population.

The variables that are examined are derived from a rather large data base that is maintained by the Center for Demographic and Cultural Research at AUM. The data base includes information concerning a wide variety of population characteristics for both Alabama counties and cities, but it also encompasses a number of variables that relate directly to education, including measures of educational attainment of the resident population and characteristics of local school systems (i.e., sources of financial support, average daily attendance, teacher salaries, dropout rates, etc.). While all of the variables in the data base were incorporated into the analysis, only those associated with each dimension of exceptionality at the .05 level of probability are reported in Tables 7 and 8.

For county school systems, three of the five variables that are positively correlated with rate of exceptionality reflect employment in the white-collar segment of the occupational hierarchy (Table 7, Part A). Thus, the higher the percentage of persons in Alabama counties that are employed in such occupations as finance and real estate, wholesale and retail trade, and public utilities, the higher the ratio of exceptional students to the total student population. Per capita income level is also modestly related to the rate of exceptionality (.260), as is net migration gains involving the white segment of the population (.258). All five of these factors, in turn, are more likely to be associated with residence in the more urbanized counties of Alabama as opposed to those with a larger proportion of the population that is classified as "rural."

Collectively, these findings suggest that prosperous urban counties (i.e., areas with a larger proportion of white-collar workers, higher per capita incomes, and whose opportunity base is sufficient to attract a substantial number of in-migrants) are more predisposed to providing services for the exceptional than counties that are characterized by unfavorable socioeconomic circumstances. Indeed, school personnel in poorer, rural systems may be less prone to identify youngsters as exceptional, assigning them instead to

the traditional classroom setting.

A negative correlation is observed between rate of exceptionality and the percentage of students enrolled in private schools. While enrollment in private schools in Alabama is highly correlated with the percentage of the population that is classified as "black" (i.e., .766), the percentage black, in turn, is not significantly related to the overall rate of exceptionality (-.196). Place of residence (rural versus urban), furthermore, is not associated with enrollment in private schools, suggesting either the possibility of other influences that have not been investigated or the existence of a spurious relationship.

Of the eight variables that are positively linked to the teacher/pupil ratio (see Table 7, Part B), five relate in one way or another to population growth (percent change in population, various indicators of migration, and -- indirectly -- the sex ratio)(9). One possible explanation is that rapidly growing areas are more pressed to provide needed services for the exceptional than those that are growing at a slower pace. It is the urban and metropolitan parts of the state that are growing most rapidly, the same areas (as indicated above) that report the highest rates of exceptionality.

"Employment in wholesale and retail occupations," a category that consists mainly of lower level, white-collar occupations, undoubtedly reflects the same tendencies that were discussed previously in regard to occupations and the rate of exceptionality. That is, a preponderance of these occupations is indicative of urban residence, which may also be associated a with greater availability and diversity of educational programs. The relationship involving "percent employed outside the county," on the other hand, may be reflective of the large amount of commuting that takes place relative to employment in the more urbanized parts of the state. The growth in Alabama's metropolitan areas during the 1980s has led to the expansion of health and social services generally, but educational programs in particular -- a pattern that has apparently served to increase class size in a number of instances. For the remaining variable (i.e., "population per physician"), no theoretical basis for the relationship has been established.

Likewise, the negative correlations involving the teenage birth rate and the percent unemployed are difficult to explain. Both unemployment and teenage fertility tend to be higher in counties that are economically depressed (low income levels, a high rate of poverty, etc.). Teacher/pupil ratios, in these counties, however, are not generally lower than those in more prosperous locales.

For city school systems, relatively few significant correlations are observed (see Table 8). Those factors that do

emerge, furthermore, are not the same as those reported for counties. Rate of exceptionality in this case, for example, is negatively correlated (-.284) with the teacher/pupil ratio (i.e, the ratio for the entire school system) and average daily attendance (-.280). On the other hand, the variables most closely associated with the teacher/pupil ratio for exceptional students are percent in the labor force (.283) and the nonwhite dropout rate (-.330).

While it is difficult to develop a satisfactory explanation regarding the two correlates of exceptionality, those observed for the teacher/pupil ratio appear to be consistent with theoretical expectations, as well as the findings that have been previously presented. Thus, a high percentage of persons in the labor force is closely associated with urban and metropolitan growth -- a potential influence on both the rate of exceptionality and the teacher/pupil ratio that has already been noted. Likewise, in instances where the nonwhite dropout rate is high, it appears reasonable that the teacher/pupil ratio will also experience a reduction. Blacks in Alabama qualify somewhat more frequently than whites for most programs for the exceptional. As they leave these programs in larger numbers, therefore, ratios are correspondingly reduced.

As the final step in this portion of the analysis, the variables for both counties and cities that were significantly correlated with the two dimensions of exceptionality were subjected to further examination through the use of stepwise regression. The result of this analysis is presented in Table 9. The findings reveal that the proportion of the "explained variation" ranges from approximately 29 percent in the case of the teacher/pupil ratio in county systems to about 15 percent in regard to that same variable for city systems. While much unexplained variation remains -- and that which is "explained" in some instances (e.g., rate of exceptionality for city systems) is suspect from a theoretical perspective -- the analysis reveals at least some areas (e.g., the provision of services in metropolitan centers, rapidly growing locales, etc.) that would appear to be appropriate for further investigation.

Correlates Involving Specific Types of Exceptionality

As indicated above, the attempt to identify correlates (i.e., potential causative agents) of the various dimensions of exceptionality has not been highly fruitful. Instead of examining individual types of exceptionally, however, this portion of the analysis has focused on combined measures of these phenomena (i.e., the rate of exceptionality and the teacher/pupil ratio for all students enrolled in special education programs). A major disadvantage of this approach is that it may serve to mask the underlying forces that influence individual categories of behavior. To test this hypothesis, rates of exceptionality within selected

special education areas (i.e., developmentally delayed, emotionally disturbed, educable mentally retarded, speech impaired, specific learning disabilities, and gifted and talented) were correlated with two major demographic variables of counties and cities (i.e., place of residence, as indicated by "percent urban," and race, indicated by "percent black").

The correlations that emerged from the analysis are presented in Table 10. For county school systems, neither percent black nor percent urban are significantly associated with the rate of students classified as developmentally disabled. This same pattern holds for the speech impaired. There is a significant correlation, however, between percent urban and the rate of students labeled as emotionally disturbed -- with the more urban the composition of a county, the greater the likelihood that students will be labeled as ED. Percent black, whether within a city or county school district, is not significantly related to the rate of students classified in this category.

Classification as EMR is negatively associated with the percentage of the population that is urban (county systems) but, on the other hand, is strongly correlated in a positive direction with percent black in both county and city school systems. For students classified as gifted and talented, significant negative correlations were found between
the percent black within both city and county school systems and placement within this category. Perhaps in counties and cities where the percentage black is particularly high, gifted students are more likely to be enrolled in private schools.

There is a significant positive correlation between the SLD classification and urban residence. Thus, the more urban the county, the greater the tendency toward placement in SLD classes. Perhaps this indicates that school personnel who reside in counties that are more highly urbanized have become more adept at utilizing sophisticated identification and placement procedures in dealing with SLD youngsters.

Percent black (both county and city systems), furthermore, is highly correlated with this same variable in a negative direction. As the percentage of the population that is black increases, the rate of SLD placement decreases. Once again, this pattern suggests concerns regarding the identification and placement procedures being utilized when considering black children for possible assignment to SLD classes.

The above data indicate that a careful study should be undertaken relative to the psychometric techniques that are utilized when testing black children. No serious scholar would hold that black children, when considered as a group or category of children within the total school population, are less intelligent than white children. The data, however, strongly suggest that

black children are systematically being assigned to classes for the educable mentally retarded at higher rates than white children. The data also indicate that black children are being placed in classes for the gifted and talented, as well as classes for those with specific learning disabilities, at a lower rate than white children. Hence, the data point to the possibility that improper procedures are being used when testing and/or interpreting the results of tests of black children. Perhaps overdependence on scores achieved on such tests as the Wechsler Intelligence Scale for Children - Revised and the Stanford-Binet Intelligence Scale is partly to blame. In addition, a portion of the explanation may reside in how established state guidelines are interpreted and implemented.

Factors unrelated to classification and testing procedures, however, may also be operative. Thus, the overrepresentation of blacks in the EMR category may likewise trace to such considerations as health practices (such as prenatal care) and the negative effects of living in economically and culturally deprived conditions. In any case, these data suggest that current identification and placement procedures be subjected to intensive review and evaluation.

The data presented above provide a considerable amount of support for treating the various categories of exceptionality separately in conducting investigative procedures. The variations among these categories, therefore, appear to be based much more on qualitative considerations than on differences in degree.

Observations Concerning the Quality of the Data/Atypical Variations in the Data

As mentioned earlier, the overall scope of the present investigation is that of "fact finding." The attempt has been made to establish "base line data" that will document the current status of selected aspects of special education programs within Alabama's public school systems. The task of trying to account for, or the amelioration of, any observed weaknesses must necessarily become topics for subsequent discussion and evaluation. In this section of the report, however, additional explanations will be posited concerning the substantial variations that exist within the data that has been subjected to the foregoing analysis. While speculation has been offered in other sections of this report concerning the underlying reasons for many of these variations, other influences of a more general nature may be operative. These range from the quality of the data supplied by local school officials to the impact of community pressures in the classification process.

1. Data Supplied by School Districts

Some of the data that were utilized in this project are

apparently flawed. One school district, for example, reported that 50 percent of its kindergarten students received special education services. Another district, although it is characterized by a comprehensive special education program and a low pupil/teacher ratio, indicated that it needed to double its teaching staff. Several other systems that have very few special education teachers, a high pupil/teacher ratio, and significant gaps in programs for the exceptional, reported the absence of a need for new teachers. A procedure needs to be established, therefore, that will identify and correct data that appear to be obviously erroneous. Otherwise, they will continue to be utilized in the formulation of decisions that could ultimately impact upon every school system and university training program within the state.

2. Programs for Preschoolers Aged Three to Five

As indicated earlier, significant variations were reported in the number of children served at age five -- a pattern that held for both city and county school districts. Youngsters at this age are currently covered by Alabama Act 106 and, therefore, PL-94-142. In some school districts in Alabama, however, there is a reluctance to refer those in kindergarten to special education programs unless they are having serious difficulty in school. In some instances, this practice extends beyond kindergarten and into the first grade. This pattern is based on the premise that many children will naturally outgrow their problems if just given more time. Other school districts espouse the philosophy of "the earlier, the better" when referring students with suspected learning problems to special education classes. These dramatically opposed philosophies may account, in part, for a significant portion of the variations that were observed in the data.

Programs for three and four year old exceptional children will not be mandated by PL-99-457 until the 1991-92 school year, yet many districts have already launched programs for these children. At the present time, there is a scarcity of teachers that are trained to work with this age group. Presumably, however, the substantial differences in the level of services provided to this age category will move toward equalization as a result of the mandate and university programs will begin to produce more teachers in required areas of expertise.

3. Variations Among Exceptionalities Served

Several possible explanations emerge in regard to the wide differences observed for both county and city school systems in the proportions served within the various categories of exceptionality. The first relates to the substantial variations that exist in the training received by persons serving as coordinators of special education programs, while the second concerns the expertise of those who are responsible for the actual testing of children. Many school districts have highly trained coordinators who have both

training and experience in at least one area of special education. Others are characterized by coordinators who have little training or experience in any field of special education. In addition, some psychometrists who are presently working within Alabama's school systems have received only the minimal level of training that is required in order to qualify for that position. The requirements have been changed, however, so that a master's degree in school psychometry is now required for those engaged in the testing of children. Persons with this new level of intensive training are slowly beginning to replace personnel with only the minimal level of training. This process, however, will take many years to complete.

The severe shortage of teachers in the fields of learning disabilities and emotional disturbances also helps to account for the wide variances in the proportion of children served in different school districts. This is especially true in the more rural areas of the state, as the great majority of students who are completing their training in these fields of study report that they plan to seek employment in an urban/metropolitan setting. Special tuition grants to those planning to teach in nonurban locales have helped to relieve this shortage, but many more teachers with these specialties are still needed in the rural areas of the state. The recently established programs for those with "mild learning handicaps" (MLH) have also produced many new teachers who are trained to address the problems of mildly handicapped students classified as educable mentally retarded and/or emotionally disturbed.

Variations according to race in the classification of persons as "learning disabled" may further explain the differences in rates associated with this category of exceptionality. It is harder, for example, to substantiate that a significant difference exists between measured intelligence and measures of academic achievement among black students than it is among whites. This appears to result from the fact that many black children do not score as high as white students on intelligence tests. If the measured intelligence level for blacks is lower than that for whites (artificially lower in this case), it is much more difficult to show that blacks are significantly behind in academic subjects according to guidelines established by the Alabama Department of Education. Some blacks also score below the average range on intelligence tests such as the Wechsler Intelligence Scales, which may exclude them (in error) from consideration for LD placement by some local eligibility committees. These problems can be dealt with effectively by the local school district, however, based on the extent to which well-trained, informed individuals are responsible for the coordination, testing, and placement of children into special education programs.

Rate difference across school districts relative to the emotionally disturbed may stem from a number of influences. There

appears to be a great reluctance, for example, on the part of some school districts and parents (especially those in rural areas) to classify students as "emotionally disturbed." Several school systems did not identify a single student in this category based on the data that were analyzed for this report. Several smaller districts also seem to lack staff members with the training that is required in order to quantify and place students within this program area. Also, as noted earlier, there is a severe shortage of both ED and MLH teachers, especially those who are willing to work in rural areas.

Summary/Conclusions

The preceding analysis has provided a descriptive review of selected features of special education programs in the public school systems of Alabama. The distribution of exceptionality has been examined relative to such factors as age, grade level, and rate of enrollment within county school systems, city school systems, and among individual school districts. In addition to the basic characteristics of special education students, data have also been presented concerning both the need for new special education teachers and the distribution pattern of currently employed teachers.

On a more theoretical level, the attempt has been made to investigate potential linkages between community characteristics and selected dimensions of exceptionality. While the current research, at best, represents a preliminary approach to this question, it has generated a number of hypotheses that are deemed to be worthy of further consideration.

Based on the results of the analysis, the following general conclusions appear to be warranted:

^Individual school systems vary greatly in the distribution of exceptionality according to such factors as age, grade level, and rate of enrollment.

^The assignment of students to special education programs appears to be inconsistent and uneven. At a general level of analysis, social and economic differences across school districts are associated with placement in special education classes. More specifically, it is hypothesized that such factors as referral practices, classification patterns, testing procedures and test interpretation, and differences in the evaluation and interpretation of official policy guidelines may also be operative. It appears that training requirements (both pre-service and in-service) of coordinators and psychometrists should also be examined.

^Some school systems exhibit a much greater need for additional teaching personnel than others. Teacher/pupil ratios in special education classes appear to be inordinately high in a number of school systems.

^The findings concerning the correlates of specific forms of exceptionality (i.e., high percentage black, high EMR placement; high percentage urban, high SLD assignment; etc.) indicate a pattern of questionable procedures relating to the identification and placement of special education students.

^The overall differences between county school systems and city school systems in the delivery of special education services appear to be minimal, with little variation in personnel need ratios, teacher/pupil ratios, or the characteristics of those who are served in special education programs.

^Procedures need to be established by the State Department of Education that will identify and correct any spurious data that are provided to the Department by local school officials.

ENDNOTES

1. Throughout the report, reference will be made to the 0-21 age group. Even though the data reported herein encompass that age range, there were only four persons aged 0-2 that were reported to the Alabama Department of Education. This number was excluded from the EAA-VIB child count that was conducted on December 1, 1989.

2. A "metropolitan county," as generally defined by the U.S. Bureau of the Census, is a county that contains a central city of 50,000 or more in population. Counties contiguous to the central metropolitan county may also be classified as "metropolitan" (even though they lack a large city) it they meet certain criteria regarding social and economic integration with the central city. At the present time, there are 10 metropolitan areas in Alabama encompassing 20 counties. In addition, Russell County, Alabama is part of the Columbus, Georgia metropolitan area.

3. In this particular system, however, there have been adjustments in the classification of developmentally delayed students that impact on the numbers that have been reported for this category.

4. The value reported for Barbour County traces to the change in classification that was alluded to in Note 3.

5. Again, this pattern is explained for the most part by the change in classification that was mentioned in Note 3.

6. This total is currently under review by the Alabama Department of Education.

7. Some students in these systems may have been categorized under a handicapping condition rather than classified as developmentally delayed in the December, 1989 child count.

8. Due to the size of the reported need, this total is currently under review.

9. The "sex ratio" is defined as the number of males per 100 females.

TABLE 1

ENROLLMENT IN SPECIAL EDUCATION PROGRAMS,
BY TYPE OF EXCEPTIONALITY, ALABAMA, 1980 AND 1989(a)

Type of Exceptionality	Year 1980 (No. & %)	1989 (No. & %)	Change 1980-89 (No. & %)
Deaf	231 (0.3)	191 (0.2)	-40 (-17.3)
Deaf/Blind	32 (0.0)	6 (0.0)	-26 (-81.3)
Emotional Conflict	3,792 (5.0)	5,688 (5.7)	1,896 (50.0)
Hard of Hearing	445 (0.6)	534 (0.5)	89 (20.0)
Mentally Retarded(b)	34,632 (46.1)	26,716 (26.9)	-7,916 (-22.9)
Multi-handicapped	1,153 (1.5)	919 (0.9)	- 234 (-20.3)
Preschool Handicapped	-c-	10,115 (10.2)	10,115 (-)
Specific Learning Disability	18,373 (24.4)	32,130 (32.3)	13,757 (74.9)
Speech Impaired	15,078 (20.1)	21,525 (21.7)	6,447 (42.8)
Orthopedically Impaired	424 (0.6)	493 (0.5)	69 (16.3)
Other Health Impaired	728 (1.0)	716 (0.7)	- 12 (-1.6)
Visually Impaired	306 (0.4)	304 (0.3)	- 2 (-0.7)
Total	75,194 (100.0)	99,337 (100.0)	24,143 (32.1)

(a) For persons aged 0-21. (See Note 1, section listing Endnotes)
(b) Includes the educable mentally retarded, the trainable mentally retarded, and the profoundly mentally retarded.
(c) Not listed as a category in 1980 as services were not mandated at that time for persons aged 3-5.

Source: Alabama Department of Education, Division of Special Education Services.

TABLE 2

ENROLLMENT IN SPECIAL EDUCATION PROGRAMS,
BY TYPE OF EXCEPTIONALITY AND SCHOOL SYSTEM,
ALABAMA, 1989(a)

Type of Exceptionality	County School Systems (No. & %)	City School Systems (No. & %)
Deaf	104 (0.2)	105 (0.3)
Deaf/Blind	2 (0.0)	5 (0.0)
Developmentally Delayed(b)	2,998 (4.5)	976 (3.0)
Emotionally Disturbed	3,417 (5.1)	2,290 (7.0)
Educable Mentally Retarded(c)	16,019 (24.1)	7,321 (22.3)
Hard of Hearing	318 (0.5)	241 (0.7)
Multihandicapped	703 (1.1)	281 (0.9)
Orthopedically Impaired	356 (0.5)	178 (0.5)
Other Health Impaired	605 (0.9)	225 (0.7)
Profoundly Mentally Retarded(c)	294 (0.4)	229 (0.7)
Specific Learning Disability	21,688 (32.6)	10,459 (31.8)
Speech Impaired	17,667 (26.6)	9,551 (29.0)
Trainable Mentally Retarded(b)	2,053 (3.1)	932 (2.8)
Vision Impaired	225 (0.3)	99 (0.3)
Total	66,449 (100.0)	32,892 (100.0)

Table 2 (footnotes)

(a) For those aged 0-21. (See Note 1, section listing Endnotes.)
(b) Many more school districts used this as a placement category in 1980 than in 1989; hence, the difference in numbers over the two time periods. Today, many of those formerly identified as "preschool handicapped" are reported under other categories of exceptionality.
(c) Included in the category "mentally retarded" in the data appearing in Table 1.

Source: Alabama Department of Education, Division of Special Education Services.

TABLE 3

DESCRIPTIVE STATISTICS RELATIVE TO SELECTED FEATURES OF ENROLLMENT IN SPECIAL EDUCATION PROGRAMS, ALABAMA, 1989

Variable	Range	Median	Total for System
A. County School Systems			
Type of Exceptionality(a)			
Percent DD	0.0-46.8	4.1	4.5
Percent ED	0.0-17.1	2.7	5.1
Percent EMR	8.3-64.4	31.3	24.1
Percent SLD	3.3-55.7	32.2	32.6
Percent SI	6.0-48.2	24.4	26.6
Percent TMR	0.3-13.0	3.4	3.1
Age Distribution(b)			
Percent Age 5	0.7-24.5	8.6	8.9
Percent Aged 6-11	25.4-55.8	45.7	47.3
Percent Aged 12-17	31.5-62.1	47.1	43.8
Enrollment Rate(c)			
Grade K	6.2-625.0	125.1	151.7
Grades 1-6	43.4-200.9	110.9	122.6
Grades 7-12	73.7-260.5	125.0	128.6
Teacher/Pupil Ratio(d)	1:15.1-1:36.7	1:20.4	1:21.5
Need Ratio(e)	1:0.7-1:47.0(f)	1: 7.3(f)	1: 9.5(f)
B. City School Systems(g)			
Type of Exceptionality(a)			
Percent DD	0.0-15.9	5.3	3.0
Percent ED	0.0-15.7	5.6	6.3
Percent EMR	1.7-61.8	24.7	22.3
Percent SLD	10.0-63.0	30.6	32.0
Percent SI	10.7-63.4	29.0	29.0
Percent TMR	0.0- 8.0	3.0	2.8

Variable	Range	Median	Total for System
Age Distribution(b)			
Percent Age 5	0.9-28.3	10.4	8.5
Percent Aged 6-11	40.4-62.8	49.9	50.2
Percent Aged 12-17	26.7-55.5	38.9	41.4
Enrollment Rate(c)			
Grade K	12.5-507.0	148.9	125.7
Grades 1-6	71.2-208.1	121.2	121.4
Grades 7-12	64.8-415.1	102.0	114.6
Teacher/Pupil Ratio(d)	1:12.2-1:40.3	1:21.4	1:21.0
Need Ratio(e)	1: 0.6-1:43.1(h)	1: 7.4(h)	1: 3.6(h)

(a) Listing includes those categories totaling 3 percent or more of all types of exceptionality.
(b) Of those aged 5-17 enrolled in special education programs.
(c) Number of students classified as exceptional per 1,000 total enrollees at the specified grade level.
(d) Number of students enrolled aged 0-21 (see Note 1, section listing Endnotes) divided by the total number of teachers.
(e) Number of teachers currently employed divided by the number of new teachers needed.
(f) Twenty-two systems reported the absence of a need for additional teachers. These systems, therefore, were excluded from the computations pertaining to this portion of the analysis.
(g) Excludes the Alabama Department of Youth Services.
(h) Twenty-eight systems reported no need for additional teachers; hence, they were excluded from the computations.

Source: Alabama Department of Education, Division of Special Education Services.

TABLE 4

ENROLLMENT IN SPECIAL EDUCATION PROGRAMS, BY AGE GROUP AND TYPE OF SCHOOL SYSTEM, ALABAMA, 1989

Age Group	County School Systems (No. & %)	City School Systems (No. & %)
Under 5	1,473 (2.2)	760 (2.3)
5	5,397 (8.1)	2,502 (7.6)
6-11	28,589 (43.0)	14,817 (45.0)
12-17	26,498 (39.9)	12,503 (38.0)
18-21	4,505 (6.8)	2,332 (7.1)
Total	66,462 (100.0)	32,914 (100.0)

Source: Alabama Department of Education, Division of Special Education Services.

TABLE 5

ENROLLMENT IN SPECIAL EDUCATION PROGRAMS,
BY GRADE IN SCHOOL AND TYPE OF SCHOOL SYSTEM,
ALABAMA, 1989

Grade	County School Systems (No. & Rate) (a)	City School Systems (No. & Rate) (a)
K	5,397 (151.7)	2,502 (125.7)
1-6	28,589 (122.6)	14,817 (121.5)
7-12	26,498 (128.6)	12,503 (116.8)
Total	60,484 (127.4)	29,822 (119.8)

(a) Number of students classified as exceptional per 1,000 enrollees at the specified grade level.

Source: Alabama Department of Education, Division of Special Education Services.

TABLE 6

SELECTED INDICATORS OF PERSONNEL NEED,
SPECIAL EDUCATION PROGRAMS, ALABAMA PUBLIC SCHOOL SYSTEMS

Indicator	County School Systems	City School Systems
Teacher/Pupil Ratio(a)	1:21.5	1:20.9
Need Ratio(b)	1: 9.5	1: 3.5

(a) Number of students enrolled aged 0-21 (see Note 1, section listing Endnotes) divided by the total number of teachers. Based on data collected on December 1, 1989.

(b) Number of teachers currently employed divided by the number of new teachers needed. Based on data assembled in July, 1990.

Source: Alabama Department of Education, Division of Special Education Services.

Table 7

RELATIONSHIP BETWEEN DEMOGRAPHIC CHARACTERISTICS OF THE RESIDENT POPULATION AND SELECTED DIMENSIONS OF EXCEPTIONALITY, COUNTY SCHOOL SYSTEMS, ALABAMA

Demographic Characteristics	Correlation Coefficient
A. Rate Exceptional Per 1,000 Enrollees	
Percent Employed in Finance/Real Estate Occupations	.315*
Percent Employed in Wholesale/Retail Occupations	.308**
Percent Employed in Public Utility Occupations	.270**
Per Capita Income	.260**
Net Migration Rate, Whites	.258**
Percent Enrolled in Private Schools	-.255**
B. Teacher/Pupil Ratio	
Percent Change in Population	.444*
Net Migration Rate, Whites	.421*
Net Migration Rate, Total Population	.328*
Percent Employed Outside County	.323*
Sex Ratio	.302**
Percent Employed in Wholesale/Retail Occupations	.294**
Population Per Physician	.293**
Percent Migrating from Another County	.271**
Teenage Birth Rate	-.246**
Percent Unemployed	-.268**

*P<.01
**P<.05

Note: The rate of exceptionality and the teacher/student ratio were computed for students aged 0-21 (see Note 1, section listing Endnotes) and reflect enrollment in special education classes as of December 1, 1989. Demographic data for counties are derived from the 1980 Census of Population and from later statistics published by various governmental units, State of Alabama. This portion of the analysis includes all categories of the exceptional except the gifted.

Table 8

RELATIONSHIP BETWEEN DEMOGRAPHIC CHARACTERISTICS OF THE RESIDENT POPULATION AND SELECTED DIMENSIONS OF EXCEPTIONALITY, CITY SCHOOL SYSTEMS, ALABAMA(a)

Demographic Characteristic	Correlation Coefficient
A. Rate Exceptional Per 1,000 Enrollees	
Teacher/Student Ratio	-.284**
Percent Average Daily Attendance	-.280**
B. Teacher/Pupil Ratio	
Percent in Labor Force	.283**
Dropout Rate, Nonwhites	-.330*

*P<.01
**P<.05

(a)For explanatory notes, see Table 7.

Table 9

RESULTS OF STEPWISE REGRESSION ANALYSIS
OF CORRELATES OF SELECTED DIMENSIONS OF EXCEPTIONALITY,
ALABAMA PUBLIC SCHOOL SYSTEMS

School Systems	R2 (Original Runs)	R2 (a) (Final Runs)
Counties		
Rate of Exceptionality	0.3200	0.2384
Teacher/Pupil Ratio	0.3874	0.2853
Cities		
Rate of Exceptionality	-b	0.1948
Teacher/Pupil Ratio	-b	0.1470

(a) Some variables were deleted from the final runs in the case of county school systems either as a result of a high degree of intercorrelation or a failure to add a significant amount of explained variation to the model. Three variables were retained for the final run relative to rate of exceptionality (percent enrolled in private schools, the net migration rate for whites, and percent employed in public utility occupations) and also in relation to teacher/student ratios (percent migrating from a different county, the net migration rate for whites, and population per physician).

(b) Only one regression model was developed.

TABLE 10

RELATIONSHIP BETWEEN THE AREA OF RESIDENCE AND RACE OF THE RESIDENT POPULATION AND SELECTED CATEGORIES OF EXCEPTIONALITY, ALABAMA PUBLIC SCHOOL SYSTEMS

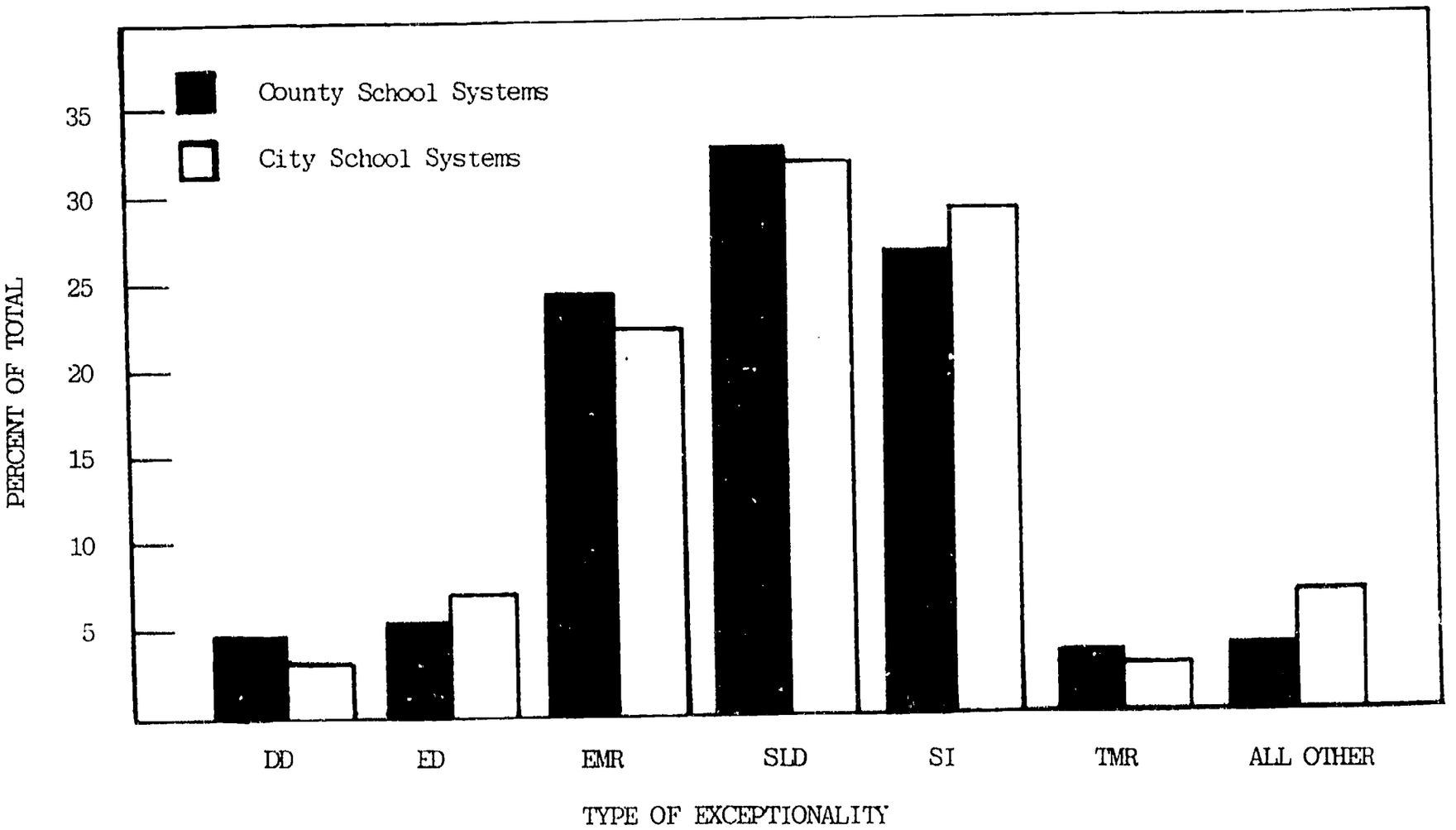
Population Characteristic/ Exceptionality	Correlation Coefficient(a)
A. County School Systems	
Percent Urban/Rate, DD Students(b)	.043**
Percent Urban/Rate, ED Students	.411*
Percent Urban/Rate, EMR Students	-.346*
Percent Urban/Rate, SI Students	.020**
Percent Urban/Rate, SLD Students	.361*
Percent Urban/Rate, GT Students	.211**
Percent Black/Rate, DD Students	.059**
Percent Black/Rate, ED STudents	-.229**
Percent Black/Rate, EMR Students	.600*
Percent Black/Rate, SI Students	-.180**
Percent Black/Rate, SLD Students	-.638*
Percent Black/Rate, GT Students	-.391*
B. City School Systems	
Percent Black/Rate, DD Students	-.144**
Percent Black/Rate, ED Students	-.121**
Percent Black/Rate, EMR Students	.545*
Percent Black/Rate, SI Students	-.125**
Percent Black/Rate, SLD Students	-.487*
Percent Black/Rate, GT Students	-.423*

*P<.01
**Not significant at the .05 level of probability.
(a)Person's r.
(b)In this and other categories of exceptionality, "rate" refers to the number of special education students aged 0-21 per 1,000 total enrollees in grades K-12. (See Note 1, section listing Endnotes, for information concerning this age range.)

Source: Special tabulations provided by the Alabama Department of Education, Division of Special Education Services, and data from the 1980 Census of Population.

FIGURE 1

DISTRIBUTION OF ENROLLMENT IN SPECIAL EDUCATION PROGRAMS,
BY TYPE OF EXCEPTIONALITY, ALABAMA, 1989(a)

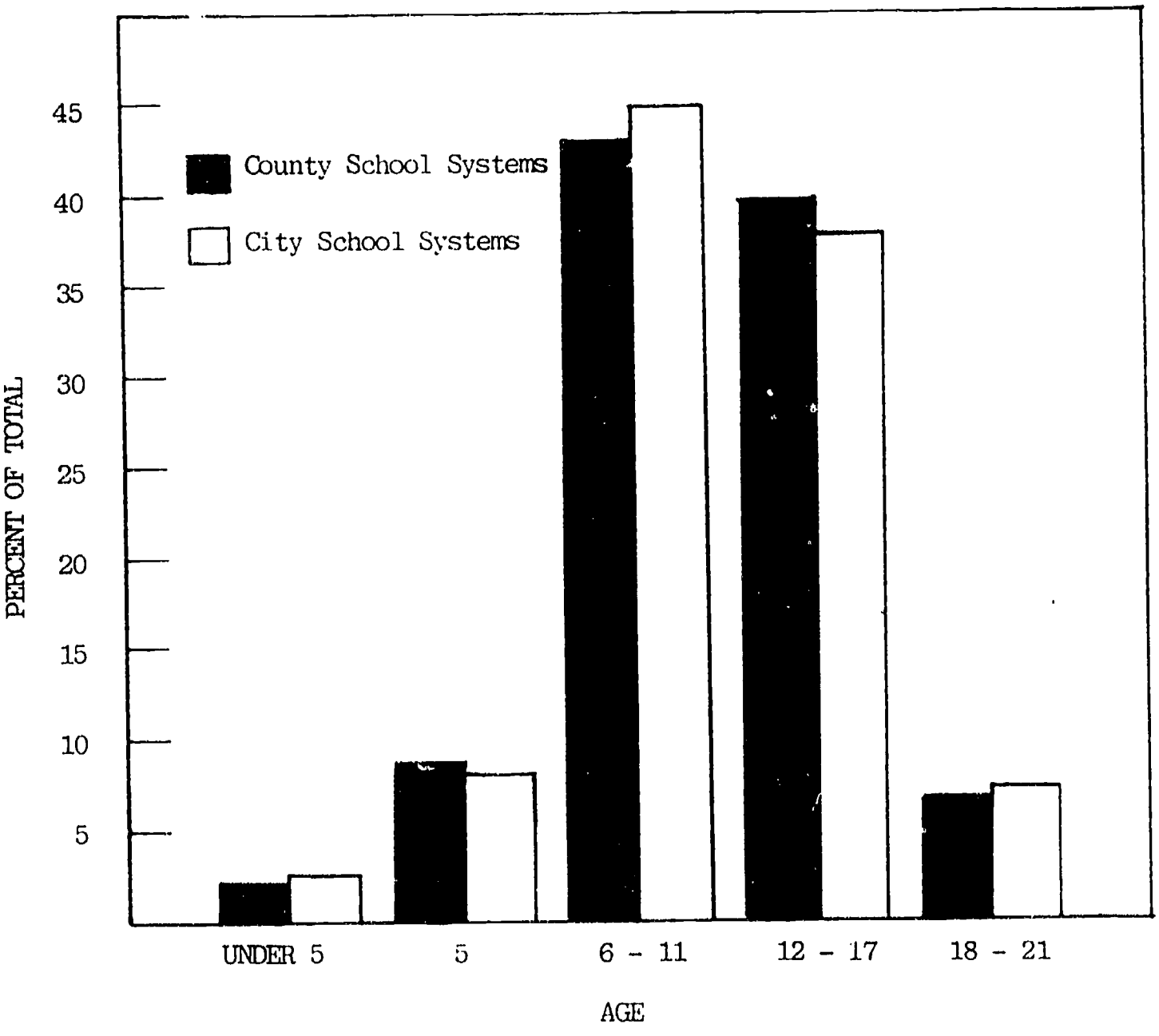


(a)For those aged 0-21. (See Note 1, section listing Endnotes.)

Source: Alabama Department of Education, Divison of Special Education Services.

FIGURE 2

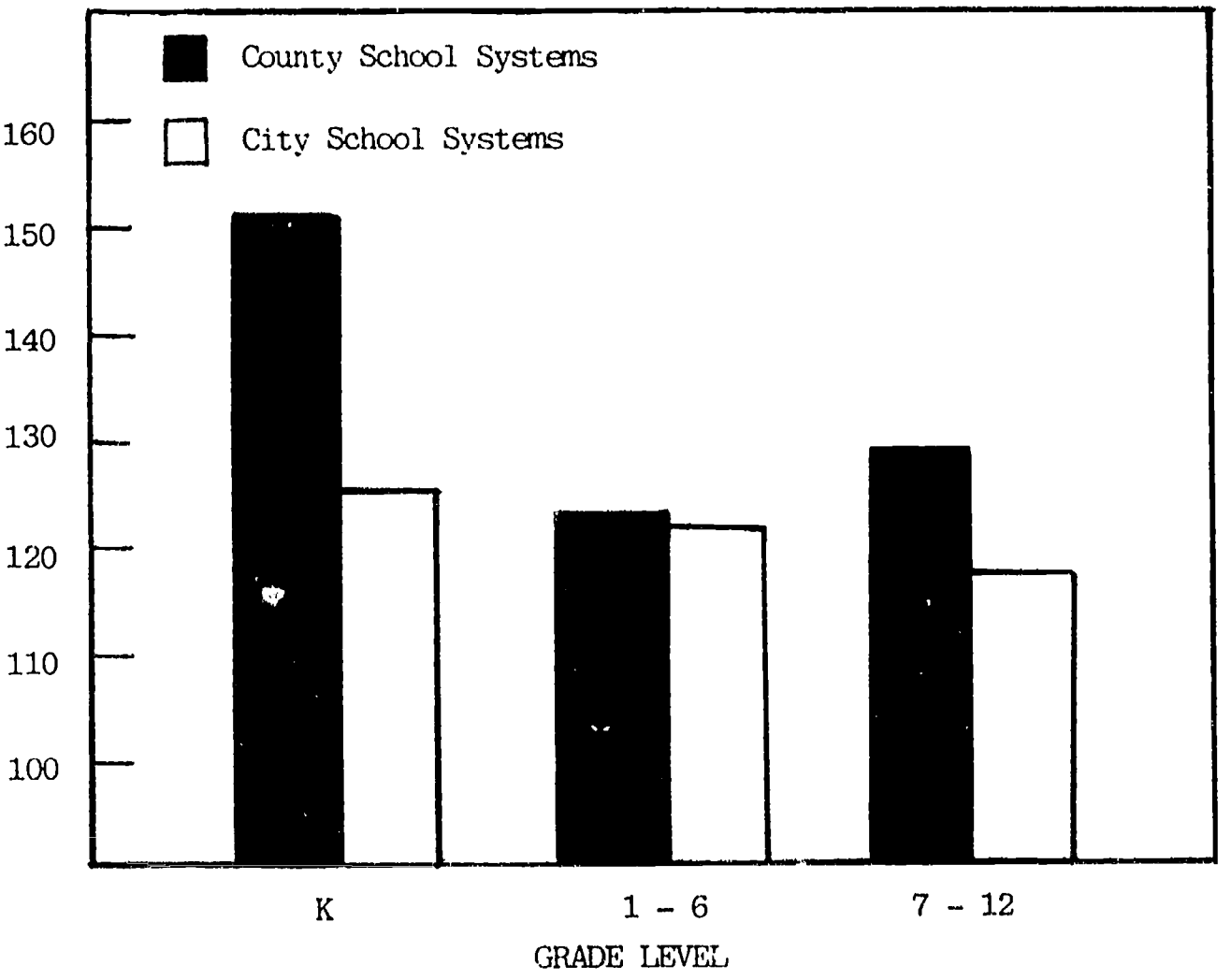
DISTRIBUTION OF STUDENTS ENROLLED IN SPECIAL EDUCATION PROGRAMS, BY AGE, ALABAMA, 1989



Source: Alabama Department of Education, Division of Special Education Services.

FIGURE 3

RATE OF ENROLLMENT IN SPECIAL EDUCATION PROGRAMS,
BY GRADE IN SCHOOL, ALABAMA, 1989(a)



(a)Per 1,000 total enrollees

Source: Alabama Department of Education, Division of Special Education Services.