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The Use of Census Geography and County Typologies in the Construction of Classification Systems for Rural Schools and Districts

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I describe the characteristics of schools and school districts by interrelating NCES data using various Bureau of the Census and ERS county typologies. When rural school districts are defined as those where at least 75% of the students attend a school in a rural locale, then 47% of the nation's districts are rural and 53% are urban. Rural districts account for 22.3% of all regular public schools, 11.8% of all public school students, and 13.4% of teachers. Most of our 22,400 rural schools and 6.6 million rural students are in rural districts, but a sizable fraction are in urban districts as well. Differences in school size are discussed by region and county type. The analysis suggests that rural schools and rural districts are small because their populations are sparse and isolated, which makes the diseconomies of transportation to larger centers greater than the diseconomies of small scale. The prospects for more precise typologies of rural schools are considered in anticipation of forthcoming educational data based on the 1990 census Topologically Integrated Geographic Encoding Referencing (TIGER) files, which include levels of geographic detail not previously available for rural areas.

Introduction

Although rural schools and districts tend to be small compared to urban educational systems, together rural schools and the districts that administer them are a large part of the American educational system. Over 6.6 million students attend 22,412 regular public schools located in rural areas, representing 16.6 percent of U.S. students and 28.3 percent of U.S. schools (see Table 1). Public policy for this significant segment of our educational system is constrained by the diversity of rural settings. It is not always clear what is meant by "rural", and it is not always clear a policy produces comparable effects in different kinds of rural settings.

Consequently, there has been an on-going search for educationally meaningful ways to classify rural schools and school districts (Stephens, 1988). Among the demographic factors influencing rural education are differences in population densities and remoteness of the areas served. It is possible, in a preliminary way, to explore these factors by interrelating school and district data files from the National Center for Educational Statistics (NCES) with county demographic files and county typologies from the Economic Research Service (ERS). Such an analysis explores the usefulness of crosstabulating rural/urban status with metropolitan/nonmetropolitan status as contextual categories for helping to understand the characteristics of rural education. These classifications may be useful if they reveal important regional or spatial interrelationships among schools and districts which can be used together with other educational indicators. In an earlier analysis, the NCES files were interrelated to help provide a description of rural education (Elder, 1991). Here, I review the methods and findings of that work. I extend the previous analysis by linking district level data to the ERS county types, and I discuss some implications for future classification development.

The data files used are reviewed in some detail to show why more precise classification schemes for rural education are needed. Descriptions of rural

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Table 1
Number and Percentage of Regular Public Schools and Students, and Mean School Enrollment by NCES Locale Class (1989-90)

Selected Indicators	Summary Locale Classifications				
	City	Urban Fringe	Town	Rural	Total
Total Regular Public Schools	17,900[a] (22.7)[b]	18,935 (23.9)	19,970 (25.2)	22,412 (28.3)	79,307 (100)
Total Students (in millions)	11.9 (29.8)	11.7 (29.4)	9.7 (24.2)	6.6 (16.6)	39.9 (100)
Average School Enrollment	661	619	485	296	503

[a]*N.*
[b]Percentage.

schools and rural districts are included to show that there are important interrelationships involved in the classifications and that analyses relying only on metropolitan/nonmetropolitan groupings of schools or districts may be misleading. A discussion about possible further development of classification schemes is timely because of the forthcoming data from NCES, which will report 1990 census data by school district along with information from the *Common Core of Data* files. In addition, the availability of desktop Geographic Information Systems and digital geographic databases, such as Topologically Integrated Geographic Encoding Referencing (TIGER) from the Bureau of the Census, promise a more detailed exploration of the structure of rural education and the development of classifications that more meaningfully reflect the important elements of its well-known diversity.

Before turning to a review of files and methods, I first consider the meaning and significance of some basic U.S. census terms that are incorporated into classifications systems. The census definition of *rural* is a residual category of areas that are not urban. *Urban places* have populations greater than 2,500. *Urbanized areas* include places and some unincorporated urban fringes that are densely settled. Thus, what is not defined urban is defined rural. Similarly, the census definition of *non-metropolitan* is "the territory, population and housing units located outside metropolitan areas" (Bureau of the Census, 1991). *Metropolitan areas* include the central counties of a large city (50,000 population) and the outlying counties that have close economic and social ties to the central city.

These two types of census geography—one by place or area, and one by county—cut across each other so that *both* urban and rural territory may be found within *both* metropolitan and non-metropolitan areas. Non-metropolitan counties are sometimes used to refer to "rural" schools or districts because county level data are usually more readily available than the decennial census used to label areas rural or urban. However, when schools are classified using both sets of census definitions, then the spatial interrelationships can be useful for understanding more clearly what a "rural school" means.

Why are such census definitions meaningful for education? The organization of schools is influenced by the pattern of population density and these patterns differ by region and state (see Figure 1). For example, some western states have great expanses of wide open spaces, but most of their people live in a few highly urbanized cities. Educationally meaningful classifications of schools and districts must take such diversity into account. For example, all of New Jersey is metropolitan, but some parts of New Jersey remain quite rural—though not necessarily remote. In Montana, two counties are metropolitan and most of the state is rural—and often remote. These differences have consequences for the educational systems.

Consider the fact that there actually are more students attending schools in the rural areas of New Jersey (65,799) than in the rural areas of Montana (53,446). The conditions for the organization of schools in Montana, with 104 students per 100 square miles, are quite different from New Jersey, with over 14,000 students per 100 square miles. In New Jersey, the

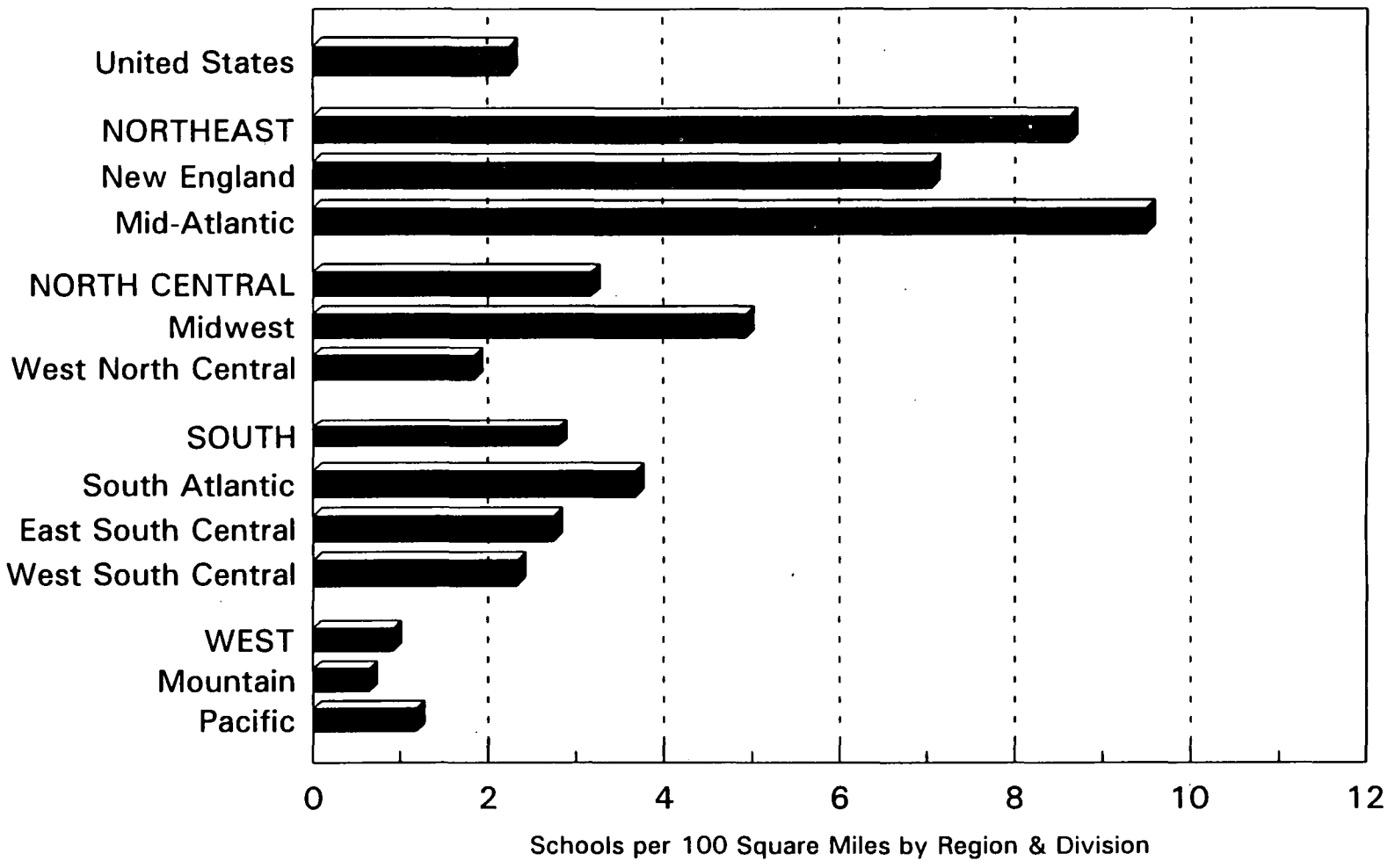

Figure 1. Regular Public Schools per 100 Square Miles by U.S. Census Division and Region (1989-90)
(*Source*: NCES Common Core of Data Public School Universe Files, 1989-90.)

Table 2
Johnson Locale Codes

Large City	Central city of a Standard Metropolitan Statistical Area (SMSA) with the city having a population greater than or equal to 400,000 or a population density greater than or equal to 6,000 people per square mile.
Mid-Size City	Central city of SMSA, with the city having a population less than 400,000 and a population density less than 6,000 people per square mile.
Urban Fringe of Large City	Place with SMSA of a Large City and defined as urban by the Bureau of the Census.
Urban Fringe of Mid-Size City	Place within SMSA of Mid-Size City and defined as urban by the Bureau of the Census.
Large Town	Town not within SMSA, with a population greater than or equal to 25,000.
Small Town	Town not within SMSA, with a population less than 25,000 and greater than or equal to 2,500 people.
Rural	A place with less than 2,500 people or a place having a zipcode designated rural by the Bureau of the Census.

rural students constitute 7% of all public school students, and the difference in the size of rural and urban schools is slight because distances in rural New Jersey are relatively small. In Montana, rural students constitute almost 70% of all public school students, and the difference in the size of rural and urban schools is large because the distances in rural areas are relatively great.

To notice that New Jersey has any rural schools at all requires more than a metropolitan/nonmetropolitan scheme; to distinguish between what is rural in Montana and what is rural in New Jersey requires more than an urban/rural scheme. So how can school data be organized to illuminate the interrelationships?

Data Files, Methods, and Locale

The Johnson locale codes. The Common Core of Data Public School Universe (CCD) file contains a record of information for each public elementary and secondary school in the country as reported to the National Center for Education Statistics by the various state education agencies. Beginning in 1987-88, the seven-category locale code shown in Table 2 was assigned to each school in the CCD file (Johnson, 1989). Locale code assignments are based on the mailing address of the school building.

Johnson's codes can be summarized into four classes: central cites, urban fringes, towns, and rural. The first three include all urban locales. Conceptually, central cities and urban fringes are entirely metropolitan, towns are entirely non-metropolitan, and rural can include both metropolitan and non-metropolitan areas.

An important advantage of Johnson's use of the census definition of rural in the locale codes is that, because schools are linked to places rather than only counties (as in metropolitan groupings), it is possible to examine the distribution of rural schools across the different types of counties within which they exist—including metropolitan areas.

The CCD schools file (1989-90) includes records for 85,029 U.S. public schools. Only regular public schools (81,029) are included in this analysis. Also, locale codes are not assigned for the outlying areas of the United States, so only schools from the 50 states and District of Columbia are included. The resulting file includes 79,307 regular public schools. Among the specific data items available on the schools file are identification codes, total number of students, classroom teacher FTE, student enrollment, and school grade ranges.

The CCD Local Educational Agency file. The U.S. Department of Education also maintains a Common

Core of Data Public Education Agency file. The agency file (1989-90) includes records for 16,967 public school districts. Among the variables included on the district file, but not included on the schools file, is the county in which the district is located. To permit the crosstabulation of schools by locale and metropolitan area (county), records from the CCD agency file were merged with the school file to assign the county of the district to each school record. There is an exact match between the district school files for each school.

However, some schools may not be in the same county as their district offices. To assess the assignment of a county to a school based on its district, schools were matched to U.S. counties based on the zipcode of the school's mailing address using a U.S. Postal Service file. Unfortunately, zip codes do not provide an exact match to county either. But, they do indicate the primary county associated with each zipcode, so the assignment of district county to school should be relatively consistent with a county assignment based on zipcode. There was a difference in county assignment in only about 3% of the schools nationally. Therefore, although not exact, the method adopted for the assignment of counties to schools is adequate for this preliminary analysis. However, I later will discuss the opportunity to develop more precise information about the exact location of public schools.

The counties file. A file of selected U.S. county statistics was created by merging data elements from the 1990 Census of Population Public Law 94-171 file, the 1988 Bureau of Economic Analysis personal income series, the 1980 Census of Population and Housing, and a file of county types from the Economic Research Service. From the CCD files, selected characteristics of regular public schools were summarized by county and merged with the counties file. Thus, the distribution of rural schools and rural districts can be summarized by types of U.S. counties with associated population and income characteristics.

The 1990 Census of Population and Housing is the first decennial census to include information for small units of geography in rural areas (such as blocks). When fully released, this information will be useful not only because of the social and economic information, but also because of the detailed digital geographic database it includes. However, the census data are already two years old. Consequently, counties remain a popular unit of analysis because there are large amounts of annual data available for them, and their boundaries do not change very often.

The districts file. The schools file described above contains one record for each regular public school in the 1989-90 universe, including a locale code that indicates if the school is in a rural area. Unlike the schools file, the CCD agency file does not include locale information because, unlike school buildings located at one particular address and either in or out of areas called rural, Local Educational Agencies (LEAs) include many schools sometimes located at different addresses encompassing both rural and urban areas.

To retain this diversity at the district level requires that school characteristics be considered. Therefore, a new district file was created by summarizing the schools file by district identifier, carrying forward counts of the total number of schools and students enrolled, the number of rural schools, the number of students attending rural schools, and other items. In addition, the percentage of the district's total enrollment in rural schools was calculated. The resulting file includes a record for each school district that administered at least one regular public school in 1989-90.

Defining rural schools and rural districts. The CCD schools file assigns a locale code to each school; rural schools are defined in terms of their particular census geography (given the mailing address of the school). Characterizing districts as rural is not quite as straight forward because districts can include schools (areas and population) located in both rural and urban areas.

One way to address the degree to which a district is rural is to examine the percent of the district's students who attend rural schools—that is, a school to which a rural locale code has been assigned in the CCD schools file. Data from the district file show that most school districts (89%) are either entirely rural or entirely urban—they consist of only rural schools or only urban schools. In 46% of the school districts (6,946), all students attend only rural schools (Table 3); in 43% of the districts (6,434), all students attend only urban schools. Only 11.6% of the districts (1,744) administer schools located in both rural and urban areas. Among these districts with both rural and urban schools, about half (918) have fewer than a quarter of their students attending a rural school; over two-thirds (627) have between 25% and 75% of their students attending a rural school; and only slightly more than a tenth (199) have more than three-quarters of their students attending rural schools.

For the purpose of analysis, if the percentage of rural school enrollment was 75% or more of total enrollment, then the district was defined as rural. Thus, we intentionally adopted a conservative estimate of the number of rural districts. Consequently, the proportion of rural schools, rural students, and rural teachers in urban districts may be slightly overstated by our analysis. In any case, the difference is

Table 3
School Districts by Percentage of Students Attending Rural Schools (1989-90)

Percentage of Students in District Attending a Rural School	Number of Districts	Percentage of Districts
None	6,434	42.5
1 - 24	918	6.1
25 - 49	381	2.5
50 - 74	246	1.6
75 - 99	199	1.3
100	6,946	45.9

Note. There were 9 cases of missing data out of 15,133 districts.
Source: Merged file of Common Core of Data Public School Universe and Public Agency Universe, 1989-90.

small because most districts are entirely rural or urban; a broader breakpoint (say, 50%) would affect only 246 (1.6%) out of 15,133 districts.

By linking the various files described above, we can assign individual schools and school districts to specific geographic categories that reveal important interrelationships. In the process, it is necessary to formulate an operational definition of a rural school district. For some kinds of analyses, schools are the important unit of analysis; for other analyses, districts are. The approach used here to define rural districts is based on the characteristics of the schools the districts administer. Key school characteristics are summarized at the district level and may be useful district indicators. Among other things, this approach recognizes that some rural schools are administered by predominately urban districts. We will see that there is regional diversity to this pattern. We turn now to a summary of school and school districts characteristics derived from the files discussed above.

Rural Public Schools

Because our definition of rural districts is based on the characteristics of rural schools, it will be useful to consider a description of rural schools in the U.S. before addressing districts. According to the CCD schools file, there were 79,307 regular public schools in the 50 states and District of Columbia during the 1989-90 school year, enrolling just under 40 million students. Table 1 summarizes the distribution of schools and students for 1989-90 by school locale: city, urban fringe, town, or rural. Over 6.6 million students attend 22,412 rural schools, accounting for 16.6% of regular public school students and 28.3% of regular public schools.

The majority of public *schools* are located in towns and rural areas, but the majority of *students* attend schools located in central cities and the metropolitan fringe areas of our country. Generally, areas with large, densely settled populations organize relatively fewer, but larger, schools; and areas with sparser populations organize relatively more, but smaller, schools.

Schools and Students by Enrollment Size and Locale

Rural schools are small schools. On average nationally, city and urban fringe schools are twice the size of rural schools (Table 1). Figures 2 and 3 show the distribution of schools and students by enrollment size and rural or urban locale. Almost 20% of rural schools have fewer than 100 students; nearly three-quarters have fewer than 400 students. Almost half of all students attending rural schools are in buildings with enrollments under 400. In contrast, schools with fewer than 400 students make up about a third of all urban schools and account for only about 15% of all urban students. Less than 4% of rural schools have enrollments over 800, accounting for 14% of rural

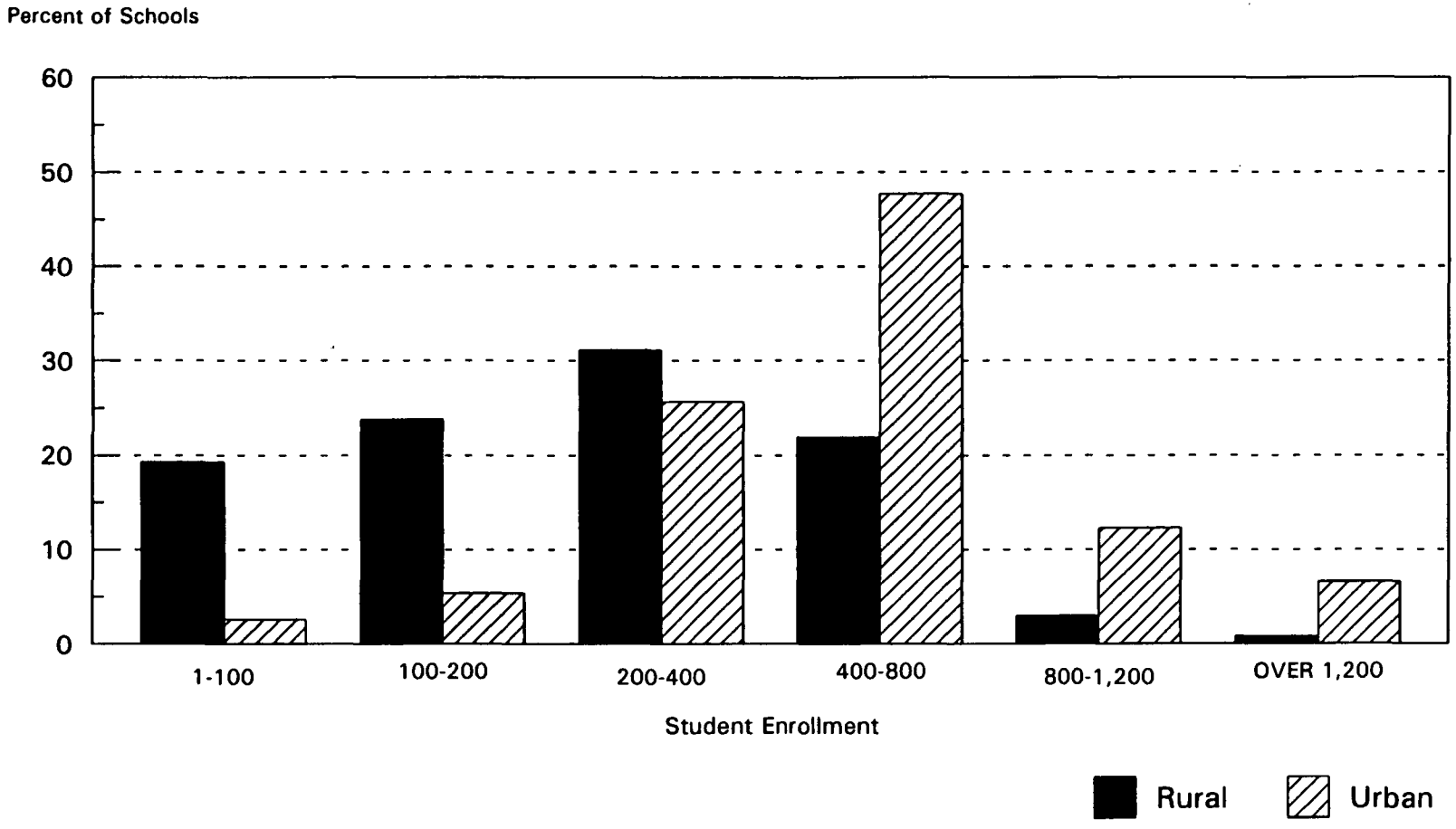

Figure 2. Public Schools by School Enrollment Size and Locale (1989-90)
(*Source*: NCES Common Core of Data Public School University Files, 1989-90.)

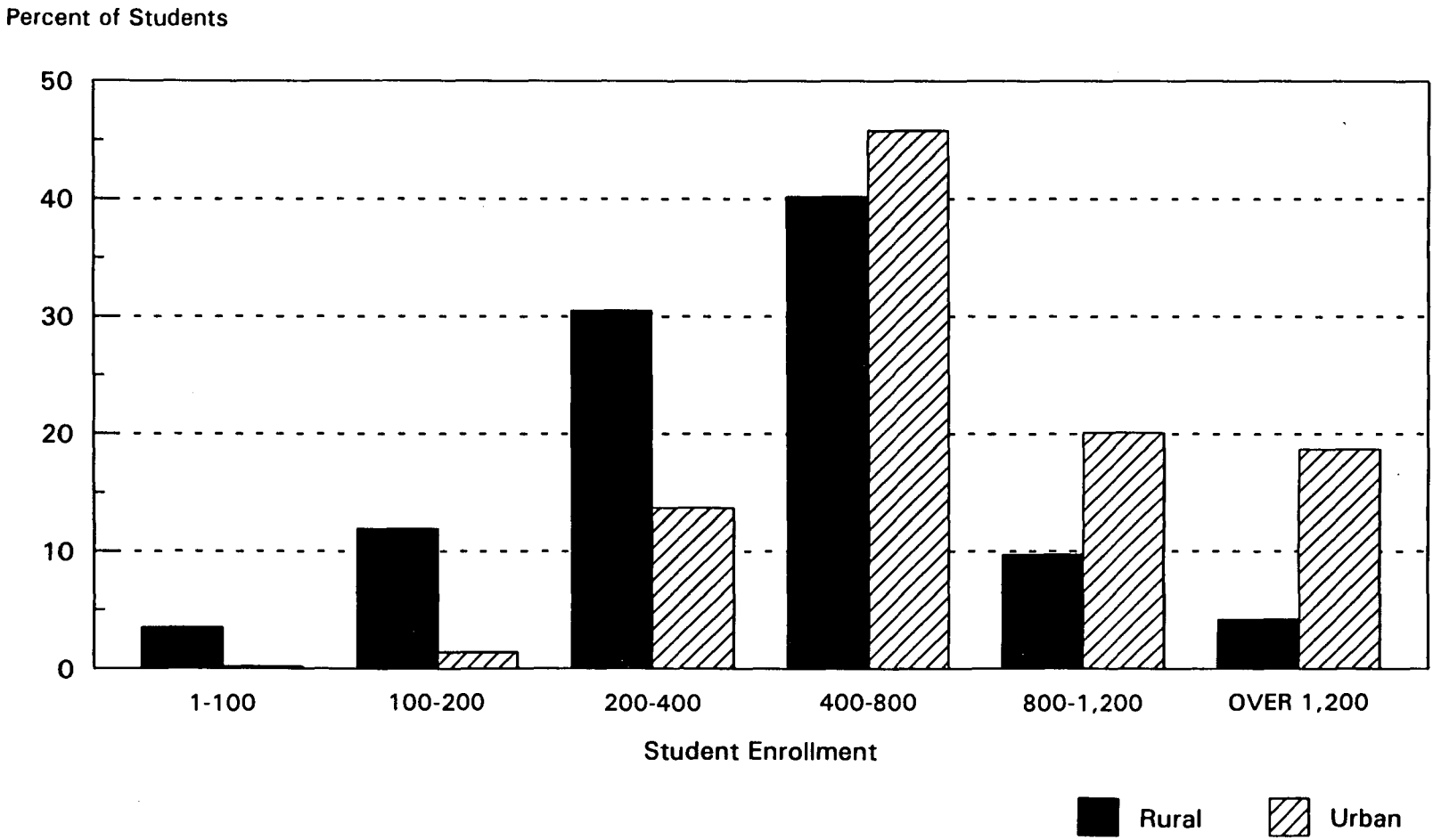

Figure 3. Students by Public School Enrollment Size and Locale (1989-90)
(*Source*: NCES Common core of Data Public School Universe Files, 1989-90.)

Table 4
Distribution of Regular Public Schools and Students by School Enrollment Size and Type of School for Rural and Urban Locales (1989-90)

School Size	Type of Schools					
	Primary		Secondary		Combined	
	Urban	Rural	Urban	Rural	Urban	Rural
	Percentage of Schools					
Under 100	1.70	15.20	2.90	21.90	5.90	23.20
100 - 200	6.10	24.60	3.40	25.10	5.90	21.00
200 - 400	31.90	34.70	12.90	27.20	20.30	29.50
400 - 800	52.20	23.10	34.60	19.50	47.20	22.60
800 - 1200	7.40	2.30	22.40	4.30	16.70	3.00
1200 & over	0.80	0.10	23.80	2.00	3.90	0.60
	Percentage of Students					
Under 100	0.20	2.80	0.20	4.40	0.40	3.70
100 - 200	2.00	12.50	0.60	11.90	1.60	11.00
200 - 400	20.90	34.50	4.50	25.10	11.10	30.00
400 - 800	60.30	42.60	23.40	34.80	48.80	42.70
800 - 1200	14.20	7.10	24.90	13.20	28.00	9.90
1200 & over	2.80	0.60	46.50	10.60	10.10	2.70

Source: Common Core of Data Public School Universe, 1989-90.

students. In contrast, nearly 20% of urban schools have enrollments over 800, which accounts for 40% of urban students.

Types of Schools and School Size

Schools are organized in many different ways by grade level. Following Johnson (1989), three categories of schools were created for this analysis: primary, secondary, and combined. Table 4 shows the distribution of these three groupings of schools by enrollment size and locale. There are relatively more small schools among rural schools than urban schools, regardless of school type. Among schools with only primary grades, about 40% of the rural schools have fewer than 200 students, while less than 8% of urban primary schools are that small.

Some have suggested that secondary schools with enrollments of 400 or more are generally able to offer a reasonably comprehensive curriculum (Haller & Monk, 1988). Secondary schools with smaller enrollments may find it necessary to adopt innovative curriculum and instructional practices. While 74% of rural secondary schools have fewer than 400 students, less than 20% of urban secondary schools are that small. Moreover, the secondary schools with under 400 students enroll over 41% of all rural secondary students compared to just over 5% of urban secondary students. Indeed, the difference between rural and urban secondary schools is not just that rural areas organize more small schools than urban areas, but also that urban areas organize many very large ones and rural areas organize few very large ones. The 24% of urban secondary schools with enrollments over 1,200 account for 47% of urban secondary students. Among rural secondary schools, only 2% have enrollments over 1,200, and these account for under 11% of rural secondary students.

Table 5
Student Teacher Ratios by School Type, Size, and Locale (1989-90)

	School Type			
	Primary Schools		Secondary Schools	
Locale	Under 400 Students	Over 400 Students	Under 400 Students	Over 400 Students
Rural	16.7	18.9	12.5	16.6
Urban	18.2	19.8	14.1	17.7

Source: Common Core of Data Public Schools Universe, 1989-90

The NCES data also show that small schools have lower student/teacher ratios than larger schools in both rural and urban settings. Rural schools have even lower ratios than urban schools. Schools that have exclusively secondary grades have lower ratios than schools with exclusively primary grades, and small rural secondary schools have the lowest ratios (Table 5).

Geographical Diversity Among Rural Schools

Table 6 shows the relative distribution of rural schools and students by state grouped by region and division. The number of rural schools ranges from 796 in New England to just over 4,500 in both the Midwest and the West North Central Divisions. West North Central has the highest proportion of rural schools (57%) and also the highest proportion of students attending rural schools (35.7%). But, because there are roughly 7.5 million students among Midwest states compared to 2.2 million in the West North Central, the Midwest has nearly twice as many rural students as the West North Central (1,407,252 vs. 788,233).

Regions with large expanses of space have some relatively isolated rural schools, but because their populations are often concentrated in a few large urban centers, the overall percent of students in rural schools may be relatively low. For example, in the Mountain states where space abounds and there are fewer than 3 students per square mile and less than 1 school per hundred square miles, only about 16% of the students attend rural schools. This compares to nearly 20% of students enrolled in rural schools among the South Atlantic states where there are over 23 students per square mile and nearly 4 schools per hundred square miles.

Among the 50 states, Texas has the largest number of students (418,192) attending the largest number of rural schools (1,355). But 35 other states have higher proportions of their schools in rural locales and 40 have higher proportions of their students attending rural schools. There is considerable diversity. For example, the percentage of a state's schools that are rural ranges from less than 4% in Rhode Island to over 76% in South Dakota.

Regional Distribution of Schools and Students by Locale and Size

As mentioned above, almost 20% of the nation's 22,412 rural schools have enrollments of fewer than 100 students. Among the states, the percentage of rural schools with fewer than 100 students ranges from zero (in Rhode Island and Delaware) to nearly 65% (in Montana). In eleven states, more than 30% of the rural schools have fewer than 100 students (see Table 7). Southern, Midwest, and Middle Atlantic states tend not to have many small rural schools, but Plains states, Mountain states, and some New England and Pacific states do. As discussed below, these patterns reflect not only the rurality and isolation of various parts of the country, but also regional traditions in the organization and supervision of school districts.

School Districts

Using the 75% rural enrollment benchmark to define a rural school district, Table 8 shows that 47.2% (7,145) of the 15,133 districts administering regular public schools in the U.S. are rural districts; 52.8% (7,988) are urban districts. The rural districts admin-

Table 6
Distribution of Rural Schools and Students by Division and State (1989-90)

Division		Total *N* of Schools	*N* of Rural Schools		Total *N* of Students	*N* of Rural Students		Schools Per 100 Square Miles	Students Per Square Mile
New England		4,450	796	(17.89)[a]	1,841,657	171,433	(9.31)	7.06	29.23
	CT	926	49	(5.29)	444,453	15,739	(3.54)	19.01	91.24
	ME	714	305	(42.72)	208,903	58,330	(27.92)	2.30	6.74
	MA	1,747	107	(6.12)	793,518	32,325	(4.07)	22.33	101.41
	NH	444	151	(34.01)	171,660	31,415	(18.30)	4.94	19.09
	RI	285	11	(3.86)	130,043	4,812	(3.70)	27.04	123.38
	VT	334	173	(51.80)	93,080	28,812	(30.95)	3.60	10.04
Middle Atlantic		10,602	1,542	(14.54)	6,037,018	681,507	(11.29)	9.51	54.15
	DE	145	52	(35.86)	91,981	29,643	(32.23)	7.50	47.58
	DC	168	0	(0.00)	79,370	0	(0.00)	266.67	1259.84
	MD	1,146	192	(16.75)	685,674	94,974	(13.85)	11.74	70.27
	NJ	2,143	147	(6.86)	1,054,013	65,799	(6.24)	28.70	141.16
	NY	3,884	526	(13.54)	2,513,391	238,084	(9.47)	8.20	53.05
	PA	3,116	625	(20.06)	1,612,589	253,007	(15.69)	6.94	35.92
Midwest		15,941	4,533	(28.44)	7,469,390	1,407,252	(18.84)	4.93	23.09
	IL	3,915	979	(25.01)	1,756,253	205,083	(11.68)	7.03	31.56
	IN	1,825	460	(25.21)	946,764	183,815	(19.42)	5.08	26.35
	MI	3,179	636	(20.01)	1,547,337	227,267	(14.69)	5.58	27.17
	MN	1,460	703	(48.15)	701,267	219,702	(31.33)	1.84	8.82
	OH	3,579	991	(27.69)	1,742,513	377,591	(21.67)	8.73	42.49
	WI	1,983	764	(38.53)	775,256	193,794	(25.00)	3.64	14.24
West North Central		7,911	4,534	(57.31)	2,209,698	788,233	(35.67)	1.85	5.16
	IA	1,578	785	(49.75)	472,325	149,599	(31.67)	2.82	8.44
	KS	1,454	982	(67.54)	425,466	223,517	(52.53)	1.78	5.20
	MO	2,011	825	(41.02)	804,283	210,823	(26.21)	2.92	11.68
	NE	1,464	882	(60.25)	269,688	91,752	(34.02)	1.91	3.52
	ND	635	475	(74.80)	118,638	52,336	(44.11)	0.92	1.71
	SD	769	585	(76.07)	119,298	60,206	(50.47)	1.01	1.57
South Atlantic		9,394	2,571	(27.37)	5,860,918	1,147,083	(19.57)	3.69	23.02
	FL	2,129	206	(9.68)	1,744,388	124,908	(7.16)	3.93	32.21
	GA	1,712	354	(20.68)	1,122,708	193,129	(17.20)	2.95	19.34
	NC	1,904	663	(34.82)	1,075,783	313,510	(29.14)	3.90	22.03
	SC	1,019	298	(29.24)	613,342	131,931	(21.51)	3.37	20.31
	VA	1,660	557	(33.55)	977,503	242,601	(24.82)	4.23	24.93
	WV	970	493	(50.82)	327,194	141,004	(43.09)	4.02	13.56
East South Central		4,925	1,655	(33.60)	2,668,673	727,045	(27.24)	2.75	14.92
	AL	1,278	372	(29.11)	721,855	179,315	(24.84)	2.52	14.22
	KY	1,311	528	(40.27)	629,213	194,637	(30.93)	3.30	15.86
	MS	858	364	(42.42)	499,775	192,625	(38.54)	1.82	10.58
	TN	1,478	391	(26.45)	817,830	160,468	(19.62)	3.59	19.87
West South Central		9,933	3,030	(30.50)	5,051,474	838,823	(16.61)	2.32	11.82
	AR	1,095	495	(45.21)	434,078	132,457	(30.51)	2.10	8.34
	LA	1,366	332	(24.30)	759,066	137,707	(18.14)	3.07	17.05
	OK	1,835	848	(46.21)	571,747	150,467	(26.32)	2.67	8.33
	TX	5,637	1,355	(24.04)	3,286,583	418,192	(12.72)	2.15	12.54
Mountain		5,554	2,009	(36.17)	2,534,501	406,752	(16.05)	0.65	2.96
	AZ	973	157	(16.14)	608,473	39,294	(6.46)	0.86	5.36
	CO	1,277	384	(30.07)	556,332	76,923	(13.83)	1.23	5.37
	ID	539	262	(48.61)	212,832	63,557	(29.86)	0.65	2.58
	MT	758	516	(68.07)	151,002	53,446	(35.39)	0.52	1.04
	NV	313	115	(36.74)	184,120	39,963	(21.70)	0.29	1.68
	NM	646	223	(34.52)	294,303	44,474	(15.11)	0.53	2.43
	UT	651	174	(26.73)	431,367	70,037	(16.24)	0.79	5.26
	WY	397	178	(44.84)	96,072	19,058	(19.84)	0.41	0.99
Pacific		10,597	1,742	(16.44)	6,251,478	463,048	(7.41)	1.18	6.98
	AK	452	316	(69.91)	106,445	39,291	(36.91)	0.08	0.19
	CA	7,119	724	(10.17)	4,714,857	231,004	(4.90)	4.55	30.17
	HI	231	42	(18.18)	169,381	25,949	(15.32)	3.60	26.36
	OR	1,169	216	(18.48)	468,361	37,249	(7.95)	1.22	4.87
	WA	1,626	444	(27.31)	792,434	129,555	(16.35)	2.44	11.91
Total		79,307	22,412	(28.26)	39,924,807	6,631,176	(16.61)	2.24	11.28

[a] *Percentage*
Source: Common Core of Data Public Schools Universe, 1989-90.

Table 7
Rural Schools by Enrollment Size by Division and State (1989-90)

Division		Total *N* of Rural Schools	Enrollment Size (Percentage)					
			1 - 100	100 - 200	200 - 400	400 - 800	800 - 1,200	1,200 +
New England		796	26.51	30.28	31.91	10.05	1.01	0.25
	CT	49	2.04	24.49	42.86	28.57	2.04	0.00
	ME	305	29.51	32.79	30.16	6.89	0.33	0.33
	MA	107	13.08	28.04	37.38	15.89	4.67	0.93
	NH	151	33.77	19.87	36.42	9.93	0.00	0.00
	RI	11	0.00	9.09	45.45	36.36	9.09	0.00
	VT	173	31.79	39.31	23.70	5.20	0.00	0.00
Middle Atlantic		1,542	3.18	14.92	33.20	40.14	6.49	2.08
	DE	52	0.00	9.62	21.15	50.00	15.38	3.85
	DC	0	0.00	0.00	0.00	0.00	0.00	0.00
	MD	192	5.21	8.85	28.13	44.79	10.42	2.60
	NJ	147	4.76	21.77	31.97	29.25	8.16	4.08
	NY	526	2.66	7.98	37.26	46.01	3.99	2.09
	PA	625	2.88	21.44	32.64	35.52	6.24	1.28
Midwest		4,533	9.53	25.52	38.50	23.91	2.12	0.42
	IL	979	18.59	40.14	33.40	7.56	0.31	0.00
	IN	460	0.87	16.74	36.09	42.61	3.26	0.43
	MI	636	7.08	14.94	39.62	35.38	2.36	0.63
	MN	703	9.25	31.44	36.13	18.78	3.27	1.14
	OH	991	2.62	13.72	45.21	34.71	3.23	0.50
	WI	764	14.40	30.76	39.01	14.79	1.05	0.00
West North Central		4,534	37.16	30.94	24.59	6.59	0.46	0.24
	IA	785	13.63	46.24	37.58	2.42	0.13	0.00
	KS	982	26.88	29.53	29.23	12.83	1.02	0.51
	MO	825	17.09	31.27	35.52	14.55	0.97	0.61
	NE	882	59.86	25.17	12.70	2.04	0.11	0.11
	ND	475	56.84	28.21	13.89	1.05	0.00	0.00
	SD	585	64.10	23.25	10.60	1.88	0.17	0.00
South Atlantic		2,571	4.24	12.37	33.76	40.41	7.31	1.91
	FL	206	4.85	4.85	18.93	47.57	16.99	6.80
	GA	354	0.56	6.78	26.27	50.85	12.71	2.82
	NC	663	1.21	8.14	34.99	46.46	7.69	1.51
	SC	298	1.01	11.07	36.24	45.64	4.03	2.01
	VA	557	4.67	12.03	36.45	38.24	7.36	1.26
	WV	493	12.17	26.37	39.15	21.10	0.81	0.41
East South Central		1,655	3.02	13.11	33.23	41.45	7.85	1.33
	AL	372	2.69	9.14	30.91	44.35	11.29	1.61
	KY	528	3.03	19.70	38.26	34.85	3.98	0.19
	MS	364	0.27	4.95	30.22	49.73	12.36	2.47
	TN	391	5.88	15.60	31.46	39.90	5.63	1.53
West South Central		3,030	15.78	29.80	34.69	16.77	2.34	0.63
	AR	495	8.28	30.30	44.65	15.35	1.41	0.00
	LA	332	1.20	11.75	42.77	39.46	3.61	1.20
	OK	848	34.43	35.02	23.47	6.25	0.71	0.12
	TX	1,355	10.41	30.77	36.09	18.30	3.39	1.03
Mountain		2,009	38.53	25.83	21.55	12.49	1.10	0.50
	AZ	157	26.11	21.66	30.57	21.02	0.64	0.00
	CO	384	30.21	32.81	25.26	10.94	0.52	0.26
	ID	262	20.23	30.15	31.68	17.18	0.38	0.38
	MT	516	64.53	20.35	11.63	3.49	0.00	0.00
	NV	115	27.83	17.39	19.13	28.70	3.48	3.48
	NM	223	32.74	32.29	21.97	12.56	0.45	0.00
	UT	174	16.09	16.67	28.74	28.74	7.47	2.30
	WY	178	55.06	30.34	13.48	1.12	0.00	0.00
Pacific		1,742	31.57	19.58	25.32	19.98	2.58	0.98
	AK	316	63.61	19.62	9.18	6.33	0.95	0.32
	CA	724	27.49	16.16	24.45	26.80	3.59	1.52
	HI	42	4.76	4.76	26.19	38.10	14.29	11.90
	OR	216	34.26	30.09	30.09	5.56	0.00	0.00
	WA	444	16.67	21.40	35.81	23.87	2.25	0.00
Total		22,412	19.36	23.78	31.09	21.93	3.04	0.81

Source: Common Core of Data Public Schools Universe, 1989-90.

Table 8
Distribution of Districts, Schools, Students, and Teachers by District Type (1989-90)

Indicator	Total *N* (in thousands)	District Type	
		Rural	Urban
Districts	15.133	47.2[a]	52.8
Schools	79.307	22.3	77.7
Students	39,300.000	11.8	88.2
Teachers	2,200.000	13.4	86.6
Rural Schools	22.412	77.6	22.4
Students Attending Rural Schools	6,600.000	70.0	30.0
Teachers at Rural Schools	406.656	72.4	27.6

[a]Percentage.
Note: Rural districts are those where 75% of the students attend a regular public school in a rural locale.
Source: Merged file of Common Core of Data Public School Universe and Public Agency Universe, 1989-90.

ister a total of 17,679 regular public schools enrolling over 4.7 million students, and the urban districts administer 61,628 regular public schools enrolling over 35 million students. Rural districts account for 22.3% of all regular public schools, 11.8% of all public school students, and 13.4% of teachers.

As discussed above, some rural schools are located in predominately urban districts. In fact, 22.4% of rural schools, 30% of students attending rural schools, and 27.6% of the teachers working in rural schools are part of what we call an urban district. I will return to this pattern in more detail below.

Like rural schools, rural districts have smaller enrollments than urban ones. Districts with fewer than 300 students account for over 43% of rural districts compared with just over 10% among urban districts (Table 9). While districts with under 2,500 enrollment account for 59% of all urban districts, they account for 96% of all rural districts.

The distributions of the numbers of districts and their sizes differ regionally and by state. In New England and the Mountain states, over 70% of the rural districts have fewer than 300 students. In the West North Central, West South Central, and Pacific states, the percentage of rural districts with fewer than 300 students ranges from 41% to 56%. In the Mid-Atlantic and Midwest, about 20% of the districts have fewer than 300 students; most have 300 to 2,500 students. However, in the Southern regions, districts with under 300 students are rare, districts with between 300 to 2,500 are common, and more than a quarter of rural districts have between 2,500 and 5,000 students. This pattern reflects the organization of school districts in many southern states along county lines.

This pattern in the South means, among other things, that southern states have relatively fewer, but larger, districts. It also means that relatively larger proportions of rural schools in southern states are administered by urban districts. For example, in the South Atlantic states, over 58% of rural schools are in urban districts compared with only 4% among West North Central States (Table 10).

It is likely that such differences have educationally meaningful consequences for schools, districts, and their communities. Is the proportion of rural schools administered by urban districts a measure of organizational complexity in the district? What are the advantages and disadvantages for the operation of rural schools depending on the rural/urban texture of the district? What effects on community perceptions of schools and districts arise from different types of districts. Also, notice that if districts were defined as rural on the basis of their enrollment size, many rural schools in the South would be excluded.

Nonmetropolitan Diversity, Rural Districts, and Rural Schools

Rural areas are so diverse and the meanings associated with rural are so idealized that one must remain skeptical of single descriptive categories. Tables 13-16 present school and district information within county type. These tables are a crosstabulation

Table 9

School Districts by District, Enrollment Size, Division, and State (1989-90)

Division		Total *N* of Districts	% Rural Districts	% Urban Districts	Rural Enrollment[a] *N*	Rural Under 300	Rural 300 to 2,500	Rural Over 2,500	Urban Enrollment[a] *N*	Urban Under 300	Urban 300 to 2,500	Urban Over 2,500
New England		1,167	35.99	64.01	420	71.19	28.57	0.24	747	7.36	64.26	28.38
	CT	166	13.86	86.14	23	56.52	43.48	0.00	143	2.80	55.24	41.96
	ME	229	54.59	45.41	125	61.60	37.60	0.80	104	13.46	68.27	18.27
	MA	331	12.69	87.31	42	61.90	38.10	0.00	289	4.50	60.90	34.60
	NH	157	42.68	57.32	67	65.67	34.33	0.00	90	13.33	71.11	15.56
	RI	38	7.89	92.11	3	33.33	66.67	0.00	35	2.86	45.71	51.43
	VT	246	65.04	34.96	160	86.25	13.75	0.00	86	12.79	86.05	1.16
Middle Atlantic		1,839	20.55	79.45	378	17.20	70.90	11.90	1,461	6.09	57.70	36.21
	DE	16	37.50	62.50	6	0.00	16.67	83.33	10	0.00	30.00	70.00
	DC	1	0.00	100.00	0	—	—	—	1	0.00	0.00	100.00
	MD	24	16.67	83.33	4	0.00	0.00	100.00	20	0.00	5.00	95.00
	NJ	555	11.89	88.11	66	45.45	51.52	3.03	489	12.47	64.83	22.70
	NY	743	27.46	72.54	204	16.67	76.47	6.86	539	5.01	59.18	35.81
	PA	500	19.60	80.40	98	1.02	78.57	20.41	402	0.25	50.50	49.25
Midwest		3,293	43.67	56.33	1,438	20.03	76.98	2.99	1,855	5.66	57.57	36.77
	IL	955	38.64	61.36	369	34.15	65.58	0.27	586	11.43	66.55	22.01
	IN	302	33.77	66.23	102	2.94	94.12	2.94	200	2.00	48.00	50.00
	MI	561	35.83	64.17	201	17.91	77.11	4.98	360	5.00	51.11	43.89
	MN	434	70.74	29.26	307	31.60	67.43	0.98	127	1.57	51.97	46.46
	OH	612	36.93	63.07	226	1.77	89.38	8.85	386	0.00	54.15	45.85
	WI	429	54.31	45.69	233	9.44	87.98	2.58	196	7.14	62.76	30.10
West North Central		2,555	74.87	25.13	1,913	56.19	42.71	1.10	642	32.40	45.79	21.81
	IA	431	69.61	30.39	300	26.00	73.67	0.33	131	0.00	77.10	22.90
	KS	304	81.58	18.42	248	26.61	68.15	5.24	56	1.79	71.43	26.79
	MO	542	66.79	33.21	362	38.95	59.39	1.66	180	14.44	51.11	34.44
	NE	809	72.31	27.69	585	83.93	15.90	0.17	224	77.68	16.07	6.25
	ND	284	91.55	8.45	260	78.85	21.15	0.00	24	20.83	41.67	37.50
	SD	185	85.41	14.59	158	59.49	40.51	0.00	27	7.41	55.56	37.04
South Atlantic		666	30.18	69.82	201	1.00	66.67	32.34	465	0.22	15.70	84.09
	FL	67	13.43	86.57	9	0.00	66.67	33.33	58	0.00	8.62	91.38
	GA	186	29.03	70.97	54	3.70	70.37	25.93	132	0.76	26.52	72.73
	NC	134	27.61	72.39	37	0.00	45.95	54.05	97	0.00	6.19	93.81
	SC	91	28.57	71.43	26	0.00	80.77	19.23	65	0.00	16.92	83.08
	VA	133	39.85	60.15	53	0.00	67.92	32.08	80	0.00	18.75	81.25
	WV	55	40.00	60.00	22	0.00	72.73	27.27	33	0.00	3.03	96.97
East South Central		601	30.62	69.38	184	3.80	63.04	33.15	417	0.48	35.25	64.27
	AL	129	18.60	81.40	24	4.17	33.33	62.50	105	0.00	28.57	71.43
	KY	177	35.03	64.97	62	4.84	66.13	29.03	115	0.87	44.35	54.78
	MS	156	44.23	55.77	69	2.90	65.22	31.88	87	0.00	39.08	60.92
	TN	139	20.86	79.14	29	3.45	75.86	20.69	110	0.91	29.09	70.00
West South Central		2,057	57.22	42.78	1,177	40.70	57.26	2.04	880	13.75	47.16	39.09
	AR	329	63.83	36.17	210	26.19	72.86	0.95	119	5.04	64.71	30.25
	LA	67	11.94	88.06	8	0.00	75.00	25.00	59	1.69	1.69	96.61
	OK	604	64.07	35.93	387	55.56	43.67	0.78	217	31.34	53.92	14.75
	TX	1,057	54.12	45.88	572	36.54	60.49	2.97	485	9.48	45.36	45.15
Mountain		1,241	66.16	33.84	821	70.04	29.11	0.85	420	11.19	45.95	42.86
	AZ	219	40.18	59.82	88	59.09	39.77	1.14	131	19.08	43.51	37.40
	CO	176	63.07	36.93	111	48.65	50.45	0.90	65	4.62	43.08	52.31
	ID	115	64.35	35.65	74	39.19	60.81	0.00	41	0.00	48.78	51.22
	MT	537	84.92	15.08	456	90.57	9.43	0.00	81	20.99	67.90	11.11
	NV	17	41.18	58.82	7	28.57	42.86	28.57	10	0.00	30.00	70.00
	NM	88	54.55	45.45	48	39.58	58.33	2.08	40	0.00	32.50	67.50
	UT	40	35.00	65.00	14	14.29	71.43	14.29	26	0.00	11.54	88.46
	WY	49	46.94	53.06	23	17.39	82.61	0.00	26	7.69	53.85	38.46
Pacific		1,714	35.76	64.24	613	51.06	46.00	2.94	1,101	18.71	38.51	42.78
	AK	55	81.82	18.18	45	40.00	55.56	4.44	10	0.00	50.00	50.00
	CA	1,059	26.63	73.37	282	49.65	46.45	3.90	777	18.15	37.45	44.40
	HI	1	0.00	100.00	0	—	—	—	1	0.00	0.00	100.00
	OR	303	38.28	61.72	116	73.28	26.72	0.00	187	27.81	47.06	25.13
	WA	296	57.43	42.57	170	41.18	55.88	2.94	126	10.32	31.75	57.94
United States		15,133	47.21	52.79	7,145	43.43	52.58	3.99	7,988	10.44	49.29	40.27

Note. Rural districts are those where 75% of the students attend a regular public school in a rural locale.

[a] *Except for N, figures below are percentages.*

Source: Merged File of Common Core Data Public Schools Universe and Public Agency Universe, 1989-90.

Table 10

Distribution of Schools and Districts by District Type, School Locale, Division, and State (1989-90)

Division		Total N of Districts	N of Rural Districts		Total N of Schools	N of Schools in Rural Districts		N of Rural Schools	N of Rural Schools in Districts		% of Rural Schools in Urban Districts
New England		1,167	420	(35.99)[a]	4,450	632	(14.20)	796	619	(77.76)	22.24
	CT	166	23	(13.86)	926	30	(3.24)	49	29	(59.18)	40.82
	ME	229	125	(54.59)	714	251	(35.15)	305	243	(79.67)	20.33
	MA	331	42	(12.69)	1,747	67	(3.84)	107	67	(62.62)	37.38
	NH	157	67	(42.68)	444	105	(23.65)	151	103	(68.21)	31.79
	RI	38	3	(7.89)	285	10	(3.51)	11	8	(72.73)	27.27
	VT	246	160	(65.04)	334	169	(50.60)	173	169	(97.69)	2.31
Middle Atlantic		1,839	378	(20.55)	10,602	1,030	(9.72)	1,542	987	(64.01)	35.99
	DE	16	6	(37.50)	145	46	(31.72)	52	46	(88.46)	11.54
	DC	1	0	(0.00)	168	0	(0.00)	0	0	(0.00)	100.00
	MD	24	4	(16.67)	1,146	49	(4.28)	192	48	(25.00)	75.00
	NJ	555	66	(11.89)	2,143	113	(5.27)	147	109	(74.15)	25.85
	NY	743	204	(27.46)	3,884	437	(11.25)	526	425	(80.80)	19.20
	PA	500	98	(19.60)	3,116	385	(12.36)	625	359	(57.44)	42.56
Midwest		3,293	1,438	(43.67)	15,941	3,950	(24.78)	4,533	3,866	(85.29)	14.71
	IL	955	369	(38.64)	3,915	877	(22.40)	979	871	(88.97)	11.03
	IN	302	102	(33.77)	1,825	330	(18.08)	460	322	(70.00)	30.00
	MI	561	201	(35.83)	3,179	563	(17.71)	636	544	(85.53)	14.47
	MN	434	307	(70.74)	1,460	653	(44.73)	703	649	(92.32)	7.68
	OH	612	226	(36.93)	3,579	834	(23.30)	991	800	(80.73)	19.27
	WI	429	233	(54.31)	1,983	693	(34.95)	764	680	(89.01)	10.99
West North Central		2,555	1,913	(74.87)	7,911	4,370	(55.24)	4,534	4,353	(96.01)	3.99
	IA	431	300	(69.61)	1,578	731	(46.32)	785	729	(92.87)	7.13
	KS	304	248	(81.58)	1,454	933	(64.17)	982	925	(94.20)	5.80
	MO	542	362	(66.79)	2,011	784	(38.99)	825	782	(94.79)	5.21
	NE	809	585	(72.31)	1,464	881	(60.18)	882	876	(99.32)	0.68
	ND	284	260	(91.55)	635	475	(74.80)	475	475	(100.00)	0.00
	SD	185	158	(85.41)	769	566	(73.60)	585	566	(96.75)	3.25
South Atlantic		666	201	(30.18)	9,394	1,128	(12.01)	2,571	1,074	(41.77)	58.23
	FL	67	9	(13.43)	2,129	37	(1.74)	206	36	(17.48)	82.52
	GA	186	54	(29.03)	1,712	182	(10.63)	354	178	(50.28)	49.72
	NC	134	37	(27.61)	1,904	273	(14.34)	663	257	(38.76)	61.24
	SC	91	26	(28.57)	1,019	102	(10.01)	298	101	(33.89)	66.11
	VA	133	53	(39.85)	1,660	321	(19.34)	557	304	(54.58)	45.42
	WV	55	22	(40.00)	970	213	(21.96)	493	198	(40.16)	59.84
East South Central		601	184	(30.62)	4,925	893	(18.13)	1,655	859	(51.90)	48.10
	AL	129	24	(18.60)	1,278	175	(13.69)	372	155	(41.67)	58.33
	KY	177	62	(35.03)	1,311	309	(23.57)	528	301	(57.01)	42.99
	MS	156	69	(44.23)	858	270	(31.47)	364	268	(73.63)	26.37
	TN	139	29	(20.86)	1,478	139	(9.40)	391	135	(34.53)	65.47
West South Central		2,057	1,177	(57.22)	9,933	2,692	(27.10)	3,030	2,687	(88.68)	11.32
	AR	329	210	(63.83)	1,095	455	(41.55)	495	455	(91.92)	8.08
	LA	67	8	(11.94)	1,366	45	(3.29)	332	44	(13.25)	86.75
	OK	604	387	(64.07)	1,835	837	(45.61)	848	833	(98.23)	1.77
	TX	1,057	572	(54.12)	5,637	1,355	(24.04)	1,355	1,355	(100.00)	0.00
Mountain		1,241	821	(66.16)	5,554	1,523	(27.42)	2,009	1,518	(75.56)	24.44
	AZ	219	88	(40.18)	973	148	(15.21)	157	148	(94.27)	5.73
	CO	176	111	(63.07)	1,277	298	(23.34)	384	296	(77.08)	22.92
	ID	115	74	(64.35)	539	188	(34.88)	262	187	(71.37)	28.63
	MT	537	456	(84.92)	758	510	(67.28)	516	510	(98.84)	1.16
	NV	17	7	(41.18)	313	44	(14.06)	115	44	(38.26)	61.74
	NM	88	48	(54.55)	646	140	(21.67)	223	140	(62.78)	37.22
	UT	40	14	(35.00)	651	73	(11.21)	174	73	(41.95)	58.05
	WY	49	23	(46.94)	397	122	(30.73)	178	120	(67.42)	32.58
Pacific		1,714	613	(35.76)	10,597	1,461	(13.79)	1,742	1,439	(82.61)	17.39
	AK	55	45	(81.82)	452	290	(64.16)	316	284	(89.87)	10.13
	CA	1,059	282	(26.63)	7,119	580	(8.15)	724	568	(78.45)	21.55
	HI	1	0	(0.00)	231	0	(0.00)	42	0	(0.00)	100.00
	OR	303	116	(38.28)	1,169	181	(15.48)	216	179	(82.87)	17.13
	WA	296	170	(57.43)	1,626	410	(25.22)	444	408	(91.89)	8.11
Total		15,133	7,145	(47.21)	79,307	17,679	(22.29)	22,412	17,402	(77.65)	22.35

Note: Rural districts are those where 75% of the students attend a regular public school in a rural locale.

[a]Percentage.

Source: Merged file of NCES Common Core Data Public Schools Universe, 1989-90.

Table 11
ERS County Types

Metropolitan	
0	Central Counties of metropolitan areas of 1 million population or more
1	Fringe Counties of metropolitan areas of 1 million population or more
2	Counties in metropolitan areas of 250,000 - 1,000,000 population
3	Counties in metropolitan areas of less than 250,000 population
Nonmetropolitan	
4	Urban population of 20,000 or more, adjacent to a metropolitan area
5	Urban population of 20,000 or more, not adjacent to a metropolitan area
6	Urban population of 2,500 to 19,999, adjacent to a metropolitan area
7	Urban population of 2,500 to 19,999, not adjacent to a metropolitan area
8	Completely rural (no places of 2,500 or more population) adjacent to a metropolitan area
9	Completely rural, not adjacent to a metropolitan area

of locale code information and different types of metropolitan and nonmetropolitan counties. They permit us to explore more fully the diversity of rural education. Two typologies developed by the Economic Research Service (ERS) of the U.S. Department of Agriculture are used to differentiate characteristics of nonmetropolitan counties.

The first ERS typology orders the rurality of U.S. counties according to metropolitan status, population size, and adjacency to a metropolitan area. The county types are listed in Table 11; Table 12 summarizes some basic social and economic information about these county types. In general:

1. During the 1980s, the rate of population growth among all the metropolitan types exceeded any of the non-metropolitan types.

2. Rurality types are directly related to both population density and per capita income.

3. Apart from central cities, which have high concentrations of young people, the proportion of the population under 18 years old is evenly divided among county types.

Before reviewing each county type, one should consider some overall comparisons including metropolitan/nonmetropolitan types and metropolitan adjacency. Table 13 shows the distribution of regular public schools by county type, illustrating the interrelationships between metropolitan status and rural locales. Overall, metropolitan counties account for about 40% of all districts, 62% of all public schools, and 74% of all students. Metropolitan counties also account for 18.5% of rural districts, 26% of rural schools, and nearly 38% of students attending rural schools. Of 6,086 metropolitan districts, 1,317 (21.6%) are rural districts where more than 75% of the students attend almost 5,800 rural schools. Nonmetropolitan counties account for 60% of all school districts, 38% of all schools, and 26% of all students. They also account for 82% of all rural districts, 74% of rural schools, and 62% of rural students.

The ERS county types also show the relationships among population density, metropolitan adjacency, and the size of districts and schools. The size of rural schools and rural school districts are related directly to rurality (sparseness of the population) and relative geographic isolation. Among the three nonmetropolitan county types that are adjacent to a metropolitan county, the percentage of rural districts with fewer than 300 students hovers around one third; the corresponding percentages for non-adjacent nonmetropolitan counties are considerably higher (Table 14).

The percentage of rural *schools* with enrollments of less than 100 follows the same general pattern. For the three adjacent nonmetropolitan county types, the percentages are 10.4%, 14.5%, and 17.2% respectively. The corresponding percentages for non-adjacent nonmetropolitan counties are 19.2%, 27.7%, and 35.4% (see Table 15).

Nonmetropolitan, completely rural counties. About 2,000 school districts are located in these two types of counties—over 13% of the U.S. total. Almost all of

Table 12
Selected Population Indicators by ERS County Types

County Type	1990 Population	% of 1990 Population	Population Per Square Mile	% Population Under 18 Years Old	Per Capita Income 1988
0 Metro, Central Counties, 1 Million+	69,662,368	28.20	981	40.60	18,245
1 Metro, Fringe Counties, 1 Million+	43,714,038	17.69	469	27.40	19,804
2 Metro, 250K to 1 Million	54,994,615	22.26	248	25.64	15,983
3 Metro, Less Than 250K	22,589,641	9.14	127	25.91	13,961
4 Nonmetro, Urban, 20K +, and Adj.	10,846,569	4.39	76	25.57	13,727
5 Nonmetro, Urban, 20K +, and Not Adj.	8,807,724	3.57	36	26.81	12,575
6 Nonmetro, Urban, 2.5K to 20K, and Adj.	15,098,923	6.11	36	26.85	12,216
7 Nonmetro, Urban, 2.5K to 20K, and Not Adj.	14,962,484	6.06	17	27.09	12,077
8 Nonmetro, Completely Rural, and Adj.	2,567,924	1.04	14	26.72	11,990
9 Nonmetro, Completely Rural, and Not Adj.	3,807,315	1.54	7	26.60	11,665
Total	247,051,601	100.00	83	30.42	16,290

Note. Excludes Hawaii, Alaska and five outlying areas.
Sources: 1990 Census of Population and Housing, BEA Personal Income, and ERS County Types.

these districts are rural districts. They include about 5,100 regular public schools—6.5% of all schools; and they enroll 1.2 million students, roughly 3% of all U.S. students. In 1990, about 2.6% of the U.S. population resided in these types of counties. These two county types—most rural of all—account for 28% of the nation's rural districts, 22% of U.S. rural schools, and 17.5% of all rural students. Among the counties adjacent to metro areas, there are about 270 students per 100 square miles; 17% of the rural schools have fewer than 100 students; and 35% of the districts have fewer than 300 students. In counties that are not adjacent to metro areas, there are about 133 students per 100 square miles; 35% of the rural schools have fewer than 100 students; and 56% of the districts have fewer than 300 students. The adjacent counties have increased in population by 6.7% and the non-adjacent counties have declined by about one percentage point. Together, these two kinds of rural counties share the lowest per capita incomes.

Nonmetropolitan, small urban center counties. These two types of counties account for about 12.2% of the 1990 population—over 30 million people. With about 5,060 districts, they have the greatest proportion of school districts among the county types—34% of all regular public school districts. These counties are home to over 16,500 public schools (21% of all U.S. public schools) enrolling 5.6 million students (14% of all U.S. public school students). In these counties are about 2,900 rural school districts (41% of all rural districts) with nearly 8,500 rural schools (38% of rural schools) enrolling 2.1 million rural students (32% of all rural students). That represents 38% of all rural schools and 32% of all rural students. Non-adjacent counties have almost twice as many small schools (under 100), and twice as many small districts (under 300), as adjacent counties of this type. Overall, the adjacent counties have grown slightly in population and the non-adjacent group has, overall, shown no growth or decline.

Nonmetropolitan, large urban center counties. Home to nearly 20 million Americans, these two types of counties support about 1,900 districts (12.5%) with over 8,000 schools (10%) enrolling 3.4 million students (8.6%). There are roughly 900 rural districts with 2,800 rural schools enrolling about 850,000 rural students—about 13% of the rural districts, rural schools, and rural students. Non-adjacent counties have about twice as many small schools as adjacent ones. Among the non-adjacent counties, about half of the districts have fewer than 300 students; among adjacent counties, about a third are this small.

Metropolitan counties. These four types of counties have about 77% of the population, 74% of the students, 62% of the schools, and 40% of the school districts. But, as discussed above, they also contain over 18% of the rural districts, 26% of the rural schools, and 38% of rural students. They are the wealthiest and fastest growing counties.

ERS Socioeconomic Types

The second ERS county typology characterizes nonmetropolitan counties on the basis of their

Table 13
Districts, Schools, and Students: Density, and Ratios by ERS County Types (1989-90)

County Type	Total *N* of Districts	*N* of Rural Districts	Total *N* of Schools	*N* of Rural Schools	Total *N* of Students	*N* of Rural Students	Students per 100 Square Miles	Schools per 100 Square Miles	Student/ Teacher Ratio	Rural Student/ Teacher Ratio
Metro	6,086	1,317	48,960	5,787	29,383,693	2,476,161				
	(40.37)[a]	(18.55)	(62.27)	(26.24)	(74.11)	(37.71)				
0 Metro, Central Counties, 1 Million+	1,003	58	14,303	410	10,033,518	252,617	14,131	20.14	19.45	19.61
	(6.65)	(0.82)	(18.19)	(1.86)	(25.31)	(3.85)				
1 Metro, Fringe Counties, 1 Million+	1,830	321	11,501	1,339	6,657,515	609,890	7,145	12.34	17.74	17.30
	(12.14)	(4.52)	(14.63)	(6.07)	(16.79)	(9.29)				
2 Metro, 250K to 1 Million	2,045	472	15,635	2,371	8,887,457	1,031,540	4,001	7.04	18.44	17.44
	(13.56)	(6.65)	(19.89)	(10.75)	(22.42)	(15.71)				
3 Metro, Less Than 250K	1,208	466	7,520	1,667	3,805,202	582,114	2,137	4.22	17.56	17.06
	(8.01)	(6.56)	(9.56)	(7.56)	(9.60)	(8.87)				
Nonmetro	8,991	5,784	29,665	16,268	10,265,289	4,089,776				
	(59.63)	(81.45)	(37.73)	(73.76)	(25.89)	(62.29)				
4 Nonmetro, Urban, 20K +, and Adj.	988	415	4,193	1,360	1,846,038	438,361	1,292	2.94	17.89	17.35
	(6.55)	(5.85)	(5.33)	(6.17)	(4.66)	(6.68)				
5 Nonmetro, Urban, 20K +, and Not Adj.	900	482	3,850	1,471	1,593,265	416,105	648	1.56	17.19	16.07
	(5.97)	(6.79)	(4.90)	(6.67)	(4.02)	(6.34)				
6 Nonmetro, Urban, 2.5K to 20K, and Adj.	2,110	1,139	7,520	3,828	2,797,178	1,078,340	671	1.80	16.45	15.88
	(13.99)	(16.04)	(9.56)	(17.36)	(7.05)	(16.42)				
7 Nonmetro, Urban, 2.5K to 20,K, and Not Adj.	2,949	1,760	8,991	4,654	2,836,614	1,010,354	324	1.03	16.30	15.23
	(19.56)	(24.79)	(11.44)	(21.10)	(7.15)	(15.39)				
8 Nonmetro, Completely Rural, and Adj.	576	555	1,622	1,556	481,108	459,985	269	0.91	15.89	15.88
	(3.82)	(7.82)	(2.06)	(7.06)	(1.21)	(7.01)				
9 Nonmetro, Completely Rural, and Not Adj.	1,468	1,432	3,489	3,398	711,086	686,630	133	0.65	14.71	14.69
	(9.74)	(20.17)	(4.44)	(15.41)	(1.79)	(10.46)				
Total	15,077	7,100	78,624	22,054	39,648,981	6,565,936	1,339	2.66	17.96	16.31
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)				

Note. Excludes Hawaii, Alaska, and five outlying areas.
[a]Percentage of total.
Source: Merged file of Common Core of Data Public Schools Universe (1989-90) and ERS County Types.

primaryeconomic activity (see Table 16). Table 17 displays population, income, and school data for six of these ERS socioeconomic types.

The population of the 511 farm-dependent nonmetropolitan counties declined by over 4% during the 1980s to 4.2 million people—1.7% of the U.S. population. Farm-dependent counties represent the least dense socioeconomic county type, with about 8.3 persons per square mile. There are about 1,900 school districts in these types of counties, accounting for 4,252 schools and over 825,000 students. That is 12.7% of U.S. districts, 5.4% of schools, and 2.1% of our students. Among these counties, 78% of the schools, 61% of the students, and 83% of the districts are rural. They are the most rural type and they have the greatest proportion of small schools and districts.

However, as information on the other ERS socioeconomic types in Table 17 shows, it is inaccurate to characterize rural education based on these farm-dependent—largely midwestern—counties. There are more rural students in manufacturing, government, and unclassified counties than in farm-depen-

Table 14
Rural Districts: Enrollment by ERS County Types (1989-90)

	Enrollment							
	Under 300		300 to 2,500		Over 2,500		Total	
County Type	*N*	%	*N*	%	*N*	%	*N*	%
0 Metro, Central Counties, 1 Million+	16	27.59	29	50.00	13	22.41	59	100.00
1 Metro, Fringe Counties, 1 Million+	74	23.05	208	64.80	39	12.15	322	100.00
2 Metro, 250K to 1 Million	106	22.46	314	66.53	52	11.02	473	100.00
3 Metro, Less Than 250K	133	28.54	307	65.88	26	5.58	467	100.00
4 Nonmetro, Urban, 20K +, and Adj.	138	33.25	262	63.13	15	3.61	416	100.00
5 Nonmetro, Urban, 20K +, and Not Adj.	235	48.76	229	47.51	18	3.73	483	100.00
6 Nonmetro, Urban, 2.5K to 20K, and Adj.	380	33.36	744	65.32	15	1.32	1,140	100.00
7 Nonmetro, Urban, 2.5K to 20K, and Not Adj.	1,011	57.44	722	41.02	27	1.53	1,761	100.00
8 Nonmetro, Completely Rural, and Adj.	194	34.95	328	59.10	33	5.95	556	100.00
9 Nonmetro, Completely Rural, and Not Adj.	798	55.73	589	41.13	45	3.14	1,433	100.00
Total	3,085	43.45	3,732	52.56	283	3.99	7,109	100.00

Note. Excludes Hawaii, Alaska, and five outlying areas.
Source: Merged file of Common Core of Data Public Schools Universe, 1989-90 and ERS county types.

dent counties. There also are more rural schools in manufacturing and unclassified counties than farm-dependent ones, and more rural districts in unclassied counties than farm-dependent ones. Most of these county types have similar per capita income levels well below the comparable U.S. level of $16,513. It is worth special note that over 700,000 nonmetropolitan students attending over 1,200 schools reside in "persistent poverty" counties whose per capita income has ranked in the lowest quintile for three decades.

Discussion

As we saw above, generalizations about rural education that rely on either a urban/rural or metropolitan/nonmetropolitan framework are likely to be off the mark.

Consider Table 18, which displays some summary data using a single geographic framework that results when *both* the ERS rurality county types and NCES locale codes are crosstabulated for the 115 counties and 541 districts in Missouri. Notice that both town and rural groupings are separated by metropolitan/nonmetropolitan status. Although town locale codes are conceptually all nonmetropolitan, over 100 Missouri schools are in NCES town locales, but also in metropolitan counties.

In Missouri, rural districts account for 67% of all districts, 40% of all schools, and 25% of all students. Over 95% of all rural schools in Missouri are in rural districts, as are 94% of all students. There are relatively few rural schools administered by urban districts in the state, and most schools within a district are within the same Missouri geographic class. For example, among the 180 urban districts, only 31 have schools in more than one class. With only five exceptions, these combinations involve grouping rural schools with town schools, mostly in nonmetropolitan counties.

There is wide variation by state in the proportion of rural schools administered by urban districts. Describing these interrelationships accurately is likely to be important to further our understanding of rural education. Such a scheme need not conflict with systems that describe districts based on the characteristics of the areas within their boundaries (e.g., the NCES mapping project). Indeed, a system that also takes into account the locales of schools can extend the value of the mapping project database. Because we only have census data once a decade and because district boundaries change often, the ability to aggregate school locales within types of districts would provide, through existing NCES data series, updated annual information about rural schools and districts. However, we need better ways to know where schools are.

The use of mailing address to assign locale codes to rural schools may have different effects, depending on locale, and this practice may introduce errors that are difficult to detect. Fortunately, the same Topologically Integrated Geographic Encoding Referencing (TIGER) system that NCES is using to define district

Table 15
Rural Schools: Enrollment by ERS County Types (1989-90)

County Types	Under 100		Under 200		Under 400	
	N	%	*N*	%	*N*	%
0 Metro, Central Counties, 1 Million+	28	6.83	57	13.90	145	35.37
1 Metro, Fringe Counties, 1 Million+	56	4.18	231	17.25	659	49.22
2 Metro, 250K to 1 Million	142	5.99	499	21.05	1,287	54.28
3 Metro, Less Than 250K	172	10.32	506	30.35	1,109	66.53
4 Nonmetro, Urban, 20K + , and Adj.	141	10.37	441	32.43	957	70.37
5 Nonmetro, Urban, 20K +, and Not Adj.	282	19.17	643	43.71	1,135	77.16
6 Nonmetro, Urban, 2.5K to 20K, and Adj.	555	14.50	1,609	42.03	2,955	77.19
7 Nonmetro, Urban, 2.500 to 20K, and Not Adj.	1,289	27.70	2,673	57.43	3,998	85.90
8 Nonmetro, Completely Rural, and Adj.	268	17.22	639	41.07	1,145	73.59
9 Nonmetro, Completely Rural, and Not Adj.	1,202	35.37	2,102	61.86	2,939	86.49
Total	4,135	18.75	9,400	42.62	16,329	74.04

Note. Excludes Hawaii, Alaska, and five outlying areas. The number and percentage of schools by size are cumulative.
Source: Merged file of Common Core of Data Public Schools Universe, 1989-90 and ERS county types.

Table 16
ERS Nonmetropolitan Socioeconomic County Types

Farming-dependent: 512 counties in which farming contributed 20% or more to total income.

Manufacturing-dependent: 553 counties in which manufacturing contributed 30% to total income.

Mining-dependent: 124 counties in which mining contributed 20% or more to total income.

Government-dependent: 347 counties in which local, state, and federal payrolls contributed 25% or more to total income.

Unclassified: 712 counties in which no single industrial sector predominated.

Persistent Poverty Counties: 239 counties ranking in the lowest quintile of per capita income for four decades.

Table 17
Selected Population and Education Statistics by ERS Nonmetropolitan County Policy Impact Types

Indicators	County Type					
	Farm Dependent	Manufacturing Dependent	Mining Dependent	Government Dependent	Unclassified	Persistent Poverty
General						
Number of Counties	511	554	124	347	519	240
1990 Population	4,217,799	18,384,573	2,364,063	9,318,434	13,638,821	3,608,881
Percentage of U.S. Populatio	1.71	7.44	0.96	3.77	5.52	1.46
Percentage Change 1980-90	-4.01	2.46	-4.86	8.72	-0.10	0.45
Per Capita Income, 1988	$12,817	12,343	$11,127	$11,838	$12,718	$9,442
Population/Square Mile	8.3	52.8	12.2	18.3	31.5	25.6
Total Districts, Schools, and Students						
Number of School Districts	1,912	1,806	275	1,265	2,524	417
Percentage of U.S. School Districts	12.68	11.98	1.82	8.39	16.74	2.77
Number of Public Schools	4,252	7,889	1,448	4,532	7,823	1,739
Percentage of U.S. Public Schools	5.41	10.03	1.84	5.76	9.95	2.21
Number of Public School Students	826,792	3,352,250	494,265	1,673,540	2,495,521	706,411
Percentage of U.S. Students	2.09	8.45	1.25	4.22	6.29	1.78
Rural Districts, Schools, and Students						
Number of Rural Districts	1,589	874	141	772	1,569	280
Percentage of Districts Rural	83.11	48.39	51.27	61.03	62.16	67.15
Number of Rural Schools	3,334	3,542	809	2,307	4,157	1,213
Percentage of Schools Rural	78.41	44.90	55.87	50.90	53.14	69.75
Number of Rural Students	508,004	1,206,672	218,824	604,042	945,896	425,646
Percentage of Students Rural	61.44	36.00	44.27	36.09	37.90	60.25
Rural Districts with Under 300 Students						
Number of Rural Districts	1,013	204	51	369	738	69
Percentage of Rural Districts	63.75	23.34	36.17	47.80	47.04	24.64
Number of Rural Schools with:						
Under 100 Students	1,400	282	122	544	1,011	133
Under 200 Students	2,431	990	353	1,130	2,308	356
Under 400 Students	3,157	2,363	649	1,790	3,570	771
Percentage of Rural Schools with:						
Under 100 Students	41.99	7.96	15.08	23.58	24.32	10.96
Under 200 Students	72.92	27.95	43.63	48.98	55.52	29.35
Under 400 Students	94.69	66.71	80.22	77.59	85.88	63.56
Total Schools/100 Square Miles	0.83	2.27	0.75	0.89	1.81	1.23
Total Students/100 Square Miles	162	963	256	329	576	502
Total Student/Teacher Ratio	14.7	16.9	16.4	16.8	16.3	17.0
Rural Student/Teacher Ratio	13.6	16.7	15.8	15.7	15.2	16.6

Note. Excludes Alaska, Hawaii, and outlying areas.
Sources: 1990 Census of Population and Housing, BEA Personal Income, Common Core of Data Public Schools Universe, 1989-90 and ERS Social-Economic County Types.

Table 18
Missouri School Locale by Combining NCES Locale and ERS Beale Codes

Missouri Geographic Classes	*N* of Missouri Schools	Percentage of Missouri Schools	*N* of Schools in Rural Districts	*N* of Schools in Urban Districts	Total Enrollment	Average Enrollment
Central City	231	11.72	0	231	93,076	403
Large City Fringe	338	17.15	0	338	204,130	604
Mid-Size Metro	129	6.54	0	129	58,151	451
Metro Town	109	5.53	0	109	58,287	535
Nonmetro Town	346	17.55	2	344	148,954	431
Metro Rural	165	8.37	143	22	66,295	402
Nonmetro Rural	653	33.13	632	21	141,249	216
Total	1,971	100.00	777	1,194	770,142	391

boundaries can be used to precisely identify the *point* location of schools. TIGER is a digital map of every block in the country, and it already contains the latitude and longitude of the center of every block. If, as part of the NCES school file, the census tract and block code for the school were recorded, Geographic Information Systems software could manage, map, and summarize by district (and all other census geography) the characteristics of schools.

Moreover, as part of a separate project for its own digital map series, the U.S. Geological Survey already has completed updates for 17 states by recording the latitude and longitude of most schools. The USGS map series was the base for TIGER, and their data should be relatively easy to resolve to a census block code using common GIS software.

There are educationally important interrelationships among the contextual categories we use to describe rural education. Taking both school locale and metropolitan status into account and linking this information to county level data adds to our understanding. But more precise methods of determining the location of schools are available, and, if adopted, will improve the existing schemes and, in turn, significantly enhance our understanding of the social and economic factors influencing schools.

References

Bureau of the Census. (1991). *Census of population and housing, 1990: Summary tape file 1 technical documentation.* Washington, D.C.: Author.

Elder, W. L. (1991). *A descriptive analysis of rural schools and rural school districts.* Columbia, MO: University of Missouri, Office of Social and Economic Data Analysis.

Haller, E. J. & Monk, D. (1988). New reforms, old reforms, and the consolidation of small rural schools. *Review of Educational Research, 17* (April) 167-77.

Johnson, F. (1989). *Assigning type of locale codes to the 1987-88 CCD public school universe.* (Technical Report CS 89-194). Washington, DC: National Center for Education Statistics.

Stephens, E. R. (1988). *The changing context of education in a rural setting.* Charleston, WV: Appalachia Educational Laboratory.