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ECONOMIES THROUGH THE ELIMINATION OF VERY SMALL SCHOOLS

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FOREWORD

The general policy of maintaining a school within easy walking distance of every rural child, coupled with the widely prevailing small local district system, has resulted in the maintenance in this country of a large number of extremely small schools. It appears that more than 7,000 of our 1-teacher schools enroll 5 or fewer pupils each and that several times this number enroll 6 to 10 pupils each. There is evidence that approximately 1,000 of these extremely small schools are allowed to operate with as few as 1 or 2 pupils each. It is obvious that when a teacher is employed and other maintenance costs are incurred for such very small numbers of pupils the per pupil costs run extremely high.

The problems of abandoning such small schools and of finding other means of educating the children living in the districts affected are as far-reaching as they are complicated. That possibilities of large savings in cost are entailed is apparent. The educational policies and procedures to employ in lieu of maintaining a school in every community are not always so clear.

Mr. Gaumnitz has undertaken in this bulletin (a) to present data which will help us to realize more fully how prevalent and how wide-spread the small-school problem really is, (b) to examine concrete evidence of the cost of extremely small schools, and (c) to cite ways and means employed both in this country and abroad in seeking a solution to the problem. It is hoped that this study will more prominently bring to the fore the whole problem of maintaining extremely small schools and that it will stimulate and guide further study and experimentation looking toward more economical and more educationally desirable practices.

BESS GOODYKOONTZ,
Acting Commissioner.

August 9, 1934.

ECONOMIES THROUGH THE ELIMINATION OF VERY SMALL SCHOOLS

INTRODUCTION

Although it has long been known in a general way that smallness is the dominating characteristic of rural schools, it has seldom been realized how small the enrollments of some of these schools are, how their smallness affects educational costs, or what can be done about it. It is the purpose of this study, so far as the data are available, to review briefly the facts relating to these three aspects of the rural school situation. The smallness of these schools and the relationship of this smallness to the cost of education should even in normal times claim the earnest attention both of the taxpayer and the educational leaders, but in a time like the present when all our social institutions need to be scrutinized for every possible economy and when school costs in particular are under attack from all sides, a consideration of these problems would seem to be most timely.

It is, of course, recognized that many rural people are tenaciously clinging to the "little red schoolhouse." Somehow they seem to feel that democracy is secure only if this social institution, so long under the immediate control of the community, is unchanged. At the same time complaints against high farm taxes are bitter and persistent. As the techniques of education become more refined and as the Nation develops its road and transportation systems it becomes more and more pertinent to question whether it is good policy to continue to indulge the traditional pride in the "little red school" and whether the total social returns from this educational heritage of pioneer days are worth the cost. Rural people should realize that if they insist upon a local school within walking distance of every home, no matter how small or expensive such a school will be, they must "pay the fiddler" in high taxes.

The whole problem of the maintenance or abandonment of very small schools entails questions of educational economy

other than costs or savings in dollars and cents. The large school is very different from the 1-teacher school in a number of important respects. To teach one or two grades is a very different educational task from teaching pupils of all grade levels. It has been justly maintained by the champions of the small school that if such things as the equipment, the training of the teacher, the supervision provided, and the like, were equivalent to those of larger schools the small schools could provide an education equal in quality to that given in large schools. Indeed, it may be that under favorable conditions small schools could give a superior type of education. But the fact is that in general practice there is associated with the smallness of rural schools an attitude of meagerness and insignificance which results in very unequal provisions in such matters for the smaller schools as compared to the larger schools. A number of studies¹ have shown fairly conclusively that the larger schools tend to obtain better educational results when measured in academic achievement. Moreover, there are many other educational values which result from group activities, such as pupil organizations, games, athletic contests, and the like, which have been found possible only if a school has a considerable number of pupils of like ages. This study will present no data relating to the economies involved in the question of the large or small schools other than costs. It is clear, however, that the quality of education purchased is as important a consideration of potential economy as the per capita expense.

When school officers and school patrons have recognized the smallness of many of the schools and the economic and educational significance of the problems involved, certain factors, in addition to the traditional insistence upon local school control, have made it difficult in many localities to abandon even the smallest and most uneconomic of such schools. In places of very sparse or rapidly changing populations, extremely small schools are often maintained despite policies to the contrary. Poor roads, isolated and inaccessible homes, harsh climate, and the like, have often created problems of providing education which seemed to be solvable only through the establishment and maintenance of these

¹ Covert, Timon. Educational achievements of 1-teacher and of larger rural schools. Washington, Government Printing Office, 1928. (Office of Education, Bulletin, 1928, no. 15.) (A survey of studies on this problem.)

extremely small schools. Considerable experimentation has, however, taken place in recent years leading to other solutions. There now are educational authorities who believe that extremely small schools are justified only under the most extreme circumstances. They believe that other acceptable procedures and devices of providing an education have now been developed and that the high cost entailed in providing the meager educational opportunities available in most of the very small schools is no longer warranted. Such authorities point to experiments such as school consolidation and super-consolidation, dormitory schools, correspondence lessons, itinerant teachers, and similar devices. They believe that through the use of these procedures and devices either singly or in combination, a high grade of education can be provided to almost every child without the necessity of maintaining schools of substandard size.

Perhaps the most helpful portion of this study is the section in which these devices are reviewed, together with some of the ways and means employed in putting them into operation. As will be seen, many of these devices are still very much in an experimental state. But this time of economic crisis warrants some departure from the traditional and everything which promises an improvement in educational procedures, especially if potentially savings are entailed, should not only be given careful consideration but it should be given a fair trial. Perhaps modifications and improvements can thus be found whereby such procedures can make significant contributions to future school organization and economy.

In considering the facts to be presented in this study the following social and economic questions present themselves. Can any or all of the present large number of extremely small schools be profitably abandoned? Can society afford to maintain complete schools of but 1, 2, 3, 4, or 5 pupils each? In fairness to all the children can a State fix a minimum enrollment or attendance figure below which schools will not be entitled to the use of public funds? Can an acceptable quality of education be made available to isolated rural children by some means other than inordinately small schools? How can the varied educational needs of the increasingly complex social order be provided for in areas of sparse population within the limits of reasonable expenditures?

PREVALENCE OF EXTREMELY SMALL SCHOOLS

In order that we may fully appreciate the fact that large numbers of rural schools are being maintained which have extremely small enrollments, and even smaller numbers of pupils in average daily attendance, detailed data will be presented in the following pages for the several States for which such facts were obtainable. As these figures are examined it should constantly be borne in mind that every school, however small, even if it serves but 1 or 2 pupils, entails the cost of employing a teacher. This is naturally the largest item of school expense. In most cases it requires, too, the maintenance of a school building involving expenditures for such things as fuel, supplies, repairs, costs incident to administration and supervision, and the like.

Data for this study were for the most part drawn from recent annual or biennial reports of State departments of education. For most of the States the data are for the school year 1929-30 or for 1931-32. Information could not be obtained for all States for a single year but sizes of schools are relatively stable.

To a very large degree, extreme smallness of schools is a problem limited to the 1-teacher, 1-room type of rural schools. Almost without exception the data presented in the various tables of this study are limited to schools of this type. Extremely small classes as well as small total enrollment, however; also are ever-present problems in rural high schools as some of the statistics presented will show.

The data presented may be regarded as depicting fairly accurately the present conditions relating to the problem of extremely small 1-teacher schools in certain sample States. It is probable that a number of the States for which no data on the prevalence of small schools were available have few such schools; many others, however, have large numbers of such schools.

The statistical information from the several States relating to the prevalence of small rural schools is not sufficiently similar, one State with another, to permit its presentation in a single table. Because of variations in practices of student accounting and reporting some of the sources of information give data on the sizes of schools by pupils enrolled; others classify the schools on the basis of average daily attendance.

Some States give information on smallness of schools separately for 1-teacher rural schools; others include all rural schools. The reports also varied in the size interval for which data were given. Some distributed the schools of the State by single-pupil intervals up to 5; others followed this procedure up to 10 or higher. Still others employed 5-pupil intervals either for the first 10 to 20 integers or for the entire range of school enrollments or attendances. The variations in data, pointed out above, make comparisons in the number and proportion of schools of various sizes, State with State, impracticable in many instances. For any given State, however, the distributions are valid under the conditions stipulated in the headings and footnotes of the several tables.

For convenience of presentation and because of the effect upon the size of the schools of certain geographical influences statistical data for the States located in the same general parts of the United States are grouped together. For example, tables showing the sizes and costs of these very small schools in the Western States are presented as group I; the Central States as group II, etc. Since for many States in which the problem is known to exist, no data are available to show the number and proportion of small schools, those States for which figures are presented may be regarded as more or less illustrative of most of the States in that general region. The close similarity in the conditions revealed makes it unnecessary to undertake an extensive evaluation of the statistics presented for each State. All that will be needed is to show how the data should be read and to suggest briefly what they mean. It will be more in point to show in some detail what is being done to solve the problem and to consider critically proposed plans which might hold solutions if given a fair test. The above will be the general plan of this study.

GROUP I.—PREVALENCE AND COST OF SMALL 1-TEACHER SCHOOLS IN 7 WESTERN STATES

TABLE 1.—ARIZONA ¹

Average attendance per school	Schools		Average cost per pupil	Average attendance per school	Schools		Average cost per pupil
	Number	Percent			Number	Percent	
6.....	1	0.5	\$245	15.....	12	7.1	\$116
7.....	3	1.8	246	16.....	8	4.8	123
8.....	10	5.9	198	17.....	9	5.4	112
9.....	13	7.7	198	18.....	8	4.8	93
10.....	13	7.7	152	19.....	8	4.8	86
11.....	20	11.9	162	20.....	8	4.8	87
12.....	18	10.7	142	21-25.....	16	9.5	102
13.....	9	5.4	146	26-30.....	2	1.2	110
14.....	8	4.8	128	31 or more.....	2	1.2	107

¹ Eleventh Biennial Report of the State Superintendent of Public Instruction, 1932, pp. 104-120. (Based on average daily attendance and current expenditures.)

TABLE 2.—NEVADA ¹

Average attendance per school	Schools		Average cost per pupil	Average attendance per school	Schools		Average cost per pupil
	Number	Percent			Number	Percent	
1.....	1	0.5	\$1,361	9.....	10	4.8	\$167
2.....	8	3.9	588	10.....	17	8.2	166
3.....	29	13.9	365	11.....	11	5.3	130
4.....	26	12.5	282	12-15.....	8	3.8	130
5.....	32	15.4	245	16-19.....	12	5.8	102
6.....	94	11.5	213	20-25.....	5	2.4	83
7.....	10	4.8	206	26-30.....	3	1.4	95
8.....	11	5.3	182	36.....	1	0.5	45

¹ Supplement to the report of the State Superintendent of Public Instruction, November 1932—Computed from detailed data, pp. 2-9. (Based on average daily attendance and current expenditures.)

TABLE 3.—IDAHO ¹

Enrollment per school	Schools		Average cost per pupil per month	Average cost per pupil for 9 months
	Number	Percent		
5 or less.....	60	7.9	\$32.03	\$288.27
6-10.....	250	33.2	17.17	154.53
11-15.....	205	27.2	11.02	99.18
16-20.....	129	17.1	9.25	83.25
21-25.....	66	8.8	7.13	64.17
26-30.....	32	4.2
31 or more.....	12	1.6	5.30	47.70

¹ Proceedings of the Idaho Education Association, 1928, p. 49—Latest available data, 1927. (Based on enrollment and current expense.)

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TABLE 4.—MONTANA ¹

Enrollment per school	Schools, 1929-30		Schools, 1931-32	
	Number	Percent	Number	Percent
1-5.....	277	11.0	426	17.2
6-10.....	825	32.8	1 685	27.2
11-20.....	1,055	42.0	1 862	34.9
21-40.....	293	11.7	1 298	12.1
41 or more.....	63	2.5	1 200	8.0

¹ Twenty-first and Twenty-second Biennial Report of the State Superintendent of Public Instruction, 1930 and 1932, pp. 32 and 59, respectively. (Based on enrollment.)

² A few 2-teacher schools included.

TABLE 5.—MONTANA ¹

Enrollment per school	Schools		Enrollment per school	Schools	
	Number	Percent		Number	Percent
1.....	7	0.3	4.....	74	2.9
2.....	83	1.3	5.....	123	4.9
3.....	40	1.6	1-5.....	277	11.0

¹ Twenty-first Report of the State Superintendent of Public Instruction, 1930. (The report for 1930 provided these additional data for schools enrolling from 1-5 children.)

TABLE 6.—COLORADO ¹

Enrollment per school	Number of schools	Average cost per pupil	Enrollment per school	Number of schools	Average cost per pupil
1.....	7	\$917	4.....	27
2.....	14	558	5.....	44
3.....	21	1-5.....	113

¹ Klemmedson, G. S. Economy in the Operation of Public Schools. Fort Collins, Colo., Agricultural College and Experimental Station, July 28, 1930. (Based on enrollment.)

TABLE 7.—OREGON ¹

Average attendance per school	Schools		Average attendance per school	Schools	
	Number	Percent		Number	Percent
1.....	7	0.5	4-5.....	145	10.9
2.....	25	1.9	6-10.....	374	28.2
3.....	33	2.5	11 or more.....	743	56.0

¹ Thirtieth Biennial Report of the State Superintendent of Public Instruction, 1932, p. 11. (Based on average daily attendance.)

TABLE 8.—UTAH¹

Enrollment per school	Schools		Average cost per pupil	Enrollment per school	Schools		Average cost per pupil
	Number	Percent			Number	Percent	
5 or 6.....	2	3.0	\$123	18.....	9	13.4	41
15.....	6	9.0	62	19.....	4	6.0	23
16.....	20	29.8	53	20.....	4	6.0	45
17.....	13	19.4	36	21 or more.....	9	13.4	26

¹ Nineteenth Report of the State Superintendent of Public Instruction, 1932, p. 120. (Based on average daily attendance and teachers' salaries.)

SMALL ELEMENTARY SCHOOLS IN THE WESTERN STATES

Because of geographical conditions and the prevalence of the district system, small schools are especially numerous in the West (group I). For example, nearly half of the 1-teacher schools of Nevada reported an average daily attendance of from 1 to 5 pupils in 1932. During that year more than 11 percent of the rural schools of Montana had enrollments of 5 pupils or fewer. From data for 1930 it was found that 7 of the schools of this State enrolled but a single pupil each, 33 had 2 pupils, 40 had 3 pupils, 74 had 4 pupils, and 123 had 5 pupils each. Oregon reported nearly 16 percent of the 1-teacher schools of that State in 1932 as having an average attendance of 5 or fewer pupils. Colorado, with a total of 1,855 1-teacher schools in 1930, reported 113, or 6 percent, of these schools with enrollments of 1 to 5 pupils and Idaho showed 60 1-teacher schools, or about 8 percent of the total, enrolling an equally small number of children in 1927. Arizona and Utah also had many very small schools but they were not as many as in the other Western States.

Of course, schools enrolling 6 to 10 pupils must also be regarded as very small. Within these enrollment limits fall about one-third of the 1-teacher schools of the States of Nevada, Montana, Oregon, and Arizona. If data were available for Colorado it is likely that a similar situation would be found in that State. No data on the prevalence of small schools were available for such other Western States as California, New Mexico, Washington, or Wyoming. But these States, especially Wyoming, are also known to have many very small rural schools.

SMALL ELEMENTARY SCHOOLS IN THE CENTRAL STATES

For the Central States (group II), data on the prevalence of small schools are available for 5 States: Minnesota, Wisconsin, Illinois, Iowa, and Missouri. If the first 3 are representative of all the States in this part of the Nation it is evident that about 1½ to 2 percent of the numerous 1-teacher schools of this area were maintained for so few as 1 to 5 pupils. Illinois and Iowa show the largest proportion of such extremely small schools among the Central States. Illinois reported 1,611, more than 16 percent, of the 1-teacher schools with enrollments of 10 pupils or fewer. Iowa had 1,618 schools, or nearly 20 percent, with 1 to 9 pupils each. In Wisconsin, the number of schools with fewer than 10 pupils was 615, this being about 10 percent of all 1-teacher schools of the State. Minnesota and Missouri reported 521 and 672 schools, respectively, with enrollments of 1 to 9 pupils. Thus, in these 5 States alone there were more than 5,000 schools with enrollments of fewer than 10 pupils each. If data were available on the basis of average attendance these numbers would be about two thirds higher. This fact is established in the case of Missouri for which data are presented on both the enrollment and the attendance bases.

GROUP II.—PREVALENCE AND COST OF SMALL 1-TEACHER SCHOOLS IN 5 CENTRAL STATES

TABLE 9.—MINNESOTA¹

(Representative study)

Attendance per school	7-month schools		8-month schools		9-month schools	
	Number	Average cost per pupil	Number	Average cost per pupil	Number	Average cost per pupil
1-4.....	6	\$255	6	\$418	7	\$500
5-9.....	50	137	84	179	129	216
10-14.....	79	87	169	108	349	121
15-19.....	99	66	247	73	455	90
20-24.....	70	53	214	63	437	72
25-29.....	33	49	133	55	319	65
30-34.....	21	41	52	49	158	57
35-39.....	10	37	38	40	66	52
40-44.....	5	43	17	40	43	48
45-49.....	2	35	5	35	21	46
50 or more.....			3	38	9	38
Total.....	374	61	968	67	1,992	76

¹ Berning, T. J. A study of 3,334 1-teacher ungraded elementary school costs, State department of education, St. Paul, Minn., 1931. (Based on average daily attendance and current expenditures.)

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TABLE 10.—MINNESOTA ¹

(Total distribution)

Enrollment per school	Schools	
	Number	Percent
1-5.....	86	1.2
6-9.....	455	5.9
10-14.....	1,297	17.7
15-19.....	1,668	22.8
20 or more.....	3,832	52.3

¹ Financial statement of State board of education, 1931-32, Department of Education Bulletin No. 7, Feb. 10, 1933, pp. 230-232. (Based on enrollments of all "ungraded elementary schools", including 430 employing more than 1 teacher each.)

TABLE 11.—IOWA ¹

Enrollment per school ¹	Schools ²	
	Number	Percent
1-9.....	1,618	19.7
10-19.....	4,844	58.9
20-29.....	1,525	18.5
30 or more.....	232	2.9

¹ Peterson, E. T., *et al.* Census of public-school teaching personnel of Iowa for the year 1928-29, Des Moines, Iowa, Board of Educational Examiners, 1932, p. 18.
² Enrollments are on a per teacher rather than a per school basis. Since nearly all "rural" schools employ but 1 teacher each, the data give a fair index to the sizes of these schools.

TABLE 12.—ILLINOIS ¹

Enrollment per school	Schools	
	Number	Percent
1-5.....	236	2.4
6-10.....	1,375	13.7
11-15.....	2,491	24.8
16 or more.....	8,959	89.1

¹ Statistical Report of the State Superintendent of Public Instruction, Springfield, Ill., 1932, pp. 116-118. (Based on enrollments.)

TABLE 13.—KANSAS ¹

Enrollment per school	Schools		Enrollment per school	Schools	
	Number	Percent		Number	Percent
0.....	6	0.1	4.....	132	1.8
1.....	15	.2	5.....	114	1.6
2.....	34	.5	1-5.....	369	5.1
3.....	68	.9	6-10.....	1,411	19.6

¹ State School Code Commission of Kansas, vol. 1, pp. 10, 48-49. Topeka, Kans. (Data are given on enrollment basis. Statistics for the year 1927-28 were the latest available.)
² Partially estimated.

TABLE 14.—WISCONSIN¹

(Total distribution)

Enrollment per school	Schools		Enrollment per school	Schools	
	Number	Percent		Number	Percent
1-5.....	91	1.5	16-20.....	1,205	19.2
6-10.....	524	8.4	21-25.....	1,086	17.3
11-15.....	1,026	16.4	26 or more.....	2,343	37.3

¹ Education in Wisconsin, Biennial Report, State Department of Public Instruction, Madison, 1932. (Based on enrollments.)

TABLE 15.—WISCONSIN¹

(Sheboygan County only)

Enrollment per school	Average cost per pupil	Enrollment per school	Average cost per pupil
6-10.....	\$99.73	21-25.....	\$45.11
11-15.....	71.33	26-30.....	37.85
16-20.....	51.49	31-35.....	30.03

¹ Small schools have high costs, Milwaukee Journal, May 21, 1933. (Data based on enrollments and current expenditures.)

TABLE 16.—MISSOURI¹

(Representative study)

Attendance per school	Number of schools	Average cost per pupil	Attendance per school	Number of schools	Average cost per pupil
1	1	\$851	14	46	\$54
2	2	378	15	83	52
3	5	186	16	60	52
4	8	172	17	61	51
5	30	127	18	49	55
6	25	115	19	58	47
7	31	94	20	47	41
8	48	92	21	48	41
9	43	83	22	32	37
10	52	70	23	32	35
11	60	69	24	32	41
12	54	62	25	22	34
13	51	55			

¹ Eighty-third State Report of Public Schools, Jefferson City, Mo., 1932. (Schools of 15 representative counties having enrollments of 25 or fewer pupils. Costs computed on current expenditures.)

TABLE 17.—MISSOURI¹

(Total distribution)

Pupils per school	Districts (enrollment)		Districts (A.D.A.)	
	Number	Percent	Number	Percent
1-9.....	672	8.7	1,100	14.2
10-14.....	1,249	16.1	1,578	20.4
15-19.....	1,687	21.8	1,975	25.5
20 or more.....	4,121	53.3	3,076	39.8

¹ Eighty-third State Report of Public Schools, 1932, pp. 28-32. (Rural school districts, including 433 schools employing more than 1 teacher each.)

Information from other States of the central group indicates that the very small school is also a problem in these States. Complete data for most of these States are lacking. For the State of Kansas, however, a recent study² found that there were 369 1-teacher schools in 1927-28 enrolling 5 pupils or fewer. Nearly 1,800 schools, or 20 percent of the total, enrolled 10 pupils or fewer. Six schools were reported as having no pupils at all—all pupils having moved from the district after the teachers' contracts were signed but before the school term had begun.³ If data could be obtained from the other States in this area—for example, Nebraska, South Dakota, and North Dakota—large numbers of very small schools would be shown to exist.

GROUP III.—PREVALENCE AND COST OF SMALL 1-TEACHER SCHOOLS IN 3 NORTHEASTERN STATES

TABLE 18.—NEW YORK¹

Attendance per school	Schools in 1920		Schools in 1930	
	Number	Percent	Number	Percent
1.....	15	0.2	21	0.3
2.....	52	.6	67	.9
3.....	167	1.9	171	2.3
4.....	259	3.0	222	3.0
5.....	392	4.6	268	3.6
6.....	430	5.0	358	5.0
7.....	556	6.5	410	5.6
8.....	535	6.2	405	5.5
9.....	612	7.1	422	5.7
10.....	593	6.9	454	6.2
11 or more.....	4,991	58.0	4,532	61.9
1-5.....	885	10.3	749	10.1
6-10.....	2,726	31.7	2,049	28.0
Total.....	8,602	100.0	7,360	100.0

¹ 1920 data from: Works, George A., *et al.* Rural school survey of New York State, 1922, p. 218; 1930 data from: Letter, State Education Department, August 1933. (All data based on average daily attendance.)

TABLE 19.—NEW HAMPSHIRE¹

Enrollment per school	Schools in 1929-30		Schools in 1931-32	
	Number	Percent	Number	Percent
1-9.....	86	15.0	68	13.0
10-12.....	107	18.8	93	17.7
13-14.....	78	13.7	56	10.7
15 or more.....	300	52.5	307	58.6
1-14.....	271	47.5	217	41.4
Total.....	571	100.0	524	100.0

¹ Report of State Board of Education for Biennial Period ending June 30, 1932, pp. 44-45. (Based on enrollment. The group showing enrollments of 15 or more pupils includes a few schools employing more than 1 teacher.)

² State School Code Commission of Kansas, vol. 1, pp. 10, 48-49, Topeka, Kans., 1929.

³ Brunner, E. DeS., and Kolb, J. H. Rural Social Trends, New York, McGraw-Hill Book Co., 1933, p. 181.

TABLE 20.—MAINE¹

Attendance per school	Number of teachers	Average cost per pupil	Attendance per school	Number of teachers	Average cost per pupil
1-5.....	6	\$232	16-20.....	21	\$73
6-10.....	20	176	21 or more.....	9	61
11-15.....	24	109			

¹ Report of the commissioner of education of the State of Maine for the School Biennium ending June 30, 1932, pp. 115-138. (Computed from 80 representative 1- and 2-teacher schools. Costs were based on average daily attendance and total expenditures for school maintenance.

SMALL ELEMENTARY SCHOOLS IN NORTHEASTERN STATES

Not a great deal of information on the size of rural schools could be obtained for the Northeastern States. Data for New Hampshire (group III) show however, that 86 schools in 1930 and 68 in 1932 enrolled 9 pupils or fewer. This is 15 and 13 percent, respectively, of all 1-teacher schools of this State. Only partial data could be obtained for Maine, but it is evident that this State, too, has some extremely small schools. It is quite surprising that in such a State as New York, usually thought of as being quite populous, there should also be large numbers of extremely small schools. Indeed, this State shows a small-school situation similar to that obtaining in the "wide-open spaces of the West." A total of 749, or 10 percent, of the 1-teacher schools of this State had an average attendance in 1930 of 5 or fewer pupils, 2,049, or 28 percent, had 6 to 10 pupils. In each of 21 schools of New York State the average attendance totaled 1 pupil, in 67 it was 2 pupils, and in 171 schools it was only 3 pupils. It is clear from these figures that even in the Northeastern States, commonly regarded as socially and economically progressive, comparatively large numbers of extremely small schools are still maintained. It is, of course, true that most of these States have some areas which are sparsely settled.

SMALL ELEMENTARY SCHOOLS IN THE SOUTHERN STATES

When the Southern States are studied with respect to the prevalence of small schools one finds, first, that practically no information is available on this problem and, second, that what information exists reveals that comparatively few very small schools are maintained by these States. Indeed, if Negro schools are included in a tabulation of 1-teacher schools on the basis of size it is apparent that too many

pupils per teacher is the problem rather than too few. Data presented in group V, table 25, show that in all of the Southern States for which State averages on enrollment in 1-teacher schools are available except South Carolina, these averages exceed 25 pupils even when schools for colored children are excluded. The fact that smallness is not so great a problem in most of these States probably accounts in part for the scarcity of data. Widespread use of the county unit of school administration has undoubtedly been helpful in preventing the establishment and maintenance of very small schools in these States. The generally low per capita wealth in many of these Southern States probably also has been an influential factor in discouraging the maintenance of very small schools.

GROUP IV.—PREVALENCE AND COST OF SMALL ELEMENTARY SCHOOLS FOR WHITES OF 2 SOUTHERN STATES

TABLE 21.—SOUTH CAROLINA ¹

Teachers per school	Schools		Average attendance per teacher	Costs per pupil per day
	Number	Percent		
1.....	350	22.3	16.7	\$0.322
2.....	481	30.6	17.9	.289
3.....	266	16.9	20.3	.258
4.....	143	9.1	22.7	.233
5.....	84	5.4	22.7	.223
6.....	50	3.2	23.4	.218
7.....	50	3.2	23.7	.213
8.....	25	1.6	25.2	.197
9-15.....	62	3.9	27.5	.183
16-25.....	28	1.8	28.4	.189
26-46.....	11	.7	30.0	.186
47 or more.....	10	.6	28.8	.212

¹ Fulmer, H. L. Statistical studies, nos. III and IV, State Department of Education, Columbia, S. C., April and May 1932. (Size of schools and per pupil costs computed on average daily attendance and teachers' salaries.)

TABLE 22.—ARKANSAS ¹

Pupils per school	Schools		Pupils per teacher	Annual cost per pupil
	Number	Percent		
1-9.....	121	2.9	5.2	\$77
10-19.....	625	14.8	14.1	23
20-29.....	890	21.1	22.9	25
30-39.....	733	17.4	30.3	21
40-49.....	457	10.9	32.8	21
50 or more.....	1,383	32.9	38.8	22

¹ Dawson, Howard A., *et al.* Financial and administrative needs of the public schools of Arkansas, vols. I and II, State superintendent of public instruction, Little Rock, Ark., 1930. (Size of schools and per pupil costs computed on number of pupils per teacher belonging and teachers' salaries. Salary data were partially estimated.)

A distribution of schools by size was, however, available for one Southern State, namely, Arkansas (group IV, table 22). This State showed 121, or nearly 3 percent of the elementary schools enrolling 1-9 pupils. In this group of schools there was an average enrollment of 5.2 pupils per teacher. A total of 625 schools enrolled 10-19 pupils and these showed an average of 14.1 pupils per teacher. It would seem, therefore, despite the high average pupil-teacher ratios commonly found in these States, that smallness as a problem of school administration is not entirely absent in some localities of the South. Possibly other Southern States could be shown to have some extremely small schools if data showing complete distributions by size were available. South Carolina, for example, shows an average attendance in 1-teacher schools for whites of only 16.7 pupils, thus indicating that there are probably a good many of these schools with comparatively few children in attendance.

For West Virginia, a State having many of the characteristics of the South, school authorities recently reported that there were "approximately 200 schools in the several counties with an average enrollment of only 9 pupils and an average daily attendance of only 8." ⁴ Information indicates, however, that under a "county unit law" recently going into effect in this State, these very small schools are rapidly disappearing.

GROWTH IN THE PROPORTION OF SMALL SCHOOLS

For four States information was obtained to show tendencies in the growth or decrease of the number of very small schools. In many States educational leaders are fully aware of the smallness of the rural schools and the problems such smallness entails. Some are exerting every effort to eliminate such schools. The report of the commissioner of education of New Hampshire indicates clearly that a program of abandonment of small schools is under way in that State. The report points with pride to the fact that during the last biennium the total number of 1-teacher schools has been decreased by 47 and that schools enrolling 1-9 pupils have been reduced by 18, those enrolling 10-12 pupils by 14, and those enrolling 13-14 pupils by 22. (See group III, table 19).

⁴ Report of the State Board of Education, 1930-32, p. 21.

The commissioner is of the opinion that "experience shows that educationally a school with fewer than 10 pupils is seldom highly satisfactory, and that the most effective instruction in the 1-room school is usually given in schools enrolling at least 15 pupils."⁴

Despite efforts to the contrary the proportion of extremely small schools is increasing in some States. According to the last two biennial reports for Montana (see group I, table 4) the number of rural schools enrolling 1-5 pupils has risen from 277 in 1930 to 426 in 1932. Information from Minnesota⁵ shows that in 1926 the percentage of 1-teacher schools enrolling fewer than 10 children was 7, in 1928 it was 9, in 1930 it was 11, and in 1932 it was 8. Those enrolling 10-19 pupils showed percentages of 35, 38, 41, and 43 for the respective bienniums. Data covering a 10-year span show that although the total number of 1-teacher schools has greatly decreased in New York State, both the number and the proportion of schools with an average attendance of as few as 1, 2, or 3 pupils has increased.

Evidence from these several States indicates that one cause of the increases in the percentages of extremely small schools is the shifting of rural populations. For years previous to the present economic depression there has been a heavy migration from farm to city. In some rural sections there is a definite tendency toward larger farms. This, too, results in fewer farm families and fewer educables. In other sections lands have become marginal in productive capacity. Under the low prices prevailing for farm products many such lands have been deserted. In still other rural communities factories have recently been located, attracting rural populations. Thus in some rural territories concentration of population is taking place while in others the tendency is toward depopulation. The effect of such shifts in population upon the schools is illustrated from the following observations from New York State:

⁴ Report of State Board of Education, 1932, pp. 44-45.

⁵ Reports of the Commissioner of Education, 1930, p. 174; 1932, p. 197.

There are 4 school districts in the State where no voters reside, 5 where there is but 1, 18 where there are 2, and 809 where there are 10 or less. Nevertheless, each has been charged with the responsibility of providing schooling for its children. The coming of factories has given some neighborhoods a large population but has left others with only a handful of voters.⁷

It is clear from the facts showing the proportions of small schools for successive years in these 4 States that the problem of very small rural schools is by no means yielding to procedures normally counted upon to effect solutions. Even when special efforts are made to bring about consolidation of small schools, as in the case of New York and many other States, the small-school problem continues to be as prominent as ever. Unless the problem is constantly watched and unless conditions obtain which make it possible readily to abandon the smallest schools and to care for the education of the children concerned in other ways there is always the chance that schools with extremely small enrollments will appear to take the place of those which from time to time are abandoned.

PREVALENCE OF SMALL ELEMENTARY SCHOOLS SUMMARIZED

Statistical facts have been presented above for certain States and by geographic sections to show the prevalence of extremely small rural elementary schools. The data should not be interpreted as indicating that the problem is limited to the States cited. There is no doubt that there are a good many extremely small schools in many of the other States of the Union. Indeed, it is probable that the fact that data on this point are readily available for some States and not for others indicates that in some States more than in others school authorities are recognizing the small-school problem and its importance to educational effectiveness and economy.

⁷ Weishaar, Wayne. Rural Schools of New York. New York Herald-Tribune, Apr. 20-22, 1933.

GROUP V.—TABLES SUMMARIZING THE DATA ON PREVALENCE AND COST OF SMALL ELEMENTARY SCHOOLS IN THE UNITED STATES

TABLE 23.—NUMBER OF EXTREMELY SMALL SCHOOLS MAINTAINED IN CERTAIN STATES

State	1 pupil per school	2 pupils per school	3 pupils per school	4 pupils per school	5 pupils per school	Total schools enrolling 1-5 pupils
Colorado ¹	7	14	21	27	44	113
Idaho ¹						60
Illinois ²						236
Kansas ²	15	34	68	132	114	363
Minnesota ³						86
Montana ²	7	33	40	74	123	277
Nevada ¹	1	8	29	26	32	96
New York ¹	21	67	171	222	268	749
Oregon ¹	7	25	33	60	85	210
Wisconsin ³						91
Total.....	58	181	362	541	666	2,281

¹ Based on average daily attendance.

² Based on enrollment.

³ Partially estimated.

⁴ 6 States only.

⁵ 10 States.

TABLE 24.—SIZE DISTRIBUTION AND APPROXIMATE PER PUPIL COSTS IN 99,575 ELEMENTARY SCHOOLS OF THE UNITED STATES ¹

Attendance per school	Number	Percent	Average number of teachers per school	Average number of pupils per teacher	Average cost per pupil
3-7.....	8,201	8.2	1.0	6	\$200
8-12.....	18,342	18.4	1.0	10	120
13-17.....	17,347	17.4	1.0	15	80
18-22.....	12,946	13.1	1.1	19	63
23-27.....	8,563	8.6	1.3	23	52
28-37.....	10,726	10.8	1.5	23	52
38-47.....	4,778	4.8	1.7	24	50
48-67.....	4,977	5.0	2.4	24	50
68-100.....	4,412	4.4	3.3	25	48
101-150.....	3,500	3.5	4.6	27	44
151-200.....	2,157	2.2	6.3	28	43
201-300.....	2,214	2.2	8.3	30	40
301-400.....	936	.9	11.6	30	40
401-500.....	476	.5	15.5	29	41
Total.....	99,575	100.0			

¹ Lawler, Eugene S. Technical aspects of the development of the national pupil-teacher index. In State Support for Public Education, National Survey of School Finance, Washington, D. C. The American Council of Education, 1933, pp. 432-433. (Distribution based on average daily attendance—costs computed on teachers' salaries, using as a base the average of \$1,200 paid elementary teachers of the United States in 1930.)

TABLE 25.—AVERAGE STATE ENROLLMENT OF 1-TEACHER SCHOOLS IN 27 STATES

State	Total number of 1-teacher schools	Average enrollment per school
Alabama.....	2,808	¹ 34.6
Arizona.....	172	² 14.4
Arkansas.....	2,707	¹ 33.1
Colorado.....	1,855	12.5
Delaware.....	178	¹ 22.3
Illinois.....	10,072	² 14.8
Iowa.....	9,358	15.8
Kansas.....	7,420	15.9
Kentucky.....	6,089	² 37.4
Maryland.....	1,024	¹ 25.7
Michigan.....	6,209	⁴ 27.0
Minnesota.....	6,888	11.9
Mississippi.....	2,897	¹ 28.0
Nebraska.....	6,047	15.9
Nevada.....	185	² 7.3
New Hampshire.....	559	15.3
New Jersey.....	294	31.5
North Dakota.....	4,270	15.1
Ohio.....	4,258	20.8
Oregon.....	1,302	17.1
South Carolina.....	1,791	^{1 2} 16.7
Tennessee.....	3,050	¹ 33.9
Utah.....	91	18.3
Washington.....	960	15.3
West Virginia.....	4,289	^{2 3} 22.0
Wisconsin.....	6,042	22.0
Wyoming.....	968	² 11.8

- ¹ Whites only.
- ² Based on average daily attendance.
- ³ Includes whites and Negroes.
- ⁴ Ungraded schools.
- ⁵ Estimated by State supervisor of rural schools.
- ⁶ Enrollment per teacher. Includes rural schools other than those employing 1 teacher.

The tables presented in group V have been prepared to show in a somewhat more general way, than the State tables could, the very large number of extremely small schools in the United States. No reliable totals are obtainable, but if the 6 States giving detailed data on schools with 1, 2, 3, 4, and 5 pupils each, are taken as representative for the Nation as a whole, it may be roughly estimated that during the period from 1930 to 1932 there were maintained in this country about 250 rural schools with an average attendance of 1 pupil each, 750 with 2 pupils, 1,500 with 3 pupils, 2,250 with 4 pupils, and 3,000 with 5 pupils each. The 10 States (see table 23) giving data on schools with 5 or fewer pupils maintain slightly more than one third of the 1-teacher schools of the Nation. About 5 percent of all 1-teacher schools of

these States show an attendance of 1 to 5 pupils. If this percentage is representative of the size of 1-teacher schools of the entire Nation, there is a total of from 7,500 to 8,000 schools in the United States within these very low attendance brackets.

Examining statistics on this point gathered by the National Survey of School Finance (table 24) and including 99,575 rural elementary schools from all parts of the country it is found that of this number 8,201 had an average attendance of 3 to 7 pupils and 18,342 had an attendance of 8 to 12 pupils. As may be seen from column 4 of this table, it is fair to assume that the first 5 groupings of these elementary schools are by and large identical with the 1-teacher situation. These 5 groupings include a total of 65,399 of the schools entering into the investigation. This number is about 44 percent of the 148,711 1-teacher schools in the United States in 1930 the year when these data were gathered. If, therefore, the distribution of these 65,399 schools is taken as representative of all 1-room schools of the Nation it may be estimated that there were in this country a total of about 18,638 schools with an average daily attendance of 7 pupils or fewer, 60,325 with an attendance of 12 pupils or fewer, and 99,750 with an attendance of 17 pupils or fewer.

Referring briefly to table 25 it becomes clear in which of the 27 States listed the average enrollment (average attendance in some States) of 1-teacher schools is the smallest. States with large sections of sparse population, like Nevada, Arizona, or Colorado, naturally show a very low enrollment average per school. But even in such fairly thickly settled States as Minnesota, Illinois, Iowa, and South Carolina, the average number of pupils per 1-teacher school does not greatly exceed 15. The average enrollment per 1-teacher school for whites for the United States as a whole is estimated at less than 20 pupils. The number of pupils in average daily attendance is about one-fifth lower. The averages presented in table 25 may be regarded as general indices indicating the States in which the problem of small schools is most widespread.

PREVALENCE OF SMALL SECONDARY SCHOOLS

Smallness is a problem by no means limited to the rural elementary schools. Rural high schools, too, are extremely

small. To be sure, elementary schools are primary in character and all children are expected to attend them. They are therefore much more numerous than the secondary schools which, in rural communities of the Nation as a whole, are attended by only about 40 percent of the total educables. But the cost per pupil is greater and the educational programs involved are usually regarded as more complex in the secondary than in the elementary schools. Smallness is, therefore, also a very important consideration in rural secondary education. In Arkansas, for example (group VI), nearly one-third of the high schools show enrollments of from 1 to 20 pupils; in Nevada about one-fourth are similarly small. South Carolina had 12 2-teacher high schools in 1932 with an average attendance of 13 pupils per teacher and 89 3-teacher high schools with fewer than 15 pupils per teacher.

GROUP VI.—TABLES SHOWING PREVALENCE AND COST OF SMALL SECONDARY SCHOOLS IN CERTAIN STATES AND FOR THE NATION AS A WHOLE

TABLE 26.—ARKANSAS¹

(White secondary schools)

Pupils per school	Schools		Annual cost per pupil	Pupils per school	Schools		Annual cost per pupil
	Number	Percent			Number	Percent	
1-10.....	56	14.0	\$183	41-50.....	24	6.0	\$88
11-20.....	68	17.0	114	51-100.....	86	21.6	69
21-30.....	56	14.0	114	101 or more.....	70	17.6	51
31-40.....	40	10.0	86				

¹ Dawson, Howard A., et al. Financial and administrative needs of the public schools of Arkansas, vols. I and II, State Superintendent of Public Instruction, Little Rock, Ark., 1930. (Size of schools and per pupil costs computed on number of pupils per teacher belonging and teachers' salaries. Salary data were partially estimated.)

TABLE 27.—ARIZONA¹

Attendance per school	Schools		Annual cost per pupil	Attendance per school	Schools		Annual cost per pupil
	Number	Percent			Number	Percent	
1-25.....	4	6.9	\$287	101-200.....	12	20.7	\$204
26-50.....	8	13.8	241	201-300.....	7	12.1	190
51-75.....	4	6.9	290	301 or more.....	11	18.9	137
76-100.....	12	20.7	296				

¹ Eleventh Biennial Report of State Superintendent of Public Instruction, 1932, pp. 122-124. (Based on average daily attendance and total current expense.)

TABLE 28.—NEVADA¹

Attendance per school	Schools		Annual cost per pupil	Attendance per school	Schools		Annual cost per pupil
	Number	Percent			Number	Percent	
1-10.....	2	6.1	\$251	41-50.....	4	12.1	\$332
11-20.....	6	18.2	338	51-100.....	1	3.0	307
21-30.....	3	9.1	318	101-150.....	6	18.2	183
31-40.....	4	12.1	306	151 or more.....	7	21.2	164

¹ Supplement to Report of State Superintendent of Public Instruction, November 1932, pp. 2-9. (Computed from detailed data on basis of average daily attendance and total current expense.)

TABLE 29.—SOUTH CAROLINA¹

[White secondary schools]

Teachers per school	Schools		Average attendance per teacher	Costs per pupil per day
	Number	Percent		
2.....	12	4.0	13.0	\$0.526
3.....	89	29.7	14.7	.449
4.....	50	19.7	17.5	.402
5.....	29	9.7	19.2	.354
6.....	25	8.3	19.0	.325
7.....	25	8.3	19.7	.335
8.....	12	4.0	21.3	.300
9-11.....	26	8.7	20.8	.513
12-16.....	11	3.7	22.6	.347
17-32.....	7	2.3	22.6	.331
33 or more.....	5	1.6	23.6	.309

¹ Fulmer, H. L. Statistical studies, nos. III and IV, State Department of Education, Columbia, S. C., April and May 1932. (Size of schools and per pupil costs computed on average daily attendance and teachers' salaries.)

TABLE 30.—DISTRIBUTION OF 11,180 HIGH SCHOOLS OF THE UNITED STATES ON THE BASIS OF SIZE AND APPROXIMATE COSTS PER PUPIL¹

Attendance per school	Number	Percent	Average number of teachers per school	Average number of pupils per teacher	Average cost per pupil
3-7.....	126	1.1	1.0	6	\$317
8-12.....	220	1.9	1.2	8	237
13-17.....	278	2.5	1.5	10	190
18-22.....	341	3.1	2.0	10	190
23-27.....	343	3.1	2.3	11	173
28-37.....	877	7.8	2.7	12	158
38-47.....	1,011	9.0	3.2	13	146
48-67.....	1,964	17.6	3.6	15	127
68-100.....	2,358	21.1	4.0	17	112
101-150.....	1,706	15.3	6.7	19	100
151-200.....	712	6.4	9.0	19	100
201-300.....	699	6.3	11.9	21	90
301-400.....	339	3.0	16.4	21	90
401-500.....	206	1.8	20.8	22	86
Total.....	11,180	100.0			

¹ Lawler, Eugene S. Technical aspects of the development of the national pupil-teacher index. In State Support for Public Education, National Survey of School Finance, Washington, D. C. The American Council of Education, 1933, pp. 432-433. (Distribution based on average daily attendance—costs computed on teachers' salaries, using as a base the average of \$1,900 paid high-school teachers of the United States in 1930.)

For the Nation as a whole, a sample study of 11,180 high schools (table 30) revealed 126 schools with an average attendance of 3 to 7 pupils, 220 with 8 to 12 pupils, and 278 with 13 to 17 pupils. Schools in these small enrollment groups showed a pupil-teacher ratio of 6, 8, and 10 pupils, respectively. If this sampling is accepted as representative for all the schools of the Nation the total schools in each enrollment grouping will roughly have to be doubled to secure estimates for the country as a whole. Such estimates would lead to the conclusion that there are in this country about 250 small high schools with an average daily attendance of 7 pupils or fewer, 700 with 12 or fewer pupils, and 1,250 with 17 or fewer pupils each. Many schools beyond these attendance groupings must also be regarded as very small. But a consideration of those discussed above will point clearly to the fact that a great many very small high schools are being maintained. These and other statistics indicate that about one third of all American high schools have an attendance not exceeding 50 pupils each. More than two thirds have an attendance of fewer than 100 pupils each. As has been pointed out in other studies⁸ these small schools result in many difficult administrative problems as well as excessive per capita costs. Considerations of quality of education are also involved.

EFFECT OF SMALLNESS OF SCHOOLS ON PER CAPITA COSTS

Detailed data for specific States and general estimates for the Nation as a whole show conclusively that very small schools are expensive. Indeed, when the tables showing costs by size of school are analyzed it is apparent that almost invariably the per pupil costs are extremely high in the smallest schools; that these costs fall rapidly as one passes from the smallest to the next larger schools; and that the effect of increases in numbers of pupils upon cost becomes less and less apparent as the schools become larger. The whole matter of costs is, of course, very closely related to pupil-teacher ratios. In the very small schools there are very few pupils per teacher. As schools become larger the pupil-teacher

⁸ Gaumnitz, W. H. *The smallness of America's rural high schools.* Washington, Government Printing Office, 1930. (U.S. Office of Education Bulletin, 1930, no. 13.) Cyr, Frank W., *et al.* *Economical enrichment of the small secondary school curriculum.* Washington, National Education Association, 1934. (Yearbook of the Department of Rural Education.)

ratios more and more closely approach the general standard of class-size until this latter factor controls the costs rather than the number of pupils per school. In schools employing but one teacher the standards of class-size fixed for the larger schools naturally do not apply.

Data showing costs by size of schools for Utah, Arkansas, and South Carolina, as well as the estimates given for the Nation as a whole, were computed on the basis of teachers' salaries rather than on total current expenditures. Teachers' salaries usually constitute the chief item of cost of maintaining a school. Most of the variations in per capita expenditures are due to this factor. This is true of 1-teacher as well as larger schools despite the fact that teachers of the former are as a rule at the bottom of the salary scale. Indeed, there is some evidence that, as the schools grow larger, costs other than those for teachers' salaries become proportionately so much greater that they tend in part to offset decreases in per capita costs due to larger pupil-teacher ratios.

It is a common practice in the smallest rural schools to employ teachers who have lower qualifications, less experience, and less training than in the larger schools and to pay them accordingly. It is clear, therefore, that the high per capita costs in such schools usually purchase a low quality of education. To state the situation differently, if the smaller schools were to undertake to equalize educational opportunities, as measured by such things as teacher qualifications, salaries, and the like, then the per pupil costs in these small schools would tend to be even higher than indicated in the various tabulations. States which pay the largest salaries to rural teachers, and those maintaining the closest parity between large and small schools in educational standards show not only higher per capita costs in these very small schools than States paying lower salaries but they also show the widest disparities between costs in the various sizes of schools within their borders.

Of the 11 States for which data showing comparative expenditures are available by size of school, all except three are in the western and northwestern portions of the United States. In some of the States in these sections of the United States salaries higher than average are paid to rural teachers. Moreover, unusual efforts have been made in these States to

bring about equality between the educational standards of the smaller and the larger schools. These two policies have resulted in disproportionately high per pupil expenditures in the small schools. This fact has tended to bring the small school problem to the fore in such States and probably accounts to a very large extent for the greater availability of data on this point from these States.

One school was found in Nevada (see group I, table 2) in which the per pupil cost for a school with but 1 child in attendance was \$1,361 per year; schools with 2 pupils in the same State showed an average per capita cost of \$588. In the seven 1-pupil schools of Colorado the per pupil cost was \$917; in the 2-pupil schools it was \$558. In Idaho this cost in schools with fewer than 5 pupils was \$32 per month or \$288 for a school term of 9 months. Other States show similarly high costs resulting from the smallness of schools. A study of representative 1-teacher schools of Minnesota controlled (see group II, table 9) somewhat more carefully than others the factor of length of term by compiling data on a monthly basis. This study revealed a monthly per pupil cost in schools attended by 1 to 4 pupils of \$36, \$52, and \$65, respectively, for schools maintaining 7, 8, and 9 months of schooling. On an annual basis these costs were \$255, \$418, and \$590 per child in attendance. For schools with 5 to 9 children in attendance the costs in this State were \$137, \$179, and \$216 per annum.

Comparison of data from the several States leads to the generalization that when schools enroll between 1 to 5 pupils the cost per pupil per year averages between \$250 and \$300, depending in part upon the salaries paid and in part upon length of term maintained; in schools with an attendance of from 6 to 10 pupils the cost averages between \$150 and \$200, and in those with as many as 20 to 25 pupils the average falls to between \$40 and \$100. The smallest elementary schools are, therefore, from 3 to 6 times as expensive as the larger schools. It may be of interest at this point to note that the average cost per pupil attending elementary schools was about \$75 for the United States as a whole in 1930.

A conservative estimate for the Nation as a whole indicates that there are about 30,000 pupils in attendance at schools having five or fewer pupils each. If these extremely

small schools could be abandoned and if the education of pupils now attending them could be provided for in larger nearby schools at an average cost of \$75 per pupil, it is evident that there would be an annual saving to the total school budget of about \$6,000,000. If schools with an average attendance of 6 to 10 pupils could be abandoned and other satisfactory provisions made for the education of the 1,000,000 or more children affected, that saving would be multiplied many times. If such wholesale abandonment of very small schools were possible the total savings from this source might well mount to as much as fifty or sixty millions per year.

There is some evidence that when the schools of a given State are classified on the basis of number of teachers employed, those employing the fewest teachers are most expensive per pupil. In the case of South Carolina (group IV, table 21) it was found that costs varied from \$0.32 per pupil per day in 1-teacher schools to \$0.18 in schools employing 8 teachers or more. The factor accounting for this difference is clearly the pupil-teacher ratio. Other factors, such as teachers' salaries, equipment costs, and the like, would, as pointed out above, tend to widen the disparities.

Data from Kansas⁹ show similar decreases in cost with increases in teaching staff. A review of monthly average daily attendance costs shows \$9.89 in 1-teacher schools, \$8.58 in rural schools employing 2 or more teachers, \$7.64 in schools of first class cities, and \$6.39 in cities of second class.

Similar data may be cited also for Maryland. "The current-expense cost per white pupil in elementary schools (excluding costs for general control, supervision, and fixed charges) was \$52.30 in 1-teacher schools, \$49.99 in 2-teacher schools, and \$46.88 in the graded schools. In spite of transportation costs, the graded schools which permit the organization of large classes are the least expensive to operate."¹⁰

There is a tendency also for costs in high schools (see group VI, table 29) to increase with the decrease in the size of schools. As a rule, however, small high schools add readily to the staff as enrollments increase, often even drawing upon the staffs of the elementary schools with which they are

⁹ Twenty-Seventh Biennial Report of the State Superintendent of Public Instruction of Kansas, Topeka, 1931. P. 546.

¹⁰ Sixty-Sixth Annual Report, Department of Education, Baltimore, Md., 1932. Pp. 77-78.

housed. In the high schools, therefore, the pupil-teacher ratio decreases more gradually than the enrollment decreases. Costs tend to keep pace with pupil-teacher ratios rather than size of schools. Data for South Carolina, for example, show that in 2-teacher high schools costs are about two thirds higher than in 8-teacher schools.

In the case of Arkansas the decreases in per pupil costs are very marked as one passes from the smallest to the largest high schools. Arizona also shows a regular downward trend in the cost of high schools with increases in size of school. In the case of Nevada the descent is less regular, but secondary schools enrolling fewer than 100 pupils are nearly twice as expensive per capita as those enrolling more than 100. Data for specific States indicate that the per capita pupil expenditures tend to be at least twice as high in the smallest high schools as in the largest high schools. If costs are approximated for the high schools of the Nation (see group VI, table 30) on a salary basis and on the assumption that all high-school teachers are paid the average salary of \$1,900 per annum, the smallest schools are found to cost about three and three-fourths times as much per pupil in attendance as those which enroll more than 400 pupils. While there are fewer small secondary than small elementary schools, both when compared on a percentage basis and on a numerical basis, and the downward curve of the costs for high schools is more gradual, the per capita costs are so much higher in secondary schools that the total amount of money entailed is very great. It follows, therefore, that any abandonment or enlargement of small high schools results in very large savings.

Thus it may be seen that per capita costs in small schools are high both when their smallness is considered on the basis of pupils attending and on the basis of number of teachers employed. Small elementary schools, as well as small secondary schools, are disproportionately high in cost, and these high costs obtain regardless of the quality of education provided in them. The abandonment of small schools would, of course, involve some expenditures in addition to those usually obtaining in the larger schools, such as cost of transportation, building costs, or the costs incidental to the administration of some other educational procedure adopted in lieu of

the maintenance of small schools. So far as can be learned, however, such costs are comparatively small.

For example, concerning the 584 Oregon schools found to be enrolling fewer than 10 pupils each, State Superintendent Howard¹¹ states that "probably one half of these schools could not change their conditions; however, it is also probable that the other half could not successfully justify their continued existence if cost of operation were carefully weighed against cost of transportation to some other center."

This observation was made on the basis of prevailing conditions of school organization and educational planning. It would probably hold for most of the mountain States and is probably too conservative for States where road and topographical conditions as well as other factors are more propitious to school consolidation. If the problem were attacked with a studied consideration of all other means of providing education to isolated children the proportion of these extremely small schools which could be abandoned without harm to any child but with substantial savings in cost would in many States probably be found to be much greater than that estimated for Oregon. Even if only one half of the schools enrolling fewer than 10 pupils could be abandoned and the education of the children involved taken care of in other ways the savings to some States would be very substantial.

Considering for the moment only the possibility of consolidation and transportation with respect to costs, Fulmer¹² gives evidence for South Carolina. He states that even if the cost for transportation of 8.9 cents per pupil per day, the median daily transportation cost in that State, were added to the daily salary costs (see group IV, table 21) the total costs in the larger schools would be far below the present per capita costs of 1-teacher schools. That is to say, that in 8-teacher schools it would be 28.6 cents per pupil per day (19.7 cents, the average cost of these schools, plus 8.9 cents for transportation) compared to 32.2 cents, the average cost now obtaining in 1-teacher schools. Similar facts were pointed out in the case of Maryland cited above. Evidence of this kind could be multiplied.

¹¹ Thirtieth Biennial Report of the State Superintendent of Public Instruction, Salem, Oreg., 1932. P. 13.

¹² Fulmer, H. L. Statistical studies, nos. III and IV, State Department of Education, Columbia, S. C., April and May 1932.

It should, however, again be emphasized that it is probable that many rural schools serving comparatively few children must be continued. Unless other satisfactory provisions are made for the education of children living in sparsely settled and isolated communities many small schools cannot, as a practical situation, be abandoned. Any attempt to fix general standards of size of enrollment, size of teaching staff, or size of pupil-teacher ratios uniformly for all States or for all portions of each State is of course doomed to failure. Topography, climatic conditions, road development, the type of farming practiced, and many other factors must of necessity be taken into account in any intelligent effort to establish such minima of school size. Practices of school administration, existing school laws, and the general educational policies of the State will also have to be reckoned with in establishing specific sizes below which schools should not be allowed to operate.

But it seems certain that at a time when public services must be reevaluated and the costs reexamined that serious attention should be given to these small schools. Recent emphasis upon comprehensive consolidation and rehousing of rural schools makes the consideration of this whole problem especially important at this time. Savings in costs as well as improvements in the educational opportunities of the pupils involved could undoubtedly be effected if many of the very small schools now maintained were abandoned. The whole matter of fundamental readjustments in taxing units and in units of school control, so essential to any wise plan of rehousing and improving rural schools, is particularly in need of careful study at this time.

Some States have made greater progress than others toward abandoning extremely small schools and making other provisions for the education of rural children formerly attending them. In some States consolidation and transportation have been easier and cheaper to effect than in others. The local district plan of administration has undoubtedly been a serious cause of retardation to progress along these lines. Where larger units of school administration have been in vogue plans for taking care of the children without maintaining extremely small schools have

progressed more rapidly. But in almost all States some further improvements are possible.

The next section of this study will devote special attention to the various ways and means whereby adequate educational provisions can be made for isolated children.

WAYS AND MEANS SUGGESTED FOR ELIMINATING VERY SMALL SCHOOLS

If the issue were raised there would probably be general agreement that schools, which are so small that per capita costs run unreasonably high or which are otherwise hampered in their efficiency, should be discontinued provided adequate provisions can be made for the education of the pupils involved. There would, however, be no general agreement concerning what constitutes unreasonably high costs or when provisions for education in lieu of small local schools achieve the status of adequacy. Most taxpayers and many educational authorities have probably not thought about the matter at all. They are just taking the present small schools for granted. As a rule pupil per capita costs are not computed for a given local school and even less frequently are comparisons made between such per capita costs in one community with those in other communities. Complicating the whole matter is the fact that satisfactory optimum costs or optimum sizes of schools have never been determined and that such optima as are available cannot be generally applied because of modifying factors peculiar to each individual community.

This section is devoted to devices and procedures proposed or actually in use whereby educational opportunities can be provided in sparsely settled communities without the necessity of maintaining extremely small schools. The proposals here cited could probably not be adopted in toto; ~~the innovations~~ already in use will almost certainly have to be improved or adapted if applied to new situations. An open mind and a spirit of experimentation will undoubtedly find a way to use some of them, and to develop others. The purpose of this study will be accomplished if it helps to point the way.

LARGER UNITS OF SCHOOL ADMINISTRATION AND CONSOLIDATION
OF SCHOOLS

Practically all authorities who have worked on this problem have agreed that any scheme to eliminate small unnecessary schools should involve larger units of school administration. Not only is it difficult to eliminate a small school when doing so also involves the elimination of a school district which is virtually an independent unit with separate officers, tax levies, debt obligations, school properties, and the like, but the existence of so many interests often at cross purposes makes it almost impossible to evolve an intelligent scheme which is sufficiently comprehensive in scope. It has been found that when fairly large powers are given to a single school board, functioning, for example, for a whole county, schools with very small enrollments are seldom continued. There is also apt to be more plan and purpose concerning such things as location of schools, transportation of pupils, school consolidations, and the like. The whole question of units of school control and of gathering and distributing tax funds is, of course, also involved here.

A good many studies¹³ have shown such larger units of school administration as the "county unit" to be superior to the district system, both in the more intelligent management of country schools and in managing such schools more economically. In Oregon, for example, the county unit of school administration was found¹⁴ to have resulted in a large increase in the pupil-teacher ratio and in reducing the per capita costs. According to table 31 counties with approximately equal enrollments employed considerably fewer teachers with consequent advantages in pupil-teacher ratios. It is, therefore, not surprising that in a county operating under the county unit plan the annual cost was \$5.68 less per pupil than in a county otherwise similar but operating under the district plan. It is obvious that when all the schools are controlled as one administrative unit it is easier to consolidate the smaller schools, to transport pupils without consolidating local schools, and otherwise to provide for the education

¹³ Carr, William G. County unit of school administration. New York, The H. W. Wilson Co., 1931. Deffenbaugh, W. S. and Covert, Timon. School administrative units with special reference to the county unit. Washington, Government Printing Office, 1933. (U.S. Office of Education Pamphlet No. 34.)

¹⁴ Huffaker, C. L. A survey of Lane and Klamath Counties. Manuscript, University of Oregon, 1933.

of isolated children than when each district is "a law unto itself."

TABLE 31.—COMPARISONS OF COUNTY-UNIT COUNTIES WITH NON-COUNTY-UNIT COUNTIES HAVING APPROXIMATELY EQUAL ENROLLMENTS

County ¹	Elementary enrollment	Elementary teachers	Pupils per teacher
1. Crook	617	28	22.0
2. Gilliam	623	43	14.5
1. Lincoln	1,900	78	24.4
2. Tillamook	1,706	85	20.0
1. Klamath	2,812	96	29.3
2. Umatilla	2,918	143	20.4

¹ No. 1 has county unit; no. 2 does not have county unit.

If we should assume that Superintendent Howard is right in his assertion that pupils from half of the smallest rural schools could be economically transported and if we should assume further that county-wide units of administration, careful study, and the will to experiment could materially reduce the other half in which transportation does not seem so feasible, what would it mean in savings in school costs to the farm people of Oregon?

Dr. Frank P. Bachman ¹⁵ of Peabody College for Teachers, was recently called to Iowa to advise with the legislative committee on reduction of governmental expenditures. His committee came to the following conclusion after considering the major educational problems in that State, especially as they relate to possible economies:

Therefore, if by some magic half of the present 9,540 township and independent rural district schools could be abandoned and the children attending them be brought into the remaining 4,770 schools the number of pupils per teacher employed would be increased to 32.36 and consequently only half as many teachers would need to be employed as are now employed. Even if the teachers retained were paid the present median salary of \$730, as should be done in order to retain the best and most experienced, the annual savings in salaries alone, to say nothing of savings on certain other operating expenses, would be the difference between \$3,556,560 (4,872 by \$730) and \$7,019,350, or a saving of \$3,462,790. ¹⁶

¹⁵ Mimeographed manuscript published early in 1932. Place of publication not indicated.

¹⁶ A part of the very large sum thus saved would probably have to be used to transport distant children to neighboring schools. Perhaps such costs would largely be offset by other savings such as fuel, school repair, and maintenance.

Admittedly, the present district organization makes difficult such drastic elimination of schools in townships and independent school districts. Tradition, sentiment, personal prejudice, and convenience stand in the way. Nevertheless, the citizens of these districts cannot have their "cake and eat it." They cannot have a little inadequate and antiquated school within sight of the old home place, however glorious and wonderful it may seem to them, without paying in many instances excessive taxes.

Dr. Bachman believes that an average of 32.36 pupils per teacher is not excessive and cites evidence to show that as high or higher average ratios are maintained in some of the neighboring States. He points out that ratios higher than this are maintained throughout the South and calls attention to the fact that the average numbers of pupils enrolled per teacher in cities is as high or higher than that proposed by him.

Recent statistics compiled by the United States Office of Education for 130 cities by types of schools showed the following pupil-teacher ratios: Kindergarten, 54.8; elementary, 37.6; junior high school, 30.1; and high school, 29.3. So far as the general practice in city schools is concerned, therefore, the evidence cited above would indicate that the figure suggested by Dr. Bachman was not too high. Of course, some allowance would have to be made in rural schools for the fact that teachers here teach not one grade or two, but more often than not are responsible for all the grades and all the subjects of the elementary school as well as for a good many administrative duties.

Not only are such school authorities as Dr. Bachman calling attention to the need of raising the low pupil-teacher ratio in country schools as a means to educational economy but research authorities employed by State tax commissions have come to the same conclusion. H. S. Hicks¹⁷ of the Illinois Tax Commission points out that—

* * * the steady migration from the farms of Illinois has had a marked effect on the enrollment of the 1-room schools of the State. Last year in the 9,691 1-room schools of Illinois there was an average daily attendance of 144,529 pupils which would make an average attendance of 14.8 pupils per school. Nearly 4,000 of these schools operated with 12 or fewer pupils. In a few instances a single pupil constituted the entire school.

¹⁷ Hicks, H. S. The rural schools of Illinois. Illinois State Tax Commission. Manuscript, 1932.

Teachers' salaries are always the chief item of school cost and any school system which is conducted on the basis of 1 teacher for 15 pupils must necessarily show a very high per capita cost per pupil. In every county of Illinois more 1-room district schools are maintained than are necessary to meet the needs of rural pupils of the county. If fewer schools were maintained and the average daily attendance raised to 25 or 30 pupils per teacher a tremendous saving in school costs would result and the quality of the 1-room schools would be greatly improved.

Mr. Hicks submitted data to show that the abandonment of the 3,964 1-room schools of the State having an average attendance of fewer than 12 pupils would result in a pupil-teacher ratio in rural schools of 25 and stated that this would effect a saving of \$4,776,574 even after an allowance of \$1,076,587 had been made for the transportation of the children from abandoned districts to larger schools nearby. He declared that his plan would reduce the average annual cost per pupil in these schools from \$80.43 to \$47.38.

To quote again from his study:

In making this survey of the rural schools of Illinois a detailed study has been made of the 1-room schools of each county of the State. The information which was assembled has been tabulated on a single sheet as presented herewith:

Total number of 1-room schools in Illinois.....	9,691
Total average daily attendance.....	144,529
Average daily attendance per school.....	14.8
Total tax levy—all 1-room districts.....	\$9,493,813
Total State aid—all 1-room districts.....	2,131,348
Combined tax levy and State aid.....	11,625,161
Average per capita cost per pupil.....	80.43

Abandoning schools with fewer than 12 pupils and reorganizing them generally so as to provide an average of 25 pupils per school the following new set-up would result:

Number of 1-room schools necessary on a basis of 25 pupils per school.....	5,727
Total cost of operation on basis of \$1,000 per school.....	\$5,772,000
Transportation of pupils from small schools to be abandoned.....	1,076,587
Total cost of maintaining all 1-room schools of Illinois.....	6,848,587
Average per capita cost per pupil.....	47.38
State aid on present basis.....	2,131,348
Amount necessary to be raised by taxation.....	4,717,239
Total savings effected.....	4,776,574

In a recent study of the small-school situation in Kansas, F. P. O'Brien found not only that there are very many extremely small schools in that State, but when a radius of 2 miles is taken as a reasonable walking distance, the areas assigned to each school frequently show an enormous amount of overlapping. He points out that even if rural people "wish to retain the one-teacher type of school it does not follow that they will wish to maintain two or more schools to serve an area for which one school would be entirely adequate."

This study concludes that if the extremely small enrollments of 1-teacher schools were combined so as to approach 30 pupils per school there would be a yearly saving in Kansas of \$3,562,000, and that if a more fundamental reorganization were undertaken, so that the average enrollment per teacher approximated 30 pupils in all graded and secondary rural schools, annual savings could be effected which would total more than \$7,000,000.

It is in point here to raise the following questions concerning these proposals for wholesale increases in pupil-teacher ratios: Do not children in small classes and small schools receive more education? What is the maximum number of pupils which a teacher can successfully instruct? Are the general conclusions relating to the size of the class and educational efficiency found to obtain for the city and other large schools equally applicable to consolidated and other rural schools? Facts concerning these points have not been as carefully sifted as they ought to be but all evidence in recent years points to the following conclusions:¹⁸ (a) Under proper conditions teachers can successfully teach much larger classes than had in the past been thought possible. There is considerable evidence that children in larger groups learn better than in extremely small groups; (b) Large rural schools consistently achieve better scholastic results than small ones. (This may, of course, be due in part to the

¹⁸ Whitney, F. A. The Trinidad-Pueblo experiment in class-size in the primary school. Colorado State Teachers College, Education Series No. 12, Greeley, 1931.

Keener, E. E. What size class? *Elementary School Journal*, 32, 144-46, October 1931, and 492-94, March 1932.

Charters, W. W. Larger classes. *Educational Research Bulletin* (Ohio University), 8:276, Sept. 11, 1929.

Class-size in elementary schools larger. In Maryland, Sixty-fourth Annual Report, Department of Education, p. 69-72, Baltimore, 1932.

Covert, Timon. Educational achievements of 1-teacher and larger rural schools, Washington, Government Printing Office, 1928. (U.S. Office of Education Bulletin, 1928, no. 15.)

superiority of teachers and equipment rather than numbers of pupils); (c) When pupil-teacher ratios are raised above the normal average of 25 to 30 pupils the changes necessary in instructional procedures and in school organization must be carefully worked out, usually necessitating the guidance of expert educators.

It is clear that the use of magic, as suggested by Dr. Bachman, cannot be depended upon as a means of eliminating small and expensive schools. If changes in pupil-teacher ratios are to be achieved in any large scale way, school authorities must give serious attention to the evolvement of a comprehensive plan of school consolidation. Before such plans can be evolved it is usually wise to undertake a detailed study of every school of each county concerned. Such a study should get the facts on the present per pupil costs of every school district, on present or potential educables, on the feasibility and cost of transportation, on the available room in and placement of centrally located school buildings, on probable improvements in the quantity and quality of education to be achieved, on per pupil costs of maintaining schools under any proposed scheme of reorganization, etc. A study of the type here proposed has recently been made for the States of Missouri¹⁹ and Arkansas.²⁰ The study by Mr. Hicks for Illinois, cited above, is also in the right direction. Results looking toward wise consolidations could undoubtedly be obtained if the educational authorities of a State, representatives of tax commissions and taxpayers' leagues, county road authorities, and related agencies would undertake such a study together. A thorough study of the present system of education and a careful forward-looking plan for reorganization on a wide scale with due regard for costs, available funds, and above all, for the child to be educated, would without doubt insure the best results in any effort looking toward a large scale elimination of small schools.

From the Arkansas study the following paragraphs point to significant savings from wide-scale consolidation:

The consolidation movement now under way among the schools of Arkansas is having a marked effect upon the costs of offering adequate school advantages to children. This can be well illustrated by some

¹⁹ Eighty-third Missouri Report of Public Schools. Jefferson City, State Department of Education, 1932.

²⁰ Dawson, Howard A., *et al.* Financial and administrative needs of the public schools of Arkansas. Vols. I and II. Superintendent of Public Instruction, Little Rock, Ark., 1930.

examples. In one county of Arkansas there are five fully accredited high schools. The number of pupils and the per capita cost for teachers' salaries alone in these schools are as follows:

Pupils:	Per capita cost	Pupils—Continued.	Per capita cost
63.....	\$136	67.....	\$76
64.....	133	152.....	53
76.....	76		

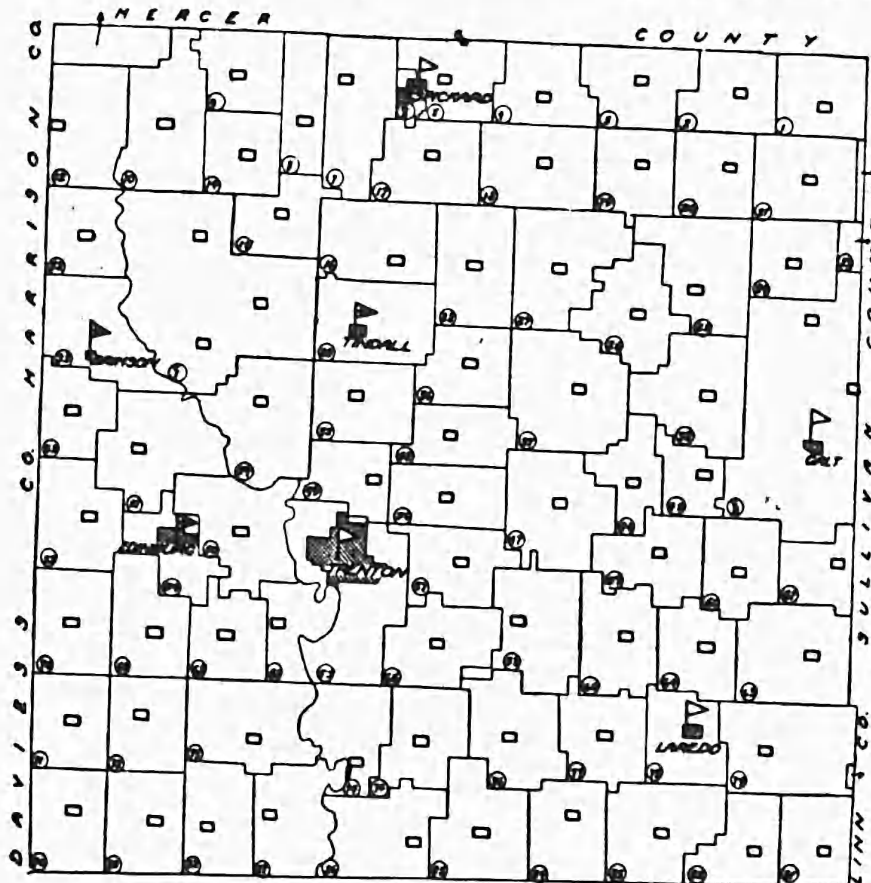
These figures clearly reflect the effect of small enrollment on high-school cost. In the first 4 schools mentioned above there is a total of 20 teachers employed to teach 270 high-school pupils. As a matter of fact, this is a sufficient number of teachers to teach 600 pupils. It so happens that these high schools should be so consolidated as to at least double the enrollment in each high school to be maintained. It does not require a genius to see that considerable money could be saved by this process.

In at least 1 county school system recently studied and in which more than 50 schools have been abolished by consolidation within recent years, it was found possible to improve the school advantages now offered to all the children of the county, and at the same time effect a net saving of more than \$28,000 annually. Many things like this are happening in Arkansas. As a matter of fact, the people of the State are rapidly organizing their schools in accordance with the best accepted educational organizations and in conformity with the principles of sound financial administration.

In Missouri, a county by county survey was undertaken to show both the present conditions and to plan a consolidated school system for each county which would greatly reduce the number of 1-teacher schools, and eliminate entirely the smaller ones. Data from one county, Grundy, in the north central part of the State, will illustrate what the survey committees found in most of the counties and what changes were recommended.

There were found in this county (see map 1) a total of 78 separate school districts averaging in area about $5\frac{1}{2}$ square miles each. There were 78 administrative organizations which elected a total of 252 school directors. Each separate district bought school supplies and equipment in small lots, which necessitated the payment of excessive prices. Each of the 78 districts levied its own school tax, employed its own teachers, and otherwise managed its affairs independently of every other district. The 78 districts maintained a total of 82 schools. Seventy-five of these were 1-teacher schools, averaging fewer than 16 pupils in total enrollment. Eleven districts had fewer than 10 pupils; 43 had enrollments rang-

ing from 10 to 20 pupils. Out of a total of 1,180 boys and girls of high-school age 839 were found to be attending 7 comparatively small high schools. Fifty-six percent of these potential high-school pupils were found living in districts which maintained a first-class high school, 5 percent were living in districts having a third-class high school, and 39



MAP 1.
GRUNDY COUNTY

PRESENT DISTRICTS AND SCHOOLS

LEGEND

- ▭ DISTRICT BOUNDARIES
- ▣ SENIOR HIGH SCHOOL
- ▢ THIRD-CLASS HIGH SCHOOL
- ELEMENTARY SCHOOL
- ⊙ DISTRICT NUMBER

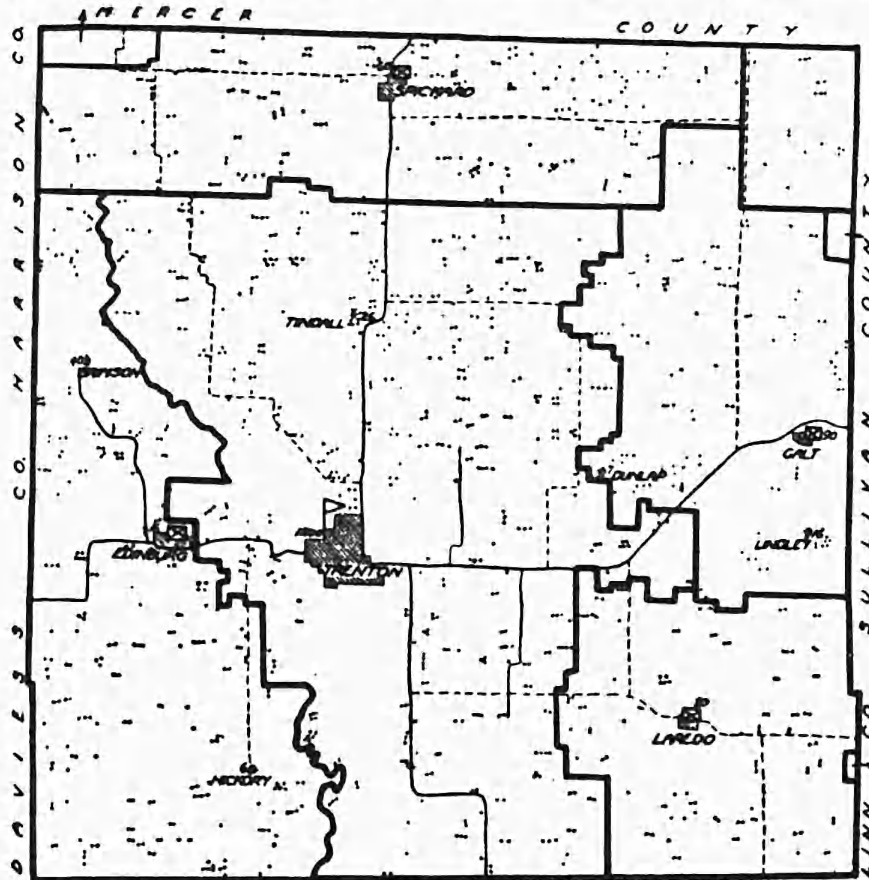
SCALE OF MILES



percent lived in districts maintaining no high school. Tax levies in the county varied from 10 cents to \$1.40 on \$100 valuation. The amount of assessed valuation back of each child enrolled in school varied from \$2,152 in the poorest county to \$32,257 in the wealthiest. Average annual costs per pupil varied from \$143 in a rural school with an enroll-

ment of 7 pupils to \$25 in another rural school enrolling 34 pupils. That there are extreme variations, district with district, both in the cost of providing schools and in the educational opportunities provided is therefore evident.

The plan of reorganization and consolidation proposed for Grundy County by the survey committee (see map 2) would

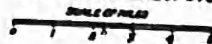


MAP 2.
GRUNDY COUNTY

PROPOSED ENLARGED DISTRICTS

LEGEND

- ▬ DISTRICT BOUNDARIES
- SENIOR HIGH SCHOOL
- JUNIOR HIGH SCHOOL
- CHILD ENROLLED
- HIGHWAYS
- TENTATIVE LOCATION OF PROPOSED ROADS
- COMPLETED GRAVELLED ROADS
- POPUL. ENROLLMENT IN COUNTIES



provide for 1 school board clothed with jurisdiction over the schools of the entire county. In place of 78 subdistricts 5 enlarged districts are proposed, with 1 school in each large enough to employ a strong teaching staff and provide a complete modern curriculum. These schools are to be located in the trading centers, their location having been determined

with a regard for the location of the available children, the location of present and proposed highways, and other related factors involved in providing schools of sufficient size to operate efficiently and economically. The county-wide administration proposed is designed to make the maintenance of a local high school in each district unnecessary. Only 1 standard 4-year high school centrally located is therefore planned for the county. Four strategically located junior or 2-year high schools are to be maintained, 1 for each major district outside of the one in which the central high school is located. The plan is calculated to organize the school transportation system so that senior high school pupils will be gathered from the several junior high school centers and taken to the central senior high school.

All elementary schools save one operated in conjunction with each junior high school are to be abandoned. The hope is that this plan will greatly improve the quality of education provided in the county and do so at materially reduced cost. Above all the plan will bring school opportunities of backward districts up to par, and greatly equalize both the educational opportunities and the school tax burden.

The transition from the present highly decentralized plan to complete consolidation as outlined by the committees is, of course, to be gradual. The new enlarged district will retain some of the existing schools until such time as their abandonment seems most possible, but they are to be regarded as temporary. The benefits of the whole survey is that there now is a well-conceived plan, formulated after a careful study of the various factors involved toward which the school system of the county may evolve. Abandonment of small schools is not to be sporadic and according to whim and fancy but according to a definite plan and purpose.

Individual projects of school consolidation have, of course, resulted in the abandonment of large numbers of very small schools in all parts of the United States. Consolidated schools²¹ have more than trebled in number during the last 15 years and 1-teacher schools have during the same period been reduced by nearly 50,000. The consolidation of small schools has been facilitated by the tendency toward larger

²¹ Covert, Timon. Rural school consolidation. Washington, Government Printing Office, 1930. (U.S. Office of Education Pamphlet No. 6.)

units of administration but many, many of them have been consolidated at the insistence of the residents of local districts. Seldom do schools once consolidated return to their independent status.

The abandonment of very small schools need not always involve consolidation of schools in the sense that one or more districts are dissolved and a large consolidated district created. Many States have created unorganized territory so far as schools are concerned when available pupils fall below a certain number and have made provision for tuition payments and, if necessary, for transportation for the pupils involved. Local school districts also frequently establish contractual relations with a neighboring district and thus provide for the education of their pupils without disturbing the status of the local district.

There are many communities in which the sparsity of population and the undeveloped conditions of roads and other transportation facilities are such that it is not now possible to consolidate school districts or to transport pupils to avoid the maintenance of very small schools. There will probably be some communities for a long time to come where such conditions obtain. The problem of eliminating very small schools in such communities necessitates the development of other means of providing an acceptable quality of education than the common plan of transportation and consolidation.

DORMITORY SCHOOLS AND OUT BOARDING

There has been considerable experimentation, particularly in Montana and other Western States with dormitories²² in connection with public schools for children of sparsely settled and undeveloped communities. In such cases the children live at the school from Monday until Friday, or they may even live there throughout the entire school term. In the past these experiments have been limited to children of high-school age. The idea of dormitories or other means of providing satisfactorily for elementary children to live at least a portion of their time near a centrally located school which is too far from their homes to make daily transportation feasible, undoubtedly has possibilities both from the standpoint of

²² Lathrop, Edith. Dormitories in connection with public secondary schools. Washington, Government Printing Office, 1922. (U.S. Bureau of Education Bulletin, 1922, no. 12.)

costs and the educational opportunities involved. As concerns the problem of whether such children can successfully live away from home at so youthful an age one needs only to cite the fact that it is already a common practice to require young children to live in dormitories operated in connection with private boarding schools, as well as in connection with public schools for such special groups as the blind, the deaf, the crippled, those from homes broken or otherwise contributing toward delinquency, and many similar cases. Authorities who have studied the development of children in environments of these types declare that the children show no ill effects of dormitory life. When such dormitories are in the hands of trained educators the results in health, character, and the like have usually been found to be satisfactory. If dormitories are to be used in any extensive way for bringing isolated children into a wholesome school environment it should be emphasized that placing a trained person in charge of such children is a very important consideration. The practice of employing housekeepers, however "motherly" they may be, has not always been found wise.

School authorities sometimes resort to "out-boarding" arrangements other than in dormitories in order to avoid maintaining extremely small schools. The following report from Maine²³ may be cited to illustrate experimentation along this line:

One of the natural results of the many cases of small numbers of children in an unorganized township, frequently the children of but one family, is the relatively large number of children boarded for attendance at school. Pupils, including those of light stations,²⁴ to the number of 78 and 94, respectively, were boarded for the school years 1930-31 and 1931-32. This arrangement is sometimes rather reluctantly entered into by parents, and naturally so in the case of very young children, but it usually results very satisfactorily. Very often children are boarded with relatives. . . . The policy of payment by the State of the major part of the expense for board with the requirement that parents are to pay a small amount, representing the equivalent cost of supporting the child at home, has become well established and is accepted in most cases without question.

The matter of costs and other administrative features of a dormitory scheme would, of course, have to be carefully

²³ Report of the Commissioner of Education of the State of Maine for the Biennium Ending June 30, 1932. Pp. 13-14.

²⁴ There are many lighthouses along the coast line of Maine.

worked out. The State, as was seen in the case of Maine, could contribute as large or perhaps, greater amounts than are at present given toward transportation costs. The local district could afford to pay a reasonable amount in lieu of the very high per capita cost otherwise paid to maintain such pupils in very small local schools. The superior education provided at such a central school would be worth some additional payments by the parents to help defray the cost of board and room if this should prove necessary. Probably such payments could largely be made in produce. There would after all be some savings in the home due to the fact that the children are away from home. The total cost of such a scheme to the taxpayer would probably be less than would be required in operating a small school. Perhaps the greatest economy would be achieved in the superior quality of education purchased.

USE OF CORRESPONDENCE LESSONS

Considerable interest has in recent years been shown in the use of correspondence lessons as a means of supplementing provisions for public education. By use of correspondence lessons many extremely small but high-priced classes in the smaller high schools have been consolidated or eliminated. Such lessons are, therefore, already playing a part in raising the pupil-teacher ratios and thus in reducing the costs. But thus far the use of this device has in this country been limited chiefly to the high school. The spread and feasibility of the use of correspondence courses in secondary schools has been extensively surveyed in a recent study²⁶ published by the United States Office of Education.

The question here to be raised, however, is whether correspondence lessons could be successfully used as a means of providing elementary education to children of sparsely settled communities instead of maintaining many of the extremely small rural schools. As concerns the adaptability of correspondence lessons to the education of younger children it should be recognized that the general principles involved in instruction by correspondence are already in common use in such well known instructional devices as the "self-admin-

²⁶ Gsummits, W. H. High-school education by mail—A potential economy. Washington, Government Printing Office, 1933. (U.S. Office of Education Bulletin, 1933, no. 13.)

istrative lesson contract" of the Dalton Plan and the "self-instructive and self-corrective practice materials" of the Winnetka Plan. These plans have successfully used the techniques of self-instruction, written assignment, individual pupil work and progress, written recitations, etc., all of which have long been integral parts of instruction by correspondence. If such lessons were carefully planned with young children in mind and if a careful procedure were evolved for the administration and supervision of such lessons, they suggest great possibilities for successfully providing for the education of isolated rural children and for doing this at an expense greatly below that involved in maintaining very small local schools for such children.

If such lessons were as carefully prepared and supervised as would be necessary to properly safeguard the education of those whose schooling would have to depend upon this device it would naturally result in considerable expense. A plan to use correspondence lessons should, therefore, not be lightly entered upon. It should be predicated upon careful study and experimentation; and it should provide for a considerable initial outlay. Of course several States could study and experiment cooperatively with the development and use of such lessons, and thus spread the overhead that would be involved.

As pointed out above, instruction is already being successfully provided by mail to pupils of elementary school age who for various reasons cannot or do not care to attend the regular schools. Such experiments should be carefully studied for whatever preliminary guides they may yield. There is at least one private school in the United States which is understood to be doing a thriving business in providing correspondence instruction to children between the ages of 6 and 12. In Australia²⁸ and in the Western Provinces of Canada public education for young children by correspondence has long since passed the experimental stage, having been successfully used to furnish instruction at public expense for more than 15 years. In some of the Australian States nearly 3 percent of all children receiving elementary

²⁸ Cunningham, K. S. Primary education by correspondence. Melbourne, Melbourne University Press in Association with Messrs. MacMillan and Co., Ltd., 1931. (Australian Council for Educational Research.) See also the following copies of *School Life*: 12: 141-142, 171-173, 188-189, all published in 1927; and 17: 81-82, January 1932.

instruction receive such instruction by correspondence. For that country as a whole, 13,284 pupils were enrolled for such instruction in 1930. Since its inception a total of approximately 55,000 children of Australia have been taught by the correspondence plan. Much larger proportions of these children were found to be enrolled for instruction in grades I and II than in grades V and VI. The use of such lessons in these grades seem to indicate that this procedure is feasible with even the youngest children.

The fact that for the six Australian States the proportion of children enrolled in correspondence courses "is in inverse ratio to the density of the States' population" indicates that this means of providing an education is almost entirely a matter of pupils living in areas where the maintenance of a regular school is not practicable because of small numbers of educables. The situation is in many respects similar to that in our own sparsely settled sections and thus it bears closely upon the proposal that the use of correspondence courses be considered as a means of providing education in lieu of the maintenance of so many high-priced schools of extremely small enrollment. This being the case the essential facts of the Australian plan will here be briefly described.

In general, the Australian States provide that pupils are not eligible to enroll for correspondence instruction unless "they live 3 miles or more from the nearest school." South Australia requires 4 miles and Victoria admits pupils living nearer than 3 miles when they are less than 11 years of age. Dr. Cunningham²⁷ reports that "children take advantage of correspondence facilities because of the removal of their parents to a remote district where there is no school; because of the closing of the local school through the dropping of the number of pupils in attendance below the minimum number for which a school is kept open; because of sickness or injury, or because of other reasons which make it impossible for them to continue their attendance in an ordinary school."

In Australia, correspondence lessons for elementary pupils are as a rule constructed and administered by the State department of education. When this function is delegated to a regular school it is closely supervised by the State government. The cost to the parents is in most cases small or the

²⁷ Op. cit.

service is entirely free, nearly all of the cost being borne by the State. Indeed, the total average cost per pupil per year for 1930 was only about \$31, all postage and costs of materials usually being included. The number of correspondence pupils handled per teacher is quite high, the average being 55. But every effort is made to establish by mail a very personal relationship between teacher and pupil and the outcome seems to be satisfactory.

The whole scheme, especially for the youngest pupils, depends upon the presence of someone in every family who is sufficiently mature and educated to read the lessons to the child and to supervise his study. No special training in teaching has, however, been found necessary. In most cases parents act as the aids and guides of their own children. Sometimes, however, some capable mother will assist neighboring children as well as her own.

As concerns the success of instruction by correspondence, Dr. Cunningham concluded as follows after considerable study of the matter: "Correspondence study can make progress which compares favorably, and under the best conditions even more than favorably, with that made by pupils attending ordinary schools."

Correspondence pupils of Australia have often stood examinations for entrance into secondary schools and have been found well prepared, frequently achieving scholarship prizes in competition with children from the large residence schools. Products of the correspondence schools usually do excellent work upon high-school entrance. Dr. Cunningham points out, however, that there "are some valuable social experiences" which are denied children who cannot attend the regular schools but he hastens to explain that there are also some compensating results manifesting themselves in the ability of correspondence students to do independent work. He summarizes his arguments on this point as follows:

The child whose education takes place as does that of correspondence pupils is not subjected to the constant temptation to adopt the ideas and solutions of others. Intellectually he must stand on his own feet. He learns to look to books and printed matter rather than to word of mouth for guidance in forming ideas. One must suppose, then, that these habits counteract to some extent the disadvantages of isolation from a class group.

No comprehensive accounts of experiments with correspondence courses as a means of providing education to elementary children living in sparsely settled communities are available for the Provinces of Western Canada. But the department of education of British Columbia instituted such courses shortly after the plan had been announced from Australia. The other Canadian Provinces followed suit shortly until in 1927 at least four of them, namely, British Columbia, Alberta, Saskatchewan, and Manitoba, employed such courses. In most respects the administrative set-up in these provinces adheres closely to that described for Australia. Such reports as are available from these provinces indicate high satisfaction with this device as a means of providing education to isolated children.

From the department of education of Alberta comes this word, "During 1930 over 500 pupils have been enrolled (as correspondence pupils) and while all these do not make the same progress or put the same effort into the work, it is true that a large number has taken advantage of our help. Each year we have a grade VIII class which writes on the departmental examinations set for all grade VIII pupils, and the results are always gratifying."

Saskatchewan reported that in 1931 approximately 450 pupils from unorganized school districts were enrolled for elementary instruction by correspondence. A. B. Ross, director of correspondence of this Province states that "If one were to judge from the many letters received by the Correspondence School, I would unhesitatingly state that this type of education is receiving the whole-hearted support of parents, teachers, and pupils. The plan has been in operation since 1925 and I do not think that it can be said that pupils who have taken the correspondence course in public-school grades have been handicapped when they entered high school."

Mr. C. K. Rogers, Assistant Deputy Minister of Education of Manitoba writes that in "cases where the enrollment in an outlying school district gets very small, we close the school and put the children on correspondence lessons. It is very much more economical than operating the school since we are able to provide for these children at a per capita cost of about \$14."

Director Hargreaves of British Columbia, where correspondence lessons have been used to provide instruction to isolated pupils for many years recently wrote: "You may take my word for it this is the best spent money in British Columbia and gives entire satisfaction to parents and pupils."

The point of the whole matter is that correspondence lessons are being used in other lands to satisfactorily solve the problem of providing elementary education in sparsely settled communities and that it is being done at moderate costs. Since at the present time there are many such communities in the United States which are following the costly plan of maintaining a residence school for every child, even if this means but 1 or 2 pupils per teacher, and since in many of these communities physical conditions are such that consolidation and other commonly used solutions cannot be applied, the possibilities of instruction by correspondence should receive serious attention.

ITINERANT TEACHERS AND PART-TIME SCHOOLS

Another possibility which has from time to time been proposed as a means of providing education in sparsely settled communities without the necessity of the regular maintenance of so many small schools is that of employing of itinerant or circuit teachers. So far as is known this proposal has not been extensively tried out, or if tried out, it has not been subjected to study nor have the administrative procedures involved been carefully described. Itinerant teachers have been used in some rural communities for the purpose of providing at reasonable cost high-grade instruction in such special fields as music, agriculture, and the industrial arts.²⁸ When such a teacher's time is divided between two or more schools this division is made on various bases such as day about, week about, or on alternate periods of even larger units of the school term. With the use of the automobile and good roads such plans have been carried out successfully. Some experimentation along this line has even involved the joint purchase and sharing of tools and other special equipment through the use of especially fitted trucks. Through the use of itinerant teachers rural communities have

²⁸ Moyer, J. H. Circuit and part-time teachers, In enriching the curriculum of the small secondary school economically, Washington National Education Association, 1934. (Year book of the Department of Rural Education, ch. VI.)

been able to enrich the offerings of their schools and to provide such special, and usually high-priced, instruction at reasonable costs.

But this particular use of the itinerant teacher idea is not very closely related to the problem of providing general elementary instruction in sparsely settled and undeveloped communities. Itinerant teachers have been used for this latter purpose but such experiments have usually been regarded as makeshifts and have therefore received very little publicity. A brief news item from the *Virginia Journal of Education*²⁹ affords the only fairly detailed account of the use of such a plan available. A brief review will suffice to give the essential features of this experiment.

In certain mountain counties of this State, where the problem of providing schooling for isolated mountain children is a perennial one, one enterprising teacher undertook to teach two schools. He taught 6 days a week, spending 3 days in one school checking the work, guiding the progress of the pupils' study, and assigning lessons and activities; then he went to the second school for the remaining 3 days where he followed the same procedure. When he returned to either school after an interval of 3 days "he found perfect attendance and assignments perfectly prepared. Some of the pupils who had never been to school before, or had attended very little, showed most unusual progress."

These general comments would indicate that the experiment was a success. No definite checks or measures comparing the pupils' learning progress with that in other schools were available, neither was any information given concerning the administrative aspects of the venture. The item containing the information went on to state, however, that in 1929-30 a total of 12 schools in 3 Virginia counties followed a similar plan.

As a result of an inquiry concerning experimentation with the itinerant teacher idea in the sparsely settled sections of the Canadian Provinces, C. K. Rogers, Assistant Deputy Minister of Education of Manitoba, writes:

We have a few districts which have combined with another and between them have employed a teacher. We call it the alternate week plan and it works quite successfully when we get the right teacher.

²⁹ The Itinerant Teacher of Virginia. *Virginia Journal of Education*, 23:436. June 1930.

The teacher teaches for a week, then gives assignments enough to keep the children busy for the next week which she spends in the next school. When she goes back she checks up the work that has been done at home and spends the time in teaching and assigning again. This arrangement has not grown to any great extent. The largest number of schools operating on this plan in any 1 year is 6.

Some of the Australian States, too, have had occasion to test the itinerant teacher idea. The department of education of Victoria gave out the following statement concerning this aspect of their program:

For districts where the average attendance is 10 or lower, 2 such schools may be worked together under 1 teacher who visits the schools, day or week about, according to the distance between them. A conveyance allowance is paid to the teacher. Scholarships have been won by pupils in such half-time schools. Schools are placed under this part-time system only on the approval of the minister of education. Where 3 isolated families of about 4 children each will accommodate a teacher for a week in rotation an "itinerant school" is established. There are two such schools in Victoria. Individual differences are removed and work sufficient to occupy the children in each subject for 2 weeks is set by the teacher and completed before he returns. This system, possibly on account of the extra allowance provided, has attracted competent teachers, and work to the standard of a full-time school has, in some cases, been done.

Although the information on the use and success of itinerant teachers as a means of obviating the maintenance of very small schools is rather meager, the cases reviewed show clearly that the general idea has possibilities. It might be assumed that if this plan has been employed with a reasonable degree of success both in our own States and in other lands having a similar problem it might be much more extensively employed rather than continuing the present expensive procedure of maintaining a residence school for but 1, 2, or 3 pupils. A combination of correspondence lessons with itinerant teachers has been suggested. Such a plan would obviously make the correspondence plan less dependent upon the parents.

It is in place again to warn against any indiscriminate use of the part-time schools or itinerant teachers. Such a scheme should be resorted to only in extreme cases and then only after careful study and with continuous supervision and the use of high-grade teachers. With such safeguards the idea undoubtedly has possibilities as one device useful in the solu-

tion of the problem of providing education to isolated children.

LAWS FACILITATING THE ABANDONMENT OF EXPENSIVE SMALL SCHOOLS

It will be seen that several practical ways and means have been evolved and tried out whereby children in remote or sparsely settled areas can receive the benefits of an education without the maintenance of so many inordinately small and almost inevitably expensive schools. In Australia and in Canada the minimum number of pupils for which a regular school may be organized and maintained is definitely fixed. In these countries the incurrence of extremely high costs necessary to the employment of full-time teachers and the operation of regular schools for fewer than 6 pupils (in some cases the minimum is 10) is not tolerated. Of course in these countries the State school authorities are vested with much greater power than they are in the United States. They are, therefore, able to weigh the merits of each case and exercise their best judgment as educational statesmen.

In the United States school laws and administrative set-ups vary greatly among the several States, and frequently the abandonment of a school, however small, is extremely difficult. It is clear that in some States it is much easier than in others under present laws to resort to transportation, tuition payments, consolidation, dormitory schools, correspondence lessons, itinerant teachers, or a combination of these administrative devices, and thus avoid the continuance of very small schools. In some States none of these administrative departures is permitted except by a majority vote of the electors of each district concerned. The very fact that such a departure involves far-reaching changes is in many cases sufficient reason to delay its adoption almost indefinitely. When such changes depend upon the initiative and concerted action of farm people who are traditionally conservative the great difficulty of effecting them becomes apparent. A good deal more progress both as to organization and administrative procedures in our schools would undoubtedly result if more power and responsibility were reposed in the central school authorities of the several States. Budgetary improvements, centralized purchasing, management of teaching

personnel, management and placement of schools; all these could be accomplished more efficiently and often at great savings in costs if schools were organized and administered on a county-wide or State-wide plan.

A brief review of some of the laws which tend to facilitate the abandonment of very small and expensive schools will probably prove helpful to any State striving to effect savings in school costs through this means. As pointed out above, legislation providing for the county unit is conducive to the solution of this problem. Some of the States having successful county unit laws are Maryland, Utah, and Louisiana. Eight other States, all of them in the South, have various features of the county unit system. The New England States in which schools are operated by towns can also more readily abandon very small and inefficient schools than States under the local district plan. New York State, which has a central district plan, has been able to make greater educational progress in abandoning small schools since the adoption of that plan than before.

As far back as 1901 Indiana passed laws permitting township school trustees to abandon a school district which had an average daily attendance of 12 or fewer pupils. Recently it was made mandatory for trustees temporarily to discontinue all schools in which the average attendance during the previous year has been 12 or fewer pupils and it was made permissive to abandon such schools if the attendance fell to 15 or fewer pupils, provided that conditions of roads, bridges, and streams permit attendance elsewhere. It was also provided that a school exclusively for colored pupils shall not be discontinued because it has fewer than the specified number of pupils, if such a school is the only one available for colored pupils. Partly as a result of legislation such as this, Indiana has made tremendous strides in consolidating its rural schools and transporting pupils living beyond walking distance. The 1-teacher schools have now been reduced to about 1,800 for the entire State.

Recent legislation in several other States is similar in nature to that cited for Indiana. For example, Missouri passed a recent law which provides that "if any district in this State shall have an average daily attendance of 15 pupils (or fewer) as shown by the records of the previous

year, the State superintendent shall in lieu of State aid, after investigation that convinces him that it would be to the best interests of all concerned, require the board to provide transportation of the pupils of such districts to other public schools, provided that the total expense, including transportation and tuition paid by the State shall not exceed the amount the State would have otherwise paid to such a district." Missouri also provides that a school must be provided for colored children when there are as many as eight such children.

In West Virginia, a law recently passed provides that the newly created county boards shall have the authority to close any elementary school whose average attendance falls below 20 pupils for two successive months and to transport the children to other schools.

In the South, the laws have for some time past prescribed minimum numbers of pupils for whom schools might be maintained. North Carolina stipulates that no high school shall be maintained for fewer than 60 pupils and no elementary school for fewer than 25 pupils, unless geographical and economic conditions make it impracticable to provide for the education of such pupils elsewhere. Arkansas provides that schools which have an average attendance of fewer than 15 pupils may be dissolved at the discretion of the county board. In Alabama, the county board is empowered to consolidate schools whenever, in its judgment, it is practical to do so. In Tennessee, the county board has the power to fix the minimum number for which a school may be maintained, but the law stipulates that a school shall not be maintained for fewer than 10 pupils. The county board has the power in this State to consolidate schools whenever in its judgment the efficiency of the schools in question is improved thereby. Kentucky provides that no subdistrict be maintained with fewer than 25 children of school age. Partly as a result of such legislation the schools of the Southern States show average enrollments considerably higher, even for whites, than obtain elsewhere.

Other States fix a minimum number for which schools may be maintained, but the number fixed is comparatively low. A recent law in South Dakota provides that districts with 10 or fewer pupils living within a radius of 4 miles of the

school may maintain a school only upon petition by its electors. In California the law provides that a district shall be suspended if 5 or fewer pupils attended during the previous year. In Kansas the county superintendent is empowered to disorganize depopulated districts, i.e., those having fewer than 5 legal voters or 7 children between the ages of 5 and 21. Idaho provides that a school district shall lapse when it has an average attendance for 6 consecutive months of 5 pupils or fewer. School districts of Minnesota may be automatically dissolved by resolution of the county board when fewer than 10 children of school age reside therein, provided the majority of the freeholders are not qualified voters. In some of the States the minimum number of pupils stipulated is too low or provides for too many exceptions to be effective in solving the problem of abandoning small inefficient schools. In some States the laws specify that schools shall be abandoned only when they have failed to maintain school for given periods of time. Still other States provide that in no case shall a school, however small, be abandoned except by a majority vote of the resident electors. Thus it is very difficult in many places under present laws to escape the maintenance of very small schools no matter how expensive they may be.

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