DOCUMENT RESUME

EA 001 823

ED 025 022

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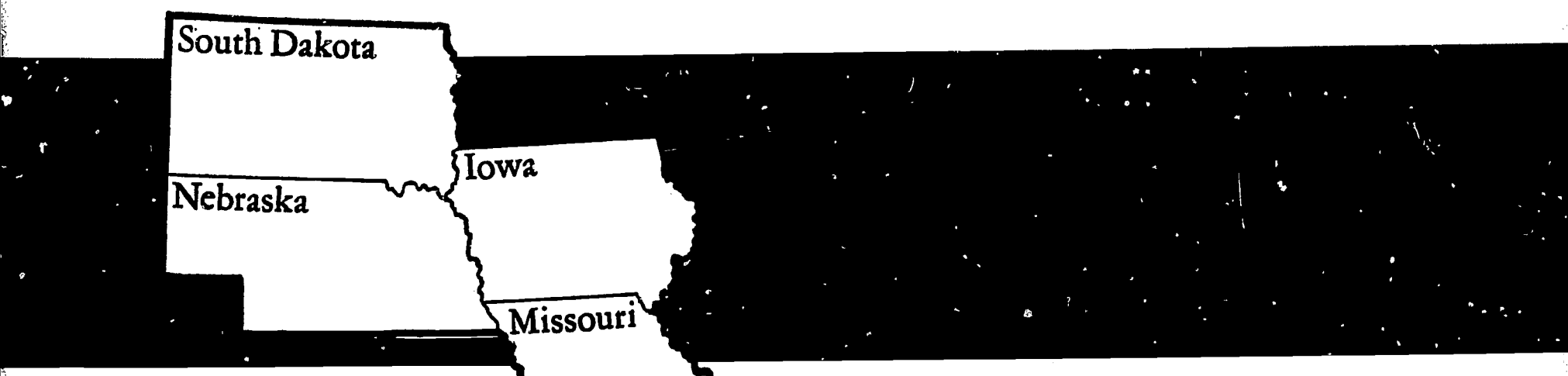
The Factor of Size and School District Organization.

Great Plains School District Organization Project, Lincoln, Nebr.
Pub Date Jun 68
Note- 6p.
Journal Cit- Great Plains School District Organization Project; v2 n4 June 1968.
EDRS Price MF- $0.25 HC- $0.40
Descriptors- Academic Achievement, Construction Costs, Educational Opportunities, Educational Quality, Metropolitan Areas, Operating Expenses, Population Distribution, *Public School Systems, School District Spending, *School Redistricting, *Student Enrollment, Tables (Data)

School district size is discussed with respect to the following topics: School district organization, school district objectives, elementary schools, secondary schools, administrative districts, intermediate agencies, metropolitan centers, administrative costs, population distribution, operational costs, educational quality, student achievement, educational opportunities, and building costs. Tables present suggestions by various organizations and individuals for minimum, optimum, and maximum sizes of (1) elementary attendance centers, (2) secondary attendance centers, (3) administrative districts, (4) intermediate agencies, and (5) special services. (TT)



THE FACTOR OF

Vol. 2, No. 4 June, 1968

SIZE AND SCHOOL DISTRICT ORGANIZATION

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The Significance of Size:

- SIZE IS AN IMPORTANT FACTOR TO CONSIDER WHEN A STATE UNDERTAKES THE TASK OF ORGANIZING ITS SCHOOL DISTRICTS INTO UNITS WHICH WILL PRODUCE THE EDUCATONAL RESULTS THE CITIZENRY EXPECTS FOR ITS INVESTMENT IN PUBLIC EDUCATION.
- SIZE, IN AND OF ITSELF, WILL NOT PROVIDE QUALITY EDUCATION. SIZE MUST BE RELATED TO THE OBJECTIVES UPON WHICH A STATE SCHOOL SYSTEM ORGANIZATION IS BASED.
- SIZE BECOMES IMPORTANT WHEN RELATED TO THE TASKS THAT SIZE CAN ACCOMPLISH TO MEET EDUCATIONAL OBJECTIVES ADEQUATELY, EFFICIENTLY, AND ECONOMICALLY.
- RESEARCH SUGGESTS THAT ONE OF THE MOST SERIOUS DETERRENTS TO THE ATTAINMENT OF EQUITABLE EDUCATIONAL OPPORTUNITIES FOR ALL YOUTH IS THE INABILITY OF SMALL SCHOOLS TO PROVIDE AN EDUCATIONAL PROGRAM TO MEET THE NEEDS OF ALL YOUTH AND ADULTS.
- RESEARCH SUGGEST THAT A WELL-ESTABLISHED RELATIONSHIP EXISTS BETWEEN SIZE AND:
  –PER-PUPIL COSTS
  –PUPIL ACHIEVEMENT
  –PROGRAMS OF BREADTH AND QUALITY
  –TEACHER PREPARATION AND CERTIFICATION
- SIZE MUST BE VARIABLE–NEVER AN ABSOLUTE.

State School System Structure Should Provide:

–a comprehensive program of elementary and secondary education. Some authorities include nursery schools, kindergarten, junior college and adult education.

–a complete range of educational services including: special classes for physically and mentally handicapped; remedial programs for underachievers special programs for academically gifted pupils; and health, guidance, and counseling services for all pupils.

–one well-defined community, or a group of interrelated communities which form a natural socio-economic area.

–specialized administrative and supervisory personnel and teachers with adequate preparation in all areas taught.

–the necessary resources to support financially the kind of educational program implied by the above criteria. Statements of economic criteria may refer to the total income available to the district or to its financial efficiency as measured by cost per pupil.

Mark Hopkins on one end of the log and the student on the other may be ideal, but there are few states, if any, that have enough logs, enough teachers, or enough money to make such an ideal a reality.

School districts can be both too small and too big. Finding the proper balance is a challenge to educational statesmanship, and to the citizens of all communities in the state.

Can there be an acceptable justification and/or validation of costs for administrative services in the amount of $100.00 per pupil in some very small districts compared with less than $10.00 in large districts?

SIZE AND STATE SCHOOL SYSTEM ORGANIZATION

A Position Paper Developed for the Great Plains Project by

WILLIAM E. INMAN[1]

- *SIZE AND OBJECTIVES–*
  - –Individuals have many different educational needs. To have a single program which forces all students through an identical educational mold hardly meets the needs of children and youth.
  - –Larger schools with greater pupil numbers, can and do offer greater program breadth than their smaller counterparts.
  - –The fiscal resources of a state should become available to more students in order to reduce the inequities in educational programs resulting from the fiscal inequities.
  - –A school district should be large enough to have a tax base capable of supporting an educational program which meets the needs of its youth.
  - –It should be remembered that State equalization programs equalize only to a minimum level, not to an optimum or maximum level.
  - –The literature supports the generalization that good-sized schools and school districts generally have staff members with higher levels of professional preparation than do smaller schools and school districts.
  - –Larger school districts and school systems with broader programs, greater local wealth and school system personnel policies attract better trained teachers.
  - –The pupil-teacher ratio factor often reveals excessively low numbers of pupils per teacher in small districts.
  - –The specialized training of teachers is often wasted, or poorly used, in small school districts.
  - –The literature consensus is that small school districts and small schools are, when compared to their larger counterparts, more costly to operate when using costs per pupil as a criterion.
  - –Statewide analysis of costs per pupil in various sizes of school districts often points out the comparatively costly programs of small school districts.

  Size suggestions are related to objectives. Unless appropriate sizes can be reached, program objectives may not be met. The importance of the size factor is not in numbers themselves, BUT WHAT THE GREATER NUMBERS CAN PRODUCE.

- *SIZE AND THE ELEMENTARY SCHOOL–*
  - –The consensus of the literature suggests a minimum of one teacher per grade level with two or three classrooms for each grade level recommended. A maximum seems to be four classrooms per grade.

- *SIZE AND THE SECONDARY SCHOOL–*
  - –The literature indicates that not all objectives can be met with 500 students. However, the suggested figure of 500 students at the secondary level appears most often.

- *SIZE AND THE ADMINISTRATIVE DISTRICT–*
  - –Contemporary literature on school district size ranges from 2,000 to 50,000 students. If the program includes primarily what goes on in the classroom plus the general administration, the lower level of pupil enrollments prevails. If program includes all the ancillary services to support the classroom and its administration, then the upper level of pupil enrollments prevails.

- *SIZE AND THE INTERMEDIATE AGENCY–*
  - –In seven states adopting the intermediate level of school government since 1962, the minimum size ranged from 5,000 to 50,000 students. The factor of size is objective oriented. The objective to be met is the provision of program support and supplemental services to all children.

  The individual parts of a state school system are inextricably related. A balance exists based upon programs offered at each level and the statutory responsibilities which each part must assume. To change any part, without giving careful consideration to the others, may cause serious problems throughout an entire state.

Size alone guarantees nothing. Size in relationship to program adequacy, to the quality of the finished product (the dropout and the graduate), to efficiency in the appropriate utilization of human and material resources, to efficiency of organization, and to economy of operation has significant relevancy.

SIZE AND METROPOLITAN CENTERS

–Four organizational patterns are in evidence at the present time:

1. Maintain the status quo, with a multiplicity of independent and largely uncoordinated school districts within one metropolitan area.
2. Decentralization of large urban cities into administrative subdistricts (Chicago, New York, and others). Such subdistricts would serve 35,000 to 50,000 pupils.
3. Consolidation into a metro-educational district (Davidson County/ Nashville, Tennessee).
4. Development of a Metropolitan Educational Commission or Agency which would administer and coordinate all programs and services which are metro in nature for all local school districts in the metropolitan area (proposed for Louisville/ Jefferson County, Kentucky; Metropolitan St. Louis, Missouri, and others).

–Existing practices have evidenced the problems of size in metropolitan areas; proposed solutions are still in the experimental stage of development.

[1] William E. Inman, Director, Title III Project, Athens, Ohio; formerly Specialist in School District Organization, U.S. Office of Education.

SUGGESTED SIZES AND PARTS OF THE STRUCTURE

THE ELEMENTARY ATTENDANCE CENTER UNIT

Individual/Organization	Minimum	Optimum	Maximum
White House Conference on Education (1956)	225–250	300	.....
NEA Dept. of Elementary School Principals (1954)	.....	.....	500
National Commission of School District Reorganization	175	300	.....
New York Council for Administrative Leadership (1961)	500	.....	900
Ohio Dept. of Elementary School Principals (1966)	300	500	750
Howard Dawson, NEA Dept. of Rural Education	240		
William Rosenstengel	175	525	750
M. L. Cushman	175	.....	.....
Ralph Sollars, Ohio State University 1963	.....	400–499	.....
State Departments of Education—California, Illinois, Iowa, Minnesota, Pennsylvania, Connecticut, Florida, Georgia, Mississippi, Missouri, New Hampshire, New York, Washington	Generally agree on minimum size of one teacher for each grade, optimum of approximately 2–3 sections per grade, and 4 sections per grade as a recommended maximum.		

THE SECONDARY ATTENDANCE CENTER UNIT

Individual/Organization	Minimum	Optimum	Maximum
White House Conference on Education (1956)	.....	700–1,000	.....
National Commission on School District Reorganization (1948)	300–450	.....	.....
State Board of Education Study—Vermont—1964	600–2,000	.....	2,000
Interim Commission Study—New Hampshire—1961	.....	500	.....
George Peabody College (1965)	100 (Graduating Class)	.....	.....
James Conant (1959)	100 (Graduating Class)	.....	.....
State Departments of Education—New Jersey, New Hampshire, New York, Vermont, Washington, Wisconsin	Generally agree on either a 500 student or a 100 student graduating class as minimum size.		
William McClure, University of Illinois	700	1,000–1,200	.....
Ohio Association of Secondary School Principals (1966)	.....	1,350–1,500	.....
Korwitz and Sayres Study in New York	500	600–800	.....

THE ADMINISTRATIVE DISTRICT

Individual/Organization	Minimum	Optimum	Maximum
National Commission on School District Reorganization (1948)	10,000	.....	.....
Howard Dawson, NEA Dept. of Rural Education	1,600	9,800–12,000	.....
Harlan Beem, Midwest Educational Research Center	.....	11,000	.....
Edgar Morphet, University of California	1,200	10,000	
Teachers College, Columbia University (1961)	.....	20,000–50,000	.....
William P. McLure, University of Illinois	5,000–6,000	.....	.....
George Peabody College (1965)	10,000	15,000–20,000	.....
Connecticut Department of Education	5,000 for regionalized school districts		
Stephen Knezevich, American Association of School Administrators	.....	10,000–12,000	.....

SIZE AND QUALITY

While authorities accept the fact that numerous factors may contribute to the overall "quality" of a school, no consensus has been reached concerning a specific list of these characteristics and the degree to which each may affect school quality. It is generally agreed that the quality of a school may be influenced by factors such as professional training and certification of teachers, teaching load, and scope of the curricular program.

Dr. E. James Maxey and Donald R. Thomas, in their study SELECTED COMPARISONS OF TEACHER AND CURRICULUM CHARACTERISTICS RELATED TO EDUCATIONAL INNOVATION FOR THE GREAT PLAINS (a position paper developed for the Great Plains Project), suggest:

- the smaller the school district, the greater the probability for a teacher to teach in more than one or two subject areas.
- smaller schools sometimes require teachers to teach in areas where they are not as adequately prepared.
- teachers in small schools tend to have three or more course preparations much more frequently than teachers in larger school districts.
- larger districts pay teachers better salaries.
- teachers in larger districts meet more pupils daily. More appropriate pupil-teacher ratios are possible in larger schools.
- schools with larger enrollments tend to attract teachers with better preparation insofar as number of semester hours of course work is concerned.
- as school district enrollment increases, more courses are available in both the junior and senior high schools.
- as district enrollments increase, the largest increases in course offerings are noted in the areas of foreign language, business, technical and vocational education.

SIZE AND ACHIEVEMENT

Elementary Pupil Achievement

A statewide study at the University of Iowa concluded that there were consistent increases in average achievement in the basic skills with increase in the size of the school. Consistently large differences in average achievements were found in schools employing a teacher for each grade over those in which a teacher was responsible for more than one grade. Kreitlow's work in Wisconsin suggests that there has been a clear relationship between the centralization of the attendance unit and the opportunities and achievements measured. Bashe reported that, in his opinion, pupils seemed to achieve more in schools where there were at least two sections of each grade level. Finlay and Thompson's study in California reported higher educational achievement test scores made by pupils in schools having a single grade per room than by pupils in schools where teachers taught more than one grade.

Secondary Pupil Achievement

At the secondary level, Feldt's study at the University of Iowa reported that many of the claims for the small school may be well founded. He suggested that subtle benefits which cannot be adequately measured or evaluated may be gained in the unique atmosphere of a small school. However, on the issue of pupil achievement the evidence appears to be overwhelming. On the average Iowa graduates of small schools achieve significantly below the graduates of large schools. Feldt found that the possible advantages to attendance at a small school were bought at the price of poorer quality in the academic aspects of the school program. William E. Inman, in the position paper developed for the Great Plains Project entitled SIZE AND STATE SCHOOL SYSTEM ORGANIZATION stated: "In the area of pupil achievement, the literature strongly suggests that pupil academic achievement, as measured by scores on standardized achievement tests, is higher in larger schools, both elementary and high school.

SIZE AND EDUCATIONAL OPPORTUNITIES

The literature on the relationship between size of school and educational program breadth is almost unequivocal. Larger schools, with greater pupil numbers can and do offer greater program breadth than their smaller counterparts. Exceptions to this statement would be few and would be largely limited to those cases where an unusual amount of local wealth supports a small pupil enrollment.

—A 1966 Illinois study, EDUCATION FOR THE FUTURE OF ILLINOIS, reported that in 10 of 13 curricular areas, the larger the size of high school, the greater number of credits offered in each curricular area.

—A study of all high schools in eleven southern states conducted by Joe L. Jackson of George Peabody College for Teachers in 1966 indicated that course offerings in both academic and nonacademic areas consistently increased in number as enrollment increased, regardless of the grade organizational pattern.

—A nationwide study in 1965, sponsored by the U.S. Office of Education entitled SUBJECT OFFERINGS AND ENROLLMENT IN PUBLIC SECONDARY SCHOOLS, found that numerous courses in the areas of language arts, social studies, mathematics, science, foreign language, art, music, industrial arts (non-vocational), vocational trade and industrial, and certain business education courses of the type which are normally considered beyond basic courses, were clearly more often available in the larger public high school.

A nationwide study, "Project Talent," summarized the relationship which seems to exist between size of high school and educational opportunities when it supported the proposition that larger school size is a proper and important objective in order to provide a greater variety and depth of course offerings, and to make available special services such as groupings, acceleration and guidance.

SIZE AND ADMINISTRATIVE COSTS

Richard Manatt and Anton J. Netusil, Iowa State University, in a study developed for the Great Plains Project entitled A STUDY OF ADMINISTRATIVE COSTS IN SELECTED SCHOOL DISTRICTS OF IOWA, MISSOURI AND SOUTH DAKOTA present the following summary statements:

- As district enrollments drop, per pupil costs for central administration, excluding costs of administering attendance units, increase rapidly.
- Large districts spend more for special services than for supervision, and a still smaller amount for general administration.
- Median sized school districts spend more dollars for general administration than for special services or educational supervisors.
- Smaller districts of each state spend almost nothing for special services; a portion of the administrator's time is devoted to teaching.
- Per capita expenditures for both general administration and total central administration vary inversely with district enrollment.
- Small and median-sized districts do not have the services of educational supervisors or personnel assigned to special services.
- Districts with 10,000 or more students spend more money for supervision and special services than for general administration.
- Districts of median and smaller size schools spend most of their total administrative budget on superintendents, assistants, and secretaries.

Conclusions and recommendations presented in the study by Manatt and Netusil include:

If pupil economy is a factor in school district organization, then reorganization must be based on K-12 enrollments of at least 3,000 to 5,000 pupils. Larger districts of 20,000 or more are desirable whenever such enrollments can reasonably be secured.

If services from the central office are considered to be important, then district enrollments must be 3,000 or more.

Reorganization on the basis of state median enrollments would not suffice, since districts of this size do not provide the supervision or special services.

If, as one speaker said, the sparse areas are becoming sparser, and the dense areas becoming denser, then legislative consideration must increasingly be given to sparsity/density factors to avoid uneconomical and wasteful expenditures of the taxpayers' dollar for buildings that will no longer be needed and for new buildings in developing communities.

The problem is not in being too small or too big. The problem is to be found in what we do with our smallness and with our bigness; and, in what the resultant cost is, both to the taxpayer in the returns for the invested dollar and to the youth of the community in terms of educational opportunities or deprivations of such opportunities.

SIZE AND SPARSITY

—The dispersion of the population, geographical factors, and other conditions make it either impossible or undesirable to create districts, all of which enroll an optimum number of pupils in each attendance center.

—In sparsely settled areas, the key factor for the determination of attendance centers is the time/distance factor.

—Maximum pupil time spent on school buses in traveling to attendance centers should remain relatively constant, with distance being a variable in relation to road and highway conditions and to the geographic contour of the area.

—It is quite frequently suggested that pupil transportation time not exceed one hour, one way, for approximately 90 per cent of the transported pupils.

—Appropriate bus routing plans are extremely important in determining distances to be traveled in allotted periods of time.

—Utilization of the computer in school bus routing is proving helpful in many school districts.

—The sparsity factor will necessitate attendance centers below the recommended enrollment figure.

—When conditions necessitate smaller attendance centers, such centers should be (1) subject to the approval of the State Board of Education, and (2) be granted additional state funds to provide equitable educational opportunities for all.

SIZE AND OPERATIONAL COSTS

—The consensus of the writings on cost is that small school districts and small schools are more costly to operate than large school districts and large schools. When cost alone is used as a criterion, without regard to other factors, districts may become very large in size without impairing financial efficiency.

—A Nebraska State Department of Education study conducted in 1967 suggests:

- The small school district is expensive to operate. Average per pupil costs ranged from more than $600 in districts with K-12 enrollments of 25-100 pupils to less than $400 in districts with K-12 enrollments of 1,500–4,000 students.
- Instruction suffers in small schools because of excessive administration costs.
- The waste of tax monies is, for the most part, inversely proportional to the size of the school district; the smaller the school district, the greater the average per pupil cost.

—Cost studies and opinions related to program breadth at both the district level and the individual school level would indicate that fairly large pupil enrollments are needed for efficiency and economy.

—A recent study in Washington reported unit costs at $700 per pupil in high schools of 100 pupils, and $400 in schools enrolling 1,500 pupils.

THE INTERMEDIATE AGENCY

State/Organization	Minimum	Optimum	Maximum
Iowa		16 districts	
Michigan, 1962	5,000		
Nebraska, 1965		10,000–guideline	
New York, 1962		125,000	
Ohio Association School Administrators	50,000		
Ohio Association for Supervision and Curriculum Development	20,000		50,000
Pennsylvania, 1965	100,000		
South Dakota County Superintendents Association		7 districts	
Texas, 1965	50,000	subject to sparsity	
Washington, 1965	20,000	16 units	
Wisconsin, 1965	25,000	19 units	

SPECIAL SERVICES

(Based on project staff analysis of reports by consultants and other related data and information)

Program or service area	Minimum	Optimum	Maximum
Adult Education, with full-time director	20,000		
Business Administration		35–50,000	
Educational media centers; Library service centers		The AESA[1]	
Electronic Data Processing	60,000	100,000+	
In-service programs		The AESA[1]	
Guidance		The AESA[1] (Coordination)	
Special education:		The AESA[1]	
(All programs at each attendance center, where possible)			
Slow learning; speech handicapped; behavior disorders; specific handicaps	10,000	20,000	
Deaf; hard of hearing; visually handicapped; crippled	100,000+		
Special media (ETV, ITV, etc.)		The AESA[1]	
Transportation		The AESA[1]	
Vocational Education		The AESA[1]	

[1] AESA—Area Educational Service Agency.

SIZE AND BUILDING COSTS

George Englehart, in a position paper developed for the Project entitled SCHOOL PLANTS AND SCHOOL DISTRICT ORGANIZATION suggested:

—The satisfactory school district, in terms of plant facilities, is one that can perform its several functions in acquiring, operating and maintaining plant facilities that provide the physical environment in which all pupils from kindergarten, or pre-kindergarten, through the secondary school can experience the learning activities which meet the individual needs of every pupil and the society of which he is a part.

—Changes that have been made and are continuing to occur in the farming enterprise results in larger and fewer farms which are operated by fewer workers. Movement of rural people from farms to cities have considerably depleted school population in these areas. Many school plants have been abandoned during the past decade because of obsolescence caused by loss of school population and changing educational demands.

—Evidence suggests that size of school plants definitely affects costs, and that school districts with high school enrollments of less than 600 students must spend considerably more per pupil for plant facilities than those with larger enrollments.

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