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ABSTRACT

The call for limits on the enrollment of students in classes has continued to grow during the past decade despite questions regarding whether class size really makes a difference in instructional effectiveness. The purpose of the research reported here is to establish what the states have actually done to reduce class size in kindergarten through grade 6. Responses to a profile analysis assessment instrument sent to the state education agencies for each of the 50 states plus the District of Columbia, American Samoa, Guam, Northern Mariana Islands,, Puerto Rico, and the Virgin Islands are analyzed. Two tables show the caps on class size, the classrooms needed, the process used to determine the classrooms needed, and how the new classroom construction was financed. Of the 24 states with mandates to reduce class size, only three (Alabama, California, and South Carolina) conducted a needs assessment to determine the number of classrooms needed to meet the mandates. This study verifies the failure of the states to adequately address the issues of reducing class size as a means to improving student achievement. It illuminates the fact that states have passed mandates but have not conducted a needs assessment of the new classrooms required to meet the mandates. It verifies also that the local school systems are being held responsible for meeting the mandates in both policy and finance without state support in the vast majority of cases. (6 references) (MLF)

MANDATED CLASS SIZE AND AVAILABLE CLASSROOMS:

AN EDUCATIONAL FACILITY DILEMMA

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A manuscript prepared for presentation at the AMERICAN EDUCATIONAL RESEARCH ASSOCIATION in Boston, MA on April 17, 1990.

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MANDATED CLASS SIZE AND AVAILABLE CLASSROOMS: AN EDUCATIONAL FACILITY DILEMMA

The call for limits on the enrollment of students in classes has continued to grow during the past decade. The response to this call has included no action, special programs enacted by state boards of education to reduce class size, state board of education policies placing caps on class enrollment and state accreditation standards which have limits on class enrollment. This call for caps on class size has continued despite questions regarding whether class size really makes a difference in instructional effectiveness. It has also continued without adequate consideration of the need for the means to build the additional classrooms to meet the mandates.

The U.S. Department of Education Office of Educational Research and Development in its March, 1988, report Class Size and Public Policy; Politics and Panaceas has stated that indices of teacher/student ratios, teacher/class size ratios and teacher/pupil load ratios do not explain or justify the current pressures for reduction in class size (Tomlinson, 1988). The National Governor's Association in their heralded report, Time for Results, advanced several ideas regarding year-round schools and parent choice. Yet they did not address class size as a factor for improving education (National Governor's Association, 1986).

Conversely, some states have formulated programs and policies in the belief that reduced class does indeed impact student achievement. The Indiana State Board of Education through their Prime Time program has designed a means for reducing the teacher/pupil ratio in grades K-3 in order to increase the potential for student achievement. Their belief in the program which began in 1984-1985 is reflected by the expenditure of more than $240,000,000 for Prime Time (Indiana Department of Education, 1989). Project STAR in Tennessee is a longitudinal study on the effects of reduced class size on student achievement. The latest results as presented at the American Association of School Administrators conference in February, 1990, show that student achievement is significantly higher in small classes than in large classes or classes with teacher aides. Additionally, the greatest benefits of reduced class size are found in inner-city schools (Achilles, Bain, & Finn, 1990). While Kentucky has had some difficulties handling the caps on class size at the local level, it is still illuminating that the superintendents believe that it is the best solution to improving instruction and achievement in the local school district (Kentucky State Department of Education, 1987).

With the debate still continuing, there are several questions which have not been answered. Those questions are:

1. What policies have the individual states enacted in regard to establishing caps on class enrollment?
2. Is a state has a mandated class size reduction policy or law, what is the cap for grades K-6?
3. How many classrooms are needed to meet the mandate?

4. What process was used to determine the number of classrooms needed to meet the mandate?
5. How are the additional classrooms to be built financed?

If answers to these questions can be ascertained, then inferences can be made as the seriousness of the educational reform efforts to mandate class size and who is to be held accountable for construction of the additional classroom necessary to meet the mandates.

The purpose to this research is to answer the questions outlined above. While there is a demand for reduced class size, the hypothesis advanced here is that the state boards of education and state legislatures pass the mandates but hold the local school district responsible for the financing of the needed classrooms to meet the mandates. This study is an attempt to establish in a written format what the states have actually done to reduce class size in kindergarten through grade six.

STRUCTURE OF THE STUDY

A profile analysis assessment instrument was sent to the state education agencies for each of the fifty states plus the District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico and the Virgin Islands. A follow-up letter was sent to those agencies which did not respond. Finally, telephone calls were made to those states not responding. The information requested followed the format of the questions listed earlier. The data is reported in Table 1 which reflects the caps

on class size by state and Table 2 which reflects the classrooms needed, the process used to determine the classrooms needed, and how the new classroom construction was financed.

DATA ANALYSIS

For simplicity purposes, only the data from the fifty states will be analyzed. Of the fifty states, all 50 (100%) responded. Of the fifty states, 24 (48%) have a mandate affecting at least one grade level either by state board of education policy, legislative law or state accreditation standard and 26 (52%) states do not have a mandate regarding class size.

Of the states that have a mandate to reduce class size, the lowest class sizes are:

K	17	Alabama
1	15	Nevada
2	15	Nevada
3	15	Nevada
4	17	Alabama
5	24	Alabama
6	24	Alabama

However, it should be noted that these caps are being phased in by grade starting with the 1988-1989 school year and are to be in place by the 1997-1998 school year. The highest class cap on kindergarten is 33 in California. The highest class cap on

TABLE 1. CLASS SIZE FOR GRADES K-6

STATE	MANDATED	COMMENTS	K	GRADE 1	GRADE 2	GRADE 3	GRADE 4	GRADE 5	GRADE 6
Alabama	Yes, 1988-89	See note	17	17	17	17	17	24	24
Alaska	No								
Arizona	No								
Arkansas	Yes, 1987	See note	20	25	25	225	28	28	28
California	Yes, 1966-69	See note	33	32	32	32	29.9	29.9	29.9
Colorado	No								
Connecticut	No								
Delaware	No								
Florida	No								
Georgia	Yes, 1985		21	25	25	25	33	33	33
Hawaii	No	See note	20						
Idaho	Yes, 1979		25	25	28	28	32	32	32
Illinois	No								
Indiana	No	See note							
Iowa	No								
Kansas	No								
Kentucky	Yes	See note	28	24	25	25	28	29	29
Louisiana	Yes		26	26	26	26	33	33	33
Maine	Yes, 1984	See note	25	25	25	25	25	25	25
Maryland	No								
Massachusetts	Yes, K only	See note	25						
Michigan	Yes	See note	25	25	25	25	30	30	30
Minnesota	Yes, 1986	See note	30	30	30	30	30	30	30
Mississippi	Yes, 1982	See note	22	27	27	27	27	30	30
Missouri	No								
Montana	Yes, 1989	See note	24	26	26	28	28	30	30
Nebraska	No								
Nevada	Yes			15	15	15			
New Hampshire	Yes	See note	25	25	25	30	30	30	30
New Jersey	Yes, K only	See note	25						
New Mexico	Yes, 1986	See note	20	20	22	24	25	25	25
New York	No	See note							
North Carolina	Yes, 1987	See note	26	26	26	26	26	26	26

TABLE 1. CLASS SIZE FOR GRADES K-6

STATE	MANDATED	COMMENTS	GRADE K	GRADE 1	GRADE 2	GRADE 3	GRADE 4	GRADE 5	GRADE 6
North Dakota	Yes, Accreditation	See note	25	25	25	25	30	30	30
Ohio	No								
Oklahoma	Yes, 1985	See note	25	22	22	22	25	25	25
Oregon	No								
Pennsylvania	No								
Rhode Island	No								
South Carolina	Yes, 1986	See note	30	30	30	30	30	30	30
South Dakota	No								
Tennessee	Yes, 1977		25	25	25	25	28	30	30
Texas	Yes, 1985		22	22	22	22			
Utah	No								
Vermont	No	Ave. class size	<20	<20	<20	<20	<25	<25	<25
Virginia	Yes	See note	25	24	25	25	25	25	25
Washington	No								
West Virginia	Yes, 1983-84	See note	20	25	25	25	25	25	25
Wisconsin	No								
Wyoming	No								
District of Columbia	Did not respond								
Samona	No								
U.S. Dept. of Education	Not applicable								

NOTES:

Alabama - Bill 16-13-52.1 was enacted in 1988-89 and phases in these class sizes through the 1997-1998 school year.

Arkansas - Presently updating a statewide facility inventory with the information gained being available approximately October 1, 1990.

California - Department of Education School Facilities Planning Division indicated that there were 60,865 classrooms available before the mandate and 18,385 additional classrooms were needed to meet the mandate which is now over 20 years old. Penalities may occur if a school district exceeds the statewide average of 1964 (29.9 for grades 4-8) or the district's average in 1964 if higher.

Hawaii - For grades K-1, there is a maximum cap of 20 to 1. However, there is no cap for grades 2-12. An allocation is made of one position for every 26.15 pupils in a school, but this is not a class by class ratio.

Indiana - Does not have a legislated mandate on class size. It is estimated that it would require construction costs of $600,000,000 to reduce class size for grades K-5 to a cap of 15 to one. PRIME TIME is a program by the Indiana State Department of Education to reduce the adult/pupil ratio in grades K-3.

Kentucky - At the finish of the accreditation cycle of the 1990-1991 school year, a facility inventory will be available via computer.

Maine - For each school grades 1-6 must average 25 pupils per teacher or less and no class may exceed 30 pupils.

Massachusetts - Class caps exist for kindergarten only and the kindergarten classes must average no more than 25.

Michigan - The class size shown here are mandates only in the sense that the School Aid Act funds the schools and a school may be penalized financially for exceeding this class size. For those classes with caps of 30, any certified employee in the district is figured into the ratio of 30:1.

Minnesota - This ratio is State Board of Education policy, not legislated law. Any exception from this ratio must be adopted and filed with the State Board of Education by August 1, each year.

Mississippi - K may have 27 if there is a teacher aide. Grades 1-4 may have 30 with approval of State Board of Education. Grades 5-6 may have 30 if the class are self contained or 33 if departmentalized.

Montana - By July 1, 1992, K-2 class size is to be 30.

New Hampshire - These class caps must be met by Fall, 1993. At the present time, their studies indicate that 89% of the classes meet these caps on class size.

New Jersey - Only kindergarten has a mandated cap of 25 students. However, the New Jersey Board of education recommends that the ideal class size be 25 students.

New Mexico - Grades K-1 with 15-20 pupils have an instructional aide.

New York - There is no mandate on class size. However, if a teachers' load for a six hour day exceeds 150 students, a justification must be provided to the state.

North Carolina - Under the provisions of 115C-301, "It shall be the duty of local school boards of education to provide adequate classroom facilities.

North Dakota - Accreditation, a voluntary process for schools, forces schools to maintain these class sizes. Failure to do so risks the loss of accreditation. Over 90 percent of the schools seek accreditation.

Oklahoma - By 1992-1993, kindergarten class size is to be 22. By 1990-1991, grades 1-3 are required to have class sizes of 21. Grades K-3 may exceed the class requirements by nine pupils provided a teaching assistant is hired for that class. Grades 4-6 may exceed the class requirements is the additional section would have less than 16 pupils.

South Carolina - Grades 4-6 are required to have a 30:1 ration in reading math. Other subjects may have a 35:1 ratio.

Vermont - The numbers reflect average class sizes, not enrollment caps. Instructional aides or special tutors must be used to compensate for higher ratios.

Virginia - By the Virginia Board of Education Chapter 13.2, Standards of Quality, July 1988, divisionwide ratios of students in average daily membership to full-time equivalent teaching positions, excluding special education teachers, principals, assistant principals, counselors and librarians are not to exceed the numbers listed per class.

West Virginia - Exceptions may be requested from the Department of Education for up to 23 in Kindergarten and 28 in grades 1-6.

Wisconsin - The laws regarding borrowing were changed in August 1989 to make it easier for LEA's to borrow. LEA's may now borrow up to $1 million without a referendum. Amounts over $1 million require a referendum only if the local board receives a petition for referendum from 20% of the persons who voted in the last state election.

TABLE 2. DETERMINATION AND FINANCING OF CLASSROOMS

STATE	CLASSROOMS TO MEET M NDATE	PROCESS TO DETERMINE CLASSROOMS	FINANCING FOR ADDITIONAL CLASSROOMS
Alabama	5585	Comprehensive needs assessment	local funds
Alaska			
Arizona			
Arkansas	information not provided	state assisted districts upon request	district funding, bonds, revolving loan from State
California	18,385	part of process to determine eligibility for state school building aid	state bond issues, local developer fees, local general obligation bonds, school facilities districts assessments
Colorado			
Connecticut			
Delaware			
Florida			
Georgia	information not available	local long-range facilities plan	local funds 10-25% state 75-90%
Hawaii			
Idaho	information not provided	information not provided	information not provided
Illinois			
Indiana			
Iowa			
Kansas			
Kentucky	.o statistics available	survey on district-by-district basis	School Facilities Construction Commission
Louisiana	not determined	did not use one	local taxes and bonds
Maine	not determined	not known	if approved by State, State; if not approved, local funds
Maryland			

TABLE 2. DETERMINATION AND FINANCING OF CLASSROOMS

STATE	CLASSROOMS TO MEET MANDATE	PROCESS TO DETERMINE CLASSROOMS	FINANCING FOR ADDITIONAL CLASSROOMS
Massachusetts	not determined	not determined	local effort
Michigan	not determined	not determined	local bonds
Minnesota	information not provided	public hearings conducted regionally	local district resources
Mississippi	not determined	local option, needs assessment	special short term loans, Bond elections.
Missouri			
Montana	information not provided	information not provided	information not provided
Nebraska			
Nevada	state planning; work w/legislators	information not provided	local revenue bonds
New Hampshire	information not provided	information not provided	local effort
New Jersey			
New Mexico	not determined		mill levy, Operating Budget
New York			local effort
North Carolina	study did not address this issue	statewide survey of total facility needs	local ad valorem taxes & bonds; special state sales taxes
North Dakota	not determined	information not provided	information not provided
Ohio			
Oklahoma	not determined	local district responsibility	
Oregon			
Pennsylvania			
Rhode Island		state has school building inventory	state, 30% minimum, remainder, local bond issues combination of state and local funding

TABLE 2. DETERMINATION AND FINANCING OF CLASSROOMS

STATE	CLASSROOMS TO MEET MANDATE	PROCESS TO DETERMINE CLASSROOMS	FINANCING FOR ADDITIONAL CLASSROOMS
South Carolina	11,446		
South Dakota			
Tennessee	information out-dated, not available	questionnaire through state district offices	local districts through property, wheel & sales tax
Texas	unknown	did not use one	local taxes and bond issue
Utah			
Vermont			
Virginia	unknown		Literary Loan Fund, Virginia Public School funding
Washington			State matching funds from Federal Forest Funds; local bonds
West Virginia	information not available	determined by individual district	local districts; no special state funding
Wisconsin			local education agency special funding (see note below)
Wyoming			
District of Columbia			
Samoa			
U.S. Dept of Education			

grade 6 is 33 in Georgia and Louisiana. The class size cap means for the grade levels are:

K	24.19
1	24.42
2	24.71
3	25.08
4	27.72
5	28.40
6	28.40

Of the 24 states that have a mandate, only three (California, Idaho and Tennessee) had the mandate in place before 1980. Most of the mandates have occurred during the past six years or since the Nation at Risk report which spurred educational reform. Conversely, reduction in class size has not been mandated in the 26 states.

An analysis of the classrooms needed to meet the mandate is most revealing in terms of the states' perceived responsibility to enable local districts to meet the mandates. Of the 24 states with mandates, only three (Alabama, California, and South Carolina) conducted a needs assessment to determine the number of classrooms needed to meet the mandates. The remaining 21 states did not determine the number of classrooms needed. The typical response is a general policy stated by the state boards of education that it is the responsibility of the local school districts to meet the mandates.

An explanation of how Alabama, South Carolina, and California arrived at the number of classrooms needed to meet the size mandates is appropriate. Alabama outlined its facility

needs in 1989 with a survey of capital outlay needs (Alabama Department of Education, 1989). The classrooms needed include academic classroom and laboratory space for grades K-12. The needs assessment also dealt with total facility needs, not just those impacted by reduced class size mandates. However, it is startling to view the assessment results. The classrooms needed and total local costs are:

Kindergarten	478	22,921,712
Special Education	652	28,900,986
Regular Classrooms	3,509	182,224,748
Science Laboratories	158	11,367,514
Mathematics Laboratories	79	4,155,943
Foreign Language Laboratories	141	6,779,333
Computer Laboratories	320	15,558,734
Other	248	38,103,724
	5,585	$310,012,693

South Carolina conducted its needs assessment in 1989 and outlined teaching stations needed. Like Alabama, the figures reflect total needs rather than those needs related directly to mandates on class size. The teaching stations needed are:

New Schools	4,207
Additions	2,803
Major Renovations to Existing Facilities	4,228
Temporaries	208
	11,446

The estimated cost of these teaching facilities by year is:

1989-1990	187,758,426
1990-1991	237,021,191
1991-1992	253,255,260
1992-1993	264,744,157
1993-1994	122,608,454
1994-1995	134,084,627
	$1,199,472,115

California determined their classroom needs based on information obtained from local districts as a requirement to determine eligibility for state school facility needs. While it is di ficult to determine the cost of reducing class size for grades K-6, it is readily apparent that the cost of new school facility construction is costly. The Indiana Department of Education has conducted a study which estimates that it would require construction costs of $600,000,000 to reduce class size for grades K-5 to a cap of 15 to one.

If each state averaged $400,000,000 to reduce class size to 20 for grades K-6, it would cost an estimated $20 billion nationwide to meet that mandate. This estimate does not take into consideration the cost of hiring additional teachers for these classrooms.

If the additional classrooms are to be constructed, how are they to be financed? Of those states that responded to this question, most of them state that it is the responsibility of the local school district to raise the taxes or bonds to finance new school construction. A few states do provide help from the state level. Arkansas provides revolving loans to local school districts. California provides funding from the state level and also some joint venture efforts with the local districts. Kentucky uses the School Facilities Construction Commission to finance new school construction. In Maine, the state provides the funding if the state approves the project. However, the major responsibility for new school construction to meet mandates

on class size still is the responsibility of the local school system.

CONCLUSIONS

While reform efforts have pushed for reduced class size as the most effective means to improving student achievement, it is apparent that many states have not adopted the concept. Even though there is debate as to the effectiveness of reduced class size in improving student achievement, several states have chosen to implement mandates to reduce class size. The latest research from Project STAR in Tennessee is the first to conclusively show that small class size does result in significantly higher student achievement scores than those attained in larger classes or classes with a teacher aide.

The states which have mandated class size caps have for the most part limited class sizes to 25 or less in grades K-3 and 30 or less for grades 4-6. However, most of the mandates have been implemented without a determination of the classrooms needed to meet the mandates or without financial help for the local school systems to meet the mandates.

This study verifies the failure of the states to adequately address the issues of reducing class size as a means to improve student achievement. It vividly illuminates the fact that states have passed mandates but did not conduct a needs assessment of the new classrooms required to meet the mandates. It verifies

also that the local school systems are being held responsible for meeting the mandates in both policy and finance without state support in the vast majority of cases.

VIEW AS A RESULT OF THE STUDY

Will change occur as a result of this study? Probably not. Legislatures and state boards of education probably find it politically convenient to pass mandates on class size to meet demands for educational reform. However, state financial support to enable the local school districts to meet the mandates has not been forthcoming.

More studies similar to Project STAR in Tennessee need to be conducted to validate the relationship between class size and student achievement. However, the expenditure of funds in terms of research dollars to determine school facility needs is not a high priority of the states or the United States Department of Education. The monies, both percentage of budget and actual expenditures, which are invested in research and development by educational organizations and the states pale in comparison to the business community. When a conscious decision is made by the federal government, the states and the education community to place monies into research and development, then maybe the impact of state mandates and classrooms needed to meet those mandates can be researched in an effort to keep school facilities from becoming an educational dilemma.

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