

Small Schools Follow-Up Report January 15, 1999

Background

On January 15, 1998, the State Board of Education submitted to the Legislature, the results of a study of the educational and economic vitality of Vermont schools with enrollments of fewer than 100 students. At the time of the study, there were fifty-five schools in Vermont with fewer than 100 students. Virtually all of them served students in grades K-6.

A study group comprised of educators and community members analyzed school and student performance data, reviewed research on small schools, surveyed small and large schools, and reached the following conclusions¹:

Findings from January 1998 Study:

Small Schools Cost More to Operate

- ▲ Small schools in Vermont are more expensive to operate. On average, costs for districts with small schools are 6-12% higher than larger elementary school districts.
- ▲ In general, the smaller the school, the more it costs to operate. Schools of 50 or fewer students have average per pupil expenditures that are nearly 18% higher than the state average.
- ▲ The extra cost can be attributed to the smaller class sizes that exist in small schools. The average student-teacher ratio in small schools is 12.6:1, while larger elementary schools (300+ students) have a ratio of 15.3 students per classroom teacher.
- ▲ Enrollment changes in small schools from year to year are much more dramatic than in larger schools. One family with four students moving in (or out) of a school of 40 increases (or decreases) the size of the school by 10%. The same four students in a school of 400 have little effect. Under Act 60, small schools will be subject to large shifts in block grant support. As a consequence, the local share property tax will vary greatly from year to year.
- ▲ While there are economies of scale in larger schools, this is not true for the largest schools. While there is no absolute “right” size for a school, the smallest and the largest schools are the most expensive, both nationally and in Vermont.

The Quality of the Education in Small Elementary Schools is as Good and in Some Cases Better than Large Schools

- ▲ Students in small Vermont schools do as well or better than students in larger schools even though the income and education levels in the communities with small schools are, for the most part, lower. This assertion is based on an analysis of Vermont’s Grade 4 New Standards reading/language arts and mathematics assessments. Parallel national

¹ The full text of the study is available at the Department of Education homepage: www.state.vt.us/educ/ssreport.htm

studies found that small schools have a mediating effect on socioeconomic factors associated with poorer student achievement.

▲ Seventy-four percent (74%) of the principals from small schools report that most of their students (80-100%) were adequately prepared to make the transition to middle or high school compared with only 58% of the principals from larger schools.

▲ In general, small school facilities are in as good or better shape than larger schools. 94% of the state's small schools report significant repairs, refurbishing or renovation since 1980, compared to 89% of large schools. 57% of small schools report having quality workspaces for children compared to 44% in larger schools. Only 21% of small schools report severe space problems compared to 27% of larger schools.

▲ In general, small schools have more parents or other community members assisting with such jobs as food service, art, music, and library services. Only 31% of small schools reported no job-related volunteerism compared to 41% of larger schools.

▲ In many cases the small school is the only "place" for the community to come together. In 25% of the communities with small schools, there are no "services" such as grocery stores, restaurants, convenience stores and post offices. Every community with larger schools had at least some of these services.

Pressure to Consolidate Small Schools is Very Real at the Local Level

- The issue of consolidation is very real for small Vermont schools. Fifteen of the forty-four small schools (34%) surveyed reported that there was or had been local pressure to consolidate. Only one larger school (3%) reported that consolidation was being considered or discussed.
- The most frequently mentioned driver of consolidation was community concern about the tax burden. These concerns were often raised by persons on fixed incomes or persons who do not have a connection to the children in the school.
- Our impression is that small schools consolidate for a number of reasons. The final decision to consolidate or not goes well beyond educational issues and becomes a very profound and complex decision for a community. Our observation was that the best place to decide whether to consolidate or not is in the local community and not in the legislature or at the Department of Education.

Recommendations from January 1998 Study:

1. Continue to provide additional funding for small schools. They are somewhat more expensive but add value to their communities and do well by their students.
2. If funds are available, provide additional funds using the same formula as in current law to small schools of up to 120 students, as this is the actual point where smaller schools are more expensive to operate than the average Vermont elementary school. We estimate that this will cost \$1.5 million, \$500,000 more than the current level of funding.
3. Continue to collect and further analyze student performance data. If the pattern of higher than expected performance for disadvantaged students who are in small schools continues, consider more extensive financial support for small schools by

weighting long term membership for the first 100 students or by providing a larger block grant to all schools for the first 100 students. We also recommend extending this study to include small high schools and K-12 schools. These schools are larger than those covered in this report. We believe such schools are more costly than larger high schools and may need special consideration in the future.

4. Use the same school accountability mechanisms for small schools that apply to low performing schools under Act 60. These mechanisms provide the technical assistance and active community involvement necessary for a community to decide whether to maintain or close its small school.
5. Act 60 has a number of cost control features that will affect both small and large schools. Let these work and do not have special circumstances for small schools. The equalization aspects of the Act 60 funding formula paired with the school quality standards will encourage communities to take a critical look at issues of cost and quality.
6. Add a hold-harmless mechanism to the basic block grant which ensures that no school will be reduced more than 10% in the basic grant funds received in the prior year.

'98 Legislative Action:

The Legislature provided \$936,000 for Small Schools Support Grants and an additional \$58,367 for Small Schools Financial Stability grants to schools with fewer than 100 students whose basic block grant funds would have been reduced by more than 10% from the prior year due to significant changes in student enrollment.

The Legislature asked that the State Board of Education report to the Senate and House Education Committees no later than January 15, 1999 on the effects of Title 16 Section 4015 (Small School Support Grants). The Legislature asked that the report include: "data describing how many schools have received the grants, the amount each school has received, and the board's recommendation about changing the definition of 'eligible school district'" (Section 93 of Act 60).

Current Study

On October 5, 1998, the State Board of Education invited members of the prior small school study group as well as other educators and community members from K-12 "single unit"² schools to participate in a study that addressed two questions:

- Who received small schools grants this year and how were the funds used?
- What are the cost and quality issues associated with being a K-12 "single unit" school in Vermont?

The names and roles of study group members is listed in Appendix A.

² A "single unit" K-12 school is one school (one principal; one board) that serves students in grades K-12.

In addition to these areas of inquiry, the analyses done last year comparing the academic performance of students in small schools (<100 students) to that of students in large schools (>300 students) was repeated using the most recent student achievement data.

Who received small schools grants this year and how were the funds used?

Forty-seven schools had fewer than 100 students based on their most recent two-year average enrollment report (Fall '96/'97). These schools will receive a total of \$936,000 in Small Schools Support Grants during the current school year. The average grant size is \$19,915 with a grant range of \$40,750 to \$250. Three of the forty-seven schools had more than a 10% decrease in their student population. These schools will receive a total of \$58,367 in Small Schools Financial Stability Grants. (for details, see Appendix B). Small school grant funds were added to the general state block grant award and distributed to school districts in September, December, and March. If the school district is a "sending" town, the grant reduced the amount sent to the state.

The schools that received small schools grants were surveyed in November 1998. At that point the schools had received one payment as part of their general state support grant. The principals were asked to report on how the funds were to be used. (for survey results, see Appendix C)

Survey Findings:

- Twenty percent (20%) of the principals whose schools received additional support were not aware of the additional funding through this grant program. In some cases, principals thought the funds were for one-year only and would be eliminated without additional legislation.
- Four of five small schools responding to the survey reported using the grant funds to offset general expenditures. In some cases funds allowed the hiring of additional personnel to strengthen the instructional program (e.g., part-time gifted and talented teacher, assistance to free up the principal).
- Small schools appreciated the recognition of their special needs. The principal from Wardsboro summed it up by saying: "Rural schools can provide an outstanding educational opportunity for children....The key ingredient to teaching, knowing the children, is virtually guaranteed because of the intimacy of small numbers of children. Supporting these ideal conditions for learning seems to be a smart way to use tax dollars."
- Since funds were awarded based on school size rather than property-tax base, a number of towns previously designated "gold towns" received funds and found them critical.

Recommendations:

- Continue funding small schools with this grant program. The funds are generally being used appropriately – to offset general educational expenses.
- Highlight the funds that are provided through the small schools grants programs by writing a memo to principals and board chairs in the schools that receive the funds. Clarify that this program is an on-going part of the Equal Educational Opportunity Act.

What are the cost and quality issues associated with being a K-12 “single unit” school in Vermont?

Last year’s small schools study only considered schools with fewer than 100 students. No high schools were included in the study. Members of last year’s study group recommended looking at cost and quality issues related to K-12 “single unit” schools since they too are small schools even though total total enrollment exceeds 100 students (for a list of these schools, see Appendix D).

K-12 single unit schools were compared to large Vermont schools across a number of variables to determine how K-12 schools are similar or different from other schools in the state (Appendix E) . Research on K-12 single unit schools was reviewed (although very little was available), and an analysis was made of small high school performance results, which included all but one of the K-12 single unit schools as well as three other small high schools.

The review and analysis concluded that there are student performance differences in small high schools (<40 students per grade) when compared to large high schools (>150 students per grade).

Findings:

- There are thirteen “single unit” K-12 schools in Vermont. The average enrollment in these schools is 413 students. The number of students varies widely from 218 students in Craftsbury to 955 students in BFA-Fairfax. Almost all of the K-12 “single unit” schools are small. Twelve of the thirteen have fewer that 47 students per grade level.
- On average, the cost of K-12 “single unit” schools is similar in cost to other Vermont schools. Cost factors seem more associated with overall school size than with the fact that a school serves all grade levels.
- The academic performance of high school students in small K-12 “single unit” schools is significantly lower than the performance of students in large high schools. This is probably due to fewer learning opportunities in very small high schools. Examples of the disadvantages include having limited advanced course offerings available to students, having a single teacher for sciences, mathematics, social studies, foreign languages and English language arts. Having one instructor for biology, chemistry, physics and other sciences increases preparations and reduces time to stay current in a particular science. The same holds true for mathematics and other subjects. In most cases, teachers must instruct multiple levels during the same class period.

Recommendations:

- There is no significant difference in the cost of educating students in “small” K-12 schools when compared to other Vermont schools. A grant similar to the one provided to very small schools would not be justified.
- There are performance differences between students in small high schools compared to large schools. Establish a focus group of educators in K-12 “single unit” schools to identify how distance learning technology and other strategies can overcome the disadvantages in academic learning opportunities that are evident in small rural high schools.

Do the findings from last year’s study of very small schools continue to hold true using another year of student achievement data?**Findings:**

- Based on an analysis of an additional year of available data, very small schools continue to be more expensive to operate than larger schools and students in the small schools do as well or better than students in larger schools. Vermont data mirror the research done across the nation. (Appendix F)

Recommendations:

- Continue to provide small school support grants. Small schools are more expensive to operate but they add value to both student performance and to their communities.

Appendix A

Small Schools Study Group Participants

Name	School/Community	Role
Patricia Davenport	Chelsea Elem/High School	Principal
Mary Bell	Albert Bridge School	Principal
Ed Hinckley	Cabot School	Principal
Shaun Pickett	South Royalton School	Principal
Leonard Spencer	Cabot School	School Board
Ilene Levitt	Rochester School	Principal
Janet Field	Chelsea	Community
John Doty	Whitingham School	Principal
Jean White	Rochester School	School Board
Janet Jamieson	Rutland South SU	Superintendent
Ruth Drachman	Tinmouth School	School Board
Carol Fritz	West Rutland School	Principal
Wayne Murray	Essex North SU	Superintendent
Wayne Young	Greensboro	School Board
Sue Mahoney	Dept. of Education	Planning Specialist
John Ferrara	Dept. of Education	Data Analyst
Bob McNamara	Dept. of Education	Director of Policy, Planning, and Operations

Appendix B

Funds Granted in FY'99

School	School District	'99 Small School Support Grant	'99 Small School Stability Grant
Albert Bridge School (W Wind.)	West Windsor	\$12,750.00	\$0.00
Athens Elementary	Athens	\$38,250.00	\$0.00
Barnard Central School	Barnard	\$3,000.00	\$0.00
Belvidere Elementary School	Belvidere	\$30,500.00	\$0.00
Bingham Memorial School	Cornwall	\$3,750.00	\$0.00
Bridgewater Village School	Bridgewater	\$9,250.00	\$0.00
Brookline Elementary School	Brookline	\$23,000.00	\$0.00
Brownington Central School	Brownington	\$13,750.00	\$0.00
Doty Memorial School	Worcester	\$4,250.00	\$0.00
E. Taylor Hatton School	Morgan	\$22,750.00	\$0.00
East Haven River School	East Haven	\$23,500.00	\$0.00
Grafton Elementary School	Grafton	\$24,250.00	\$0.00
Granby Central School	Granby	\$23,750.00	\$0.00
Granville Village School	Granville	\$40,000.00	\$0.00
Guildhall Elementary School	Guildhall	\$40,750.00	\$35,822.00
Halifax West School	Halifax	\$11,250.00	\$0.00
Hancock Village School	Hancock	\$34,750.00	\$0.00
Holland Elementary School	Holland	\$14,750.00	\$0.00
Isle La Motte Elem. School	Isle La Motte	\$33,500.00	\$0.00
Jamaica Village School	Jamaica	\$4,000.00	\$0.00
Jay/Westfield Joint Elementary	Jay / Westfield	\$15,000.00	\$0.00
Lake Elmore School	Elmore	\$38,250.00	\$0.00
Middletown Springs Elem School	Middletown Springs	\$14,000.00	\$0.00
Newark School	Newark	\$16,500.00	\$0.00
North Hero Elem. School	North Hero	\$5,500.00	\$0.00
Norton Village School	Norton	\$23,750.00	\$0.00
Peacham Elementary School	Peacham	\$6,500.00	\$0.00
Plymouth Elementary School	Plymouth	\$33,000.00	\$0.00
Reading Elementary School	Reading	\$14,500.00	\$0.00
Ripton Elementary School	Ripton	\$22,750.00	\$0.00
Roxbury Village School	Roxbury	\$23,250.00	\$0.00
Smilie Memorial School(Bolton)	Bolton	\$24,750.00	\$0.00
Stockbridge Central School	Stockbridge	\$24,500.00	\$19,539.00
Sudbury Country School	Sudbury	\$28,500.00	\$0.00
Sunderland Elem. School	Sunderland	\$12,500.00	\$3,006.00
Tinmouth Elementary School	Tinmouth	\$26,000.00	\$0.00
Townshend Village School	Townshend	\$8,000.00	\$0.00
Vershire Village School	Vershire	\$13,250.00	\$0.00
Wardsboro Central School	Wardsboro	\$13,750.00	\$0.00
Waterville Elementary School	Waterville	\$250.00	\$0.00

West Fairlee Village School	West Fairlee	\$19,250.00	\$0.00
Weybridge Elementary School	Weybridge	\$12,750.00	\$0.00
Whiting Village School	Whiting	\$28,000.00	\$0.00
Windham Elementary School	Windham	\$36,750.00	\$0.00
Woodbury Elementary School	Woodbury	\$11,750.00	\$0.00
Woodford Hollow School	Woodford	\$30,750.00	\$0.00
	Vermont	\$936,000.00	\$58,367.00

School	School District	'99 Small School Support Grant	'99 Small School Stability Grant
Rupert Schools (*Rupert School District is now Mettawee Community Sch USD #47. It did not receive FY99 Small School Funds.)	Rupert	\$20,500.00	\$0.00

Appendix C

Summary of 1998-99 Small Schools Survey

# of Survey Respondents - 33		
1) Prior to this correspondence were you aware that Act 60 and the technical amendments in Act 71 provided the above grants for your school?	N	%
a) Small Schools Support Grant		
YES	24	75%
NO	8	25%
DNR	1	
a) Small Schools Stabilization Grant		
YES	0	0%
NO	1	100%
N/A	31	
DNR	1	
2) How did you become aware of the grant(s)?		
Member of Act 60 small schools' committee	5	25%
Personal reading of Act 60/71	1	5%
District or school business manager	6	30%
Superintendent	5	25%
Press	0	0%
Community member	0	0%
Board Member	0	0%
Other	3	15%
N/A	6	
DNR	7	
3) Please circle the one best response.		
I was aware that funds for the small schools grants were added to my General State Support Grant.	10	38%
I was aware that funds for the small schools grants were deducted from the amount my district owed the education fund.	2	8%
I did not know how the funds for the small schools' grants were appropriated.	14	54%
N/A	6	
DNR	1	
4) Which category best describes the uses of your FY99 Grant(s).		
General Expenditures	17	81%
Hire staff (classroom teacher)	1	5%
Hire Support Staff	0	0%
Instructional Materials	0	0%
School Repairs	0	0%
Extra-curricular activities	0	0%
Co-curricular activities	0	0%
I have not used my grant(s).	0	0%
Other	3	14%
N/A	6	
DNR	6	

Appendix D

K-12 “single unit” Schools

School Name	Grades	Enrollment ('98)
BFA (Fairfax)	K-12	955
Blue Mountain	PK-12	471
Cabot	PK-12	268
Caanan	K-12	328
Chelsea	K-12	315
Concord	PK-12	248
Craftsbury	K-12	218
Danville	K-12	502
Rochester	K-12	268
South Royalton	K-12	551
Twinfield	PK12	594
West Rutland	K-12	477
Whitingham	K-12	284

Appendix E

Comparison of Small and Large High School Performance ¹

Performance on SAT and AP Exams ²:

	Small High Schools	Large High Schools
# Seniors	346	3250
% taking SAT	62.1%	62.2%
% scoring >600 (Verbal)	20.5%	20.1%
% scoring >600 (Mathematics)	17.7%	19.6%
% students taking AP	2.3%	9.7%
Average # AP exams per senior	1.0	1.9
% AP exams w/scores >3	50.0%	70.3%

Performance on State Assessments:

Area Assessed	Percent Students Meeting or Exceeding Standards ³	
	Small (<40 students tested)	Large (>150 students tested)
Math Concepts	24.5%	<i>36.7%</i>
Math Skills	74.8%	<i>77.6%</i>
Math Problem-Solving	21.5%	<i>29.6%</i>
Reading: Basic Understanding	38.8%	<i>49.3%</i>
Rdg: Analysis/Interpretation	25.5%	<i>35.2%</i>
Writing Effectiveness	42.3%	<i>48.5%</i>
Writing Conventions	74.8%	<i>75.9%</i>
Science	4.3%	<i>10.7%</i>

Other Characteristics:

Area	Mean Scores		Significant Difference
	Small (N)	Large (N)	
% Poverty '96	14.6 (12)	17.5 (6)	no
% Free and Reduced Lunch	33.9 (15)	14.4 (16)	yes
Property Value per Student '96	\$2,938 (12)	\$3,475 (6)	no
Average Adjusted Gross Income '96	\$13,423 (12)	\$17,889 (6)	yes
Median Joint and Head of Household '96	\$32,130 (12)	\$41,138 (6)	yes
Current Expenditures per Student '96	\$6,099(15)	\$6,470 (16)	no

¹ Small Schools <40 students/grade level – Large Schools have at least 150 students in grade level
Small schools include all K-12 single unit except BFA (Fairfax) plus Proctor, Whitcomb, and Black River

² SAT and AP scores for 1998. Patterns are very similar in prior years

³ Italics represent statistically significant difference (85% confidence interval)

Appendix F

Comparison of Small and Large Elementary Schools Performance³

Area Assessed	Percent Students Meeting or Exceeding Standards ⁴	
	Small Schools	Large Schools
Reading (Grade 2)	73.0%	<i>74.4%</i>
Rdg: Basic Understanding (Grade 4)	<i>80.5%</i>	79.2%
Rdg: Analysis/Interpretation (Grade 4)	57.1%	<i>57.4%</i>
Writing: Effectiveness (Grade 4)	<i>37.6%</i>	36.7%
Writing: Conventions (Grade 4)	<i>51.5%</i>	50.7%
Math: Concepts (Grade 4)	<i>33.5%</i>	30.9%
Math: Skills (Grade 4)	<i>62.6%</i>	61.4%
Math: Problem Solving (Grade 4)	<i>29.1%</i>	27.2%
Science (Grade 6)	<i>34.6%</i>	34.0%

³ Small Schools have fewer than 15 students per grade level – Large Schools have at least 50 students in a grade level

⁴ Italicized scores represent a statistically significant difference (85% confidence interval)