VERMONT
AGENCY OF EDUCATION

Response to Policy Brief on Vermont Education Reform from Penn State's *Center on Rural Education and Communities* by co-authors Ian Burfoot-Rochford and Daniella Hall

DATE: January 21, 2015
TO: House and Senate Education Committees
FROM: Rebecca Holcombe, Secretary of Education
Wendy Geller, Ph. D, Data Administration Director

A recent policy brief[1] suggests that research on consolidation does not support the current conversation Vermont is trying to have about how to provide high-quality opportunities for our children at an affordable price, in a way that reflects the values and priorities of our communities.

We feel compelled to respond, because with respect to school and district size, **this report seriously misrepresents much of the peer-reviewed research on which it claims to be based**. It also relies on a narrow understanding of what governance involves, appears unacquainted with existing data on Vermont, and fails to acknowledge the diversity of circumstances small towns in our state experience. Because it overgeneralizes and oversimplifies, we are concerned this report does a disservice to the powerful conversations some of our school boards and communities are having about how they can ensure stability for their schools and children—both the ones they serve today and the ones they are likely to serve in the future.

The central elements in the report that we will address separately are:

- The brief claims that research on consolidation does not support consolidation.
- The brief is not consistent in its reading or its use of the definition of "small" schools and districts.
- The brief assumes that all small towns are similar.
- The brief claims that schools in rural states must play a dual role: education and community development.

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[1] *Vermont Educational Reform: A Balanced Approach to Equity and Funding (1/15)*

Consolidation

First, we need to clarify how the term "consolidation" is being used currently in Vermont. "Consolidation" sometimes involves merging schools, but it often refers to merging governance without merging schools. The recent Chittenden East Supervisory Union (CESU) merger is a good example. Voters in this region decided by a large margin to consolidate *governance*; however, their plan does not include closing or consolidating *schools*.

This is an important distinction. Prior to the vote, representatives of several towns in CESU had told us that if the merger was not approved, they expected to have to close their local schools. By merging governance, however, they collectively expect to keep open more buildings than they could afford individually as towns. Similarly, the Mountain Towns RED was intended to preserve depth and quality of options at the secondary level without closing elementary buildings.

We believe that in the future, given both our projected continued declines in enrollment and very real fiscal constraints, we are more likely to see small schools in large districts, than we are to see small schools in small districts.

The new partnership in CESU has created opportunities in several ways, including:

- small units are insulated from some of the shocks associated with changes in enrollment;
- reporting and accountability for federal and state purposes is streamlined, substantially reducing demands on staff;
- PK-12 programs gain continuity as well as a greater capacity to develop specialized expertise and solutions for kids with high-intensity, low frequency disabilities;
- towns can pursue regional solutions together, rather than competing for students at the town level; and
- some specialization and public school choice becomes possible across schools in the now larger district.

The research cited by the brief actually suggests, in fact, that this kind of consolidation of small districts is likely to free substantial resources, which could either be returned to taxpayers or, as districts usually choose, used to improve educational opportunities for children. We examined the district sizes discussed in every article cited by this brief, as well as several more, and **this body of research clearly suggests that there are substantial inefficiencies and costs with operating districts as small as many of the districts we have in Vermont**.

In fact, the author of one of the articles, when speaking to a staff member at the Agency, noted that it would be hard to find a district in Vermont that would *not* find financial benefits in a larger partnership. See the Appendix for detailed clarification on district sizes in several of the articles cited in the brief.

Small Schools and Districts

One thing that must be made abundantly clear for any meaningful discussion of the context of Vermont's education system, student performance, and spending patterns is that **the overwhelming majority of national and international research discusses schools and districts much larger than ours**. When stakeholders cite national research on "small schools," the small in the research typically refers to an elementary school of 300 or fewer students, or at the high school level, 300-600. Being clear about the parameters within which we study this is of paramount importance for us to come to any useful conclusions about our experience as a state. Careful, methodologically rigorous attention to how variables are measured helps us have these conversations. Sweeping generalizations and broad statements do not.

The overwhelming majority of our high schools in Vermont already fall into what is broadly understood as the "small" (301-600) or "smallest" categories (<300), while some are within the lower "medium" range (601-900 students). We currently have about five high schools in the state that break the 1,000-pupil mark, putting these schools in the "upper medium" range (901-1,200). By national standards, none of our high schools are "large." While there is some variation on these category sizes across the body of research**, most studies agree that any high school with an enrollment below 500 students can be understood as a "small" high school. Again, most of our high schools fall into this range.** We even have high schools with about 50 students in attendance—micro high schools.

Other national literature cited by the brief, including the work of Ready and Lee (2006), suggests that the overwhelming majority of our elementary schools fall within the "small" (<275) and sometimes "medium" (276-400) school categories. While there is some variation in this literature on the cut-off point for "small," **most research agrees that if an elementary school has an enrollment below 300 students, it is a "small" elementary school. Most of our elementary schools fall into this range.**

Vermont 2013-2014	Size	Count	Total	Percentage
High Schools 7-12 & 9-12	300 or fewer students	11	45	24.4%
Elementary Schools 1-3, 3-5, 3-6, 4-5, pK-2, pK-3, pK-4, pK-5, & pK-6	200 or fewer students	92	152	60.5%
	100 or fewer students	52	152	34.2%

As such, we as a state don't have the student population to discuss our schools as "small" or "large" but rather, in the majority "small" and sometimes "medium" compared with national and international research. This extends to our class sizes even more so, with nearly all of ours falling into the "small" range (i.e. below 15-17) for elementary schools, and some (mostly at the high school level) being in the "medium" category (17-25). **On the whole, most are small (below 17) on average across the state.**

Similarly, districts in Vermont are also small, on average, compared to districts discussed in the national research. **Of the articles cited by the report, we were unable to find *one* that defines "small" the same way we do in Vermont.**

The smallest districts discussed in the literature were districts of 275 students or less. We have districts in Vermont of 15 students that need to meet all the same federal and state obligations as our largest districts. Almost 70% of our school districts have an average daily membership of 300 or less. Nearly half our districts have a membership of 100 or fewer pupils.

See table on following page for a breakdown of Vermont school district size:

>	<=	Count	Running Total	Percent of Total
0	50	37	37	13.9%
50	100	44	81	30.3%
100	150	45	126	47.2%
150	200	24	150	56.2%
200	250	15	165	61.8%
250	300	19	184	68.9%
300	350	15	199	74.5%
350	400	9	208	77.9%
400	450	9	217	81.3%
450	500	2	219	82.0%
500	550	5	224	83.9%
550	600	1	225	84.3%
600	650	3	228	85.4%
650	700	6	234	87.6%
700	750	6	240	89.9%
750	800	7	247	92.5%
800	850	2	249	93.3%
850	900	1	250	93.6%
900	950	1	251	94.0%
950	1000	3	254	95.1%
1000	1050	1	255	95.5%
1050	1100	1	256	95.9%
1100	1150	0	256	95.9%
1150	1200	2	258	96.6%
1200	1250	1	259	97.0%
1250	1300	0	259	97.0%
1300	1350	0	259	97.0%
1350	1400	0	259	97.0%
1400	1450	1	260	97.4%
1450	1500	0	260	97.4%
1500	1550	0	260	97.4%
1550	1600	2	262	98.1%
1600	1650	1	263	98.5%
1950	2000	1	264	98.9%
2050	2100	1	265	99.3%
2200	2250	1	266	99.6%
3600	3650	1	267	100.0%
	Total	**267**		

The peer-reviewed articles on district consolidation (as opposed to school consolidation) clearly suggest that the relationship between district size, cost, and student performance is curvilinear, with optimal efficiencies and performance found at different places depending on local circumstances, but generally 1,500 students or more. This means that there are substantial efficiencies and economies of scale to be found by consolidating districts up to 1,500 students, with continued benefits above that mark, but at a declining rate. (See Duncombe and Yinger, for example, cited in the brief.)

Transportation is an issue in some states, but in some regions of Vermont, we note that consolidation of governance and perhaps consolidation of high schools might actually reduce travel times and preserve more high school options in the long run. We are moving towards regional monopolies at the high school level in Vermont, and not all the programs likely to be standing are located close to the communities they serve.

The challenge in Vermont is that, given our finite resources, declining student base, and declining number of taxpayers, we are left with the question of how we can support all those ends in a way we can actually afford. This cannot happen unless Vermonters in rural communities think intentionally about regional strategies for our future and make their decisions based on solid evidence (which the brief in question is not).

Understanding our conditions vis-à-vis the wider research is important because it establishes two things for us:

1. **We are dealing with a very small environment that isn't adequately covered in most of the national research when it talks about the negative impact of "large" classrooms, schools, and districts.**
2. **There isn't really any research that specifically examines Vermont's unique "small" conditions.**

This clears our path to start to have some meaningful discussion about our conditions, what we can know about them, and how we should think critically about what the research can tell us to help inform these conversations.

Not All Small Schools are the Same

A major challenge for our state is figuring out how to support our schools. Because of its longstanding commitment to equity and to the rural nature of our state, we have long supported our small schools, and particularly those in less affluent communities.

In any discussion of these matters, it is essential to remember that not all small rural towns are the same. For example, the town of Cabot, cited in the report, has about 179

students as of last year. It operates its own high school, and has about 60 students in grades 9-12. Because its number of students has been declining, our funding formula treats it as if it had about 15 more students than it actually has. Without those "phantom students," its tax rate would be about $.13 higher than the $1.57 rate it had in FY14. Education spending in Cabot is up about 15% over the past five years, while its tax rate is up 20%. In FY15, Cabot raised just under $2 million a year from its Education Property taxes, but will spend just over $3 million a year on its schools, not including the approximately $93,000 the state pays to Career and Tech Centers on behalf of Cabot students. The difference is paid by towns across the state with bigger business bases, including the more affluent town of Dover (also mentioned in the report).

In contrast, in Dover, which has a growing population, the FY14 tax rate was just under $1.50. The approximately 49 Dover high school students choose which high school to attend, and increasingly, they choose Burr and Burton Academy, an independent school almost an hour away—and certainly much farther than some of the smaller high schools nearby. Overall, equalized per pupil spending in Dover is only up about 9.8% over the past 5 years, and tax rates are up 15%. Dover is fortunate to have a ski mountain in town, and it generates about $13 million in education property taxes, yet spends about $2.4 million on educating its children. The difference goes to support education in other towns across the state.

Neither of these towns is like Concord, in the Northeast Kingdom. Not counting money paid directly to career and technical centers for students, Concord spends about $3.2 million a year on education, only $1.6 million of which is raised off its local tax base. Of Concord's 200 students, only about 56 were in grades 9-12 last year. A few years ago, in response to parental pressure, the Concord School Board agreed to tuition interested children to St. Johnsbury Academy, located a few miles away. As a result, Concord now both operates a high school *and* tuitions secondary students to a nearby independent school, and the price of this decision is increasingly reflected in its tax rates.

All three of these towns are very different, despite all being small and rural. These towns have different circumstances and different prospects. What works in one is not likely to work in the others. Two of the towns are quite heavily subsidized by the property base of other towns, while the property base of the remaining one supports towns across the state. There is no one size fits all in Vermont, beyond concern in these small towns that their tax rates are too high and growing.

Moreover, we note that a strategy that competitively awards small schools grants to those communities that can demonstrate strong school-business partnerships, as described in the report, is a strategy that rewards more affluent towns and towns with

more human resources at the expense of the less affluent and more isolated rural towns that need support the most.

Community Development Purpose of Schools

Of all the claims made in the brief, this is the one that is actually supported by some of the research the authors cited.

Essentially, the authors claim that in rural areas, schools serve community development purposes that go far beyond education. Particularly in communities that have lost their economic base, schools are often the largest employer in town. Indeed, they may be the only shared institutions left that bring folks from different generations and different walks of life to share in social, cultural, and civic activities together.

Increasingly, solutions in education are regional by default, with enormous regions of the state served and supported by very few schools at the high school level. Most of our small schools provide school choice to students at the secondary level, and as a result, most of them are already sending secondary students long distances, by choice, to a handful of schools that while large in the Vermont context (500 to 900 students), are still small to medium in the context of national research on school size.

One byproduct of choice at the secondary level is that primarily in the small towns in the northeast and southwest of our state, our secondary students are increasingly choosing schools of 500 or more pupils as their high schools. They choose to bypass closer but smaller high schools, which leaves those small high schools struggling to support their operations. When tuitions rise at receiving high schools, towns that tuition their students out have no place to cut spending but at their elementary level. In turn, this raises costs and leads to program cuts at the elementary level, which makes the elementary school less attractive to new families.

Historically, our rural towns have tended to rely on choice, and choice is progressively reshaping our school market into one dominated by a few larger institutions that have the scale to provide robust programs. Like it or not, given our current way of delivering education as a state, rural high schools that do not respond to this trend or find a niche within this market that is attractive and affordable will simply not be around in the future, because of the changes in our student enrollment and our declining tax base.

Vermonters can choose to recognize these patterns, and shape and direct these trends positively for the benefit of our children and our communities, or let them happen and react to the outcomes they bring. However, despite what we say about our small towns

and sense of place, what we see in Vermont is that **for high school students, "community" is where they go to high school, and given choice, students tend to pursue larger schools that offer greater opportunities for choice and specialization as well as a larger social community**.

In contrast to the choices of many Vermont towns, the brief tasks schools with supporting and driving community and economic development, improving the tax base, and bringing new business investment to town. We feel this is too much to ask of some buildings and towns with only 15 to 40 elementary students actually educated.

We ask that we not put the responsibility of saving our rural towns purely on the shoulders of our schools and students. What the authors are calling for is not just an educational solution, but a strategy for rural economic development that makes it possible for families to live and thrive in small rural towns, and that will bring new families to our small rural towns.

We argue that schools are not enough. Families need jobs, and the most effective way to support community development may be targeted economic investment that supports business development in our rural regions. **We question, however, whether this is an activity best managed out of the Education Fund, and if economic development is possible at the level of a very small town, or better pursued at a regional level.**

Moving Forward

We submit that a key challenge in Vermont has been an unwillingness to consider change, which has prevented us from finding sound solutions to the hurdles we face as a state and as communities. **What our current demographic trends suggest is that we are looking at a future with both fewer children and fewer taxpayers statewide. If we do nothing, we will lose many of our schools, particularly in our less affluent communities, after paying a high price and in some cases, not educating our children as well as we could.**

Our communities are deeply engaged in conversations about how to best provide for their students—the ones they serve today and the ones they are likely to serve in the future. Over the last year, we have worked hard to support this conversation and to encourage our local partners to think broadly about how to achieve their goals locally, given the specifics of their situation, and **on the basis of solid, rigorous empirical analysis**. **This brief does not contribute to these discussions in an accurate or empirically sound way.**

As we have worked with communities around the state, we have stressed that this is a conversation not just about education, but also about community development and community identity in the Vermont of the future. Without this hard discussion, we will not be able to target our resources where they matter the most for our children, and separately, where they make the greatest difference in revitalizing the economics of our rural communities.

See the following pages for examples of how the cited sources define size, as well as the sample quotes.

(District and School sizes, as defined in the articles used to support the Penn State brief)

Article Cited in Brief	Definition of "small school"	Definition of "small district"	Additions	Comments
Andrews, M. Duncombe, W. & Yinger, J. (2002). *Revisiting economies of size in American education: Are we any closer to a consensus?* Economics of Education Review, 3(21), 245-262				"Sizeable potential cost savings may exist by moving from a very small district . . . to a district with 2,000–4,000 pupils, both in instructional and administrative costs." (Andrews, Duncombe, and Yinger 2002, p. 255)"
Duncombe, W., & Yinger, J. (2005). *How much more does a disadvantaged student cost?* Economics of Education Review, 24(5), 513-532				Raises questions about whether the weights we assign in our funding formula for disadvantaged students are in fact far too low.
Duncombe, W., & Yinger, J. (2007). *Does school district consolidation cut costs?* Education, 2(4), 341-375.	Median high school enrollment in both consolidating (541) and non-consolidating districts (512), and median elementary school enrollment in both consolidating (431.7) and non-consolidating districts (457.9)	Smallest of the "small" districts had 250 students. The largest of the "small" districts had 690 students.	Smallest districts analyzed had between 300 and 600 students.	"We find economies of size in operating spending: all else equal, doubling enrollment cuts operating costs per pupil by 61.7 percent for a 300-pupil district and by 49.6 percent for a 1,500-pupil district. Consolidation also involves large adjustment costs, however. These adjustment costs, which are particularly large for capital spending, lower net cost savings to 31.5 percent and 14.4 percent for a 300-pupil and a 1,500-pupil district, respectively."

Article Cited in Brief	Definition of "small school"	Definition of "small district"	Additions	Comments
Chingos, Mathew. (2012) *Class size and student outcomes: Research and policy implications.* Journal of Policy analysis and Management. Vol. 32, No. 2, 411-438.				Research Review. "The significant costs of reducing class size, coupled with these modest benefit (modest positive effects on learning) implies that many school systems in the United States have overinvested in class-size reduction and that increasing class size in some situations may represent a budget-cutting strategy that minimizes harm to students." p. 412
Howey, C. and Bickel, R. 2000. *When It Comes to Schooling. Small Works: School Size, Poverty, and Student Achievement.* Rural School and Community Trust, Randolph, VT.	Elementary Schools of 350 or less High schools of 900 or less			Excluded Montana, the state most similar to Vermont, from the "excellence" evaluation because the "excellence" effect was not statistically significant in most tested grades.
Howley, C., Johnson, J., & Petrie, J. (2011). *Consolidation of schools and districts: What the research says and what it means.* Colorado: National Education Policy Center.	Cites Coulson, A. (2007). *School district consolidation, size, and spending: An evaluation*. Midland, MI: Mackinac Center for Public Policy., who "found that the most efficient school district size in Michigan is 2,911 students. Using	Does not present numbers, but cites a number of studies that do to support claims. For example, cites Doncombe et al (above) to claim "(Duncombe and colleagues—cited later) tends to show	One interesting point: this article cites Brasington, D. (2003). *Size and school district consolidation: Do opposites attract?* Economica, 70, 673-690 and points out that Brasington "argues that school	Unable to check all sources, because references not available due to broken links. e.g. Rural School and Community Trust. (2006, March).

Article Cited in Brief	Definition of "small school"	Definition of "small district"	Additions	Comments
	the coefficient of 96.2 for the checkmark term (see Graphic 3, Model 4), the author calculated that a district of 1,500 students is likely to spend about $40 less per pupil each year than a district of 2,911 students, all other things being equal. Similarly, the spending difference between a district of 500 students and one of 2,911 students is about $300 per pupil." When Coulson advocates for "deconsolidation", he is limiting this recommendation to districts with more than 2,900 students.	that many districts are far too large to be fiscally efficient. The consolidation agenda has likely over-reached its aims, in this view." However, Duncombe clearly states that very small districts could free substantial resources for other purposes through consolidation. Other cited sources in the article also all refer back to the work of Duncombe and his various partners, including the articles by: Coulson, A. (2007). *School district consolidation, size, and spending: An evaluation*. Midland, MI: Mackinac Center for Public Policy and Spradlin, T., Carson, F., Hess, S., &	consolidation tends to reduce school quality by reducing competition among schools." In other words, the rationale for maintaining small schools is to increase choice and competition.	

Article Cited in Brief	Definition of "small school"	Definition of "small district"	Additions	Comments
		Plucker, J. (2010). *Revisiting school district consolidation issues* (Education Policy Brief). Bloomington, IN: Center for Evaluation and Education Policy, Indiana University also cites Duncombe's work. Spradlin not only cites Duncombe, but also Coulson, who found the optimally efficient district size in Michigan was about 2,900.		
Cox, B., & Cox, B. (2010). *A decade of results: A case for school district consolidation?* Education, 13 (1), 83-92.			Not inclined to use this source to make any inferences due to the fact that they did not conduct statistical analysis and yet make claims about relationships which cannot be supported without statistical analysis.	

Article Cited in Brief	Definition of "small school"	Definition of "small district"	Additions	Comments
			Additionally, this research was based on an urban setting, with much larger units than in Vermont.	
Rogers, J. D., Glesner, T. J., & Meyers, H. W. (2014). *Early experiences implementing voluntary school district mergers in Vermont.* Journal of Research in Rural Education, 29(7).			"…value proposition (of mergers) is more attractive in states with small districts such as Vermont, where only 7 of 277 districts exceed 1,500 pupils (Vermont State Board of Education, 2012).	Vermont (66%) is more similar to Wyoming (70%) and Idaho (65%), than it is to Maine (41%),
Tholkes, R. J., & Sederberg, C. H. (1990). *Economies of scale and rural schools.* Research in Rural Education, 7(1), 9-15.	Key point is that there is a curvilinear relationship between school size, performance and efficiency. Very small and very large schools seem to have higher costs and lower effectiveness. Cites Cohn (1968) who found that larger schools spent less per pupil for the same quality of	Cites Banks and Monks (1985) which defines "small districts" as districts with fewer than 2,500 students, and large districts as districts with greater than 2,500 students. Cites Sabulao and Hickrod (197) used curvilinear least-squares regression		"The challenge of implementing voluntary mergers in Vermont may be rooted in a conflict of values. Perhaps more so than in any other state, local control is a defining value for Vermonters (Innes, 1992; Council on the Future of Vermont, 2009). There is no county-level government, and the state's Agency of Education has little authority over educational governance or quality standards. Especially in smaller rural communities, schools are often regarded as the focal point of community identity

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	education, with an optimal school size for his sample of 1,500 pupils.	analysis and differential calculus to arrive at an optimally-efficient school district size for Illinois. The authors considered elementary, secondary, and K-12 districts separately. They found 1) an optimal K-12 district size of 8,000 pupils in average daily attendance and 2) that K-12 districts were more economical for district sizes of 1,500 or more pupils. Cites White and Tweeten (1973) study in rural Oklahoma, where transportation distances are large, which used 11th grade composite achievement test scores for quality control. "Results		(Howley et al., 2012; Ward & Rink, 1992). Yet concerns have persisted over the equity of educational opportunities available to students in such a diverse system. There is little consistency in academic standards across the state, and consequently performance on achievement tests is highly variable (Meyers & Rogers, 2013). Faced with an apparent choice between community identity, fiscal responsibility, and the need to provide a 21st- century education for their children, it is not surprising that Vermonters find difficulty reaching consensus."

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		showed an optimal district size of 800 students with transportation costs excluded and 675 students with transportation included, a 15-percent difference." The lesson: Analyze impact on transportation costs carefully on a case-by-case basis. Cites Bank.		
Monk, D. H., & Haller, E. J. (1993). *Predictors of high school academic course offerings: The role of school size.* American Educational Research Journal, 30(1).				The results indicate a clear positive relationship between the size of a high school's graduating class and the number of different course credits. "If the impact of school size were strongly and equally related to educational opportunities in all areas of the curriculum, it would be clear that students in small schools receive fewer educational opportunities than those in larger schools. If, in its pursuit of equity, a state felt responsible for providing a common minimum level of opportunity in all areas of the curriculum, a compelling case could be made for encouraging high schools to operate at

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				sizes that translate into this minimum level of equal educational opportunity." p.19
Cotton, K. (1996).*Affective and social benefits of small-scale schooling.* ERIC Digest..	"While there is no universal agreement about the numerical limits of small and large schools, "on average, the research indicates that an effective size for an elementary school is in the range of 300-400 students and that 400-800 students is appropriate for a secondary school" (Williams 1990, pp. 7-8). These figures should be regarded as pushing the upper limits, since many investigators conclude that no school should have more than 400 or 500 students" (p. 2).		The statement: "These figures should be regarded as pushing the upper limits, since many investigators conclude that no school should have more than 400 or 500 students" is problematic because these statements are broadly understood as no longer being the case given more recent, robust empirical research in the field. As such, the findings in this research should be treated with a critical eye.	
Sell, R. S., & Leistritz, F. L. (1997). *Socioeconomic impacts of school consolidation on host and vacated communities.* Community			"…the 95th percentile confidence interval identified the optimal enrollment	This article used "mail survey of patrons who paid property taxes to eight different North Dakota school districts that had undergone school district

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Development, 28(2), 186-205.			range to be 1,000 to 3,000 students. Beyond this range in either direction, diseconomies of scale with regard to both cost and student performance Emerge. (Zimmer, 2007)" (p. 3)	consolidation and/or school closure during the last five years" and compared their results on "Community involvement, retail services, and quality of life for host and vacated communities" (p. 186). Thus, this study focuses on the role of schools in community development and in shaping socioeconomic conditions.
Spradlin, T. E., Carson, F. R., Hess, S. E., & Plucker, J. A. (2010). *Revisiting school district consolidation issues.* Education Policy Brief, 8(3), 1-20.				Provides a broad discussion of conditions in several states. Analysis of the effects of consolidation at several size levels is included, all of which are larger than in the Vermont context.
Fairman, J., & Donis-Keller, C. (2012). *School District Reorganization in Maine: Lessons Learned for Policy and Process.* Maine Policy Review, 21(2), 24-40.	Study had 2 high schools with fewer than 1,500 students, and 13 high schools with more than 1,500 students.		Found that districts that covered more than 550 square miles and low density had more trouble reorganizing. (distance is an issue). Districts sought partners they perceived as similar. Maine is different in that some of the challenges that complicated mergers	

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			are addressed in Vermont through the funding formula (e.g. CLA). Districts also had to negotiate around issues of choice: "Some districts sought K-8 district partners that could increase their public high school enrollment, whereas some K-8 districts sought to maintain their option to send students to different high schools in their area."	
Cotton, K. (1996). Affective and social benefits of small-scale schooling. ERIC Digest; Howley & Bickel, 2000.	Quoted several sources to define small: "on average, the research indicates that an effective size for an elementary school is in the range of 300-400 students and that 400-800 students is appropriate for a secondary school" (Williams 1990, pp. 7-8).		The statement: "These figures should be regarded as pushing the upper limits, since many investigators conclude that no school should have more than 400 or 500 students" is problematic because	

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	These figures should be regarded as pushing the upper limits, since many investigators conclude that no school should have more than 400 or 500 students."		these statements are broadly understood as no longer being the case given more recent, robust empirical research in the field. As such, the findings in this research should be treated with a critical eye.	
Howley, C., & Howley, A. (2010). *Poverty and school achievement in rural communities: A social-class interpretation.* In Schafft, KA, & Jackson, AY (Eds.). *Rural education for the twenty-first century: Identity, place, and community in a globalizing world,* University Park, PA: The Pennsylvania State University Press, 34-50.			Very large districts are greater than 15,000.	Cites Duncombe.
Purcell, D., & Shackelford, R. (2005). *An evaluation of the impact of rural school consolidation: What challenges may a new round of rural school consolidations have on the safety, educational performance and social environment of rural communities?* National Rural Education	Quote: "Researchers also found that by supporting the existence of small schools, those with fewer than 350 students in elementary classes, that the following important	Rural: 600 or less	Up to two hours one way. Quote: "The larger reconsolidated school districts may become a significantly greater danger by offering a	Not a peer reviewed or published piece. Focus on closing of schools, not consolidation of districts.

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Association.	strengths of small schools were identified..."		target-rich environment to terrorists and hold the potential to increase mass casualties. We have an example of this potential in the Russian School Hostage Crisis that claimed over 350 lives and more than 700 people wounded (CNN World News, September 5, 2004)."	
Schafft, K.A. (2015). *Rural education as rural development: Understanding the rural school-community well-being linkage in a 21st century policy context.* Peabody Journal of Education				
Corbett, M. (2007). *Learning to leave: The irony of schooling in a coastal community*. Halifax: Fernwood; Lyson, 2002				This text discusses the class-based narrative of leave-taking that occurs in Canadian coastal fishing communities which contributes to out-migration among talented rural youth.
Schafft, K. A. & Jackson, A.Y. (Eds.). (2010). *Rural education for the twenty-first century: Identity, place and community in a globalizing world.*				Edited volume discussing many case studies internationally about particular rural contexts from largely qualitative perspectives with some quantitative

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University Park, PA: Penn State Press.				contextual analysis. Includes chapters on education's role in rural community development and stability, rural identity construction, race, local dialects, and class. http://www.psupress.org/books/titles/978-0-271-03682-3.html
Schanzenbach, Diane W. 2014. *Does Class Size Matter?* National Education Policy Center. Boulder: Great Lakes Center for Education Research & Practice.			Policy Brief, literature review.	"The weight of the evidence suggests that class-size impacts might be more of less linear across the range of class sizes observed in the literature -- that is, from roughly 15 to 40 students per class. It would be inappropriate to extrapolate outside of this range (as is done in the Gladwell book)." (p. 6)
Lyson, Thomas. (2002). *What does a school mean to a community? Journal of Research in Rural Education. Vol.17,No. 3, 131-137.*			About small communities and the roles of schools in serving community goals. Of communities with fewer than 500 people, only half have schools. Schools are vital to rural communities for reasons beyond schools.	
Khatter	70% of rural schools			

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	have 400 or fewer kids in them.			
Henke et all, 1996	In rural and small town areas the average was 400 students (Henke et al., 1996).			"School size...has been positively found to correlate positively with offerings (e.g. Monk and Haller, 1993). Prior studies have detected a positive relationship between size and offering, but few have revealed the strikingly low rates of (AP) offering among the very small schools." p.348
(Lee, Bryk, & Smith, 1993).	"Schools should be neither too large to inhibit a strong sense of community nor too small to offer a full curriculum and adequate instructional facilities" (Lee, Bryk, & Smith, 1993).			
	Rural schools frequently serve a smaller student population that is spread out over a larger area, making the fixed cost of maintaining a school building and operation high when expressed in per-pupil expenditures (Sherman,			Rural governments face lower revenues than do city governments, due to a smaller tax base and lower property values. This leads to tight budgets that often translate into limited curricular and program offerings, lower teacher salaries, and a lack of sufficient technology resources, leading many to argue that rural students have more limited opportunities. For example, in the early

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	1992).			1980s, half of city schools and two thirds of suburban schools offered Calculus, as compared with only one third of rural schools (Sherman, 1992)."
				More recent studies in rural school districts indicate that the number of courses and of special programs offered to rural students is much smaller than that offered to suburban students (e.g., Ballou & Podgursky, 1995; Hall & Barker, 1995).
				Research suggests that rural schools have not implemented technology to the same extent as non-rural schools, and they often lack the infrastructure and resources to do so (e.g., Howley & Howley, 1995).

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