

CAMPAIGN FOR VERMONT

CampaignForVermont.org

Education for the 21st Century

Enabling Local Districts with the Tools to Succeed

November 6, 2014

Tom Pelham, Founding Officer – Campaign for Vermont
Ben Kinsley, Policy and Operations Manager – Campaign for Vermont



Executive Summary

The Bottom Line, Excellent Schools Attract Families and Prosperity

Imagine a public education system that produces the most innovative thinkers, not just in the United States, but in the world. Imagine a system that consistently produces the best prepared citizens and that attracts employers who value the education their employees' children receive. We can have that education system in Vermont.

Vermont faces a variety of challenges that threaten the long-term prosperity of the state. An aging population, lackluster economic growth and poor infrastructure are some of the most serious challenges facing Vermont. In order to preserve the long-term health and vitality of the state, steps must be taken to address these problems. One important element will be to reform Vermont's education system.

The Need for Education Reform

Vermont's K-12 education system is well positioned to be spectacular; however, while Vermont's system is among the best resourced on a per pupil basis, our results are less than best. The bottom line is that current levels in spending are simply unsustainable. Why is it that Massachusetts spends, on average, 14,021¹ dollars per pupil while Vermont spends 17,542²? Despite this gap in spending, Massachusetts still provides better student outcomes than Vermont, and probably the best in the country. Serious structural changes are necessary to ensure that Vermont's education policies are on the right path.

Vermont's education governance structure consists of numerous administrative structures, including local school districts (251), supervisory unions (62) and Technical Trade Centers (15).³ More than 300 school entities serve, on average, the smallest population of students per district in the nation.⁴ Having so many different, and often times overlapping administrative entities leads to more money being spent on costly administrative work rather than educational programs.

Finally, any educational reform effort needs to preserve Vermont's long history of local control. For many communities, the local schools serve as the backbone of civic life. Many people

¹ Massachusetts DOE FY2013 expenditures per pupil - <http://www.doe.mass.edu/finance/statistics/ppx13.html>

² VT net expenditures / ADM student count – AOE internal documents

³ VT AOE, Number of Vermont School Districts and Education Entities - http://education.vermont.gov/documents/educ_master_district_list.pdf

⁴ Picus Report, Page 23.

become involved in their communities by serving on their local school boards, coaching school athletics, or volunteering in other school related efforts. And often times the local school serves as the “public meeting house” for that community. Education reform needs to preserve local control to as large an extent possible while allowing necessary reforms to bring down administrative cost and provide better educational opportunities to students.

Despite the complexity in our education system, one thing is clear. We are trying to educate our children for the 21st century using a 19th century school system.

What Reform Looks Like

In order to get per pupil spending in line and provide better educational opportunities for all of Vermont’s children, Vermont needs to take steps to reduce burdensome administrative costs and encourage higher degrees of economies of scale. To do this CFV recommends that we consolidate some key administrative functions into Regional Educational Administrative Districts (READs). These Educational Districts would be given greater authority to control educational spending and implement collaboration among their local districts, streamline the administrative redundancies in our current system, and allow local school districts more flexibility in providing quality education. Savings from consolidating these functions could be put to use expanding educational programs for children, lowering property taxes and ensuring that teachers are adequately paid.

Benefits of Education Reform

Providing a spectacular primary and secondary school system has many rewards. First, our children are better prepared for whatever future they choose to pursue. Whether business, agriculture, the technical trades or the arts, it’s important to send our children forward with the curiosity and skills necessary to thrive. Lastly, a spectacular education system would be a valuable Vermont “brand” asset, attracting businesses to Vermont, providing jobs of all types for our high school and higher education graduates, allowing them to remain in Vermont and build a financially viable career and raise a family of their own.

The following will further expanded on the educational challenges listed above. In addition, this paper explains Campaign for Vermont’s recommendations on child-centered reforms that can give Vermont’s children the education they deserve and have a right to expect -- the very best.

Sincerely,

Tom Pelham
Founding Officer

Cyrus Patten
Executive Director

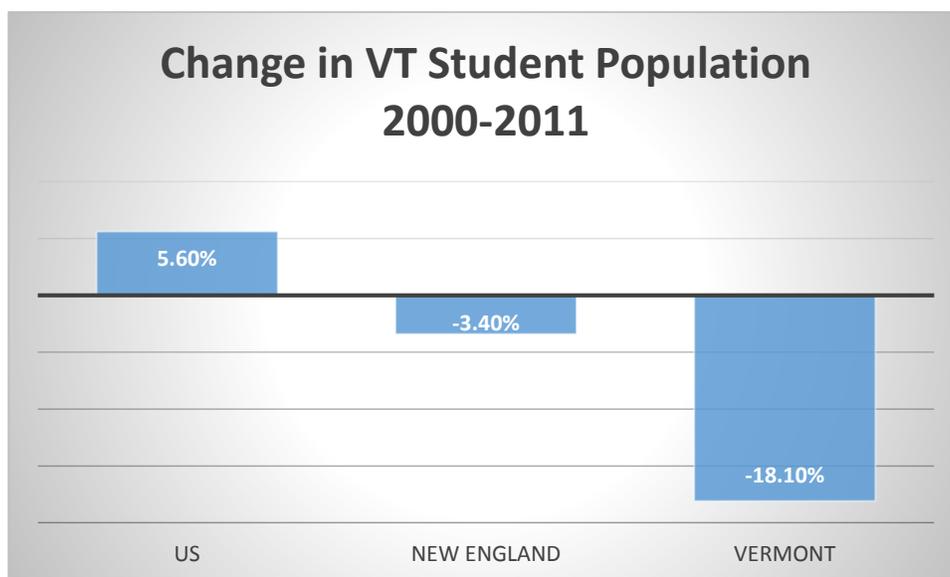
Contents

Executive Summary.....	1
The Need for Education Reform	1
What Reform Looks Like	2
Benefits of Education Reform	2
Vermont’s Education System Today	4
Spending and Population Demographics.....	4
Educational Outcomes.....	6
International Assessments and Rankings	7
Programme for International Student Assessment (PISA).....	7
Educational Opportunities are Not Equal	8
NECAP Scores by Income	8
Conclusions	9
Recommendations	10
Simplify, Streamline and Refocus Our Educational Infrastructure	10
Creation of Regional Education Administrative Districts (READs)	10
READ Governance Structure	10
READ Financing Structure	10
School Budget Process	11
READs Help Retain and Strengthen Local Control	11
READs Help Foster Bottom up Education Policies	11
Summary	12
Role of State Government	12
Partners in Reform.....	12
Income Sensitivity	12
The State Pays Its Own Costs	13
Conclusion.....	13
Appendix A.....	14
Appendix B.....	16
Appendix C.....	18
Appendix D.....	21

Vermont's Education System Today

Spending and Population Demographics

In January 2012, at the request of the Legislature, a team of consultants issued a report (The Picus Report)⁵ profiling, on a comparative basis, the core characteristics of Vermont's K-12 system. The report found the following: The number of Vermont school children has dropped dramatically in recent years and is projected to continue declining. In addition, school district sizes continue to decrease across the state and remain significantly lower than both national and regional averages.



Source: Picus Report Table 3.7

This chart clearly demonstrates that Vermont's K-12 population has declined. Yet while Vermont's school population continues to decline the cost of maintaining these administrative districts is on the rise.

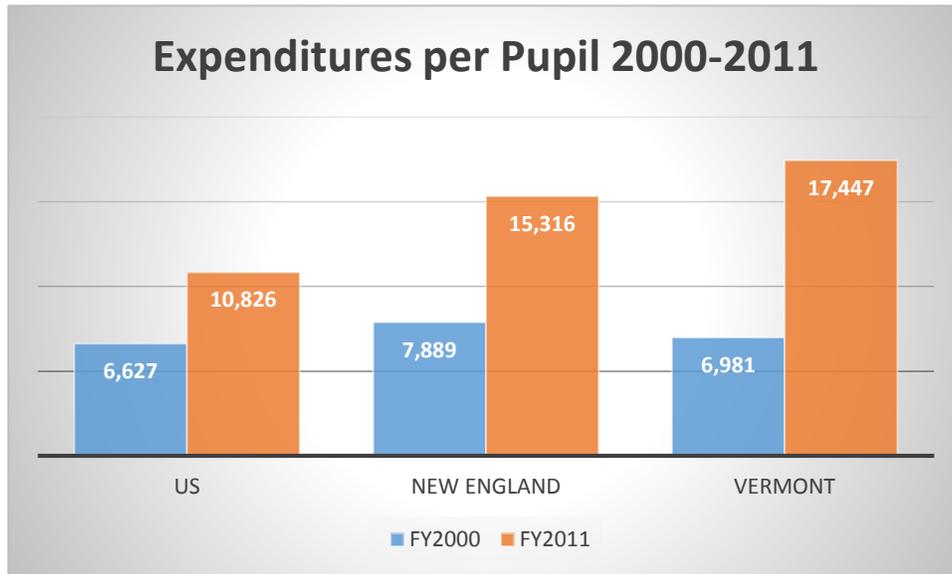
In October of 2014, Campaign for Vermont (CFV) released a [Report on Education Outcomes and Spending](#). CFV used data collected from the Vermont Agency of Education and Vermont Department of Taxes to look for any relationships between school district size, spending, or incomes and NECAP test scores.

Our statistical analysis showed no relationship between school district size and spending per student and test scores. This is the same conclusion the Picus Report came to. All around

⁵http://picusodden.com/wp-content/uploads/2013/09/VT_Finance_Study_1-18-2012.pdf

Vermont you can find a variety of school districts of different sizes and spending levels that achieve a variety of student outcomes.

Our most interesting finding? Median school district income is the best predictor of student outcomes, with nearly a 50% correlation. This is a well-documented national phenomenon, and appears to be no different in Vermont.



Source: Picus Report, Table A1.4

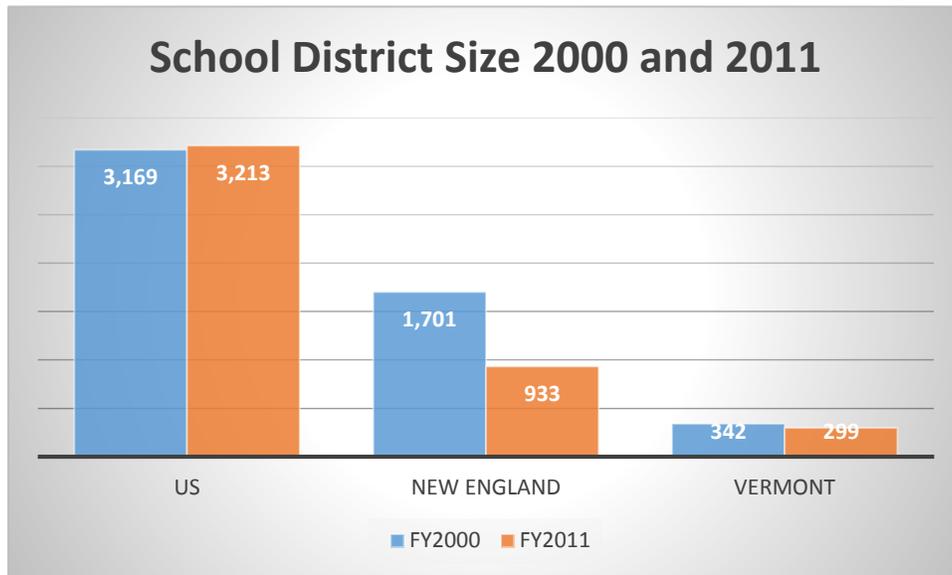
On a per pupil basis, Vermont’s school system is expensive, costing 14% more than the New England average and 60% more than the national average. The chart above shows that Vermont’s spending per pupil was close to the U.S. average in 2000 but has grown at a faster rate since then.

Vermont ranks among the highest in the country for spending per pupil. As a point of reference, if Vermont’s per pupil spending equaled that of Massachusetts, which has better student outcomes than Vermont and possibly the best in the nation, Vermont education costs would be \$134 million less.⁶

Much of the administrative overhead costs associated with Vermont’s school governance system are due to redundancies in administrative functions across our 277 school districts and 58 supervisory unions, which serve a shrinking school population. The average size of a

⁶ (Vermont Cost per ADA – Massachusetts Cost per ADA) X Vermont ADA =
(\$17,727 - \$16,161) X 85,501 students = \$133,894,566. See Appendix D.

Vermont school district is around 300 students, far below the New England average, and even further below the national average.⁷



Source: Picus Report, Table A1.8

Vermont has among the lowest number of students per administrator in the country at 184.1 students per administrator. The New England average is 258.4, and the national average is 291.9 students per administrator.⁸ This means that the number of students per administrator in Vermont is 37% below the national average, driving the overall cost to educate our students up.

Educational Outcomes

While Vermont’s educational system does face some serious challenges there are a few areas where it performs well. The National Assessment of Education Progress (NAEP), an assessment required by federal law for each state, as well as the New England Common Assessment Program (NECAP), an assessment developed for several New England states to satisfy the requirements of the federal “No Child Left Behind” legislation, offer a picture of Vermont’s successes. The Picus Report notes that Vermont’s scores on the NAEP continually rank among the top ten in the nation.

Despite this success Vermont still faces serious educational challenges. The Picus report also makes a number of points that demonstrate Vermont’s room for growth. Reviewing NAEP and NECAP scores, the Picus Report finds that Vermont students are losing ground compared to other New England states – both New Hampshire and Rhode Island have seen greater improvement in student test scores in the past five years. The average scores for students in

⁷ Picus Report, Page 24 - Table 3.8: Average School District Size. Number of school districts and S.U.’s on page xi.

⁸ The Picus Report – Table 3.10: Teacher & Administrator to Student Ratios

Massachusetts are consistently higher than the average scores for students in Vermont even though Massachusetts has a much larger at-risk population. New Hampshire students as well have consistently scored better than Vermont students on the math and reading exams. Where Vermont's scores have increased between 2003 and 2013, the gains have been modest.⁹

Comparison of Vermont NAEP results with New England and with National Results	2013 Vermont Scores			National Scores
	Test	Average	National Ranking	New England Ranking
4 th Grade Math	248	5	3	241
8 th Grade Math	295	4	3	284
4 th Grade Reading	228	7	4	221
8 th Grade Reading	274	4	3	266

Source: NAEP Results 2013 – NationsReportCard.gov

International Assessments and Rankings

In today's flattening world economy, Vermont's children must be prepared to compete with students from around the world. Jay Peak's recent expansion in the Northeast Kingdom utilizing the EB-5 program, a federal program that provides visa's to foreigners in return for capital investment, is just one example. Being near the top of the education list in the United States or New England does not translate to being prepared to compete with graduates from other nation's school systems. To protect and grow American and Vermont jobs, we need to provide a world-class education for our children.

Programme for International Student Assessment (PISA)

The member countries in the Organization of Economic Cooperation and Development (OECD) produce two-thirds of the world's goods and services and publishes PISA scores that compare educational outcomes. This assessment finds the United States far down the list of accomplishment.

⁹ See Appendix B

In assessments of 15 year old students in the 65 OECD or partner economies in the areas of Reading, Mathematics, and Science, the United States students ranked 24th, 36th, and 28th respectively in comparison to 15 year olds from the other nations.¹⁰

Further, using PISA data for countries and NAEP data for states, Stanford economist Eric Hanushek with colleagues from Harvard and the University of Munich compared U.S. education data with international data and then rank order their findings. The top scoring nations in math were Shanghai, Singapore, Hong Kong, and Korea respectively. Massachusetts ranked 9th behind Switzerland, followed by Minnesota ranked 18th behind Germany and Australia and then Vermont ranked 19th.¹¹

Educational Opportunities are Not Equal

In keeping with the Brigham decision and Act 60/68, Vermont’s school districts must have substantially equal educational opportunities. In one sense, it does; one town cannot raise substantially more education dollars than another on a per pupil basis. Our research actually found a slight negative relationship between education spending per student and district income. This would indicate that the redistributive effects of Act 60/68 are working to keep more affluent districts from spending more on education than disadvantaged districts.

However, in another sense, there is still a great inequality in educational attainment. It is not driven by school districts themselves, as Act 60/68 addresses, but rather by socio-economic class. Our research indicates a relatively strong relationship between school district income and test scores. Further, it’s clear that children from lower income families who are eligible for free or reduced lunch (FRL) do not perform as well as children not eligible. Here’s a summary of the results for reading and math from 2008 to 2013.

NECAP Scores by Income

3rd-8th Grade Math – Proficient and Above

	2008	2009	2010	2011	2012	2013
Not FRL	73%	75%	75%	76%	76%	72%
FRL	48%	49%	49%	51%	51%	47%

Source: Vermont Agency of Education [NECAP Assessments 2005-2013](#)

3rd-8th Grade Reading – Proficient and Above

	2008	2009	2010	2011	2012	2013
Not FRL	79%	80%	82%	82%	83%	81%
FRL	54%	57%	58%	61%	59%	57%

Source: Vermont Agency of Education [NECAP Assessments 2005-2013](#)

¹⁰ PISA 2012 Results: <http://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf>

¹¹ http://educationnext.org/files/ednext_20114_research_peterson.pdf

Given the chart above, it is clear that lower income students are not doing as well as higher income students.

In order to address this inequality in our system, we must allow school districts to be flexible in their response to changing demographics and educational needs. For example, the ability for two neighboring school districts to share an art or music teacher, or offer AP and other specialized classes. Something that neither district would be able to do effectively on their own, but by sharing resources they are able to create a new opportunity for students.

Conclusions

The above methods of measuring educational outcomes provide Vermonters some comfort that our K-12 education system generally offers our youth a reasonable, but not the best nor spectacular, level of educational opportunity; although those from lower income families do not achieve the same results as those from higher income families.

While it is true that Vermont scores higher than most states nationally, Vermont's scores lag behind other New England States and other developed countries. In order to be competitive Vermont must take steps to ensure that education spending goes to educating students not filling paperwork.

Recommendations

Simplify, Streamline and Refocus Our Educational Infrastructure

With over 300 local and regional administrative entities plus the State Department of Education serving slightly over 85,000 students, the demands on resources to simply coordinate Vermont's K-12 system are immense. Vermont's K-12 education system has the highest ratio of administrators to students in the nation.¹² Such a system is inherently cumbersome, directing resources away from the classroom and students in favor of organizational and administrative demands. Campaign for Vermont, for reasons of efficiency and better service to students, recommends the following specific reforms to the current system.

Creation of Regional Education Administrative Districts (READs)

Campaign for Vermont recommends the elimination of Vermont's supervisory unions in favor of more powerful Regional Education Administrative Districts (READs) organized around Vermont's 17 technical centers. Organizing READs around technology centers would provide a clear path for students interested in attending a technical college, or provide a stepping-stone to a traditional four year institution.

Local school districts will continue to manage areas most important to parents and students, such as hiring local staff and principals, managing the local school building and prioritizing budget assignments. READs will focus on economies of scale and economies of opportunity for students, including budget approval by district voters, budget assignment to school districts, teacher contract negotiations, transportation coordination, capital investment projects, purchasing of supplies, and coordination of AP and special education courses across the district to maximize availability.

READ Governance Structure

Each READ would be governed by a single board; each local school board would select one member to represent their school at the READ board. These members would be responsible for representing their school's interest before the board such as on budget issues and teacher contract negotiations. Each member of the READ board would have a proportional vote to their local district population.

READ Financing Structure

Campaign for Vermont believes that the mandates of the Vermont Supreme Court's Brigham decision, which requires "substantially equal" educational opportunity for all Vermont's children and the basis for Act 60 and Act 68, is the established standard in Vermont. However,

¹² The Picus report, page 26.

the money raised through education taxes should remain, as much as possible, within the communities in which it was raised while complying with Brigham.

Campaign for Vermont proposes replacing the statewide tax rate with a regional one administered by the READs. The budget shall include the following items now covered by the state's education fund: the education payment, transportation, and technical education. When a READ budget is approved by voters, these items, which comprise 85% of state k-12 education spending, will be shared in accord with the Brigham decision by the READ's school district property owners. In short, to a significant extent, towns will no longer be sending the majority of their property tax dollars to the state education fund in Montpelier for management by the state legislature, but to the more local READ's comprised of neighboring cities and towns and controlled and managed locally. While the Brigham decision has forever severed the decision to spend with the levy of the local property tax, the READ framework reunites the spending decisions with associated property tax burdens at the regional level rather than with the state legislature.

The state would use current general fund, federal, and other education revenue to equalize the regional tax rates in keeping with the Brigham decision and provide for special education. This system will allow flexibility at the local level as well as provide substantially equal educational resources.

School Budget Process

Local School boards would be responsible for creating a preliminary budget, the local school board's representative would present their budget to the READ board for debate and voting. Once all preliminary budgets have been approved by the READ board they will be compiled into a master budget that will be brought up for a final vote on town meeting day for approval by the voters of the READ.

READs Help Retain and Strengthen Local Control

Local school districts are a treasured and vital part of Vermont's community heritage. Shifting administrative functions and revenue collection to Regional Education Administrative Districts allows for local districts to have greater input into the way that education dollars are being raised and spent. Keeping education tax revenue inside the READ gives them the resources to be creative in finding education solutions. Such an alignment, as outlined above, would allow READs to be of a size that generates economies of scale beneficial to taxpayers as well as the critical mass necessary to offer students a rich and diverse educational environment and experience. A strong READ structure will make it possible for our schools to collaborate, share resources, and work systematically to provide more opportunities for our students.

READs Help Foster Bottom up Education Policies

The intent of this reform is to foster education policies from the bottom up (school board and READ) rather than from the top down (State Board of Education and Secretary of Education). Each of the approximately 15 READ's should be free to explore and pursue educational reforms

and curricula that are responsive to the needs of district students. Diverse approaches for educating Vermont's children should be allowed and encouraged, but measured very carefully and often for effectiveness. For example, given demographic and cultural differences among student populations, approaches to better serving the needs of students might be quite different for a READ serving the Burlington area relative to an READ serving the Northeast Kingdom. The new governance model will enable local education leaders to focus on improving learning in a customized, locally appropriate way.

Summary

In short, creating READs will help to control cost by consolidating administrative functions, allow greater flexibility to respond to changing needs, and create more educational opportunities for our students. They would also allow local districts greater input in the way that education funding is raised and spent in their communities. READs would empower local communities to play an active role in creating education policy.

Role of State Government

Partners in Reform

The Agency of Education should play a helpful role in gathering and sharing information that thoroughly informs READs, local school boards, parents and citizens of the status of student outcomes and progress, or lack thereof, and encourage READs to constantly seek and achieve high standard results. For example, the state Board of Education would be responsible for:

- Determining the standardized tests used to evaluate student outcomes and distributing broadly these results and others like the SAT, NAEP, and NECAP exams;
- Collecting, via the teacher licensing process, and distributing information that profiles the quality and performance of the instructional workforce in each READ;
- Collecting and disseminating comparative financial data profiling the financial performance and cost effectiveness of READs;
- Sharing "best practice" information garnered from READs and local school districts as well as national and international sources.

However, decisions on how to best utilize information from the Agency of Education would remain with the READ and local school district representatives. State recommendations are fine but state mandates should be avoided. For example, there would be no statewide mandates regarding the length of the school day or the annual school calendar. Campaign for Vermont believes critical education and spending decisions should not be made at the statehouse, but as close to parents, students and community members as possible.

Income Sensitivity

In 2014, the effective homestead rate was \$1.41 and the non-residential rate was \$1.44, yet only \$1.25 of these was necessary to support education, the rest being necessary to raise the \$142.5 million for income sensitivity which is cost shifted. CFV recommends that the cost of

income sensitivity be explicit on tax bills as a separate, non-education charge that taxpayers can see rather than have it embedded and hidden, as it is now, in the base education rates. Income sensitivity is not a requirement of Brigham nor is it education related but it comprises 18 cents (13%) of current education tax rates.

The State Pays Its Own Costs

While school funding issues should be decided within Regional Education Administrative Districts, the state still has an important role to play regarding education spending. The state should retain its current financial responsibilities for the following education fund budget items: the state share of special education costs, state placed students, EEE Block Grant, the Community (Corrections) High School of Vermont, Adult Education and Literacy, the Renter Rebate program, the reappraisal and listing payment and the VISION Accounting System. The small schools grants can be sunset as decisions regarding the size of school districts belong to local school districts and READ's. The state shall pay for its obligations from state funds (Sales & Use Tax, Purchase & Use Tax, and general fund, lottery and Medicaid transfers) currently mandated to the state Education Fund.

Further, the state shall finance its responsibility of equal access to equal educational opportunity consistent with the Brigham decision to the extent that the distribution of the education grand list per pupil is not "substantially equal" across all READs. The equity required by Brigham will be easier to achieve and more transparent, while tax resources will be kept more local by managing this responsibility over approximately 17 READs rather than over the current practice involving hundreds of school districts. The required equity can be achieved by directing the state funds mandated to the education fund to READs assuring that each penny of their tax rates raises a substantially equal (but not necessarily precisely equal) amount of revenue per pupil. If this remainder of state funds is not sufficient to achieve the Brigham standard of substantial equality, then the state can assess a statewide property tax on the statewide education grand list to raise the necessary additional funds.

Conclusion

Vermont is at a critical juncture. Over the next decade Vermont will begin to feel the effects of stagnant population and economic growth coupled with unsustainable levels of spending. Therefore it is necessary to take preventative measures that will help address these long-term problems. Consolidating administrative cost through the creation of regional education administrative districts would redirect money back to students, back to taxpayers and empower regional communities to serve an active role in educating their children. Education reform coupled with economic development will help set Vermont up for success for years to come.

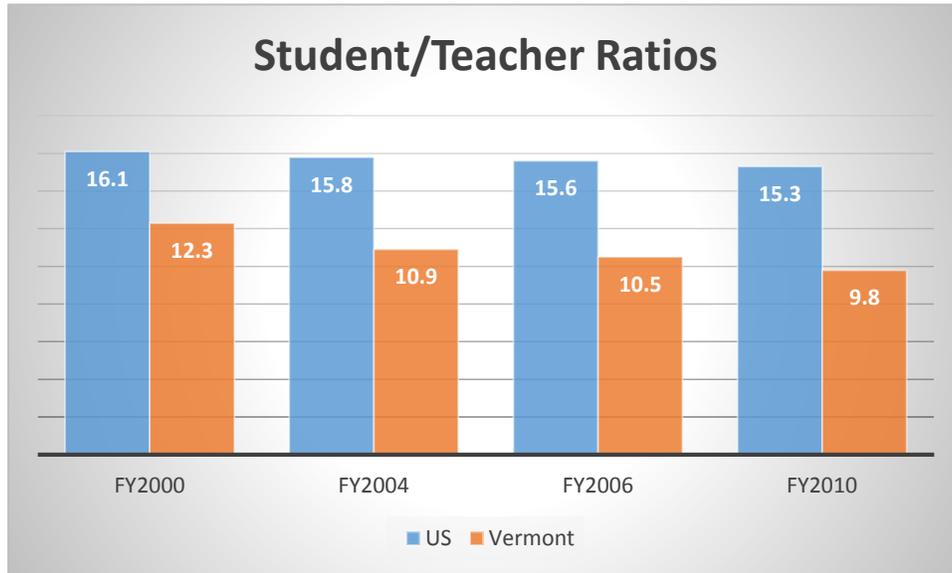
Let's partner together to create a sustainable and equitable platform to educate our children for the 21st century.

###

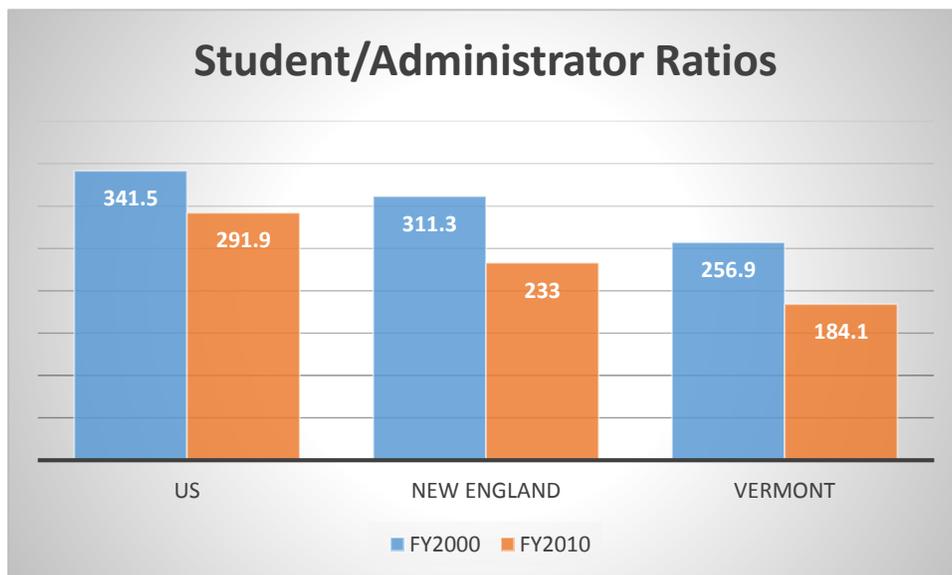
Appendix A

Student/Teacher and Student/Administrator Ratios

1. Vermont's ratio of students to teachers is the lowest in the country. Student to Administrator is the 3rd lowest.

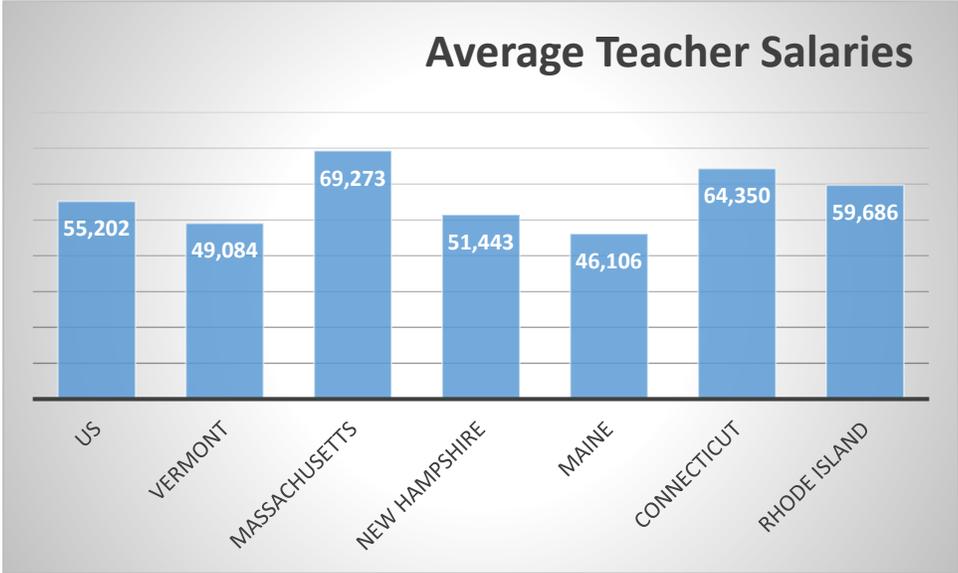


Source: Picus Report, Table A1.10a



Source: Picus Report, Table A1.10b

2. Average teacher salaries in Vermont have not kept pace with those in New England or the national average. Note that Massachusetts has much higher average salaries but also a slightly higher ratio of pupils to teacher at 13.6.



Average Teacher Salary - FY2012

State	Ave. Salary	National Ranking
Vermont	49,084	28
United States	55,202	
Maine	46,106	
New Hampshire	51,443	
Rhode Island	59,686	
Connecticut	64,350	
Massachusetts	69,273	

Source: Picus Report, Table A1.9

Appendix B

Vermont's NAEP scores compared to New England and the US.

Math 4th Grade	Vermont Scores			National Scores
Year	Average	National Ranking	New England Ranking	Average
2003	242	3	2	235
2005	244	6	3	238
2007	246	6	3	240
2009	248	4	3	240
2011	247	6	3	240
2013	248	5	3	241

Math 8th Grade	Vermont Scores			National Scores
Year	Average	National Ranking	New England Ranking	Average
2003	286	6	3	278
2005	287	3	2	279
2007	291	4	2	281
2009	293	3	2	283
2011	294	4	2	283
2013	295	4	3	284

Reading 4th Grade	Vermont Scores			National Scores
Year	Average	National Ranking	New England Ranking	Average
2003	226	4	4	218
2005	227	3	3	219
2007	228	4	3	221
2009	229	5	4	221
2011	227	7	4	220
2013	228	7	4	221

Reading 8th Grade	Vermont Scores			National Scores	
	Year	Average	National Ranking	New England Ranking	Average
	2003	271	3	3	263
	2005	269	7	4	262
	2007	273	2	2	263
	2009	272	3	2	264
	2011	274	4	3	264
	2013	274	4	3	266

Source: NationsReportCard.gov

Appendix C

CFV Report on Education Outcomes and Spending - Overview

Campaign for Vermont found that in most cases there is no relationship between NECAP exam scores and measurements of spending or district size. While all correlations between test scores and ADM counts were under 10%, the correlation between 11th grade math scores and ADM was 24.6% with an R-squared value of 6%. While this is not particularly significant, it does indicate a possible relationship and might suggest that school district size has a slight effect on high school level math scores, at least in 2014.

We see this trend again when it comes to education spending per equalized pupil. Eleventh grade math and scores showed a 23.1% correlation with an R-square value of 5.3%. Three through eighth grade math and reading scores showed no correlation. This again suggests a possible, but weak, relationship between education spending and high school educational outcomes per equalized pupil. However, given that the redistributive effect of the calculation of equalized pupils among school districts, as noted in finding (4) above, the apparent correlation, though weak, might be further diluted when controlled for such redistribution.

While the above data may be indicative, we do not consider the 11th grade statistics to be as accurate as the 3-8th grade statistics for two reasons. First, the number of school districts with an 11th grade is fewer than those with 3-8th grades and thus offers a smaller sample size. Secondly, since the 11th grade test only measures one class, results could vary significantly from year to year within a particular school. This measure may be more accurate if averaged over a longer period of time.

The most salient statistics were found regarding the comparisons of educational outcomes to income measurements. See chart below:

CFV Education Outcomes and Spending Report

Test Scores relative to district's ADM count	Correlation	R ²	District Count	
3-8 Math	-0.04005	0.001604	196	School district size appears to have little relationship to test score outcomes. There does appear to be a slight relationship between ADM and 11 th grade math scores.
3-8 Reading	-0.019974	0.0004041	196	
11 Math*	0.2458918	0.0604628	52	
11 Reading	0.0824402	0.0067964	52	
Test Scores relative to district's Equalized Pupil Count	Correlation	R ²	District Count	
3-8 Math	-0.055757	0.0031088	191	Similar to district size based on ADM, district size based on equalized pupil counts have little bearing on test score outcomes. Again, as with ADM, there may be a slight relationship with regard to grade 11 math scores.
3-8 Reading	-0.029858	0.0008915	191	
11 Math *	0.2305283	0.0531433	52	
11 Reading	0.0696833	0.0048558	52	

Test Scores relative to Education Spending per ADM	Correlation	R²	District Count	
3-8 Math	-0.02426	0.0005886	196	The level of “education spending” per ADM does not appear to have a significant relationship to test score outcomes.
3-8 Reading	0.0432067	0.0018668	196	
11 Math :	-0.024138	0.0005827	52	
11 Reading	0.0766687	0.0058781	52	
Test Scores relative to Total Spending per ADM		R²	District Count	Total school district expenditures per ADM do not appear to have a significant relationship to test score outcomes.
3-8 Math	-0.068506	0.0046931	196	
3-8 Reading	-0.048398	0.0260064	196	
11 Math	-0.120293	0.0850621	52	
11 Reading	0.0347017	0.1259522	52	
Test Scores in relation to “education spending” per equalized pupil		R²	District Count	A slight relationship between “education spending” per equalized pupil appears at the 11 th grade level, however this could be merely a function of the calculations behind education spending and equalized pupils. (See Findings 4 and 6 above)
3-8 Math	0.1364751	0.0186255	191	
3-8 Reading	0.1612649	0.0260064	191	
11 Math *	0.291654	0.0850621	52	
11 Reading *	0.3548975	0.1259522	52	
Test Scores in relation to district median income (adjusted gross income – AGI)	Correlation	R²	District Count	The strongest relationship found was between median district income (AGI) and test scores. These correlations indicate that test results increase as household incomes rise, indicating that the home environment in economically better off households is more conducive to academic achievement.
3-8 Math *	0.4489159	0.2015255	169	
3-8 Reading *	0.4385738	0.192347	169	
11 Math *	0.4962555	0.2462695	28	
11 Reading *	0.3206791	0.1028351	28	
District spending in relation to ADM or Equalized Pupil count	Correlation	R²	District Count	There appears no significant relationship between spending per student count and school district size, whether counted as ADM or Equalized pupils. This may indicate there is little proven value in assuming cost efficiencies based upon school district size.
\$/ADM : ADM	0.0037956	0.0000144	273	
\$/EqPup : ADM	0.0021017	0.0000044	273	
Ed\$/ADM : ADM	0.0006547	0.0000004	273	
Ed\$/EqPup : ADM	-0.001378	0.0000019	273	
\$/EqPup : EqPup	0.002801	0.0000078	273	
Ed\$/EqPup : EqPup	-0.0015	0.0000023	273	
Spending in relation to	Correlation	R²	District	The correlation between measures of

income measures			Count	spending per pupil and income measures (AGI and FRL) indicate a district's wealth is not a predictor of levels of spending per pupil, possibly reflecting the success of redistributive effects of Act 60/68 subsequent to the Brigham decision.
\$/ADM : FRL	-0.04153	0.0017248	176	
Ed\$/ADM : FRL	0.0009245	0.0000009	176	
\$/ADM : AGI	-0.203722	0.0415028	252	
			252	
Ed\$/ADM : AGI	-0.157698	0.0248686		

Appendix D

Spending per student and graduation rates data from the National Center for Education Statistics.

Spending per Student

	FY2004 \$/ADA	FY2011 \$/ADA	ADA FY2004*	ADA FY2011*
United States	\$ 10,463	\$ 13,087	45,325,731	46,168,400
New England**	\$ 12,546	\$ 16,852	2,122,743	2,018,647
Vermont	\$ 12,675	\$ 17,727	95,160	85,501
Massachusetts	\$ 12,322	\$ 16,161	932,417	910,568
Connecticut	\$ 13,721	\$ 18,514	561,530	537,104
Maine	\$ 11,813	\$ 15,936	187,492	165,067
New Hampshire	\$ 10,625	\$ 15,334	202,352	188,913
Rhode Island	\$ 12,989	\$ 17,614	143,792	131,494

*ADA stands for Average Daily Attendance

**New England numbers calculated by adding member states

Source: Nation Center for Education Statistics – ELSI Table Generator tool

Graduation Rates FY2010

State	Diploma Recipients	Other HS Completers	Av. Freshman Grad. Rate*
Vermont	7199	29	91.4% (1)
United States	520270	136193	78.4%**
Maine	14069	105	82.8% (13)
New Hampshire	15034	455	86.3% (7)
Rhode Island	9908	0	76.4% (33)
Connecticut	34495	321	75.1% (40)
Massachusetts	64462	1093	82.6% (14)

* () is national ranking

**Weighted average

Source: National Center for Education Statistics - ELSI Express Tables, State Diploma Recipients / Completers