

# AN EVALUATION OF VERMONT'S EDUCATION FINANCE SYSTEM



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**Final Report**

January 18, 2012

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January 18, 2012

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Dear Steve:

Please find attached our final report for the evaluation of Vermont's education finance system. We have revised our January 4, 2012 draft based on the comments we received from your office, the Vermont Department of Taxes and the Vermont Department of Education as well as the public testimony we received on January 9 and the discussions we had on January 10 with several Legislative Committees.

Our overall finding from this study is that the Vermont school funding system is working well and meeting the goals established in Acts 60 and 68. Using a series of objective measures, we find:

- Vermont's schools have among the highest levels of per pupil revenue in the United States. During the meetings with the Legislature on January 9 there was considerable discussion regarding the actual level of spending per ADM. We have revised the estimates from our draft report, and following a number of conversations with officials of the Vermont Department of Education we estimate fiscal year (FY) 2012 total revenue per ADM to be \$16,788. While this figure is \$657 lower than the number we used while in Vermont on January 9 and 10, which was based on estimates compiled by another organization, this number is developed on the basis of Vermont estimates of FY2012 revenues and more accurately reflects resources available to education Vermont's K-12 students. Moreover, this change has no substantive difference on Vermont's national ranking, nor on the overall conclusions we draw from our research.

January 18, 2012

- The state has designed an equitable system. We found virtually no relationship between district fiscal capacity (measured by either by district property wealth or personal income) and spending levels
- Disparities in per pupil spending across districts meet or nearly meet well established benchmark standards for school finance equity
- The “tax price” or cost per additional dollar of education spending drives a relatively small amount of the differences in per pupil spending suggesting that the income adjustments to homestead property taxes have not led to large resource disparities
- Spending levels continue to be determined annually by each town’s voters
- Vermont’s student performance ranks among the highest in the country, although compared to other New England states, student performance is about average
- An in depth study of five schools that have shown substantial improvements in student performance over the last five years shows that Vermont schools, even those with high proportions of low income children, can produce large gains in student learning. The case studies also identified a number of promising practices for improving student performance

In the course of our work, including a series of public hearings, a number of concerns with the way schools are funded were identified. These represent genuine issues that impact the resources available to schools and the ability of Vermont citizens to pay for those schools. However, it is our strong view that none of those issues are so serious that the state needs to completely replace its approach to funding schools – rather each needs serious and careful consideration by the Legislature, which should consider modifications to those components of the system that create these issues. It is our sense that most of the individuals who shared their views and concerns with us at the public hearings concur that the overall system is working well and the needed changes can be made within the existing framework.

The need to make minor modifications to the system should not be seen as surprising, it is impossible to develop something as complex as a school finance system that raises nearly \$1.5 billion to meet the needs of 89,115 children and meets the concerns of everyone. Moreover, school finance systems need to be flexible enough to accommodate changes in local economic conditions that cannot be predicted when the systems are initially designed. Our view is that Vermont’s system can accommodate the needs of today’s economy and continue to meet the standards established in Acts 60 and 68 provided the Legislature continues to monitor its many components and makes adjustments as circumstances warrant.

We have not made recommendations regarding tax rates, spending levels, or the distribution of tax efforts across individuals and classes of property. Those are, in our

view, policy decisions that rest with the Vermont Legislature and the citizens of your state.

During the course of our discussions with the Legislature in January, we found considerable concern with, and interest in, identification of approaches to help Vermont's schools use their resources to make further improvements in student learning. Our recommendations and conclusions identify a number of potential issues the state might consider for study in the future.

We want to thank you, your staff, and the staffs of the Vermont Department of Education and the Vermont Department of Taxes for their help in collecting and helping us to understand the tremendous amount of data available and necessary for our study. While we have vast experience in working with state agencies across the United States, it is unusual to find such a consistently high level of staff capability uniformly across so many state agencies and at so many different levels. All of the members of our team have enjoyed the opportunity to work with Vermont state agency staffers. Moreover, we appreciate the time and energy representatives of individual school districts and supervisory unions as well as education support groups have provided us throughout this work.

We hope our findings will be useful to the Legislature in its future deliberations on the important issue of education finance, and look forward to the opportunity to work with you again in the future.

Sincerely,

A handwritten signature in cursive script that reads "Lawrence O. Picus".

Lawrence O. Picus  
Lawrence O. Picus and Associates



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# AN EVALUATION OF VERMONT'S EDUCATION FINANCING SYSTEM

## EXECUTIVE SUMMARY

This report, submitted to the Vermont Legislature, provides a comprehensive evaluation of Vermont's education funding system. The study was conducted pursuant to House Bill No. 436 of the 2011 session of the Vermont Legislature, and was conducted by Lawrence O. Picus and Associates, LLC. The findings described in this report are based on work conducted by our team between August and December 2011 and provide a comprehensive analysis of the financing of Vermont's public PK-12 schools, describing the extent to which the funding system meets the goals established by Acts 60 and 68 – the two major pieces of legislation that establish the current funding model.

Our overall finding is that the current funding system meets the goals established by the Court and Acts 60 and 68 – to provide equal access to all towns for raising revenues for PreK-12 education. The system established through that legislation provides that each town determines the budget for its schools on an annual basis and, through a combination of residential and non-residential property taxes and other state sources of revenue, funds those schools so that each town has access to the same level of funding for a given tax rate. Moreover, the design and operation of the system has resulted in relatively little disparity in per pupil education spending related to property wealth and household income, created substantial equality in the level of per pupil spending across the state's 277 school districts, and has reduced the variation in student achievement in reading and mathematics across schools, as measured by NECAP tests. One result of these reforms is that today, Vermont's school children have one of the highest levels of per pupil funding in the United States, as well as one of the lowest ratios of pupils to teachers among the 50 states.

This analysis was conducted by a team of five school finance experts under the auspices of Lawrence O. Picus and Associates. As part of this study, we communicated extensively with Vermont education officials at the state and local level, as well as with other state officials responsible for administration of parts of what is a very complex funding system. We used traditional school finance and economic analytic techniques to develop our findings, and frequently interacted with state officials to ensure the accuracy of our data. We conducted extensive case studies of five improving schools across the state and developed a comprehensive comparison of Vermont's current education system with the education systems in the five other New England states as well as with all 50 states more generally. We held three public hearings in Vermont where representatives of local school districts and the general public had the opportunity to share their thoughts and concerns about Vermont schools. Finally, we met with a number of Legislative

Committees throughout the study, including a daylong series of meetings on January 10, 2012, to share our progress and to understand their concerns about the funding system.

Our report contains detailed sections that describe the state's school funding system; offers a series of interstate comparisons with all 50 states in general and with New England states more specifically; describes the findings from a traditional school finance equity analysis within the unique funding system in Vermont; conducts an economic analysis of the impact of the current system on town education spending decisions; identifies common themes in Vermont's significantly improving schools; summarizes the testimony received at the three public hearings, responds to concerns expressed by members of the Legislature, and offers conclusions and a list of issues the state may want to consider as it reviews the education funding system and its ability to improve student outcomes in the future. Our overall findings for each of these sections are summarized below.

## **VERMONT'S SCHOOL FUNDING SYSTEM**

In fiscal year 2012 (FY 2012) Vermont will raise an estimated \$1.4961 billion to educate approximately 89,115 students in 307 schools operated by 277 districts through 46 supervisory unions, 12 supervisory districts, and 2 interstate districts. This amounts to approximately \$16,788 per ADM.<sup>1</sup> Vermont's system for allocating revenue to school districts is unique among the 50 states in that local towns and districts annually determine the spending level for their schools, and the state – through a complex system of property and income taxes and other state sources of revenue – funds the schools in a manner designed to treat taxpayers choosing the same level of spending for the students in their schools equally regardless of their location across the state.

It is important to point out at this juncture that many Vermont policy makers, stakeholders and citizens view the State's funding system under Acts 60 and 68 as an income tax based system that raises money through income sensitive adjustments to property taxes. However, documents and legislation describing the system describe it more in terms of a property tax based system with adjustments for income. Moreover, all other states – with the exception of Hawaii, which is a state, funded system – view their education finance systems through a property tax lens. Consequently, the substantial school finance literature upon which we rely in this evaluation, combined with the property tax based description of Vermont's system have led us to describe the system from the perspective of the property tax and income based adjustments to that tax. While this may run counter common views of Vermont's system, this approach is, in our view, the only way to comprehensively evaluate the performance of the system within the context of the goals of Acts 60 and 68.

The funding system in use today emerged in response to the 1997 Vermont Supreme Court ruling in *Brigham v. State* and was implemented through Act 60 in 1997

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<sup>1</sup> This figure includes all revenue for K-12 public education including state appropriations for school employee retirement programs and estimated Federal funding. Details as to how this figure was derived can be found in the second section of the full report.

and Act 68 in 2004. The funding system in Vermont is a unique blend of local control and equalized state funding. While each town chooses the level of education spending for its schools annually, the revenue for education comes from a number of state sources. Primary among them is over \$900 million in residential (with adjustments) and non-residential property taxes, all of which are treated as state revenues. In addition, state funds for education come from the state's general fund, one-third of the sales and use tax receipts, one third of the state's purchase and use tax, the state lottery, Medicaid reimbursements and the Vermont Yankee power plant. This is supplemented by funding for school employee pensions appropriated by the Legislature and by Federal funding programs.

The non-residential property tax rate is set by the Legislature annually. In addition, the Legislature establishes a base per pupil spending level and a residential property tax rate to fund that level of spending. The property tax rate for towns choosing to spend above that level increases proportionally with the increase in per-pupil spending above the base level. However, individual property taxes are limited to a legislatively determined percentage of household income for taxpayers with incomes below \$97,000. The income percentage is similarly increased proportionally for per-pupil spending above the base amount. Finally, for towns that elect to spend a per-pupil amount that exceeds 125% of the state average per pupil expenditure from the previous year, the property tax rates and income adjustment tax percentages double for the portion above that level. Property tax rates (residential and non-residential) are also adjusted by the common level of appraisal (CLA), which is designed to equalize assessment practices across the state and ensure properties with the same market value are treated equally regardless of their location. For FY 2012 the rate is \$1.36 per \$100 of fair market value, and the base homestead tax rate is \$0.87 per \$100 for districts spending at or below the base level.

## **INTERSTATE COMPARISONS**

An analysis of education finance systems in the United States and New England identified the following comparisons with Vermont:

### **Educational Expenditures**

- State and local revenues for K-12 education increased by almost 83.7% between FY 2001 and FY 2012 (NEA Rankings and Estimates, 2011)<sup>2</sup>
- This increase is due in part to declining enrollments, and in part to substantial increases in state education revenues
- Vermont maintained a continued commitment to education funding as measured through both the state's relative tax effort (highest in the nation) and the percentage of state resources devoted to K-12 schools (6<sup>th</sup> highest)

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<sup>2</sup> We needed to use a national source for interstate comparisons but it is important to note that NEA estimates have not relied on data provided by the State of Vermont since 2006. The NEA has projected revenues and expenditures based on data provided prior to 2006 and we believe their estimates overstate total revenue. Our analysis of FY 2012 budgeted revenues for education identified total revenues of \$1.1.496 billion or \$16,788 per ADM.

## **Student Population**

- Vermont has experienced the second greatest percentage decrease in student population (18.1%) over the time frame of the study. Only North Dakota has had a greater decline
- Average school district size has dwindled to 299 students – making the state’s school districts the smallest in the nation with an average enrollment that is less than 10% of the size of the average school district in the United States.
- **Staffing**
  - Vermont has seen an increase in the number of new teachers, administrators and support staff
  - When combined with the decline in student enrollments the result is that Vermont has the lowest teacher to student and staff to student ratios in the country
    - In Vermont from 1999-2000 to 2009-10 the number of full-time equivalent (FTE) teaching positions increased by 250, or 3.1%.
    - Nationally the number of teachers increased by 10.3% and in the New England states they increased by 12.7%.
    - Vermont’s increase in teaching positions (3.1%) combined with the decrease in the state’s K-12 population (18.1%) led to a reduction in the student to teacher ratio from 12.3 to 1 to 10.6 to 1 in 2009-10 (NEA, 2011).
  - The reduced teacher and staff to student ratios are a major cause of the state’s increases in per pupil expenditures
- **Student Achievement**
  - Vermont’s scores on the National Assessment of Educational Progress (NAEP) continually rank among the top ten in the nation
  - While there have been slight increases in NAEP math and reading scores for 4<sup>th</sup> and 8<sup>th</sup> grade students, the increases are less than the national average increase in these scores, and also lower than improvements observed in other New England states over this time period
  - Student performance on most aspects of the New England Common Assessment Program (NECAP) has only modestly increased.
  - The state has observed a steady increase in high school graduation rates

## **EQUITY ANALYSIS**

We conducted a traditional school finance equity analysis over the time frame in which Acts 60 and 68 were in effect. We found that the Vermont school funding system has achieved a high degree of equity, even though it did not meet every standard equity benchmark established in the school finance literature, all of which are quite rigorous and rarely met by any of the 50 states. Acts 60 and 68 focused on achieving a high degree of fiscal neutrality – reducing the linkage between disparities in per pupil spending and local fiscal capacity – and have met that goal.

Our analysis focused on four main issues: the extent to which education spending is related to property and/or income wealth, the equality of education spending across districts and towns, the changes in education spending over time, and the disparity in education outcomes. We found that spending in Vermont has tended to be weakly related to wealth (at an acceptable degree under standard school finance equity benchmarks) and that there is virtually no relationship between property wealth and spending in the earliest years covered in this study. In technical language, we find that the Vermont school funding system is fiscally neutral.

Measures of the equality of spending in Vermont remained consistent over the years covered in the study. The funding system did not meet the accepted benchmarks of equality, but came very close throughout the period of study. We also found that the state spends 140% more per pupil today for PK-12 education than it did in the year 2000, with the greatest increases coming in support services for students.

Using a combined NECAP measure of both reading and math performance across grades 3-8, we found that the disparity in student outcomes also declined over the time period the NECAP test has been used.

## **ECONOMIC ANALYSIS**

An important consequence of Act 60 and Act 68 has been its impact on educational spending. These Acts revamped the educational finance system in Vermont, and changed the incentives facing taxpayers. We conducted an economic analysis of these factors and found:

- Act 60 and Act 68 altered the linkage between taxpayer benefits and costs of education by shifting from a shared state and locally funded system to a state centered system.
- Prior to Act 60 local jurisdictions were largely responsible for raising education funds above the state determined foundation level. Subsequently, local responsibility was diluted by the shift of non-residential property tax collections to the state level – along with establishment of the non-residential property tax rate – and by the separation of local budget setting and state revenue collection.
- Vermont has moved increasingly to an income-based system, with over 2/3 of residential taxpayer liability at least partially determined through income adjustments and the circuit breaker program. In FY 2011 it is estimated that over \$165 million in residential property tax collections will be replaced by income related tax adjustments.<sup>3</sup>

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<sup>3</sup> As noted above, many Vermont stakeholders view the system as an income tax based system, not a property tax based system.

- The consequence of these policy shifts has been to reduce the average marginal price of an additional dollar of per pupil educational services by approximately 70% since prior to Act 60. In other words, on average, towns that want to increase education spending must raise only 30 cents locally, with the remainder covered by other revenue sources.
- In the most recent time period we have data for, FY 2008 – 2010, changes in the marginal price of an additional dollar of per pupil educational services has been more modest, averaging approximately 3% statewide. However, the statewide average masks the experience of individual towns, some of which faced much different price changes.
- In line with economic theory, we would expect changes in price to have an impact on the level of demand for educational services. In fact, towns that experienced price declines increased their educational spending by \$550 more per ADM than towns that experienced price increases. The differences were even greater for those towns that experienced the 10% largest and 10% smallest price changes, a difference of \$1,248 per ADM.
- The change in tax price<sup>4</sup> has an independent effect on school spending, even after we have controlled for other determinants of school spending.
- We find that the price elasticity of demand for educational services is -0.072 in small towns and -0.028 in large towns. This implies that school spending is 2-5% higher than it otherwise would be in the absence of the 70% change in tax price.
- School enrollments have a powerful effect on per pupil spending. The historical decline in Vermont enrollments have driven up the cost of education. A 10% decline in student enrollments is estimated to have a \$1,500 increase in spending per ADM.

## **COMMON THEMES IN VERMONT’S SIGNIFICANTLY IMPROVING SCHOOLS**

We conducted case studies of five schools that had significantly improved student performance over the past several years. These were not necessarily the highest scoring schools, but rather schools that had made large gains in the NECAP reading and math tests between 2005 and 2010. The goal of these cases was to understand strategies schools used to boost student learning, and over time, the resource needs of those strategies. This information can serve as a beginning step toward addressing the next big education finance issue for the state – forging a closer connection between the state funding formula, school use of resources and student performance. Among the key themes that emerged from this study are:

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<sup>4</sup> As used in this document, tax price refers to the town’s average marginal cost of each additional dollar spent for schools. We compare the increased tax liability of local residential taxpayers to the cost of raising school spending \$1 per pupil to arrive at the “tax price.”

- Our findings align with recent other studies of effective schools in Vermont, including *Roots of Success* (2009) and *Vermont Schools Closing Achievement Gap* (2011)
- The strategies we identified in our five case studies align with national studies of schools that have significantly improved student learning, including studies we have conducted in other states (Odden, 2009; Odden & Archibald, 2009).
- We identified 11 common themes that were in place across the five schools, and note that several of the 11 elements represent significant augmentations of the findings from recent Vermont studies of improving schools (*Roots of Success* and *Vermont Schools Closing the Achievement Gap*). The 11 themes are:
  1. Talent
  2. High expectations
  3. Ambitious goals
  4. Curriculum
  5. Instruction
  6. Use of data
  7. Multiple interventions
  8. School schedule
  9. Professional culture
  10. Leadership
  11. Small class sizes.
- A key in the five schools we studied was the knowledge and skill of the staff to implement the various strategies effectively.
- Not every school was strong on all of the eleven elements, but all were strong on most of them.

In addition, an appendix to our report provides detailed case studies describing how each of the five schools achieved their significant improvements in student achievement.

## **PUBLIC HEARINGS**

We conducted a series of public hearings to identify concerns and suggestions from the public regarding the State's school finance system. A number of concerns and issues were identified, some pertaining to the school funding and taxation system and others to the performance of the state's schools. However, it is our sense that the problems identified are not of a magnitude that would require establishing a new or alternative funding system, but rather are the kinds of issues that develop overtime in any

school funding system and require thoughtful research and development of policy options that can resolve specific issues in the framework of a generally successful system.

The need to make minor modifications to the system should not be seen as surprising. It is impossible to develop something as complex as a school finance system that raises nearly \$1.5 billion to meet the needs of 89,115 children and that meets the concerns of everyone. Moreover, school finance systems need to be flexible enough to accommodate changes in local economic conditions that could not be predicted when initially designed. Our view is that Vermont's system can accommodate the needs of today's economy and continue to meet the standards established in Acts 60 and 68 provided the Legislature continues to monitor its many components and makes adjustments as circumstances warrant.

## **CONCLUSIONS AND ISSUES FOR FURTHER CONSIDERATION**

Our overall finding from this study is that the Vermont school funding system meets the goals established in Acts 60 and 68. Specifically in the past 12 years the funding system has reduced disparities in education spending that are linked to local fiscal capacity (property wealth and income), moderated disparities in student outcomes, and allowed all towns to set their own tax rates for schools under a system that ensures towns with equal tax rates generate virtually equal education spending per pupil. Using a series of objective measures, we find that Vermont's schools have among the highest levels of per pupil spending in the United States. We also found that the state has designed an equitable system with limited disparities in per pupil spending, and virtually no relationship between wealth (measured by either district property wealth or personal income) even though spending levels are determined annually by each town.

Further, Vermont's student performance compares favorably with the nation overall, although compared to other New England states, student performance is about average. Because of concerns about how well Vermont students do compared not only to others in New England and the United States, but also to the performance of students in other countries, we also conducted in depth studies of five schools that have shown substantial improvements in student outcomes in the last five years. Our findings from these schools identified a number of promising practices for improving student performance and found that they can be implemented within the bounds of the current Vermont school finance system.

Through a series of public hearings, a number of concerns with the way schools are funded were identified. These represent genuine issues that impact the resources available to schools and the ability of Vermont citizens to pay for those schools. However, it is our strong view that none of those issues are so serious that the state needs to completely replace its approach to funding schools – rather each needs serious and careful consideration by the Legislature who should consider modifications to those components of the system that create these issues. It is our sense that most of the individuals who shared their views and concerns with us at the public hearings concur

that the overall system is working well and the needed changes can be made within the existing framework. The issues we identified include:

- There was concern that despite Vermont's highest in the region per pupil expenditures, student performance was only average in New England. Research on the linkage between spending and student outcomes has not found direct and consistent relationships between the two. We note that Wyoming, with the 4<sup>th</sup> highest per pupil spending in the United States (Vermont is 3<sup>rd</sup>) has even lower student performance. On the other hand we did find schools that had dramatically improved student outcomes during the past five years. These schools deployed strategies that other Vermont schools also could deploy.
- Consideration of the income adjustment cut off \$90,000 for full adjustments and the "slide" to \$97,000 for partial income adjustments. We heard a great deal of discussion over the appropriate level for the income adjustment as well as concern over the limited differential between the level for a full adjustment and the complete cutoff of adjustment support. Our sense is there are substantial income distribution implications for various decisions about the level of household income qualifying for the adjustment and the differential between the full level of adjustment and the elimination of adjustment.
- There was concern expressed about the \$500,000 cap on homesite property value to qualify for the income adjustment. A number of individuals felt that an increasing share of Vermonters with fixed incomes were suddenly faced with dramatic (and potentially unaffordable) increases in property taxes as a result of where they live. Before taking action on this, our view is a clear understanding of how many individuals are impacted by this is needed, and a careful analysis should be conducted about the range of solutions available before the system is changed.
- One of the potential sources of high per pupil spending in Vermont is the limited "price" of increased spending to the average town voter. While our estimates of the price elasticity are low, it seems likely that over time, local voting on school budgets has been one of the reasons for Vermont's rapid increase in per-pupil spending. Efforts to reduce the growth in future spending need to consider the tradeoffs between local control over annual budgets and more state control over how much towns can spend for education.
- One potential source of Vermont's high spending is the large number of very small schools – average school district size is the lowest in the nation by a substantial amount. Tradeoffs between local and state control over school district size are also an issue. Strong consideration should be given to the role of supervisory unions (either through state mandates or more market based solutions) as part of the discussion on these dis-economies of scale.
- Finally, to facilitate future studies of this nature, we recommend that state

databases contain a common identity variable for each district to facilitate merging data from different state agencies. Additionally, education data bases should be designed so that it is feasible to cross link between the three main levels of local school funding, supervisory union, district, and town. There are some straightforward analyses that we could not do because the three levels could not be linked.

From these public comments and the conclusions of our evaluation, Lawrence O. Picus and Associates also make the following recommendations for further study and analysis, and offer the following suggestions for next steps for education finance policy in Vermont:

- Vermont policy makers noted that although the Vermont school finance system has implemented the intent of Acts 60 and 68, it has also led to one of the highest levels of per pupil expenditures in the country. They argued that the state needs begin identifying ways this substantial spending can be translated into further improvements in student learning. We offer suggestions for five interrelated issues that the state could address as it strives to focus education resources to improve student outcomes in all schools:
  - Establish a system of more state accountability for student performance. Develop an incentive system that provides rewards for schools that meet or exceed state-set targets for improved student performance – beyond historical trends.
  - Expand the case studies of schools to include a larger sample so that Vermont specific conclusions can be made regarding those factors that lead to substantial improvements in student learning. Though the five cases conducted for the report provide promising insight into how schools can transform dollars into instructional practices that boost student achievement, more analysis is needed to ensure that the eleven practices identified are those that are the most effective in the unique circumstances found in Vermont.
  - Related to the case study approach, Vermont might consider sponsoring a “production function” study that encompassed all schools to determine the degree to which higher spending is linked to higher achievement in Vermont.
  - Assess the degree to which Vermont has the teacher and principal talent to execute effective school improvement strategies that dramatically boost student learning. Specifically conduct an analysis of the teacher and principal supply channels in Vermont. This would include analysis of the institutions from which teachers and principals are recruited, assessment the quality of the talent that is recruited for Vermont’s schools, and development of an understanding of the degree to which Vermont recruits

teachers and principals from the top or bottom half of the talent pool. This information could be used to design policies to ensure that future educator talent is recruited from the top so that the best and the brightest teach in and administer Vermont schools.

- Join the action of nearly two-thirds of the other states in the country to develop new and comprehensive teacher and principal evaluation systems. These systems would use multiple measures to place teachers and principals into 4-5 different categories of effectiveness – effectiveness defined as producing student learning gains. Use these new metrics to design new systems to license, tenure and pay educators.