

## **Instructional Scale: Balancing Educational Quality, Efficiency, Affordability, and Rural Realities in Vermont**

The size and scale of educational structures—class size, student-to-teacher ratios, administrative capacity, school district size, and school size—are often considered influential factors in shaping the quality of instruction and overall student outcomes. However, research on their direct impact remains mixed. Their effectiveness is deeply intertwined with factors such as teacher quality, resource availability, and the unique needs of local communities. In rural areas, for example, geographic necessity adds another layer of complexity, as sparsely populated regions often face challenges such as small enrollments, long transportation distances, and limited access to specialized staff or resources. Balancing educational quality with efficiency and affordability requires careful consideration of research and contextual factors. This brief explores how instructional scale can be considered to address these intersecting priorities using research and practical input from Vermont’s superintendents.

Policy decisions in the 2025 legislative session should balance quality and efficiency. They must be able to be implemented with fidelity. The recommendations in this brief offer a sensible step related to instructional scale toward these core principles while Vermont invests time and resources in a long-term, achievable vision.

*Please note this is not an exhaustive review of the research but aims to surface considerations valuable to Vermont’s education policy discussions.*

### **Policy Recommendations Explained in this Brief**

#### **1. District Size & Governance**

- Establish ideal district sizes of 2,000-4,000 students within District Quality Standards.
- Reconfiguration of supervisory unions into unified school districts to simplify governance and improve administrative efficiency by reallocating resources toward instructional leadership.
- Mandate that each newly formed school district designates up to three public or approved independent high schools for students for mergers involving districts with non-operating grades.

#### **2. School Size**

- Establish minimum school sizes in the District Quality Standards:
  - 300 students for elementary schools.
  - 600 students for secondary schools.
- Allow exceptions for infrastructure constraints and geographical necessity.
- Recognize that Vermont’s current facility needs (\$6.35 billion) may limit immediate consolidation feasibility. Use school construction aid to incentivize the adoption of ideal district and school sizes.

### 3. Class Size, Staff-to-Student Ratios & Administrative Staffing

- Establish minimum average class sizes to be implemented by FY27:
  - K: 12 students
  - Grades 1-5: 15 students
  - Grades 6-12: 18 students
  - Allow exceptions for specialized high school and CTE courses.
- Limit multi-age classrooms (except high schools) to two grade levels per class.
- Require the Agency of Education to clearly define staffing reporting definitions by Dec. 1, 2025, to align future policy with New England staff-to-student ratio averages.

#### **District Size and Governance**

Research on school district size suggests a complex and underexplored relationship between district size, cost efficiency, and educational quality. While larger districts can achieve economies of scale, particularly in administrative and operational functions, these efficiencies tend to plateau once district size exceeds a certain threshold. Overall, district consolidation alone is not a complete solution; it should be paired with additional measures to enhance quality and efficiency.

Research on district size generally paints a picture of benefits on a U-shaped curve. Studies indicate that smaller districts typically face higher per-pupil costs due to inefficiencies, such as higher administrative costs and underutilized facilities. According to the Vermont State Education Profile Report, supervisory districts or unions with less than 1,050 long-term average daily membership (LTADM) spent \$26,118, and those with greater than 2,000 LTADM spent \$21,780 (note: this does not consider weights or equalization). However, very large districts may encounter diseconomies of scale, where the benefits of increased size are outweighed by bureaucratic inefficiencies and challenges in maintaining educational quality.

Duncombe and Yinger (2007) found that consolidating small districts can reduce per-pupil costs. Their research suggests that cost savings are most significant when small districts (those with fewer than 300 to 500 students) consolidate, but these savings diminish for larger districts.

Andrews, Duncombe, and Yinger (2002) reviewed the literature on economies of size in education and concluded that cost savings may be substantial when small districts combine, but there is little evidence of sizable cost savings in large district consolidations. They suggest that the optimal district size for minimizing costs per pupil, while maintaining educational quality, appears to be in the 2,000 to 4,000 student range. They also find that diseconomies of scale may begin for districts above 15,000 students. A study conducted in Kansas stated that diseconomies of scale emerge at 10,000 students (Kansas State Legislature, 2018).

It's important to note that while consolidation may lead to cost savings in some cases, it is not guaranteed. The Education Commission of the States (2024) highlighted that transition costs—such as those for new facilities, transportation, and integration—can offset potential

savings. Additionally, the impact on educational quality must be carefully considered alongside potential cost efficiencies when evaluating district size changes.

The *Vermont Adequacy Study* (Picus & Odden, 2024) cites a prototypical district size of 3,900, determined by grouping eight schools (four elementary, two middle, and two high schools) at their stated ideal school size. The study also contrasts its prototypical district size with national averages, noting that the “National Center for Education Statistics estimates the average school district had 3,713 students in Fall 2016.”

As we learned through the implementation of Act 46 (2015), district consolidation is politically and logistically complex. Vermont’s school districts currently have differing operating configurations related to the grade levels they do or do not operate, leading to Vermont’s out-of-district tuition program. These configurations lead to greater complexity, less fiscal controls, and increased ancillary needs, such as transportation and delivery of special services. Further, as the *Vermont Education Funding System Explained Report* (AOE, 2024) describes, “some Supervisory Unions have more than one school board, which is a very rare structure elsewhere in the country... Some Supervisory Unions can have between two to seven school boards, depending on the number of school districts in their region, with between 10-78 total school board members. On average, Supervisory Unions have one board member for approximately every 75 students.” Though school board members are effectively volunteers, this large and multifaceted governance structure often requires significant administrative time and resources to support, including multiple board meetings a month for central office staff and considerable resources to support budgeting across multiple school districts, time, and resources that could be allocated to instructional leadership and other functions to support education quality. As a comparison, according to the New Hampshire School Boards Association, New Hampshire has approximately 900 school board members serving about 165,000 students. Vermont has a similar number of school board members but serves only around 80,000 students.

Data from the U.S. Department of Education's National Center for Education Statistics reveals that administrative expenses accounted for 6.7 percent of school district budgets in the 2019–20 school year, a slight increase from 6.6 percent two decades earlier. Recommendations related to school district size should help Vermont realize economies of scale in central offices, allowing for greater efficiencies and role specialization. Increases in federal and state regulations and reporting requirements directly impact the administration's role. Defining the functions of the central office could inform effective and efficient staffing models.

*Policy Recommendations:*

- Determine and set ideal district sizes to be included in the District Quality Standards (Rule Series 100). Our recommendation is that this should be set at a minimum of 2,000-4,000 students. The Agency of Education should work with school districts to support the movement towards the ideal district sizes over a reasonable timeline and coordinate this effort with other requirements in the DQS and Education Quality

Standards (Rule Series 2000). This will also require a close review of current law related to merging school districts to optimize efficiency while allowing for community input.

- Require the reconfiguration of supervisory unions into unified school districts. In response to differing district operating structures, require that each newly formed school district designates up to three high schools public or approved independent schools outside of the district to serve as the public high school for mergers involving districts with nonoperating grades (ref. 16 V.S.A. § 827(a)).

## **School Size**

In examining research on school size on both education quality and efficiency, the former is captured well by this:

*“...the concept of school size is somewhat nebulous. It actually represents an amalgam of effects rather than just a raw number or a single effect. (Size) is important because it catalyzes conditions in terms of school climate, curricular offerings, student participation in extracurricular activities, student self-concept and self-esteem, teacher-student relationships, home-school relationships, and student opportunities to learn and grow. All of these have important roles to play in determining student outcomes.” – McCathren, 2004\**

*\*Referenced in Stevenson (2006) in a review of school size in relation to education quality.*

Research on optimal school size suggests a range that balances educational effectiveness with cost efficiency. In their review of 57 studies, Leithwood and Jantzi (2009) found an optimal size of 500 students for elementary schools and 1,000 for secondary schools. They advised reducing these numbers to 300 and 600 for schools with high proportions of disadvantaged students. Lee and Smith (1997) found that students learned more in middle-sized secondary schools (600-900 students) than in smaller or larger high schools.

As Slate and Jones (2005) note, “...the effects of school size are complex and vary depending upon a number of factors. Nonetheless, the research does show that both very small and very large schools are negatively related to school quality as, in both cases, the school will lack the appropriate resources to serve students effectively.”

Vermont’s infrastructure needs, topography, and current district configurations make achieving optimal school sizes difficult. District divisions can make school reconfigurations across school districts with proximal schools challenging. Vermont’s immediate facilities needs for the state are estimated to be \$228,613,264 and total costs \$6,352,324,952. These figures, according to the Agency, are likely an underestimate. Even when school districts want to reconfigure buildings, facility size, and condition can limit potential options.

### *Policy Recommendations:*

- Determine and set ideal school sizes to be included in the District Quality Standards (Rule Series 100). Our recommendation is that this should set a minimum of 300

students for elementary schools and 600 for secondary schools. The Agency of Education should work with school districts to support the movement towards the ideal district sizes over a reasonable timeline and coordinate this effort with other requirements set in the DQS and EQS, beginning their efforts on secondary schools. Allow exceptions to be made for infrastructure constraints absent state investment into capital construction and based on reexamined definitions of geographical necessity.

- Utilize school construction aid to incentivize follow-through on ideal district and school sizes.

### **Class Size, Staff-to-Student Ratios, and Administrative Staffing**

Class size is pivotal in Vermont's education policy decisions, especially given its rural context, declining enrollment, and fiscal challenges. Vermont class sizes are already smaller than those outlined in research, and that research shows mixed results regarding the relationship between class size and student outcomes. For example, while the Tennessee STAR experiment demonstrated that smaller class sizes (13–17 students) in early elementary grades yielded significant gains, subsequent studies, such as those by Hoxby (2000) and Bosworth (2014), found minimal or no long-term effects in other contexts. These benefits are most evident in early grades or for disadvantaged students.

In Vermont, class sizes can fall significantly below that range, limiting the breadth of instructional strategies provided, especially for students in higher grades. Very small class sizes can create challenges for instruction. They can force grade configurations (e.g., a multi-age classroom for grades K-3) that change yearly, creating an inconsistent curricular experience. It is difficult for teachers to implement varied instructional practices (e.g., ability-mixed and ability-alike groupings, cooperative learning, etc) in very small classes. These are instructional practices that are well-defined in research but not often referenced in class-size research.

The Massachusetts Department of Education found that reducing class sizes significantly increased costs without corresponding gains in student achievement in most cases (Schwartz et al., 2017). Relevant gains made from decreases in class size may not outweigh the benefit of investing elsewhere (quality intervention staff, professional learning, after-school programming, etc.) that have a greater impact on student outcomes ([Roza and Oujidani, 2012](#)).

Currently, Vermont's policy is silent on minimum class sizes and caseloads. However, the Education Quality Standards states,

*“Classes in grades K-3, when taken together, shall average fewer than twenty students per teacher. In grades four through twelve, when taken together, classes shall average fewer than twenty-five students per teacher. The total class roll of a teacher shall not exceed 100 students, except where the specific nature of the teacher's assignment, such as in certain art, music, or physical education programs, is plainly adaptable to teaching of greater numbers of students while meeting the educational goals of the program.”*

In addition, Act 153 of 2010 required that each supervisory union and member district board adopt minimum and optimal average class size policies. Viewing a representative sample of these current district policies, minimums range from 10 - 15 for K-3; 10 - 18 for 4-8; 10 - 23 for 9-12. Please note that these are average class size policies, which allow for flexibility to account for nuance across subject areas and grade bands.

While addressing staff-to-student levels more broadly is ideal, Vermont's current reality is that data reporting staffing is not clearly defined. Reporting definitions and requirements must be consistent across school districts to equitably and fairly implement policies related to staff-to-student ratios that do not detract from overall education quality. However, that should not imply that policies should disproportionately impact one category of employee over another.

While Picus and Odden (2024) aim to address specific staffing rules in relation to setting an adequate amount of funding, it does not specifically look at what would be required for Vermont to implement its vision for education - for example, the description of a Vermont education currently defined in the revised Education Quality Standards. What's more, it does not always align with initiatives already set in law, for example, multi-tiered systems of support. Thus, while the Picus and Odden report can serve as a starting point for policy discussions, there are distinct adjustments that need to be made to align with the current values supported in policy and a future vision for public education in Vermont. Policymakers should be cautious of adopting and implementing a foundation formula with an adequacy allotment based on staffing rules that don't align with the current reality or future vision for Vermont's public school system.

#### *Policy Recommendations:*

- Require minimum average class sizes through the EQS and district board policy to be implemented by FY27. Multi-aged classrooms (excluding high school) shall be limited to two gradebands per classroom. The Agency of Education should approve exceptions based on geographic necessity that should be reexamined and defined in law. Our recommendation for minimum class sizes: K : 12; 1 to 5 : 15; 6 to 12 : 18. Some exceptions may need to be made for specialized high school and CTE courses.
- Require the AOE to clearly define staffing reporting definitions by December 1, 2025, so that clear policy recommendations to move incrementally towards the New England staff-to-student ratio averages can be made in the second half of the biennium.

#### **Conclusion**

Addressing scale and instructional size should be an important component of education policy reform in Vermont. However, careful considerations must be made to balance both gains in efficiency and quality. The findings in this brief indicate that haphazard reforms that far exceed research-backed recommendations for scale, particularly district scale, are ill-advised in categories of both efficiency and quality. Comprehensive reform will marry thoughtful sequencing of change to governance, education delivery, and funding while setting and aligning these forms to a clear vision for high-quality education in Vermont.

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