Report on Act 60 of 2013
Minimum Ratios for Student-to-Staff and Student-to-Course

2013, No. 60, Sec. 5

REPORT

January 15, 2014

Report to the House and Senate Committees on Appropriations and on Education, the House Committee on Ways and Means, and the Senate Committee on Finance

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VERMONT
AGENCY OF EDUCATION

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Executive Summary

Overview

Section 5 of Act 60, 2013 Legislative session, required the Agency of Education to collect data necessary to set minimum student-to-classroom teacher ratios, student-to-staff ratios, student-to-school level administrator ratios, and student-to-central office administrator ratios in public elementary and secondary schools as well as supervisory unions.

The education governance structure in Vermont complicated the analysis, with schools having a wide variety of both grade configurations and sizes. In FY2013, there were 17 different grade configurations for grades kindergarten through 12, offered by 302 schools.

The Student Educator Course Transcript collection (SECT) provided FY2013 student and teacher data by course (school year 2012-2013). This is the second year of the SECT data collection. Investigation and use of the data revealed some weaknesses in the collection which AOE can address for future collections. Input accuracy should improve as schools recognize that these data are being used for a variety of purposes. AOE can improve the collection itself by adding more fields to allow more granular views of the data. Examples are adding a grade level so middle school courses can be separated from elementary and secondary courses, tagging courses as regular education versus special education where possible, and having a uniform method for differentiating differing sections of the same course offered multiple times by an individual teacher.

AOE can revise and improve the existing Teacher/Staff FTE and Salary Report to accurately reflect where personnel are employed and where they work. AOE can also add more specificity to the SECT data collection while providing stricter guidance to how courses are labeled and data are entered.

AOE recognizes the value of these data and is exploring options for developing capacity for improving data collections and increasing capacity for more analytical work of this nature. This type of work is of increasing interest and importance to the legislature and others and AOE feels it is critical to informed policy making.

Recommendations for Minimum Course Size in the Four Core Subjects

Recommendation 1:
For schools with grade configurations of K-6 or K-8 and enrollments of 150 or more, the minimum course size should be set at 10 students.

Recommendation 2:
For schools with grade configurations of K-6 or K-8 and enrollments of fewer than 150, the minimum course size should be set at 5 students.

Recommendation 3:
For schools with grade configurations of K-12, 5-8, 7-12, or 9-12 (or similar grades configurations), the minimum course size should be set at 10 students.

Recommendations for Student-to-Staff Ratios

Recommendation 4:
The minimum student/teacher ratio for direct instruction teachers should be eight students to one licensed teacher.

Recommendation 5:
The minimum student/staff ratio for district level personnel as defined above should be 5.5 students to one staff member.

Recommendation 6:
The minimum student/school level administrators ratio as defined above should be 75 students to one staff member. An exception could be made for those schools that have part-time principals.

Recommendation 7:
The minimum student/superintendent and assistant superintendent ratio as defined above should be 700:1 students to one superintendent/assistant superintendent. An exception could be made for those supervisory unions that have part-time superintendents.

Recommendations for Tax Incentives, Penalties, and Implementation

Recommendation 8:
Minimum ratios should go into effect in the 2015-2016 school year (FY2016) with subsequent data collection and ratio calculations in the following year (2016-2017 school year). Resulting tax incentives or penalties will be applied in the second year following (2017-2018).

Recommendation 9:
Tax incentives and penalties should be based on average student-per-course data for the district. For those districts operating more than one school, taking the average of all the student-per-course ratios should be the average for the district.

Recommendation 10:
A tax incentive/penalty should be determined by the relationship of a district's 5 ratios to the 5 minimum ratios, expressed as a percentage. 20% of each ratio will be used as the basis of the incentive/penalty, with ratios below the minimums being positive and those above the minimums being negative. The aggregate district percentage incentive/penalty will be applied against the district rate in the following year.

I. Overview and Caveats

Section 5 of Act 60, 2013 Legislative session, required the Agency of Education to collect data necessary to set minimum student-to-classroom teacher ratios, student-to-staff ratios, student-to-administrator ratios, and student-to-ratios in public elementary and secondary schools as well as supervisory unions.

The education governance structure in Vermont made this a daunting task with schools having a wide variety of both grade configurations and sizes. In FY2013, there were 17 different grade configurations for grades kindergarten through 12, offered by 302 schools. Had pre-kindergarten been included as a separate category rather than being combined with kindergarten, there would have been 23 different grade configurations.

School size also represented a substantial obstacle for comparison, with schools ranging in enrollments from 18 to 1,299 in FY2013. Grouping schools by enrollments of 50 and combining those with the various grade configurations resulted in 54 different combinations. The 200 elementary and elementary-middle schools represented 30 of those combinations, ranging in size from 18 to 1,139 students. The 43 secondary, middle, and K-12 schools accounted for the remaining 24 combinations and ranged in size from 124 students to 1,299.

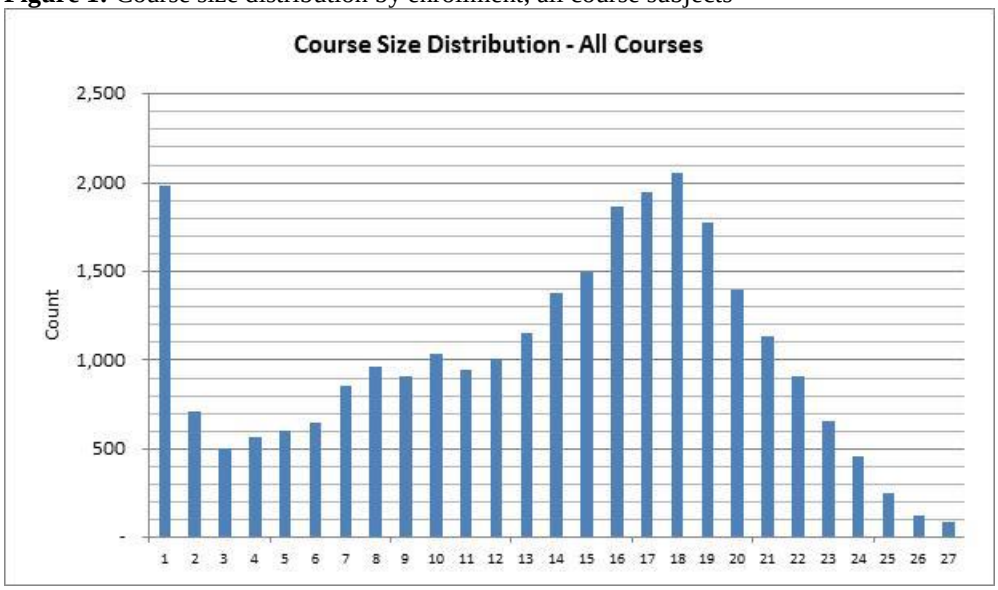
The end result is a report based on inspection of the data. In order to fully do justice to the requirements of the legislation, an individual working full-time would likely require three months at a minimum for inspecting, reviewing, and questioning the data, interviewing superintendents, principals, and teachers, and perusing the research related to optimum class/course size in terms best practice for the students.

A. Data Overview

Data used for the number of students per course were from the Student Educator Course Transcript collection (SECT) and represent data for FY2013 (school year 2012-2013). This is the second year of the data collection, and while most schools reported (267 out of 302 schools, a 95.7% response rate), there was not sufficient uniformity in reporting for all results to be used. Direction from the Agency of Education (AOE) was not specific enough to ensure consistent data reporting between schools.

Reported data included specific courses taught by specific teachers, linked to individual students enrolled in those courses. Courses were catalogued by the schools according to the *Prior-to-Secondary School Course Classification System*, published in January, 2011, by the National Forum for Education Statistics (NFES). These guidelines classified courses into two broad categories – preK-8 and 9-12. NFES identified 1,869 unique courses, divided into 23 broad categories.

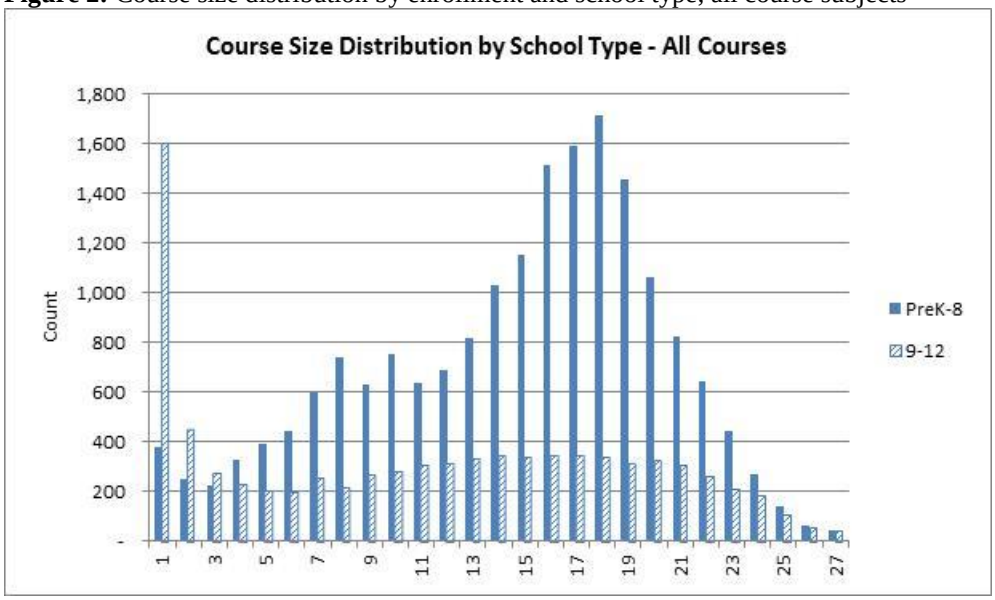
Figure 1: Course size distribution by enrollment, all course subjects



It can be seen in Figure 1 that the majority of courses have enrollments from 13 to 21. Courses of 28 or more students were excluded from the analysis as many of the courses of those sizes were not reported consistently upon inspection of the data. There were 575 courses with 28 or more students enrolled as reported, with a maximum course size of 92. These data show that the reporting requirements as provided by the AOE need to be more specific in order to ensure uniform reporting.

As previously noted, the NFES course listings were divided between preK-8 and 9-12. Figure 2 shows course size by the two NFES grade classifications.

Figure 2: Course size distribution by enrollment and school type, all course subjects



It can be seen that the overall trend of courses falls between 13 and 21 students per course for grades preK-8. The trend is less pronounced although still visible in grades 9-12.

SECT course data used for remainder of this report were limited to the four core courses: English/Language Arts, Mathematics, Science, and Social Science. A fifth category that was also used was labeled Non-Subject Specific and was intended to encompass elementary classes where one teacher taught all subjects. The remainder of the courses were of a nature such that not all students would necessarily be enrolled in those subjects. Using the four core course areas encompassed most students.

Using the five broad categories and using only courses with enrollments of 27 or less, the SECT data provided 27,426 course records with 369,266 students enrolled for analysis as reported. Those data give an average number of 13.5 students per course for the 4 core subject areas including the non-subject specific category. As noted, the latter category included data for elementary classes that were identified as grade specific rather than subject specific.

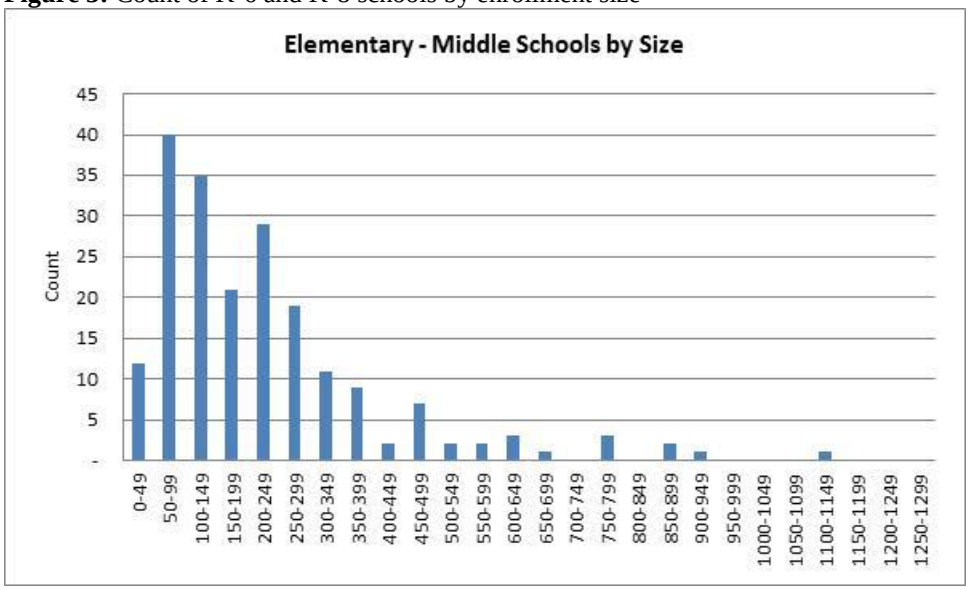
Data as used were reported by individual schools, identified by their PS identification number which allowed data from other sources to be enlisted for school enrollment and grades offered. These data in turn allowed for categorization of schools based on grades and size. Those categorizations were used to view data on a finer scale.

B. Elementary (K-6) and elementary-middle schools (K-8)

Schools were divided into two broad groups, based on grades offered. The first group consisted of elementary schools (K-6) and elementary-middle schools (K-8) for a total of 200 schools. Within this group were nine different grade configurations. Including preK as a separate grade would have brought the differing configurations to 15, but preK was grouped with kindergarten for the purposes of this report. Enrollments for the 200 schools ranged from 18 to 1,129.

Figure 3 shows the count of schools by enrollment. Schools were categorized and aggregated by enrollment, based on groupings of 50 students.

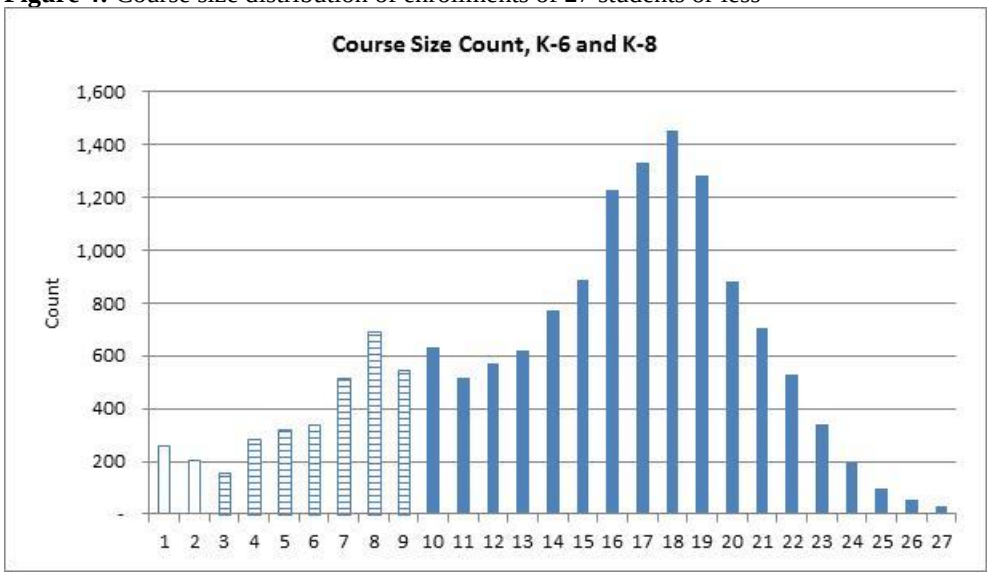
Figure 3: Count of K-6 and K-8 schools by enrollment size



Elementary and elementary-middle schools generally have enrollments of 300 students or fewer.

Figure 4 shows the count of course size by school enrollment. Course size data were plotted as a frequency distribution, again with course sizes of 28 or more not included.

Figure 4: Course size distribution of enrollments of 27 students or less



There were 459 courses reported with enrollments of 1 and 2 students. These small courses are presumed to be largely English Language Learner courses (ELL), remedial courses or special education courses. Excluding those courses of 1 and 2 students, 19.1% of courses are of three to nine enrolled students (2,858 of 14,976).

It cannot be ascertained from Figure 4 how many of those courses of 3 to 9 students are in small schools as opposed to larger schools. Table 1 groups the data by school size.

Table 1: Percentage of courses with 3 to 9 students, K-6 and K-8 schools

School Enrollment	Number of courses with enrollments of:		Percent of Courses with 3 to 9 students
	3 to 9 students	3 to 27 students	
0 - 150	1,772	3,489	50.8%
150 - 300	618	5,500	11.2%
300 - 450	163	1,745	9.3%
450 - 650	60	1,701	3.5%
650 - 1,150	245	2,541	9.6%
All	**2,858**	**14,976**	**19.1%**

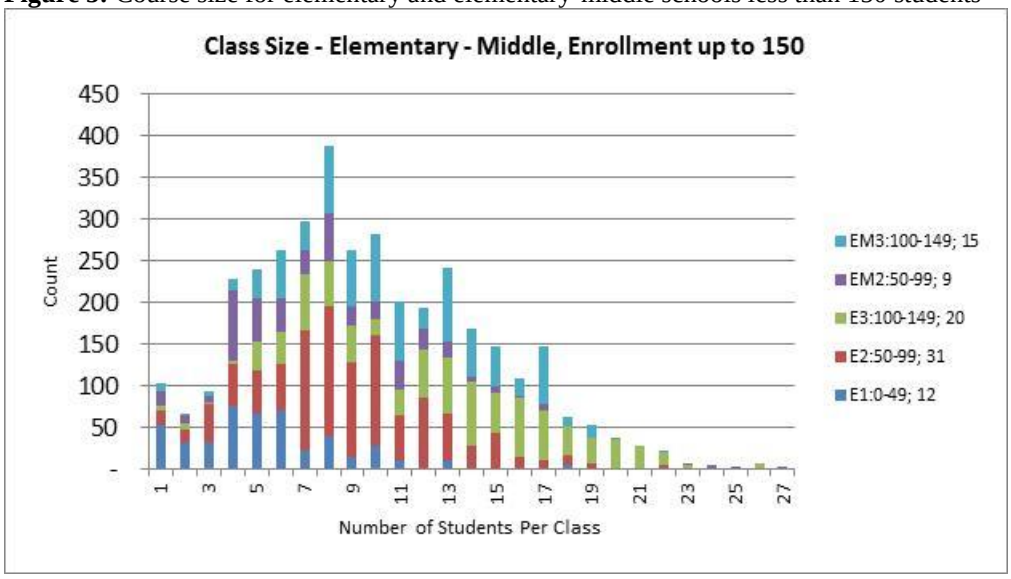
Note: 258 courses of 1 student and 201 courses of 2 students reported out of 15,435 courses

There are 87 elementary schools with enrollments of fewer than 150. Those small elementary schools have slightly more than half the courses offered with 3 to 9 students. Schools with enrollments of 150 or more report 3 to 9 students in 11% or less of the courses offered.

Recommendation 1:
For schools with grade configurations of K-6 or K-8 and enrollments of 150 or more, the minimum course size should be set at 10 students.

Figure 5 isolates the 87 elementary schools with enrollments below 150 students.

Figure 5: Course size for elementary and elementary-middle schools less than 150 students



Of the courses with 3 to 9 students, approximately 72% of those students are in courses with 5 to 9 students (1,451 of 1,772 students).

Recommendation 2:
For schools with grade configurations of K-6 or K-8 and enrollments of fewer than 150, the minimum course size should be set at 5 students.

C. K-12 schools, middle schools (5-8), and secondary schools (7-12 and 9-12)

The second group of schools consisted of K-12 schools, middle schools (grades 5-12), and secondary schools (grades 7-12 or 9-12, with one 6-12). This represented 43 schools with 7 different grade configurations, again including preK with kindergarten. Enrollments for these schools ranged from 124 to 1,299.

Figure 6 shows the count of schools by enrollment for this group of schools. As before, schools were categorized and aggregated by enrollment, based on groupings of 50 students. Most schools in this group have enrollments of less than 600 (31 out of 43 schools).

Figure 6: Count of K-12, middle, and secondary schools by enrollment size

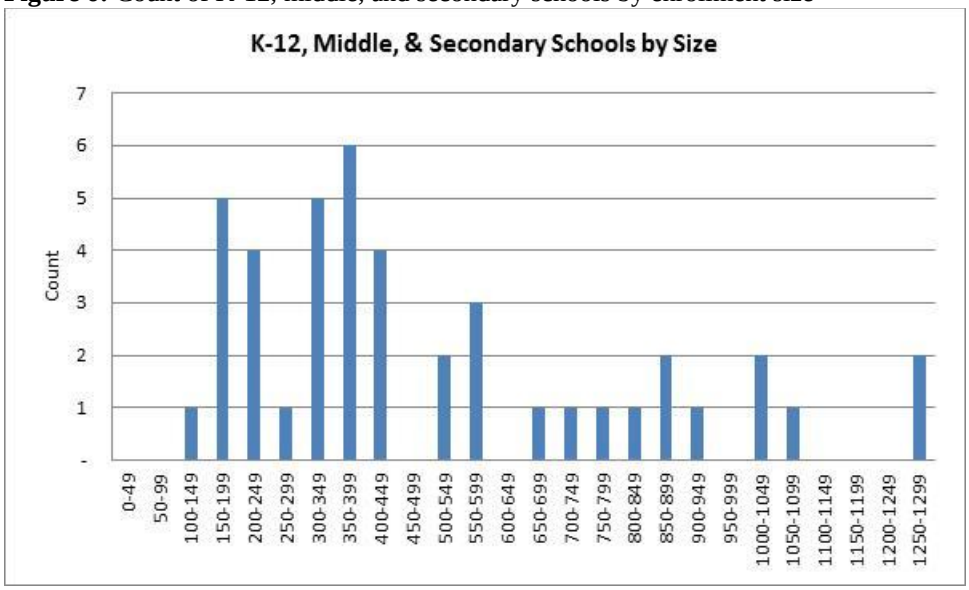
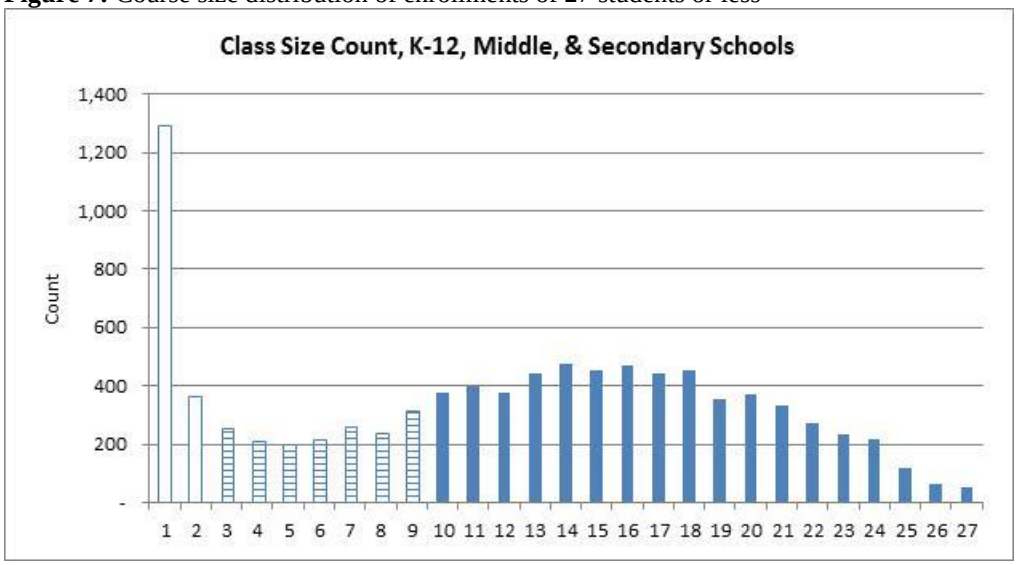


Figure 7 shows the count of course size by school enrollment for the second large grouping of schools. As before, course size data were plotted as a frequency distribution, again with course sizes of 28 or more not included.

Figure 7: Course size distribution of enrollments of 27 students or less



There were 1,654 courses with 1 or 2 students, courses presumed to be largely independent study, distance learning, an advanced core-course elective, ELL, special education, or remedial courses. Those small courses were excluded from the analysis. Of the remaining courses, 22.4% had between 3 and 9 enrolled students (1,699 of 7,601).

Table 2 groups these data by school size.

Table 2: Percentage of courses with 3 to 9 students, K-12, middle and secondary schools

School Enrollment	Number of courses with enrollments of:		Percent of Courses with 3 to 9 students
	3 to 9 students	3 to 27 students	
100 - 250	216	613	35.2%
350 - 450	313	1,267	24.7%
250 - 350	184	607	30.3%
500 - 700	321	1,787	18.0%
700 - 900	308	1,362	22.6%
900 - 1,300	357	1,965	18.2%
All	**1,699**	**7,601**	**22.4%**

Note: 1,293 courses of 1 student and 361 courses of 2 students reported out of 9,255 courses

Changes in course size are not as dramatic in the secondary schools as in the elementary schools. However, close to 80% of students in these schools are in classes of 10 or more.

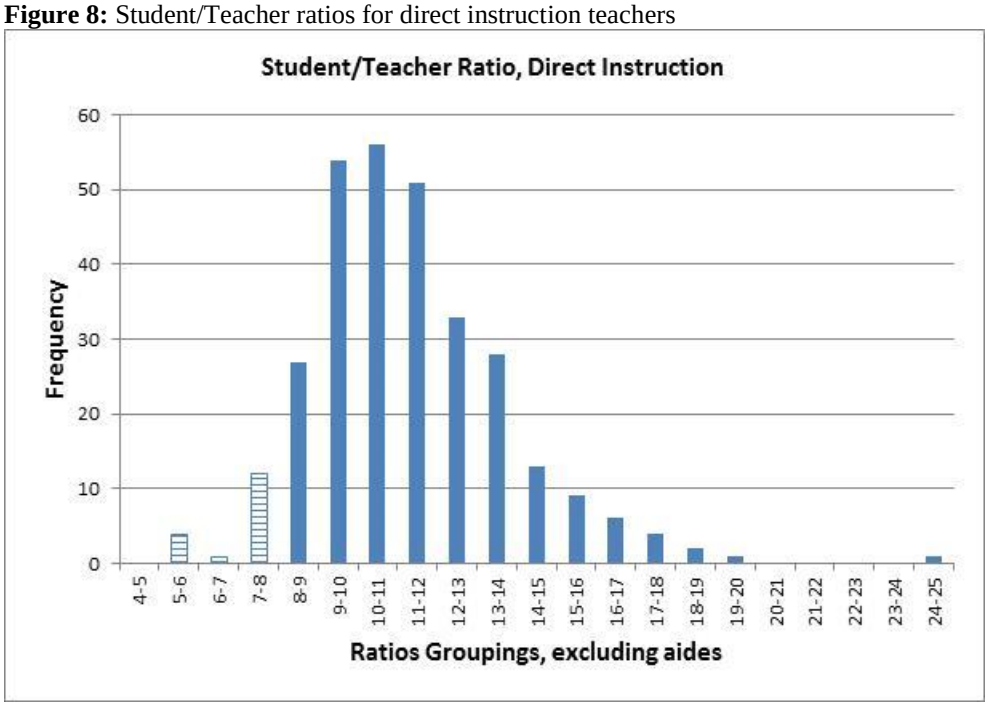
Recommendation 3:
For schools with grade configurations of K-12, 5-8, 7-12, or 9-12 (or similar grades configurations), the minimum course size should be set at 10 students.

II. Student/Staffing Ratios

A. Student/Teacher, direct instruction ratios

Direct instruction teachers are licensed professionals in the classroom. These data exclude paid teacher aides. As has been noted previously, Vermont has many small schools and therefore shows low student/teacher ratios overall.

Figure 8: Student/Teacher ratios for direct instruction teachers



There are 17 schools with an overall ratio of eight or fewer students to one teacher. Therefore, a reasonable minimum student/teacher ratio should be 8:1, regardless of size. However, it should be remembered that individual teachers have different abilities and that the personality of a class can change from year to year, both being factors that can impact class size.

Recommendation 4:
The minimum student/teacher ratio for direct instruction teachers should be eight students to one licensed teacher.

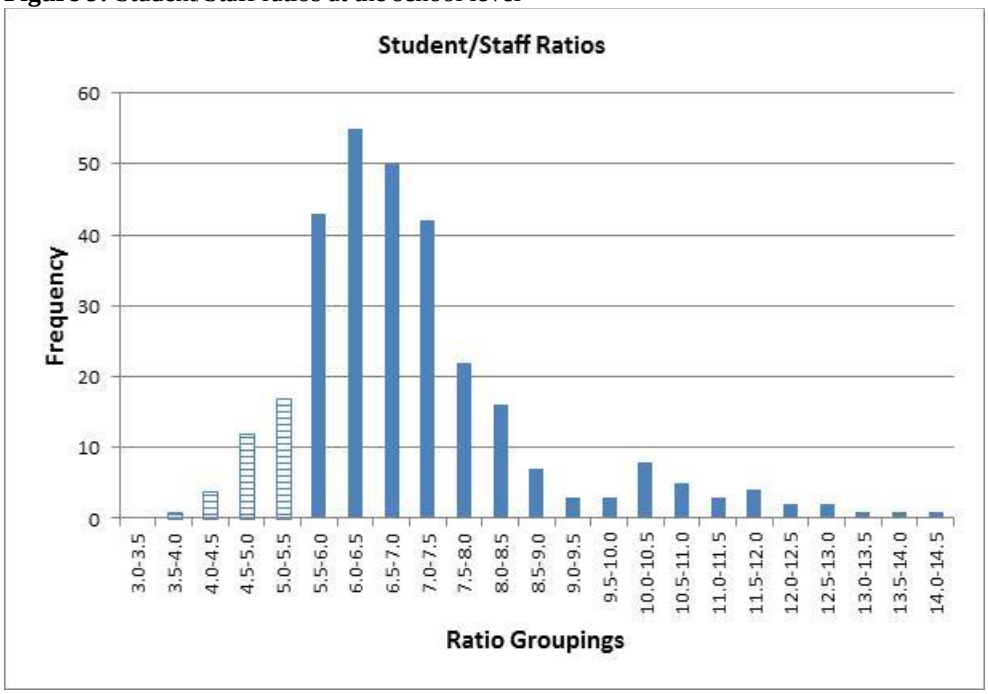
B. Student/Staff ratios

Staff includes all paid personnel employed by a school district. Excluded from this definition are:

1. central services business office personnel;
2. operations and maintenance personnel;
3. transportation personnel;
4. food service personnel; and
5. enterprise or community service operations personnel.

For this section, after excluding the categories listed above, only non-administrative staff employed by the school district were used, including teachers and teacher aides (i.e., principal/assistant principals were excluded). The above definition also excludes all central office personnel, and therefore reflects staffing levels at the schools themselves.

Figure 9: Student/Staff ratios at the school level



A visual inspection of the data shows the vast majority of schools have student staff ratios of 5.5:1 or greater. There are 67 schools with a ratio lower than 5.5: 1. Attaining a ratio of 5.5 students to one staff member should be attainable.

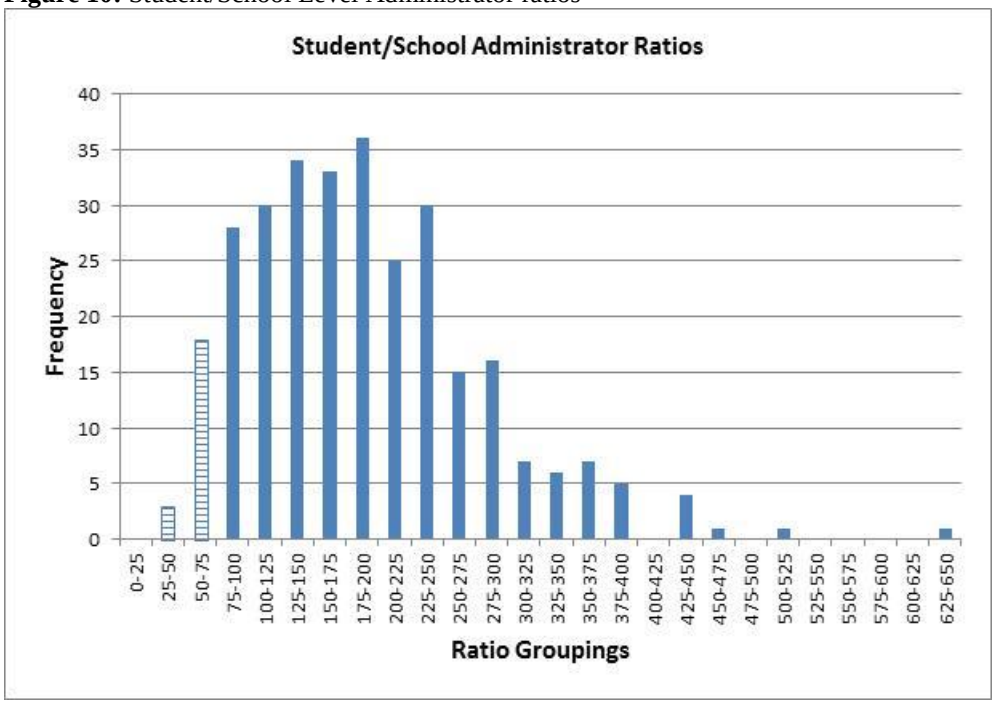
Recommendation 5:
The minimum student/staff ratio for district level personnel as defined above should be 5.5 students to one staff member.

C. Student/School level administrator ratios

School administrators include principals, assistant principals, Title I coordinators, special education directors, and essential early education directors (EEE). However, all 14 EEE directors, 10 of the 13 Title I coordinators, and 55 of the 77 special education directors were employed by supervisory unions as reported. Those personnel were not included in this section of the analysis.

The school level personnel consist primarily of principals: principals, 300; assistant principals, 93; special education directors, 22; and Title I coordinators, 3. Two very small elementary schools do not report having a principal.

Figure 10: Student/School Level Administrator ratios



Of the 300 schools reporting school level administrators as defined, three have a student/administrator ratio of less than 50:1. An additional 18 have a ratio between 50:1 and 75:1. Of those 21 schools, only 8 have a principal who is not full-time. Given that the majority of the schools with a ratio of 75:1 or less have a full-time principal while others operate with a part-time principal, it is not unreasonable to set a minimum ratio of 75:1 for school level administrators.

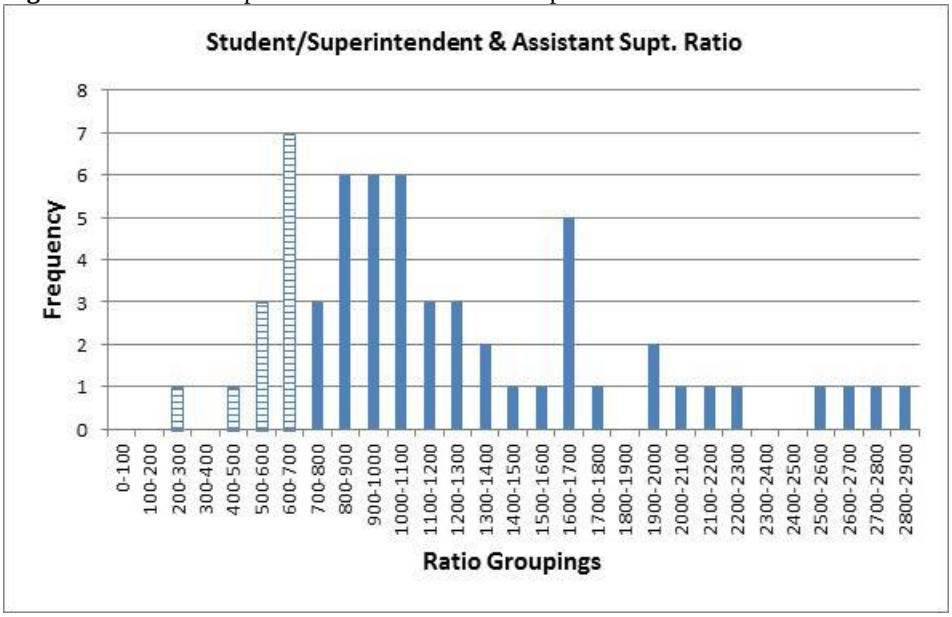
Recommendation 6:
The minimum student/school level administrators ratio as defined above should be 75 students to one school level administrator. An exception could be made for those schools that have part-time principals.

D. Student/Superintendent and assistant superintendent ratios

Superintendents and assistant superintendents are responsible for both resident students and non-resident students enrolled in schools within the supervisory union. Therefore, enrollments at the school level were aggregated to the S.U. level.

Of the 60 entities reporting having a superintendent, three reported a superintendent at the school level. However, two of those are supervisory districts, consisting of a single school district. The third reported two superintendents at a single school. It was presumed to be a reporting error and the data were not used in the latter instance.

Figure 11: Student/Superintendent and assistant superintendent ratios



Five supervisory unions have student/superintendent ratios of 600:1 or less. An additional 7 S.U.'s have ratios between 600:1 and 700:1. Of these 12 S.U.'s with ratios of less than 700:1, only one has a part-time superintendent. Two of the remaining ten S.U.'s with ratios less than 700:1 have one and two full-time assistant superintendents along with a full-time superintendent, as reported.

Recommendation 7:
The minimum student/superintendent and assistant superintendent ratio as defined above should be 700:1 students to one superintendent/assistant superintendent. An exception could be made for those supervisory unions that have part-time superintendents.

Setting a minimum student/superintendent ratio of 800:1 appears as a feasible target for S.U.'s to attain. Increasing the minimum ratio to 800:1 garners another 3 S.U.'s, one of which has a part-time superintendent.

III. Tax Incentives and Penalties

A. Timing of legislation and implementation

Subsection (c)(4) of sec. 5 of Act 60, 2013, states that this report might include:

> (4) implementation dates that would require mandatory staffing ratios beginning in school year 2015-2016 with tax penalties for noncompliance beginning in year 2016-2017.

Assuming language mandating the above recommendations is passed into law, districts and S.U.'s affected by these recommended minimum ratios will require an advance time to begin the planning for how to reduce staff, either through personnel retiring or leaving

or through reductions in force. Most contracts for teachers are offered towards the end of March. Therefore, hiring decisions for the 2015-2016 school year are in place towards the end of the 2014-2015 school year, if not earlier.

There is a two-year lag in collecting the data, comparing ratios to determine the tax incentive/penalty, and the actual application to the district tax rate. Using the data in this report as an example of a timeline, data for the FY2013 SECT, enrollments, and personnel are collected in FY2014. Tax rates for FY2014 are already in place, so any tax incentives or penalties would be applied to the FY2015 tax rates.

If the minimum ratios were to be calculated in the 2015-2016 school year (FY2016) as suggested by the Act, the data used for ratio calculations would be from the prior school year, 2014-2015 (FY2015). As of this report (January, 2015), most districts have board approved FY2015 budgets and are close to sending those budgets to the printer for town meetings in early March. Those budgets include personnel for the FY2015 year.

While school boards and supervisory boards could make personnel reductions by the end of March, 2014, to meet the assumed FY2015 minimum ratios, it would be imprudent to do so and would not be sound educational policy. Reducing personnel, courses offered, and class sizes are not decisions that should be made in two months time. These are decisions that could adversely affect student education and must be considered carefully and judiciously and should not be hurried.

Based on the timing, a more realistic implementation date would have mandatory minimum ratios go into effect during the 2015-2016 school year (FY2016). Doing so would mean data from the 2015-2016 school year would be used to calculate school, district, and S.U. ratios in FY2017 with tax implications in FY2018. This would allow school boards a minimum of 9 months to effectively plan for a reduction in staff, courses, and classes, assuming a legislative effective date of no later than July 1, 2014.

It is unknown by AOE staff if 9 months is a sufficient period for school boards and supervisory boards to plan for these reductions in FY2016 in order to receive a tax incentive or penalty in FY2018, (school year 2017-2018). However, the personnel data used to determine incentives and penalties would be from the 2015-2016 school year (FY2016), giving boards some time to plan.

Recommendation 8:
Minimum ratios should go into effect in the 2015-2016 school year (FY2016) with subsequent data collection and ratio calculations in the following year (2016-2017 school year). Resulting tax incentives or penalties will be applied in the second year following (2017-2018).

B. Student-per-course ratios at the district level

Student-per-course data as used above are at the individual school level. Taxing entities are the town municipalities in which the schools lie. But the schools belong to the school

districts which generate the tax rates used to determine the overall tax rate for any given town municipality, as many towns are members of two school districts (or three, in some instances). Therefore, any tax incentives or penalties need to be calculated at the school district level.

Aggregating student-per-course data to the district level will not present a problem in many districts, as only one school is operated. However, in those 23 districts where two or more schools are operated, a specific methodology needs to be determined.

Two options are easily computed. The first is to take the average of the student-per-course ratios and use that for the district as a whole. This methodology weights all schools the same and does not take into account smaller schools nor much larger schools.

The second option is to aggregate the number of students in individual district courses and divide that by the aggregate number of courses offered in the district. This is a weighted average and will tend to skew the resulting ratio towards the ratios of those courses with more students, generally the larger schools.

Since student-per-course ratios as recommended by AOE disregard school size, AOE recommends using the first methodology, averaging the student-per-course ratios.

The same methodology should apply to district ratios of students to personnel. S.U.'s will have one figure.

Recommendation 9:
Tax incentives and penalties should be based on average student-per-course data for the district. For those districts operating more than one school, taking the average of all the student-per-course ratios should be the average for the district.

It should be noted that any tax incentives and penalties would apply only to districts that operate schools. Tuitioning districts will not be impacted by either incentives or penalties in this section. It is the operating district that makes the hiring decisions and partially funds those decisions by enrolling tuition students.

C. Calculating tax incentives and penalties

Tax incentives and penalties should apply only to those districts and S.U.'s that are below the recommended minimum ratios. The other districts and S.U.'s with ratios at or above the minimums should already be seeing benefits due to lower personnel costs per student when compared to those below the minimums.

There are five minimum ratios recommended in this report. The ratios cannot easily be combined to one comprehensive ratio for a district to compare with a comprehensive minimum ratio. Therefore, each tax incentive or penalty as recommended below should be 20% of the total incentive/penalty for the district.

The aggregated student-per-course ratio for the district can be compared to the recommended minimum ratios. If a district is 2% below the minimum, the penalty for this ratio should be the 2% times 20%, or an additional 0.04% of the district tax rate. By the same token, a district moving to a ratio of 3% above the minimum should receive a rate reduction of 3% times 20%, or a reduction of 0.06% in the district rate.

The same methodology would apply to all five minimum ratios. Ratios that are below the minimums result in positive values and those above the minimums result in a negative value. The overall incentive or penalty to the district is the sum of the 5 comparisons.

Recommendation 10:
A tax incentive/penalty should be determined by the relationship of a district's 5 ratios to the 5 minimum ratios, expressed as a percentage. 20% of each ratio will be used as the basis of the incentive/penalty, with ratios below the minimums being positive and those above the minimums being negative. The aggregate district percentage incentive/penalty will be applied against the district rate in the following year.

D. AOE's role and timing of collections;

The SECT data collection begins in mid-May and is due to AOE on August 15. AOE then inspects and cleans the data, with the results being available on October 15. The correlating Teacher/Staff data are collected in the previous fall, as are the student census data used to determine enrollments.

Given capacity constraints, AOE should be able to provide aggregate district incentive/penalty percentages by the end of November. This is a tight time frame and results rely on the quality of the data AOE receives. This is also well into the time period when districts are developing school budgets.

AOE recognizes the value of these data and is exploring options for developing capacity for improving data collections and increasing capacity for more analytical work of this nature. This type of work is of increasing interest and importance to the legislature and others and AOE feels it is critical to informed policy making. The Vermont education governance issue further compounds the nature of this work.

IV. Limitations of the Data

Course, student, and teacher information used in section I of this report came from the Student Educator Course Transcript collection (SECT), as noted previously. This is the second year of the data collection.

1. Investigation and manipulation of the SECT data revealed weaknesses in the data. AOE did not specify how schools were to label courses when linking to the NFES course offerings. It was often impossible to differentiate between sections of the same course a teacher taught. Many of the four core courses had enrollments of

well over 30 students, an unlikely situation in Vermont. This prompted limiting data for analysis to courses with 27 students or less.

2. Data from schools with the same grade configurations were not uniformly reported. Some elementary schools used the broad category of "Non-Subject Specific" whereas others identified individual core courses taught within one class by one teacher. AOE can address this by more detailed direction and by reviewing the data as it is submitted.
3. NFES categorized courses as either preK-8 or 9-12. Many schools in Vermont are middle schools or have a middle school section encompassing grades 6-8. The NFES course categorization did not easily allow differentiation by grade. AOE could add a field to show the grade or grades a course is offered. Differentiating between middle school courses and both elementary and high school courses would allow more accurate representation given Vermont's education governance structure.
4. The data do not show multi-age courses nor classrooms. AOE could add a field to identify multi-age courses and the grades served. It has been noted by other AOE staff that linking SECT data with other data sources would allow identification of multi-age courses and classrooms. However, importing data from other sources is a potential source of error. Adding a field to the SECT collection and using the other data sources as a check is more robust.
5. There is no identification of teachers as either regular or special education. Separating courses by the two categories would allow for better understanding of course size. AOE could add a field to allow identification of regular versus special education classes. Implementing such an identification would necessitate keeping student confidentiality in mind.
6. A number of teachers were listed with multiple schools. A number of teachers of subject areas such as music, art, and even physical education are itinerant teachers, hired at the S.U. level and providing course at multiple schools. While this is also a possibility with core subject teachers, it is unlikely that some teachers offered courses at 4, 5, or 6 schools. A field for itinerant teachers would clarify some of the data.
7. 2,688 courses were reported as having either 1 or 2 students enrolled in all course categories, accounting for 3,395 students. It is likely that many of these courses were independent study, a core-course elective, distance learning, ELL, remedial, special education, etc. A field to identify the type of course taught would improve the data. It may also help resolve issues as identified in number 6.

Data used for student ratios to various groupings of personnel came from data collected for the 2012-2013 Teacher/Staff FTE and Salary Report. Personnel data were reported by districts and S.U.'s at the location of the employer, categorizing personnel by function and position. In FY2013, personnel were reported in 41 staff categories, grouped into 9 different functions.

8. Many current staff positions in schools and S.U.'s do not fit neatly into the staff categories in the collection. While several categories have been inserted over time, more are needed. AOE is planning on updating and revamping the collection this year, prior to the next collection.

9. Due to the limitations of the staff categories available, many personnel are categorized inaccurately, skewing the data in a variety of categories. This leads to an inaccurate picture of the position personnel perform and misrepresents actual growth rates for.

V. Subjects for potential legislation to assist AOE data collections and analyses

The Agency was asked by legislators as to what could be put into place in order to assist and enable AOE to gather information to answer questions such as these and financial questions. The following is a brief list.

1. Provide legislation that unambiguously states districts must respond to any AOE data collection the Agency is requested to send out. There is often push back from the S.U.'s and districts when a data collection is requested and not mandated in legislation.
2. An AOE staff member is currently working with business managers to develop a uniform chart of accounts.
   a. Legislation mandating that all districts, S.U.'s, and technical centers must use the new chart of accounts would allow easier reporting by and better data from the districts, etc., and would allow AOE to more easily answer financial questions the Legislature asks.
   b. A currently unknown cost will be attached to implementing a uniform chart of accounts. Vendors districts and S.U.'s use would need to map their current systems to the new chart of accounts which will entail a cost. An appropriation to help fund the cost to districts would be beneficial.
   c. The new uniform chart of accounts will be beyond the capacities of both Access and Excel, the two platforms AOE School Finance currently uses. A new platform will be required, possibly incurring a consultancy fee if the AOE programing section cannot provide the required code.
3. AOE is working to improve data collections and subsequent reports by revamping and updating the collections and providing more direction to the field. Doing so should provide better data, allowing for a more robust analysis of the various data collections. AOE understands the value of these data and subsequent analyses to be an integral and critical part to making informed policy decisions. As such, AOE is exploring options to expand its capacity for improving data and providing more analysis.

No. 60. An act relating to making miscellaneous amendments to education funding laws.
(H.538)

* * * Student-to-Staff Ratios * * *

Sec. 5. STUDENT-TO-STAFF RATIOS

(a) The Secretary of Education shall collect data necessary to inform development of a comprehensive plan to establish minimum student-to-staff ratios, student-to-administrator ratios, student-to-classroom teacher ratios, and student-to-teacher ratios in public elementary and secondary schools and supervisory unions in a manner that promotes educational opportunities and outcomes for students in Vermont.

(b) As used in this section:
- (1) "Teacher" includes any person licensed to be employable as a teacher who is employed as a teacher and is providing direct instruction to students in one or more elementary or secondary grades.
- (2) "Administrator" includes any person employed as a superintendent, assistant superintendent, principal, assistant principal, special education director, essential early education director, or Title I coordinator.
- (3) "Staff" includes all paid personnel employed by a school district or supervisory union, but shall exclude:
  - (A) central services business office personnel;
  - (B) operations and maintenance personnel;
  - (C) transportation personnel;
  - (D) food service personnel; and
  - (E) enterprise or community service operations personnel.

(c) At a minimum, the Secretary's data shall be sufficient to inform development of a comprehensive plan that might include:
- (1) mandatory minimum ratios at the district or the school level, which may include variations by grade, school size, and other factors such as the unique needs of students from economically deprived backgrounds and students who are English language learners;
- (2) mandatory minimum ratios at the supervisory union level;
- (3) incentives for compliance; and
- (4) implementation dates that would require mandatory staffing ratios beginning in school year 2015–2016 with tax penalties for noncompliance beginning in school year 2016–2017.

(d) On or before January 15, 2014, the Secretary shall present the data to the House and Senate Committees on Appropriations and on Education, the House Committee on Ways and Means, and the Senate Committee on Finance.

Course Size Count by Grade Configuration and Size

Elementary and Elementary-Middle Schools

Using data only for course sizes of 27 or less.

	0 - 150					150 - 300						300 - 450					450 - 650								650 - 1,150						
Total >2	3,489					5,500						1,745					1,701								2,541						14,976
2< x <10	1,772					618						163					60								245						2,858
	50.8%					11.2%						9.3%					3.5%								9.6%						19.1%
Total >2	375	1,065	838	430	781	625	1,841	1,434	437	929	234	487	938	160	158	2	554	125	138	275	245	110	122	132	122	305	424	772	656	262	14,976
2< x <10	322	616	248	293	293	205	190	36	19	145	23	62	33	60	8	-	17	-	-	10	18	3	6	6	-	85	21	37	17	85	2,858
	85.9%	57.8%	29.6%	68.1%	37.5%	32.8%	10.3%	2.5%	4.3%	15.6%	9.8%	12.7%	3.5%	37.5%	5.1%	0.0%	3.1%	0.0%	0.0%	3.6%	7.3%	2.7%	4.9%	4.5%	0.0%	27.9%	5.0%	4.8%	2.6%	32.4%	19.1%
	E-1	E-2	E-3	EM-2	EM-3	E-4	E-5	E-6	EM-4	EM-5	EM-6	E-7	E-8	E-9	EM-7	EM-8	E-10	E-11	E-12	E-13	EM-10	EM-11	EM-12	EM-13	E-16	EM-14	EM-16	EM-18	EM-19	EM-23	15,435
Students p	E1:0-49; 12	E2:50-99; 31	E3:100-149; 20	EM2:50-99; 9	EM3:100-149; 15	E4:150-1	E5:200-2	E6:250-2	EM4:150-	EM5:200-	EM6:250	E7:300-3	E8:350-3	E9:400-4	EM7:300	EM8:350	E10:450-	E11:50(	E12:55(	E13:600-	EM10:450	EM11:500-549;	EM12:550-	EM13:600-6	E16:750-	EM14:650	EM16:750	EM18:850-899; 2	EM19:900	EM23:1100	ClsCnt
1	54	16	7	16	10	3	15	10	10	6	5	7	14	-	-	-	44	-	-	5	3	-	7	5	-	2	2	13	-	4	258
2	32	16	7	10	2	6	39	12	3	-	4	6	5	-	-	-	25	-	-	5	-	4	3	2	-	-	-	5	13	2	201
3	32	46	3	6	6	9	6	5	-	-	3	3	4	-	-	-	15	-	-	1	1	-	3	-	-	-	-	4	3	5	155
4	77	50	3	85	13	5	7	6	-	10	3	2	-	-	1	-	-	-	-	9	-	3	2	4	-	-	-	5	2	-	287
5	67	51	36	52	34	28	15	5	2	13	1	3	-	-	2	-	1	-	-	-	1	-	1	2	-	1	-	4	-	-	319
6	70	56	38	42	56	12	20	4	2	7	-	6	-	-	2	-	-	-	-	-	2	-	-	-	-	13	-	4	9	-	343
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13	10	57	66	20	88	61	29	25	43	82	22	19	13	15	5	-	3	-	-	-	26	-	1	8	-	23	-	2	2	-	620
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15	-	43	49	8	48	18	87	175	35	31	23	64	112	5	20	-	11	5	7	-	21	1	8	16	1	10	18	21	51	2	890
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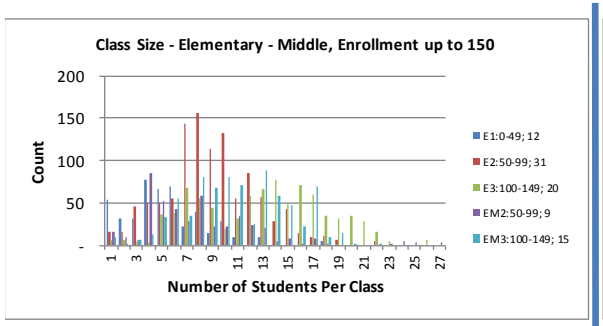
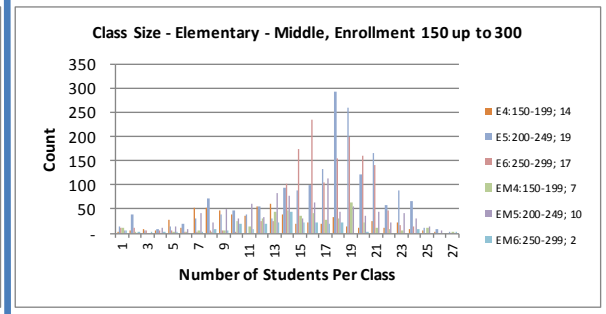
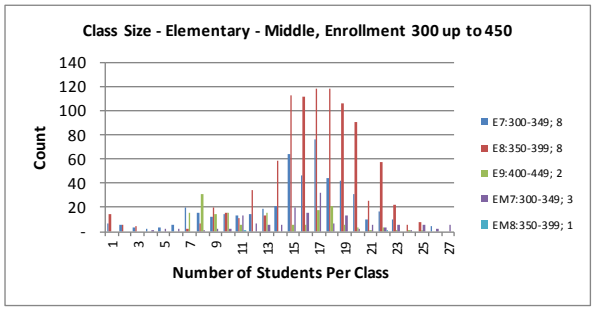
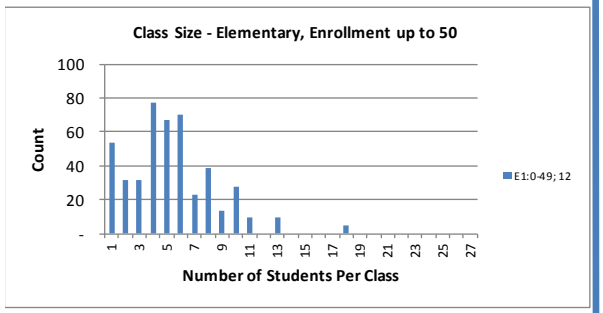
Course Size Count by Grade Configuration and Size

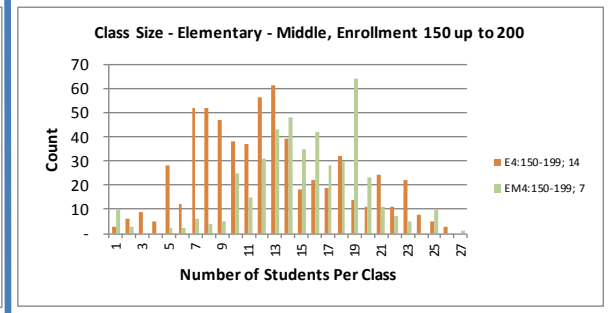
Elementary and Elementary-Middle Schools

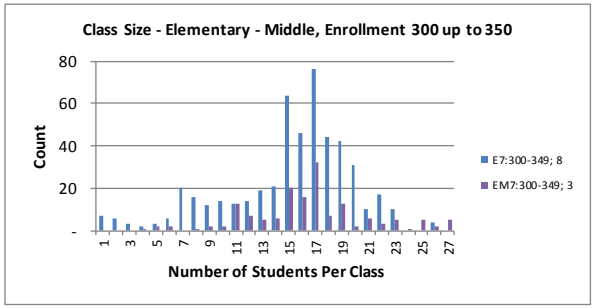


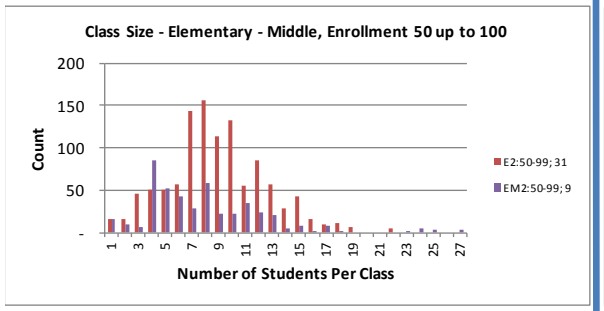


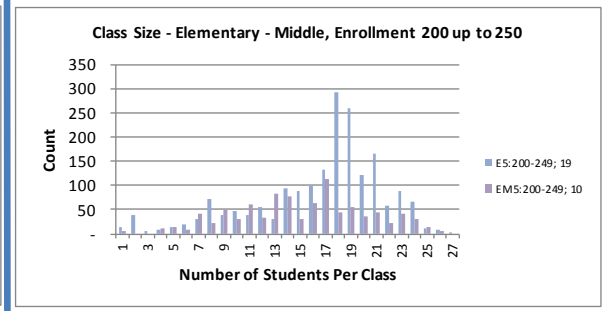


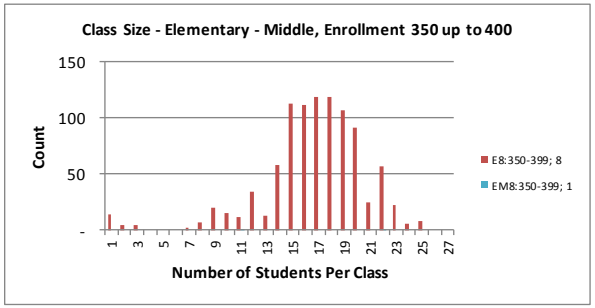


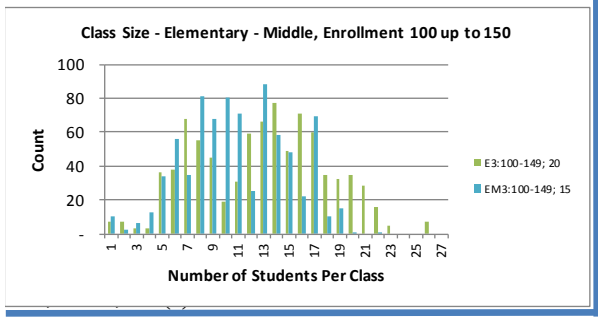


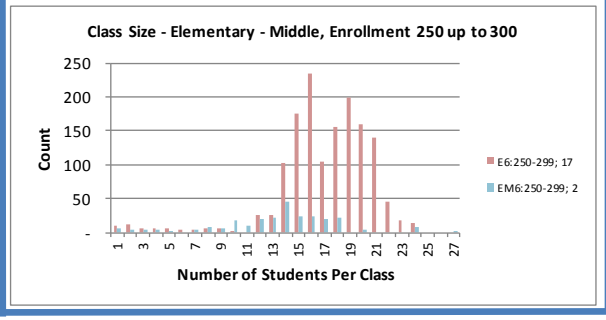


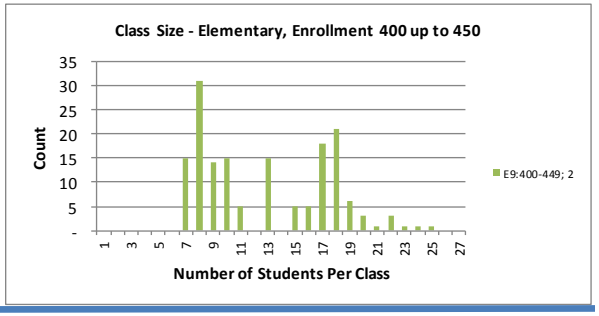






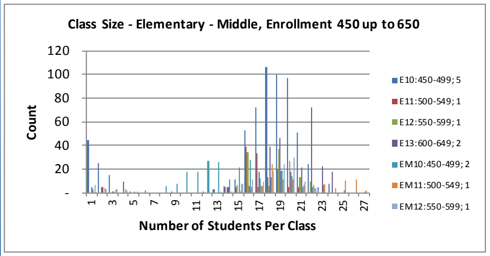


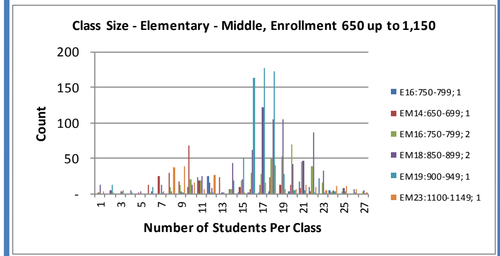


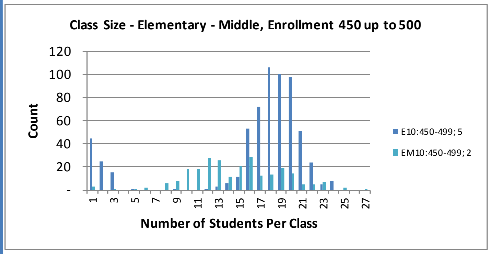


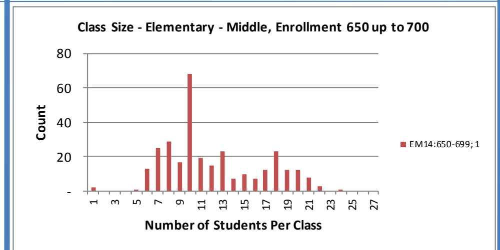
Course Size Count by Grade Configuration and Size

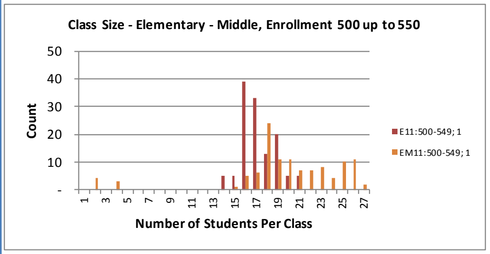
Elementary and Elementary-Middle Schools

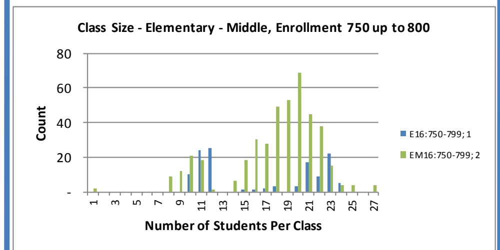


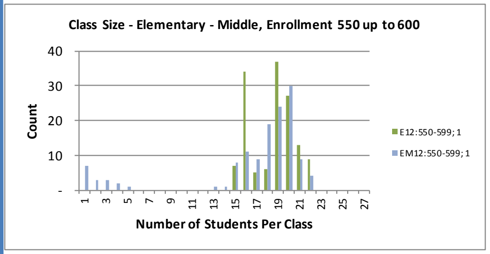


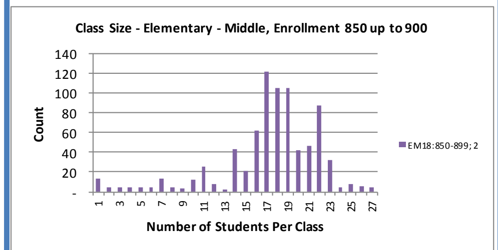


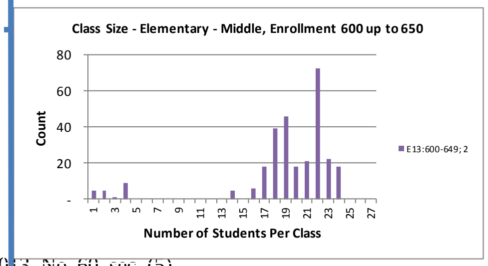


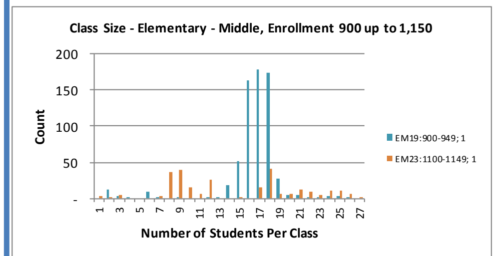












Course Size Count by Grade Configuration and Size

K-12, Middle, & Secondary Schools

Using data only for class sizes of 27 or less.

	100 - 250					350 - 450						250 - 350		500 - 700			700 - 900				900 - 1,300				
Total >2	613					1,267						607		1,787			1,362				1,965				7,601
2< x <10	216					313						184		321			308				357				1,699
	35.2%					24.7%						30.3%		18.0%			22.6%				18.2%				22.4%
Total >2	86	73	59	170	225	255	185	116	195	388	128	87	520	328	1,292	167	210	265	272	615	256	767	290	652	7,601
2< x <10	28	19	32	79	58	68	36	25	43	87	54	31	153	65	250	6	49	60	96	103	64	170	22	101	1,699
	32.6%	26.0%	54.2%	46.5%	25.8%	26.7%	19.5%	21.6%	22.1%	22.4%	42.2%	35.6%	29.4%	19.8%	19.3%	3.6%	23.3%	22.6%	35.3%	16.7%	25.0%	22.2%	7.6%	15.5%	22.4%
	K12-4	MS-5	S-3	S-4	S-5	K12-8	K12-9	MS-8	MS-9	S-8	S-9	S-6	S-7	S-11	S-12	S-14	S-15	S-16	S-17	S-18	S-19	S-21	S-22	S-26	9,255
Students p	2-4:150-19	5:200-24	3:100-149	4:150-199	5:200-249	-8:350-39	-9:400-44	8:350-39	9:400-449	8:350-399	9:400-449	6:250-299	7:300-349	1:500-549	2:550-599	4:650-699	5:700-749	6:750-799	7:800-849	8:850-899	9:900-949	1:1000-104	-22:1050-1099	6:1250-129	ClsCnt
1	24	29	32	28	47	24	19	40	19	83	23	60	75	50	323	16	23	32	78	81	29	117	8	33	1,293
2	2	6	10	17	9	5	3	15	15	19	7	13	27	29	40	3	18	4	35	25	13	32	1	13	361
3	3	3	4	5	11	8	1	3	7	20	12	10	16	16	10	1	12	6	29	27	9	25	2	14	254
4	2	2	10	14	5	2	2	4	5	7	8	-	16	6	15	1	12	9	11	32	9	25	-	12	209
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14	9	2	4	11	16	14	17	7	21	29	5	2	40	23	102	5	18	11	22	17	11	35	19	33	473
15	5	10	-	4	22	8	15	12	6	29	7	4	24	16	112	14	19	10	12	19	14	41	13	38	454
16	2	-	-	5	12	13	16	5	6	27	4	9	37	19	128	7	16	19	17	25	17	33	11	40	468
17	3	4	-	5	9	2	12	4	5	33	9	4	26	13	113	11	16	10	14	37	14	43	20	35	442
18	2	3	-	3	10	12	9	2	3	26	9	4	20	15	112	17	13	12	11	48	16	43	18	43	451
19	2	-	-	1	4	2	12	5	20	15	3	4	25	26	27	17	11	15	19	36	10	34	22	47	357
20	-	-	-	5	5	4	6	5	17	10	5	3	15	16	46	17	10	21	9	48	10	44	27	47	370
21	2	1	-	2	7	5	1	8	6	8	5	4	22	28	22	20	10	23	12	33	9	46	20	37	331
22	1	-	-	1	5	2	5	6	1	10	2	5	9	15	18	10	6	12	10	44	7	40	17	47	273
23	1	2	-	2	2	10	-	4	-	8	1	1	10	9	13	11	2	11	6	36	11	39	17	35	231
24	1	5	-	-	3	17	4	7	3	1	1	1	9	8	12	3	3	7	5	39	10	25	18	35	217
25	-	4	-	-	1	-	-	2	1	2	2	-	8	3	8	3	1	7	2	23	4	8	9	32	120
26	-	-	-	-	2	1	1	2	-	1	-	-	6	4	5	3	-	1	-	14	2	8	-	13	63
27	-	-	-	-	2	-	-	-	8	1	-	-	8	2	-	1	1	2	-	12	-	7	-	11	55

Course Size Count by Grade Configuration and Size

K-12, Middle, & Secondary Schools