The Vermont High School Class of 2018

Postsecondary Aspiration & Enrollment

Executive Summary

This report summarizes two postsecondary indicators for the Vermont high school class that graduated in the spring of 2018, a new cohort of students that will be followed for six years. Results from the Class of 2018 suggest the percentage of students who reported they planned to enroll, referred to as the aspiration rate, has remained unchanged since 2012. Postsecondary enrollment rates (the percentage of the cohort who enrolled in the fall term of the next academic year) did increase slightly, but not by a significant margin, by two percentage points since 2012. Sixty-two percent of all Class of 2018 high school graduates enrolled at a two- or four-year college or university in the immediate fall following graduation.

We found:

- over the last decade there has been a significant decline in the aspiration rate among second-generation male high school seniors, widening the gender gap in plans to pursue postsecondary education and training.
- students report their parents' postsecondary aspirations for them are shifting — away from education.
- the gender gap in postsecondary enrollment is wider in Vermont than in the US.
- significant differences in academic preparation by gender and parent education attainment; these in turn are related to aspiration and enrollment outcomes.
- there are continuing regional differences in postsecondary aspiration and enrollment throughout the state.

We begin the report presenting a description of the Class of 2018 and with findings about students' postsecondary plans. We follow with a section on postsecondary enrollment. Throughout the report we look at how gender, parent education attainment and academic preparation correlate to postsecondary aspiration and participation. This report is based on data collected from a school-based survey in the spring of 2018 as well as enrollment verification data from the National Student Clearinghouse which we used to measure immediate postsecondary enrollment.[1] We will continue to follow this cohort to report degree completion rates within four and six years.

[1] This report uses data from the National Student Clearinghouse for information about students' postsecondary enrollment, supplemented by enrollment verification data from VSAC's proprietary

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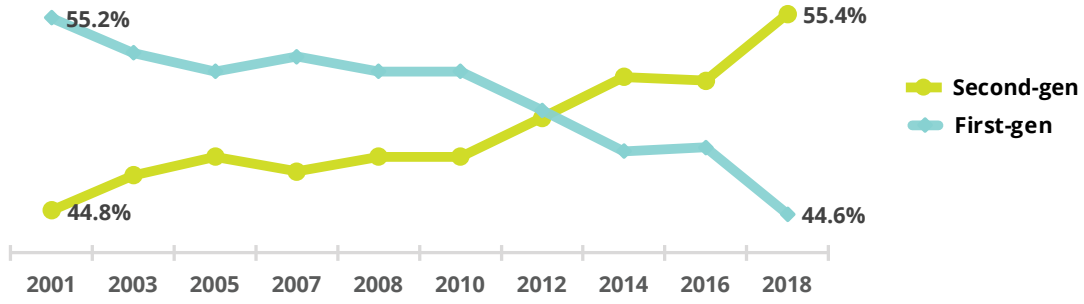
Class of 2018

In the spring of 2018, VSAC conducted a non-random survey of Vermont high school seniors attending the state's public and private high schools; 4,816 out of 5,900 graduating seniors (82%) took part in the survey (see Methodology in Appendix).

Based on our previous research on the Class of 2012 we will examine postsecondary indicators through the lens of two key demographic factors: gender and parent educational attainment. Our previous findings have shown there is a significant gender difference in postsecondary aspiration and enrollment among recent high school graduates with a larger percentage of female seniors planning to and pursuing college education immediately after high school compared to male students. Our research has also shown that parental educational attainment is an important correlate of student educational attainment.

We define first-generation students as those whose parent/guardian(s) have not completed a four-year degree. Second-generation students are those who have at least one parent with at least a bachelor's degree.[2] Students whose parents have earned a four-year degree are more likely to plan to enroll and enroll than students whose parents have not completed a four-year degree. Figure 1 shows that the percentage of first-generation graduates in each class surveyed has steadily decreased since 2001. For the Class of 2018, the proportion of first- to second-generation students is the inverse of what it was in 2001. In 2001, most students (55%) were first-generation students while 45% of the class had at least one parent who had obtained a four-year degree. In comparison, 45% of the 2018 cohort were first-generation students and 55% were second-generation students.

Figure 1. Parent educational attainment for Classes of 2001–2018



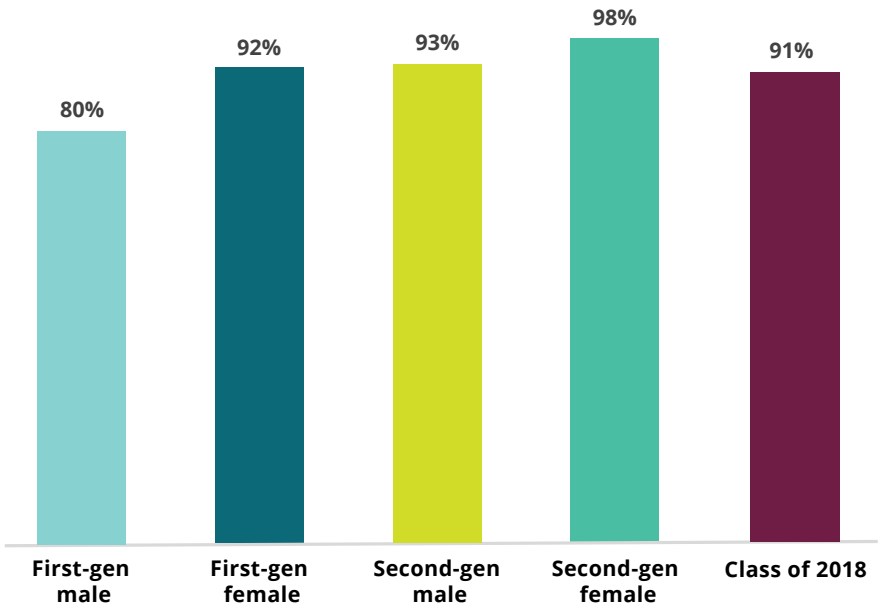
database for the Vermont Grant Program. If enrollment could not be confirmed by these two methods, we assumed that a student did not enroll in a postsecondary education or training program for the period covered for this study. NSC collects enrollment information from nearly 3,600 colleges and universities — enrolling over 97% of all students in public and private U.S. institutions. NSC also includes enrollment verification for nearly 150 institutions found outside of the U.S.

[2] We do not ask students to report on family income, so we use parents' educational attainment as a proxy for socio-economic status. In 2018 and in collaboration with the Vermont Agency of Education (VAOE), we were able to match public high school respondents with their free and reduced-price lunch (FRL) eligibility status. The statewide FRL rate for SY18 was 38%, but it is common for the FRL rate to drop as students move through high school. The FRL rate among survey respondents was 28%, comparable to the 12th grade rate for SY18 (VAOE, personal communication). Since there are not comparable data on FRL-eligibility for students from the state's private/independent high schools, we continue to use parental education attainment as our proxy.

Students' Plans for the Fall of 2018

Nine out of ten Class of 2018 high school graduates reported that at some point they had thought they would continue their education after high school (Figure 2). First-generation male students, however, were significantly less likely to report ever having considered going to college after high school (80%), compared to all the other groups (92% or higher).

Figure 2. Thoughts of going to college by gender and parents' educational attainment, Class of 2018

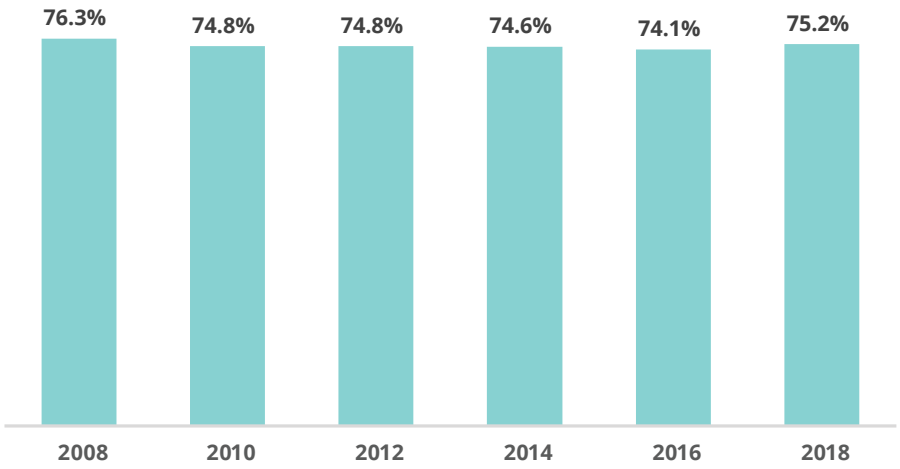


By the time these students became high school seniors, the statewide aspiration rate, or percentage of seniors who planned to continue their education after high school, had dropped by sixteen percentage points. This decline in postsecondary aspiration, particularly in the later grades of high school, has been consistent over time. In fact, over the past decade, three out of four students in each of Vermont's graduating high school classes planned to continue their education within six months of high school graduation. The aspiration rate peaked in 2008 (76.3%). From 2012 to 2018 the aspiration rate remained unchanged (Figure 3).

As in previous years, more females than males planned to continue their education after high school graduation. The aspiration rate for females was 83%; for males, 68%.[3] First-generation students were also less likely (67%) to plan to enroll by the fall of 2018 than second-generation students (84%). Public high school graduates who were eligible for free and reduced-price lunch (FRL) had a significantly lower aspiration rate (65%) compared to public high school graduates who were not FRL-eligible (80%).

[3] The 2018 Senior Survey included for the first time the choice for students to identify as non-binary. Less than 1% of the class did so; these students had the lowest aspiration rate of the cohort, 64%.

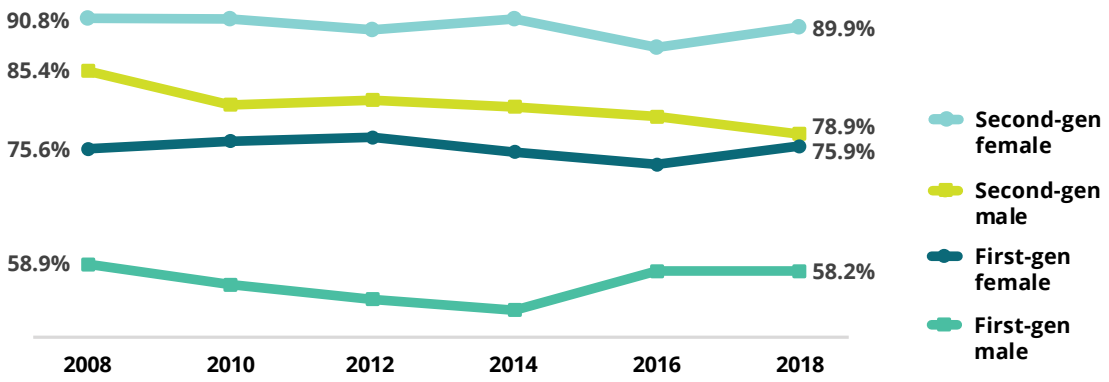
Figure 3. Aspiration rates for Classes of 2008–2018



The interaction of gender and first-generation status

As in previous years, we found that there were significant differences in aspiration rates depending on graduates' gender and first-generation status.[4] As shown in Figure 4, second-generation females have consistently had the highest aspiration rate in each cohort, while first-generation males have had the lowest. The aspiration rates began to decline after 2008 but have since rebounded to pre-recession levels with the notable exception of second-generation male students. The aspiration rate among this group has declined by 6.5 percentage points in the last decade. As a result, the gender gap in postsecondary plans among second-generation students has widened over time. In 2008, the difference in aspiration rates between male and female second-generation students was 5.4 percentage points. In 2018, the difference in aspiration between male and female second-generation students doubled, increasing to eleven percentage points. Among first-generation students the gap in postsecondary aspiration in 2018 was larger (17.7 percentage point difference) than that of second-generation students, but the gender gap for first-generation students has remained unchanged since 2008.

Figure 4. Aspiration rates by first-generation status and gender, Classes of 2008–2018

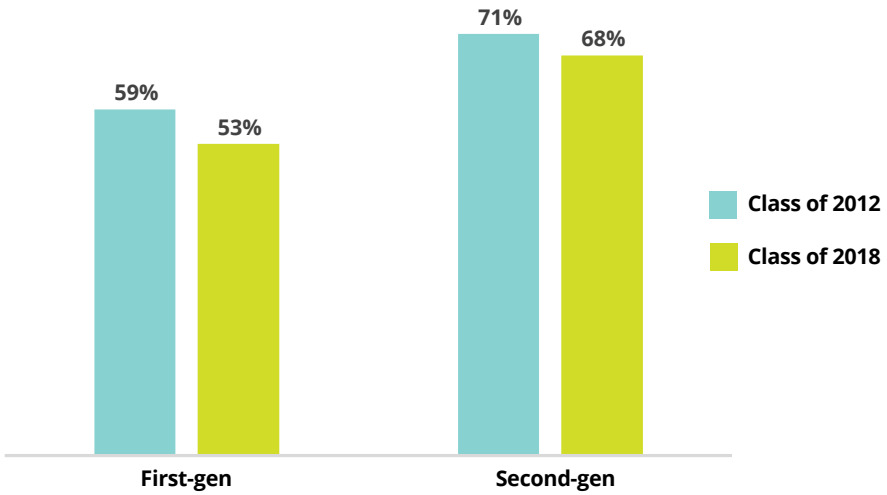


[4] We were unable to include students who self-identified as non-binary in this analysis due to small sample size.

One possible explanation for this finding may lie in parents' expressed opinions on their children's postsecondary plans. In a national study of ninth graders, parents with a bachelor's degree or higher were more likely to report (84% among those with a bachelor's degree to 87% of those with an advanced degree) that they wanted their child to complete a postsecondary credential, compared to parents without a bachelor's degree (67% of those with a high school diploma or less to 75% among those with an associate degree, NCES, 2012).

In the Vermont Class of 2012, 71% of second-generation students and 59% of first-generation students reported their parents wanted them to continue their education in the fall after graduation; 21% of all students reported that their parents would support their decisions about what to do after high school. However, as Figure 5 shows, our Class of 2018 data suggest that in Vermont, a significantly lower percentage of students than in 2012 reported their parents wanted them to continue their education (68% of second- generation students and 53% of first-generation students). More than a quarter of all students (26%) reported their parents were less prescriptive and would support whatever decision they made about their post-high school plans. While parent educational attainment has increased, their aspirations for their children have not.

Figure 5. Percent of students reporting that their parents want them to continue education, by first-generation status, Classes of 2012 & 2018



Over time, students not planning to continue their studies immediately have consistently reported needing or wanting to work to support themselves (31%) or that they needed a break from school (19%) as the most important reasons for not continuing their education. But some of the reasons for not continuing have also shifted since 2012. Seniors in 2018, for example were nearly twice as likely to report they did not need to continue their education to get the job they wanted (7%) compared to 2012 (4%). In both 2012 and 2018 male students were more likely than female students to report not needing to continue their education to get the job they wanted. Males in 2018 were significantly more likely (9%) to select not needing to continue their education to get the job they wanted at nearly double the rate as in 2012 (5%).

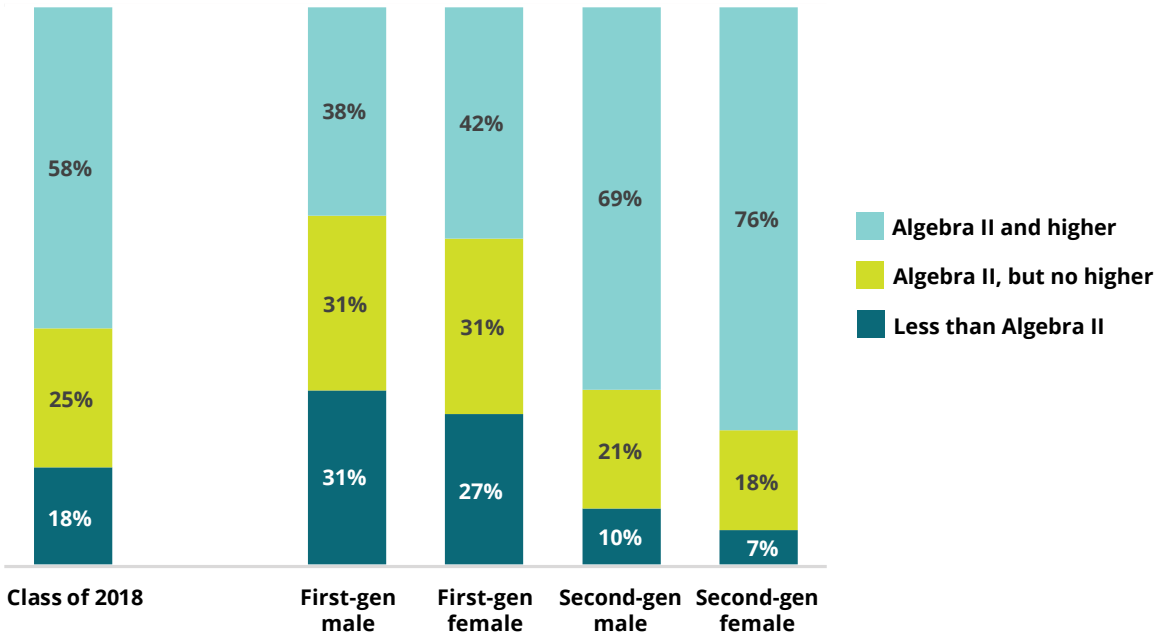
Interestingly, there were no differences between first- and second-generation students reporting this as their most important reason for not continuing their studies. Combined, these findings may help explain why the demographic shift in parental education attainment has not yielded an increase in postsecondary aspiration.

Math preparation

Academic preparation is also an important indicator of postsecondary aspiration. Assessing academic ability is complex, but for the purposes of this study we use mathematics courses completed in high school as a proxy for academic preparation. We grouped survey respondents by the highest mathematics course they reported as having successfully completed. The three groups are those students who completed (a) math classes less rigorous than Algebra II, (b) completed Algebra II, but no other higher-level math, and finally, (c) Algebra II and some other mathematics class, such as trigonometry, statistics, pre-calculus, or calculus.

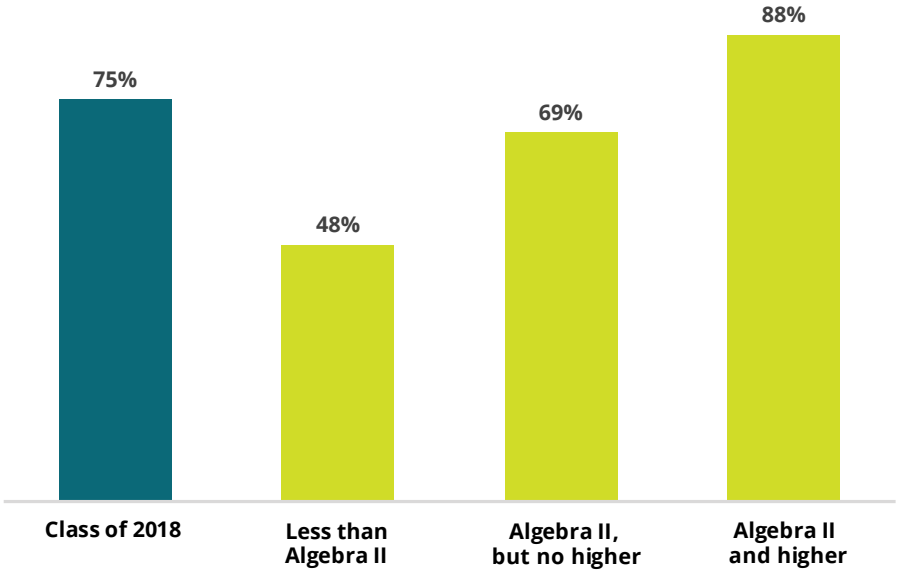
Our data show that advanced math-taking is significantly correlated to parental educational attainment. Overall, 58% of the Class of 2018 high school graduates completed a more rigorous math curriculum (Algebra II and at least one added course beyond Algebra II). But as Figure 6 shows, second-generation students far outpace first-generation students in high school math preparation. In addition, second-generation female students were twice as likely as first-generation male students to have completed a higher math course such as trigonometry or pre-calculus while in high school.

Figure 6. Level of high school math courses completed, by gender and first-generation status, Class of 2018



In turn, completing Algebra II is significantly correlated to postsecondary aspiration (Figure 7). The aspiration rate of graduates who completed Algebra II and at least one added course beyond Algebra II was nearly twenty percentage points higher than the aspiration rate of those who reached the Algebra II threshold but did not take any math beyond Algebra II. Moreover, it was forty percentage points higher than the rate of graduates who had not completed Algebra II.

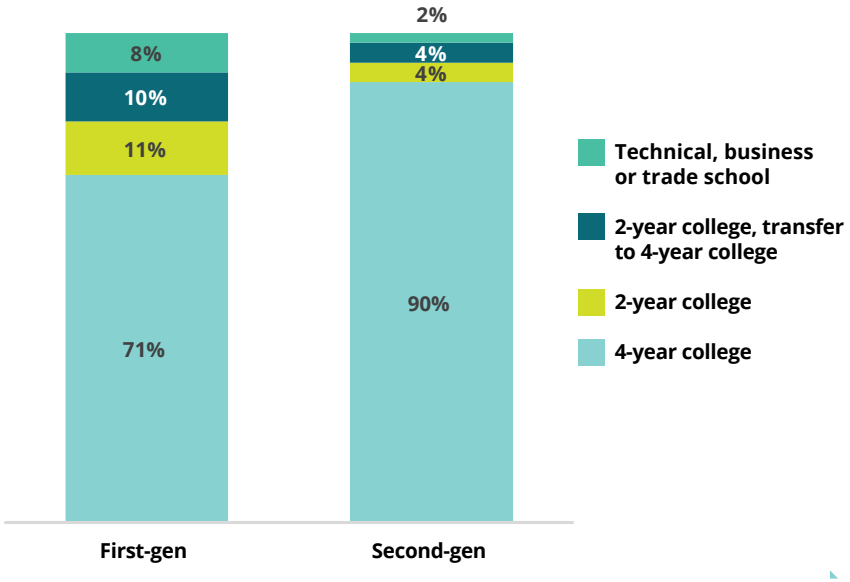
Figure 7. Aspiration rate by math courses completed, Class of 2018



In summary, three out of four high school graduates planned to continue their education and training in the fall of 2018. The percentage of high school seniors who planned to enroll in the fall after graduating from high school has not changed dramatically overall over the last decade, but the cohort has: more than half of seniors report coming from households where at least one parent has earned a bachelor's degree. Students' perceptions of what their parents would like them to do are changing, with a lower percentage of graduates reporting that their parents want them to continue their education immediately. Postsecondary aspiration rates and high school academic preparation vary by gender and parental educational attainment.

Students who reported planning to enroll in the fall after graduating from high school also told us what type of institutions they planned to attend. As our previous research suggests, Vermont students who planned to continue their education overwhelmingly planned to attend a four-year school (87%). However, the types of schools that graduates planned to attend was strongly correlated with parents' educational attainment (Figure 8). First-generation students were less likely to plan to enroll at a four-year school (71%) than their second-generation peers (90%). Nearly 21% of first-generation students planned to enroll at a two-year institution, half of whom intended to transfer to a four-year college. By comparison, 8% of second-generation students intended to go directly to a two-year college, with half planning to transfer. First-generation students were also more likely to pursue other types of formal training (8%) than second-generation students (2%).

Figure 8. Schools' level that graduates planned to attend, by first-generation status, Class of 2018

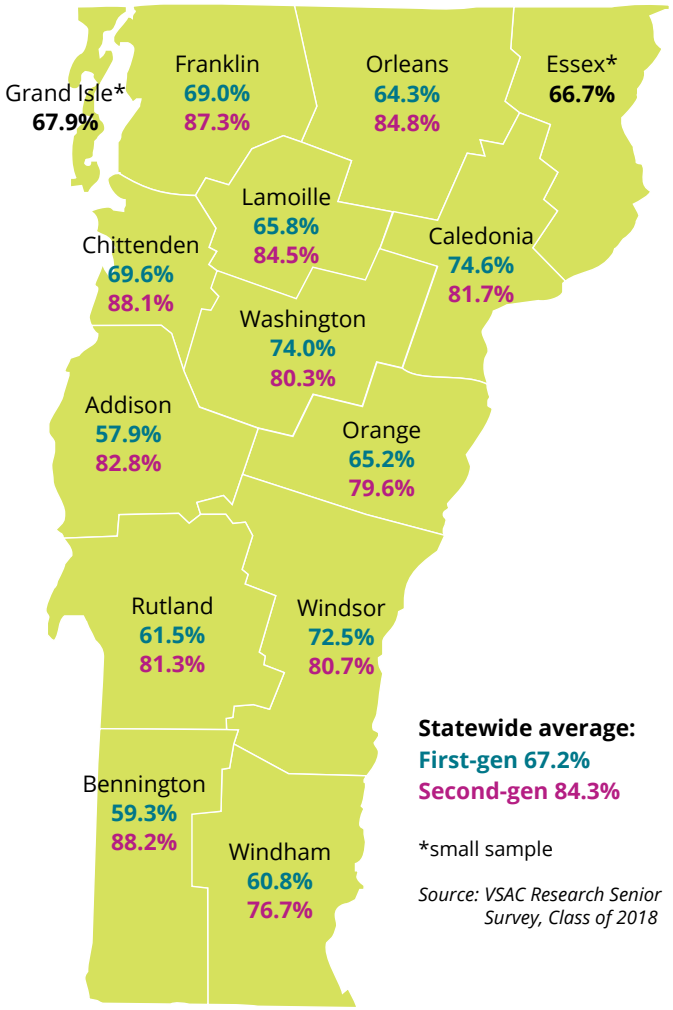


High school graduates' aspiration rates differed significantly across Vermont's fourteen counties. Chittenden County had the highest aspiration rate (81%) in 2018 and ranked first in 2012 as well (Table 1). Grand Isle and Essex counties had the lowest aspiration rates in 2018. These counties' rates were much lower in 2018 compared to 2012, showing the potential for volatility in rates from cohort to cohort, especially for counties with the fewest number of seniors. County-level differences in aspiration rate by parental educational attainment, first reported for the Class of 2012 (VSAC, 2014), persist — as shown in the map on the following page (Figure 9).

Table 1. Aspiration rate by county, Classes of 2012 & 2018

COUNTY	2012	2018
Addison	74.6%	72.3%
Bennington	76.4%	75.8%
Caledonia	71.2%	74.9%
Chittenden	81.2%	81.1%
Essex	75.6%	66.7%
Franklin	71.3%	74.5%
Grand Isle	73.3%	67.9%
Lamoille	65.8%	76.8%
Orange	69.3%	69.0%
Orleans	70.9%	70.9%
Rutland	70.5%	69.2%
Washington	75.2%	76.1%
Windham	70.5%	68.0%
Windsor	78.7%	75.5%

Figure 9. Vermont postsecondary aspiration rates by county, Class of 2018



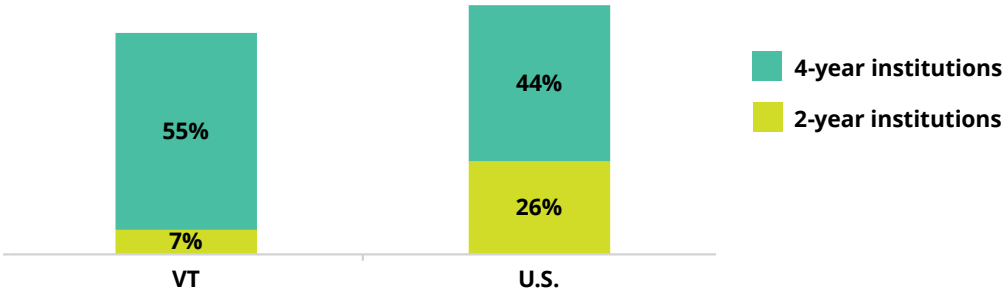
Enrollment at 2- and 4-year Postsecondary Institutions

Immediate college enrollment is defined as the annual percentage of high school completers (high school graduates and GED recipients) who enroll in two- or four-year colleges in the fall immediately after completing high school. The national college-going rate for the Class of 2018 was 70% (U.S. Department of Labor 2020). Regionally, the college enrollment rate is lower. The Common Data Project (New England Secondary School Consortium, 2019) reports that 66% of the Class of 2018 New England high school graduates enrolled in college.

The postsecondary enrollment data for the Vermont Class of 2018 come from the National Student Clearinghouse and are supplemented with information from VSAC's Grant Program database. Overall, 62% of survey participants who graduated from one of Vermont's public or private high schools in the spring of 2018 enrolled at either a two- or four-year postsecondary institution by the fall of 2018. Although this is an increase of two percentage points since 2012, it is not statistically significantly higher compared to the college continuation rate for the Vermont Class of 2012.

For the Class of 2018, Vermont students continued to enroll at four-year institutions at a higher rate than the national norm (Figure 10). Nationally. enrollment has shifted slightly from the two-year to four-year institutions over that period as well, but still differs from Vermont. Enrollment at two-year institutions is more than three and a half times higher nationally than it is in Vermont.

Figure 10. Class of 2018 high school graduates who enrolled at two- and four-year colleges, Vermont and the U.S.



All but one of the top ten institutions attended by Vermonters in the fall of 2018 were four-year institutions (Table 2). Eight of the top ten schools most attended by Vermonters were in Vermont. The Vermont State Colleges system enrolled 26% of the cohort among its four institutions (i.e., Community College of Vermont, Northern Vermont University, Castleton University and Vermont Technical College).

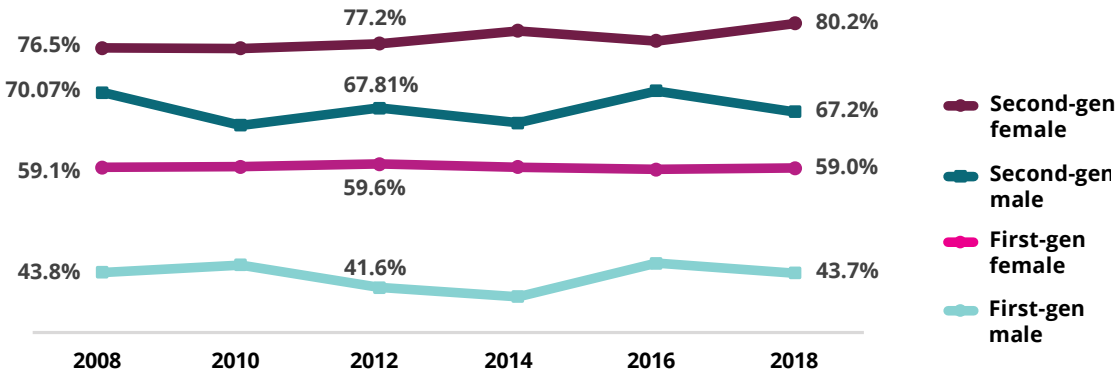
Table 2. Top ten institutions the Vermont Class of 2018 attended in fall of 2018, ranked by percent of cohort enrolled

RANK	Fall 2018 school	Valid %
1	University of Vermont	15.4
2	Community College of Vermont	8.6
3	Northern Vermont University	6.7
4	Castleton University	6.1
5	Vermont Technical College	4.6
6	Champlain College	2.6
7	Norwich University	2.0
8	Saint Michaels College	1.5
9	Clarkson University	1.3
10	Plymouth State University & University of New Hampshire-Durham (tied)	1.0

National statistics show female recent high school graduates (71%) out-paced male recent high school graduates (67%) in college enrollment in 2018 (NCES, 2020). Similarly, in Vermont, college enrollment in the Class of 2018 was significantly higher among female students (69%) than male students (55%). Notably, the gender gap in the college-going rate is more than three times higher in Vermont (a difference of fourteen percentage points) than it is in the nation (where the difference is only four percentage points).

Figure 11 shows the state's enrollment rates by gender and first-generation status over the last decade. Female students enrolled at higher rates than their male peers, regardless of parental educational attainment. However, as the chart shows, college enrollment among first-generation students has remained unchanged over the last decade. There has been a slight, but not statistically significant, decline in enrollment among second-generation male students since 2008. The only group to show a significant increase in enrollment since 2008 are second-generation female students, who have increased their college enrollment rate by nearly four percentage points.

Figure 11. Enrollment at 2- and 4-year institutions by gender and parent education attainment level



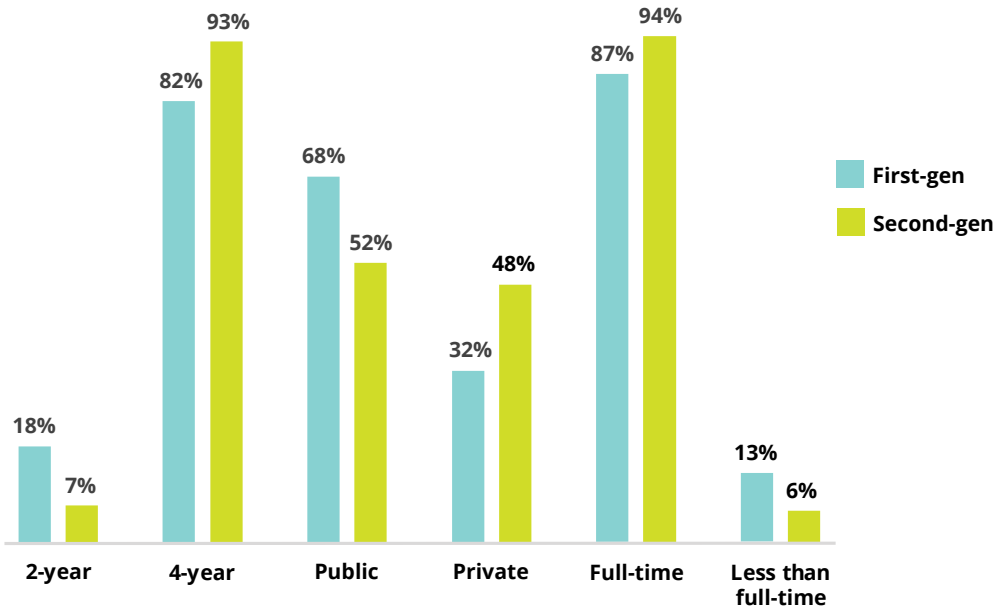
Enrollment characteristics

Most Vermont students who enrolled did so as full-time students (91%), at four-year institutions (89%), and at public institutions (58%). These numbers have remained consistent since 2012. Among the national Class of 2018 high school graduates, 91% enrolled full-time, 63% at four-year institutions (US Dept of Labor 2019), and 78% at public institutions (VSAC calculation of IPEDS data). Nationally, the proportion of students that were enrolled full-time and at four-year institutions has shifted and was higher in 2018 than in 2012.

There were differences in the types of institutions students attended by parental educational attainment (Figure 12). For example, first-generation students (64%) were more likely than second-generation students (41%) to study in Vermont rather than attend an out-of-state institution, and to attend a two-year institution (18% versus 7%) and a public institution (68% and 52%). First-generation graduates were also less likely to enroll as a full-time student (87%), compared to second-generation students (94%).

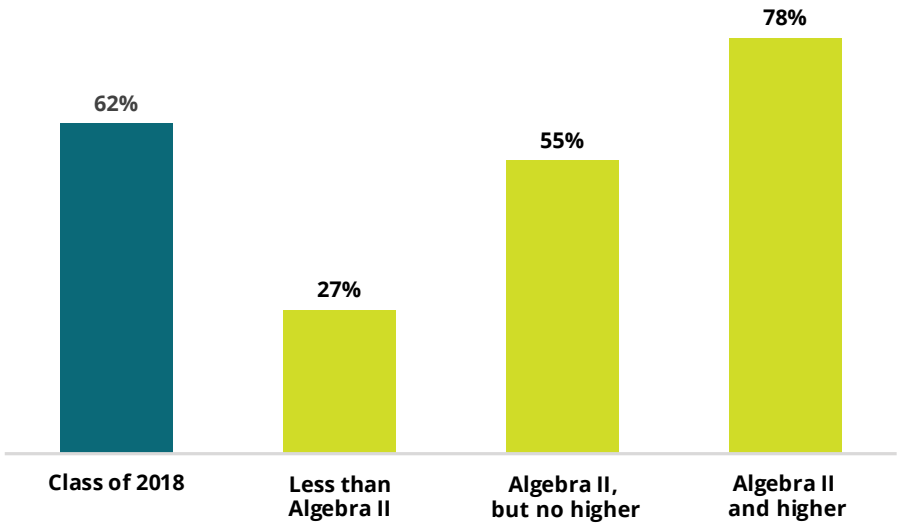
Students who enrolled full-time in a four-year program had the highest completion rates: 56% had obtained a bachelor's degree within four years, while 4% had obtained an associate degree.

Figure 12. Enrollment characteristics by parent education attainment level



Enrollment rates also varied significantly by academic preparation. Only one in four students who did not complete Algebra II enrolled in the fall of 2018. Students who completed Algebra II and took additional math courses had the highest enrollment rate: 78% (Figure 13).

Figure 13. Enrollment by highest level of mathematic course completed

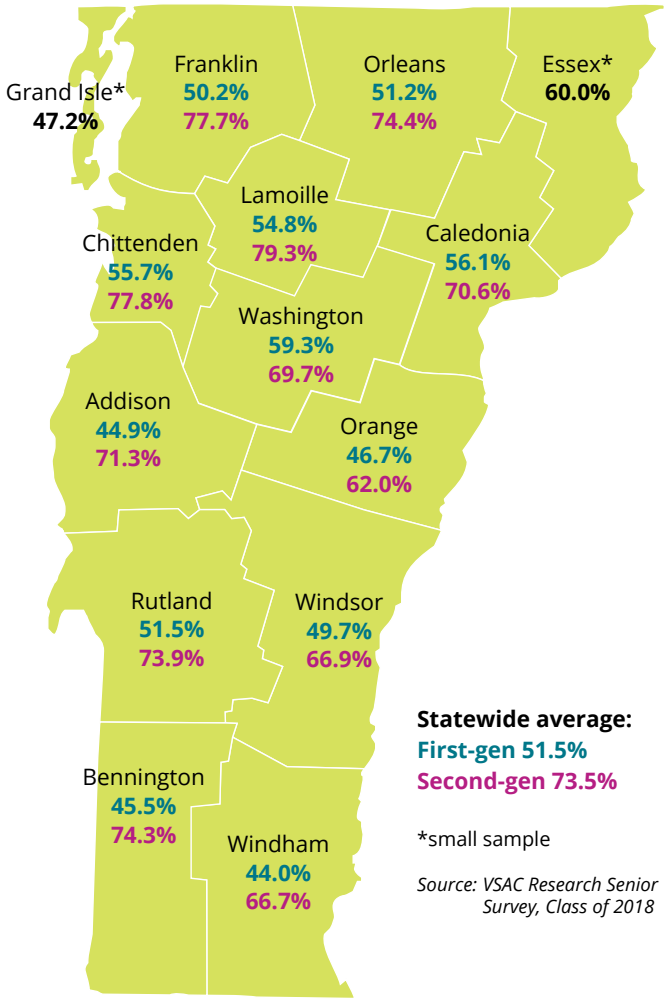


High school graduates' enrollment rates differed significantly across Vermont's fourteen counties. Chittenden County had the highest postsecondary enrollment rate (Table 3, 70%) in 2018 and ranked first in 2012 as well. County-level differences in continuation rates by parental educational attainment, first reported for the Class of 2012 (VSAC, 2015), persist as shown in the map below (Figure 14).[5]

Table 3. Enrollment rate by county, Classes of 2012 & 2018

COUNTY	2012	2018
Addison	61.5%	60.3%
Bennington	60.3%	62.1%
Caledonia	55.4%	60.2%
Chittenden	66.7%	69.7%
Essex	65.9%	60.0%
Franklin	57.9%	58.4%
Grand Isle	60.0%	47.2%
Lamoille	50.2%	67.5%
Orange	49.8%	50.4%
Orleans	53.2%	58.7%
Rutland	59.0%	60.0%
Washington	61.4%	63.9%
Windham	58.7%	54.6%
Windsor	60.7%	56.6%

Figure 14. Vermont postsecondary enrollment rates by county, Class of 2018



In summary, Vermont's Class of 2018 postsecondary enrollment continues to lag the nation and region. But Vermont also differs from the nation in that it continues to enroll a higher percentage of its students at four-year institutions and private institutions. Vermont also has a greater gender gap in enrollment than does the nation overall. Female students, regardless of parental educational attainment, enroll at higher rates than male students, but female second-generation students are the only group showing increases in postsecondary enrollment over time.

[5] Essex and Grand Isle counties had too few student records to allow for analysis by parent educational attainment.

Conclusion

This report highlights findings from the Senior Survey of Vermont's High School Class of 2018. It examined postsecondary aspiration (high school seniors' plans to continue their education after high school) and postsecondary enrollment at two- and four-year institutions. Overall, there has been no change since the last time we reported on these postsecondary outcomes for the Class of 2012. Moreover, there has been no improvement in aspiration rates or enrollment rates over the previous decade. These findings are problematic, especially in light of the growing recognition that many jobs in the future will require education or training beyond high school, and that research clearly shows the benefits of higher education at the individual and societal level (Ma, Pender, and Welch, 2019).

There has been a dramatic demographic shift among families of high school students, in that more than half of high school seniors now come from families where at least one parent holds a bachelor's degree. However, while parent educational attainment has increased, their aspirations for their children seem to have not. Our data suggest that what students think their parents want them to do plays a role in their postsecondary aspirations and enrollment. Most students (61%) reported that their parents wanted them to continue their education, but this is down from 65% in 2012. It is unclear what may be affecting parents' expressions of overt support for students to continue their studies immediately after high school. Is this decline due to growing concerns about the ballooning cost of attendance, a debate on the value of going to college, fears about the burden of student debt, and/or some other factors? Our data do not shed light on this, but the finding heightens concerns about what a continuing shift might portend for high school seniors' postsecondary aspiration and enrollment in the future.

As in previous years, we found that factors such as gender, parents' educational attainment, parental influence, and academic preparation are all associated with students' postsecondary plans and enrollment at a postsecondary school.

As suggested by national data, our data have shown that male students are not pursuing higher education at the same rate as their female counterparts. Alarmingly, the gender gap in enrollment at two-and four-year institutions is three times as large in Vermont as it is nationally. Further, we see evidence that second-generation males today have significantly lower aspiration rates than they did a decade ago. It may be that male high school seniors have other options — i.e., entering the workforce, joining the military — which seem more attractive than immediately enrolling in postsecondary education. Combined, these findings suggest that we must continue to look for ways to engage high school seniors, but particularly young men, in the pursuit of additional pathways to postsecondary training and education opportunities.

In this report we examined level of math completed and found that it positively correlates with post-secondary outcomes like aspiration to enrollment. Our data suggest significant differences in academic performance by parental educational attainment and gender. First-generation male students are the least likely to complete higher level mathematics high school classes. They are also the least likely to aspire to postsecondary education and training, and least likely to enroll.

Finally, our data show that significant differences at the county level persist. County level data provide stakeholders with a closer view of how students from their counties are progressing in terms of postsecondary education. As in earlier reports, the findings point to differences between counties, as well as differences in aspiration and enrollment within counties, by students' families' educational attainment levels.

Appendix: Data and Methodology

The data used for this report comes from two sources. Every two years, VSAC conducts a non-random survey of Vermont high school seniors attending a total of 74 (public and private) high schools. In 2018, 4,816 out of 5,900 graduating seniors (82%) took part in the survey. Verification of postsecondary enrollment is based on data from the National Student Clearinghouse (NSC), yielding 4,791 usable records of the 4,816 survey participants. These data were supplemented with information from the VSAC Grant Program. These archival data were downloaded in April of 2020. The survey data and the enrollment verification data were merged and form the basis of the findings presented in the report (n=4,791).

More than half of the respondents (55%) completed a four-page, paper-pencil survey, administered to students in their schools by school staff that chose the day of the survey's administration. The remaining respondents completed an online version of the survey (45%); we used Qualtrics software (Qualtrics, Provo, UT) to deploy the survey on the day chosen by the schools' administration. Regardless of survey type, administration took place as early as March or as late as graduation practice.

Student participation was voluntary but encouraged. Schools receive reports comparing their school results to the overall state results, so most make the effort to collect the information as completely as possible. If students were not present on the day the survey was administered, no effort was made to contact them again. Only data from students who graduated (as confirmed by graduation rosters) was included in the analysis. Data from adult graduates, GED recipients, residents of other states and foreign exchange students who obtained a high school diploma are not included in these analyses. Most participants, 86% of the cohort, graduated from Vermont public high schools; 14% from Vermont private schools (including those that serve as public schools). Less than 1% of the respondents were Vermont residents attending public high schools in adjacent states, e.g., New Hampshire and New York.

The NSC collects enrollment information from more than 3,600 colleges and universities — 96% of all students enrolled in public, private nonprofit and private for-profit, two- and four-year U.S. institutions. NSC also includes enrollment verification for nearly 150 foreign institutions. We primarily rely on the NSC for information about students' postsecondary enrollment, but we supplement enrollment verification data by using ~~the~~ Vermont Student Assistance Corporation's proprietary database for the Vermont Grant Program. For the Class of 2018, sixty records that were not verified by NSC were found by VSAC's database as being enrolled. If enrollment could not be confirmed by December 2019 with these two methods, participants were classified as not having enrolled in a postsecondary education or training program for the period covered for this study. Of special note, enrollment in postsecondary training programs of less than two years (such as certificate programs, apprenticeships, or other types of nondegree education) is not reported by the NSC and was not included in this report. As such, the enrollment rates included in this report likely understate the totality of students who continued some form of postsecondary training or education.

Using 18 months of enrollment verification data, we explored the postsecondary enrollment rate — i.e., whether high school graduates from both the state's public and private high schools later enrolled at either a two- or four-year postsecondary institution within six months of their high school graduation.

This paper is the first in a series published by VSAC to inform our stakeholders of the successes and challenges of the Vermont High School Class of 2018 so that we can collectively develop strategies to increase overall degree completion. The next publication in this series will focus on the degree completion of the Vermont High School Class of 2018 within four years of high school graduation.

Previous publications discussed the aspiration and postsecondary enrollment of the Class of 2012. The most recent publication in that series discussed the degree completion of the Vermont High School Class of 2012 within six years of high school graduation.

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