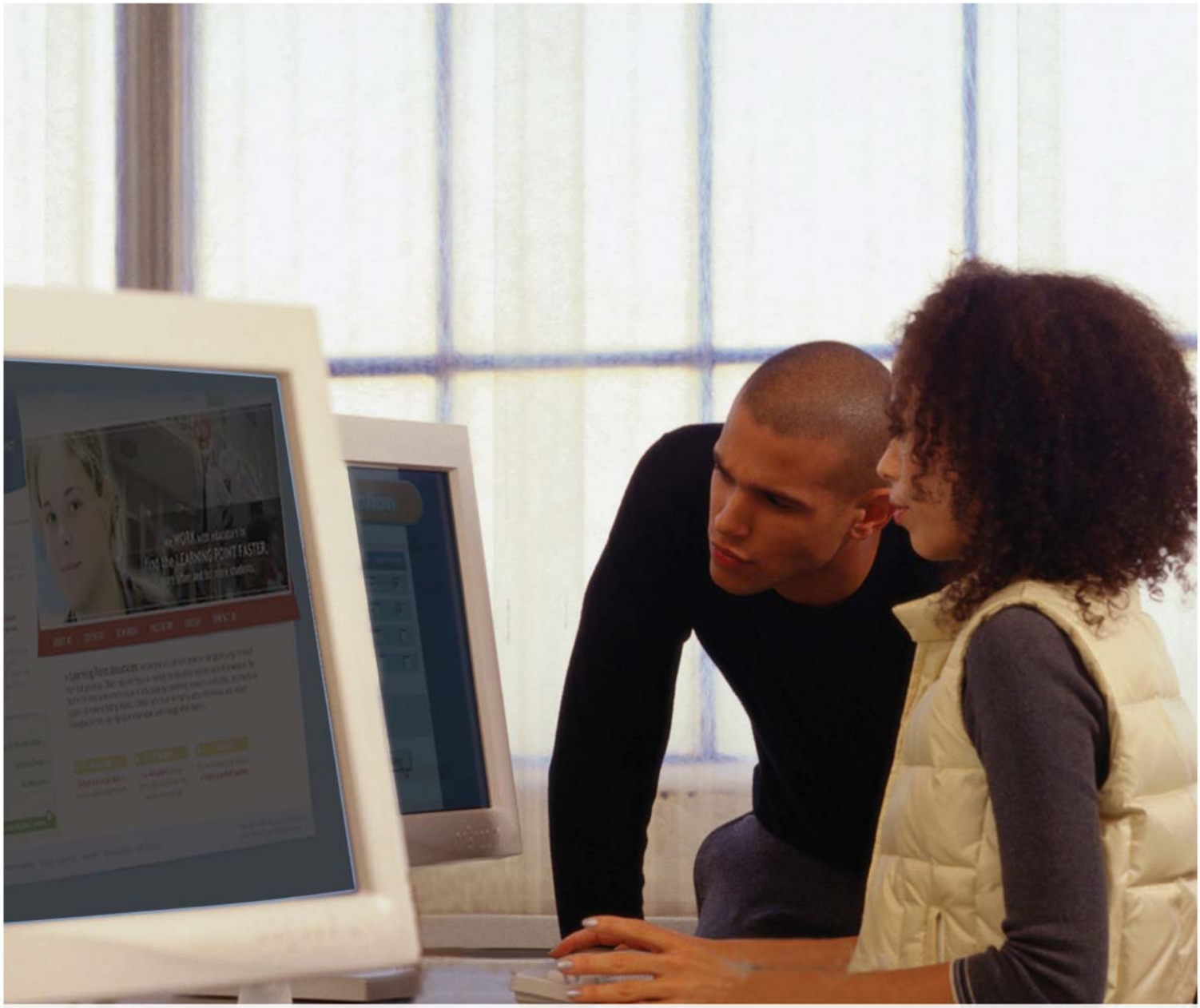

VHS inc.

Virtual High School Program Evaluation

2006–07

LEARNING POINT Associates®

Virtual High School Program Evaluation 2006–07

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Submitted to

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Virtual High School

By

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Contents

Chapter 1: An Overview of the Virtual High School Program in 2006–07

The Virtual High School Global Consortium (VHS) is a nonprofit collaborative of high schools that offers full-semester, yearlong, and summer school courses online to high school students. The vision of VHS as described on its website is "to be the leader in online education by working collaboratively with high schools to offer the highest quality courses for students and teachers" (www.govhs.org). During the 2006–07 school year, VHS offered 150 online courses to 8,139 students in 336 member schools.

The VHS program evaluation is conducted annually by Learning Point Associates to measure VHS's progress toward meeting program goals. Data collected as part of the program evaluation process are used in the development of the VHS Strategic Plan to determine areas of focus for the following year. The current program evaluation covers the 2006–07 school year. Performance is measured against stated goals and performance in previous years. New goals for the upcoming year are defined by the VHS design team based on areas in need of improvement. The questions addressed by this year's program evaluation are as follows:

Question 1: What are the characteristics of VHS's member schools, and where is VHS experiencing growth in its member base?

Question 2: To what extent did VHS experience growth in terms of course offerings, course capacity, and student enrollment in 2006–07?

Question 3: Are VHS courses consistent in their passing rates across different course types and school demographic characteristics?

Question 4: How satisfied are VHS customers with the quality of VHS courses and instruction?

Question 5: What are the benefits of VHS participation to students, teachers, and schools?

Question 6: How feasible is VHS membership and participation for schools and districts?

Question 7: How effective is VHS training and professional development for preparing teachers for online instruction?

Question 8: How satisfied are VHS customers with VHS services and communications?

VHS Operations

At the heart of the program is the VHS exchange model, in which schools trade time of their teachers for student access to VHS courses. When a teacher from a school instructs a single course in the VHS network, the school receives a certain number of slots (or "seats") in any of the courses that the VHS network offers. The number of seats each school receives depends on its type of VHS membership (the variations in memberships will be described in more detail in Chapter 2). Therefore, this model allows a school to provide numerous courses to its students in

exchange for assigning a single teacher to teach a single VHS course. These courses can supplement school offerings, providing the opportunity for students to take classes in which their teachers do not have expertise or for which there is not enough interest among the student body to schedule a full class.

Local Management of Online Learning

In addition to providing a VHS teacher, each school designates a local site coordinator to assist with the management of online learning. The site coordinator is typically responsible for managing course materials for students, monitoring student grades, and serving as intermediaries between students and teachers. The site coordinator also acts as the liaison to the VHS registrar in matters of student enrollment, withdrawal, and grades. VHS conducts the site coordinator orientation (SCO), a four-week online training course for site coordinators to learn VHS policies and procedures and the skills they need to manage online learning at their school.

Additional school responsibilities typically include recruiting students, providing guidance to students about what courses to take, and providing time and equipment for students and teachers to work on their VHS courses. In light of these responsibilities, the evaluation examined the feasibility of maintaining an online learning program.

Course Development

VHS offers courses in nine curriculum areas and four levels. A VHS curriculum coordinator oversees course development to assure adherence to the following VHS course standards (Virtual High School, n.d.):

- **Instructor-Led—**The VHS online pedagogy standards call for clear and consistent teacher presence as part of the online course delivery.
- **Student-Centered—**The VHS design and delivery standards call for an instructional style in which instructors serve as facilitators and educational coaches, designing challenging activities and providing effective guidance and quality feedback to students.
- **Collaborative—**All VHS courses contain small-group activities and team projects for which students must collaborate to foster an online community of learners.
- **Asynchronously Scheduled—**To accommodate student schedules and provide optimal flexibility across time zones, all VHS courses are scheduled (students must complete established activities within a given time frame), but courses are scheduled asynchronously so that students can access and work on their courses 24 hours per day, seven days per week.
- **Foster 21st Century Learning Skills—**Online courses should fully utilize the medium to develop effective online communication and interpersonal skills, collaboration and team-building skills, and inventive thinking skills, such as creativity, problem solving, and critical thinking.

The evaluation examined participant ratings of course quality and benefits of participation in accordance with these standards.

Professional Development and Mentoring

VHS provides its teachers with professional development and mentoring to promote effective online facilitation. All new VHS teachers participate in the NetCourse Instructional Methodologies (NIM), a 10-week course offered via the Internet. NIM was designed to prepare face-to-face classroom teachers to become online course instructors. It introduces the pedagogy, methodology, and moderation techniques, along with technical skills, that teachers need to effectively teach an online course (Virtual High School, n.d.). The content of the NIM course reflected the following best practices for online pedagogy (National Education Association, n.d.):

- Engaging in frequent and timely interactions with students.
- Setting clear expectations.
- Fostering an active learning community.
- Promoting student collaboration.
- Providing timely feedback on student work.

During a teacher's first semester as a facilitator, an expert VHS teacher serves as a mentor. The role of this mentor is to oversee the quality of facilitation and to provide feedback and support as necessary. In addition to mentoring, all teachers had access to the Community of Virtual Educators (COVE), a centralized area for online teachers to collaborate on best practices. COVE contained "hot topics" to help VHS teachers with the Blackboard online learning platform. It also contained a discussion board through which teachers could share their suggestions with their peers and get feedback. In addition, COVE contained professional development opportunities to help teachers stay current with the latest tools and techniques for online classroom management (C. Ribeiro, personal communication, February 14, 2008).

One focus of the evaluation is whether this professional development and mentoring was effective in preparing teachers to facilitate online courses.

VHS Support Services

VHS provides several types of services that assist schools with management of online learning. These include 24-hour technical support for both site coordinators and teachers, periodic communications and announcements about available student learning opportunities, and administrative support for creating and accessing student accounts, filing and obtaining grade reports, and dropping students. One focus of the evaluation was whether customers in 2006–07 were satisfied with their level of support from VHS.

Evaluation Methods

In support of the VHS mission, this evaluation report compiles and reviews data on the quality of course instruction, professional development, and membership services during the performance period. Program evaluation indicators include data from three sources. One source is the annual surveys of VHS customers, including superintendents, principals, VHS teachers, and site coordinators. In addition, VHS administered student surveys at the end of each semester. A

second source is VHS programmatic data, encompassing VHS records of school membership in VHS, course registration and grades, and teacher evaluations. A final source of data is the participation and passing rates for students in Advanced Placement (AP) courses, as reported by VHS member schools. VHS provided all of these data to Learning Point Associates to analyze. Specific measures based on these data sources are the following, organized by order of presentation in the report:

- VHS membership growth
  - Growth in VHS school membership and enrollment, disaggregated by membership type and school demographics
  - Utilization of available student seats
  - Retention rates of member schools
- Course enrollment
  - Course offerings, by curriculum area and by course level
  - Number of course sections, by curriculum area and by course level
  - Student enrollment, by curriculum area and by course level
- Passing rates
  - Course passing rates, by curriculum area and course level
  - Number of students taking and passing AP exams
- Ratings of course quality and teaching quality
- Professional development quality
  - Ratings of effectiveness of professional development NetCourse
  - Ratings of effectiveness of VHS mentoring and ongoing support
  - Percent of teachers supervised by faculty advisors after first teaching semester
- Program and services quality
  - Ratings of feasibility of participation
  - Ratings of benefits of school participation
  - Ratings of service quality
  - Ratings of effectiveness of VHS communications and responsiveness

School Demographic Data

The demographic profile of VHS member schools was provided by reference to the Common Core of Data (CCD) for 2004–05 (National Center for Education Statistics, n.d.). The CCD provided data about locale (i.e., urban, rural, or suburban), school size (i.e., school enrollment), and Title I status. There were 416 schools affiliated with VHS during 2006–07 (not all of which enrolled students, as shall be explained). Of these, demographic profiles of 334 schools (81 percent) were identified in the CCD. The remaining 82 schools may be categorized as follows:

31 were international schools; 16 were districts, consortia, or other nonschool entities; 17 were private schools listed in the CCD without demographic data; and 18 were schools whose names did not appear in the CCD.

Customer Surveys

VHS developed its own customer surveys in reference to the topic areas of educational quality, professional development quality, and service quality. VHS administered these customer surveys each semester to students and each year to teachers, principals, site coordinators, and superintendents. All surveys were administered online, although VHS sent paper copies of surveys to principals and superintendents who did not complete their online survey. The response rates for the 2006–07 rates are reported in Table 1. Teachers had the highest response rate at 50 percent, and superintendents had the lowest response rate (20 percent). A reasonable explanation for the low response rates among principals and superintendents is the fact that they may feel that the responsibility for offering opinions about the program rests with those staff who are most involved with it at their school, namely, teachers and site coordinators. Therefore, those who replied may represent those who have the strongest opinions about the program or who feel the strongest personal responsibility for their school's or district's participation.

Table 1. Survey Response Rates by Respondent Category (2006–07)

Respondent	Sent (*N*)	Received (*N*)	Response Rate
Teachers	217	109	50%
Site coordinators	453	177	39%
Principals	332	80	24%
Superintendents	244	50	20%
Students	8,139	2,086	26%

Note: Student response rates were based on a combination of surveys administered in the fall and spring semesters.

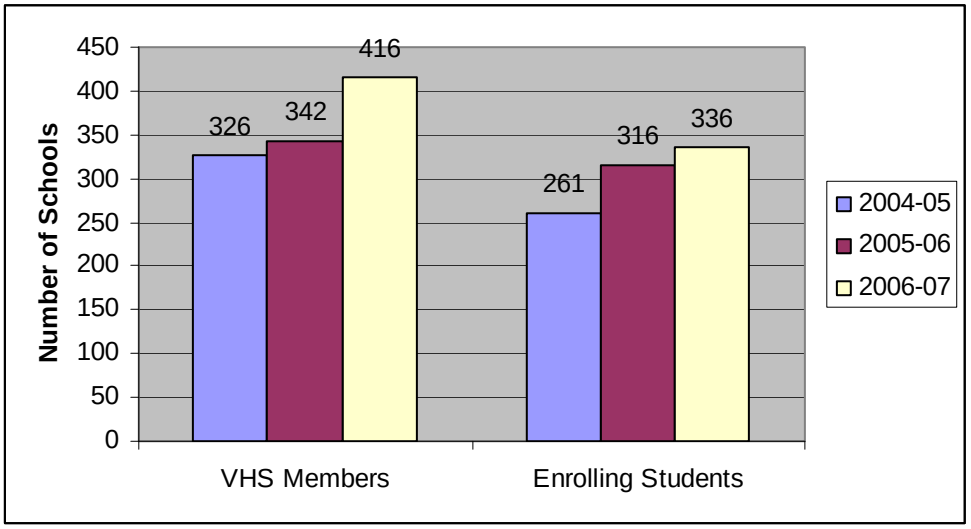
Survey Analysis. In general, survey data are reported as response frequencies (i.e., the proportion of respondents who selected a particular response for a particular question). On the student survey, however, responses to a cluster of seven items related to course facilitation were combined to form a single scale score. Therefore, instead of reporting each item separately, it is possible to report the single score for this construct. For this reason, it is possible to examine the mean level of course facilitation (as reported by students) in courses of different levels and different curriculum areas. The validity of combining these items into a single scale was confirmed with a Rasch modeling technique.

Chapter 2: VHS Member Schools

The purpose of this chapter is to describe the overall trends in VHS membership as well as to describe the characteristics of VHS member schools over time. VHS member schools are described in terms of their type of VHS membership as well as their demographic characteristics. These characteristics are examined in two ways: in terms of the proportion of different types of schools and the proportion of students associated with each school type.

Overall, school membership has increased steadily in the past three years (see Figure 1). In 2006–07, there were 416 schools affiliated with VHS, a 23 percent increase from 2005–06 and a 26 percent increase from 2004–05. However, not all of these schools enrolled students in each year. The discrepancy between VHS member schools and schools enrolling students has widened somewhat since the previous year. Whereas in 2005–06, 92 percent of member schools enrolled students, in 2006–07, 81 percent of member schools enrolled students. The reason for this decrease is not readily discernable from the school data. The number of schools enrolling students has also increased during the past three years and now stands at 336 schools. This is a 6 percent increase from the previous year and a 26 percent increase from 2004–05.

Figure 1. Number of Schools Affiliating With and Enrolling Students in VHS



The analyses that follow describe the number of VHS schools and enrolled VHS students by school-level characteristics such as membership type and demographics. The analyses that describe the number of schools are based upon the full set of 416 member schools.

School Membership Type

This section explores the prevalence of schools of different VHS membership types, their level of student enrollment, and retention of membership. Schools participating in VHS may do so under different types of membership. Because these membership categories differ in terms of teaching commitments and available seats, they may influence the level of participation and

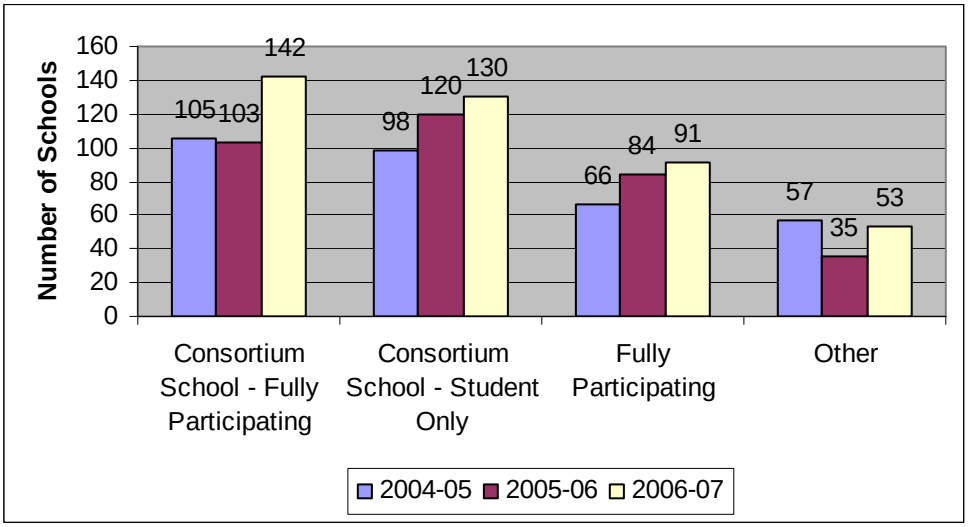
likelihood of school retention. The different types of memberships may be summarized as follows:

- *Fully participating schools* pay an annual membership fee and barter the time of one or more of their teachers in exchange for seats in VHS courses. In other words, a teacher from the school will teach a VHS course, and in return, the school receives 50 enrollment slots (or seats) per year.
- *Small schools* pay a smaller annual membership fee than fully participating schools and receive a total of 30 seats per year.
- *Student-only schools* purchase 20 seats from VHS based on an annual membership fee without bartering the time of a teacher.
- *Consortium schools* are specific groups of schools, such as from a district, that pool their seats together and decide how to apportion them among themselves. A *fully participating consortium school* has one or more of its teachers facilitating a VHS course. A *student-only consortium school* receives seats by virtue of its membership in the consortium but does not have a teacher facilitating a VHS course.
- Some schools purchase a small number of *individual seats* on an as-needed basis, without a membership fee.

Because of the relatively low prevalence of small schools (4 percent), student-only schools (3 percent), schools purchasing individual seats (8 percent), and schools with no membership information (2 percent), these affiliations will be grouped together under the label of "Other."

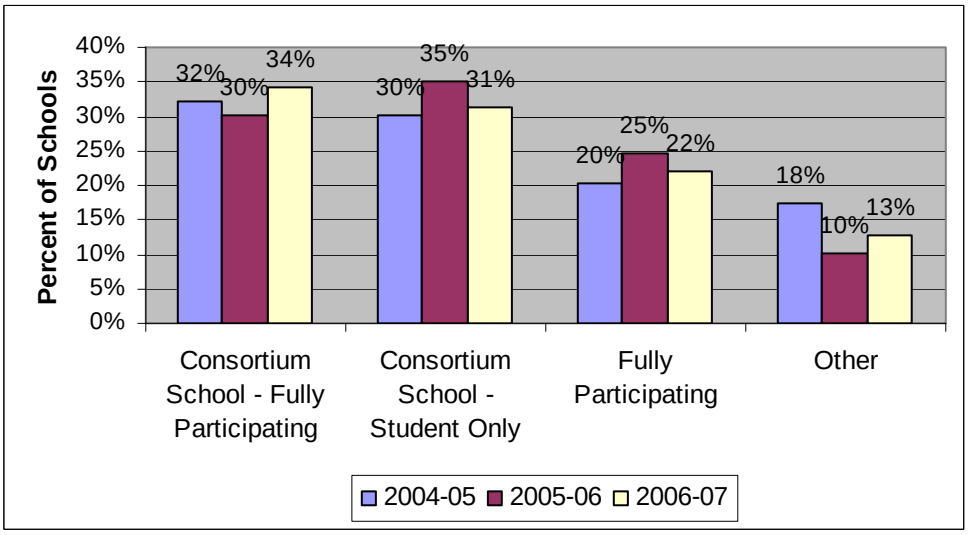
Number of Schools by Membership Type. The number of schools increased in each membership category (see Figure 2). The sharpest increase was for fully participating consortium schools, which increased by 37 (to a total of 140) from the year before. The number of student-only consortium schools (129) and fully participating schools (91) each increased modestly, exceeding the 2005–06 total by fewer than 10 schools. After a dip from 57 in 2005–06, the number of schools in the "Other" category rose sharply to 53 schools in 2006–07, after a drop down to 35 schools the previous year.

Figure 2. Number of Schools of Different Membership Types by Year



Proportion of Schools by Membership Type. The proportions of schools in all categories of school membership changed by three or four percentage points compared with the previous year, as described in Figure 3. During 2006–07, there were somewhat more fully participating consortium schools than student-only ones. The total proportion of consortium schools has remained nearly the same as the previous year and now stands at 64 percent of all schools. Fully participating schools comprise slightly more than one fifth of all schools. Finally, the "Other" category has increased to 13 percent of schools, based in part on the increase in the number of small schools and schools purchasing individual seats.

Figure 3. Proportion of Schools of Different Membership Types by Year

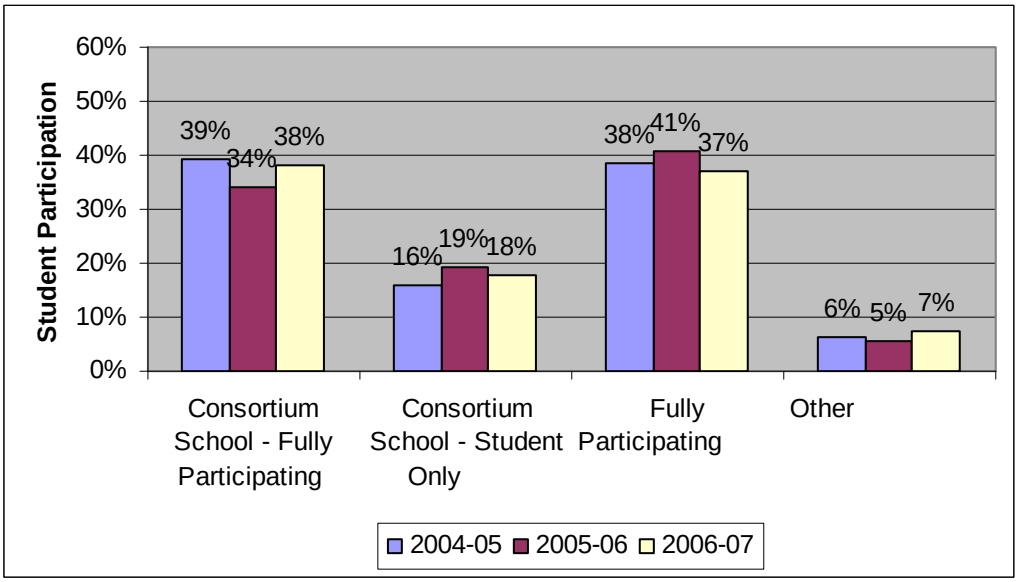


Note: 2004–05 *N* = 326; 2005–06 *N* = 342; 2006–07 *N* = 416.

Proportion of Students by Membership Type. The proportion of enrolled students from schools of different membership types exhibits a striking difference, as Figure 4 shows. Three quarters of all students come from either fully participating consortium schools or fully

participating schools (about evenly split between in and not in consortia). Less than one fifth come from student-only consortium schools. The difference can be readily understood: a fully participating school has access to 50 seats per year, and a fully participating consortium school has the advantage of having its consortium's VHS teacher being at the school to serve as an advocate for the program. Student-only schools in the consortium schools have only a site coordinator.

Figure 4. Proportion of Enrollees Associated With Each Membership Type by Year



Note: 2004–05 *N* = 5,416; 2005–06 *N* = 7,015; 2006–07 *N* = 8,128.

Membership Retention

Because the membership categories are different somewhat in their level of obligation (in terms of fee and teacher time) and benefit (in terms of available seats), it is important to examine the extent to which schools of different types are retained. Before examining these findings, it is necessary to describe overall membership retention. This analysis was conducted by comparing the proportion of schools in both 2004–05 and 2005–06 that remained VHS member schools in 2006–07. As summarized in Table 1, of the 342 member schools in 2005–06, 295 remained members in 2006–07, for a two-year retention rate of 86 percent. Looking at the three-year retention rate, of the 326 schools that were members in 2004–05, 253 or 78 percent remained members in 2006–07.

Table 1. VHS School Retention

Retention Period	Span	No. Members at Start	No. Members in 2006–07	Percent Retained
2004–05 to 2006–07	Three years	326	253	77.6%
2005–06 to 2006–07	Two years	342	295	86.2%

The three-year retention of rates of schools of different membership types are summarized in Table 2. One clear finding is that the consortium schools have higher retention rates than the fully participating or "Other" schools do. Whereas two thirds of the fully participating schools continued to affiliate with VHS after two years, between 84 percent and 87 percent of consortium schools continued to affiliate. Those consortium schools that were retained almost exclusively remained consortium schools two years later and almost never changed to fully participating or "Other" forms of membership. There are several possible reasons for this marked difference. Perhaps the lower cost of consortium membership made it more feasible for a school to remain in the program even during periods in which student enrollment was low. Perhaps consortia are initiated with district coordination and therefore benefit from a greater degree of support. These reasons are speculative and await future investigation.

Table 2. Two-Year Retention Rates of Schools of Different Membership Types

	Member Status in 2006–07					
Member Status in 2004–05	**Discontinued**	**Consortium School—Fully Participating**	**Consortium School—Student Only**	**Fully Participating**	**Other**	**Total Retained**
Consortium school—fully participating	16.2%	71.4%	11.4%	1.0%	0.0%	83.8%
Consortium school—student only	13.3%	13.3%	73.5%	0.0%	0.0%	86.8%
Fully participating	33.3%	4.5%	0.0%	53.0%	9.1%	66.6%
Other	36.8%	14.0%	3.5%	24.6%	21.1%	63.2%

Growth According to School Demographics

Schools participating in VHS vary greatly in their demographic profiles. For this reason, VHS growth was examined according to several demographic characteristics of VHS schools:

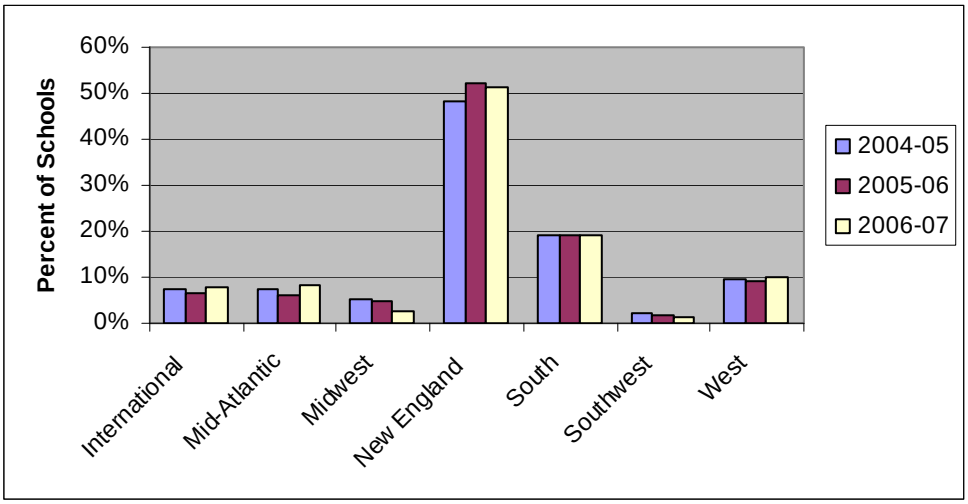
- **Region—**Every member school was categorized into one of six regions of the United States (along with a seventh category for international schools). The classification was based on the "Regions of the United States" section of the *U.S. Diplomatic Mission to Germany* website (for more information, see http://usa.usembassy.de/travel-regions.htm). Sixteen schools were missing data about school location and were excluded from this analysis.
- **Locale—**Locale refers to the degree of urbanicity of VHS schools. Locale was divided into three categories: urban, suburban, and rural.
- **Title I status—**Title I funds are provided by the federal government to high-poverty schools and districts to provide educational services to students who are economically disadvantaged or at risk of failing to meet state standards. For this reason, whether a school qualifies for Title I funding indicates that there is a significant proportion of its students who are economically disadvantaged.

- **School size—**School size was determined by total student enrollment. Schools with 1,000 or more students were classified as large, schools with 500–999 students were classified as medium, and schools with fewer than 500 students were classified as small.

School Region

The location of 400 out of 416 VHS member schools in 2006–07 (96 percent) was determined based on VHS records. VHS schools were located in 27 different states in every region of the United States, as shown in Figure 5, which describes the geographic distribution of VHS schools according to regions of the United States. Schools from the New England area comprised about half of the VHS member schools, and the overall pattern remained relatively unchanged during the three years.

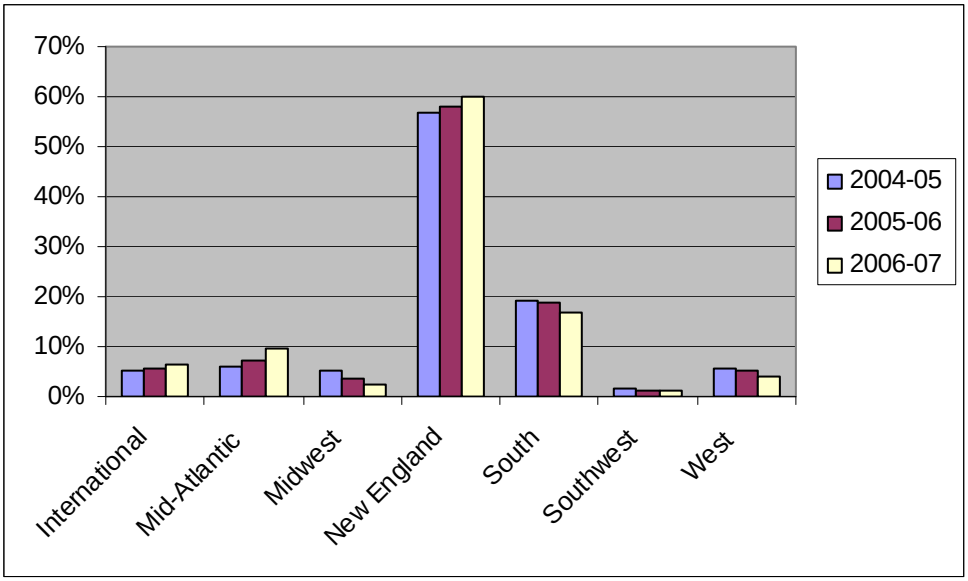
Figure 5. School Membership by Region and by Year



Note: 2004–05 *N* = 318; 2005–06 *N* = 336; 2006–07 *N* = 400.

When considering the proportion of students enrolled from schools in each region, the picture is mostly the same, except the preponderance of New England schools is more pronounced. Specifically, 60 percent of students came from New England schools in 2006–07 (see Figure 6).

Figure 6. Proportion of Students by Region

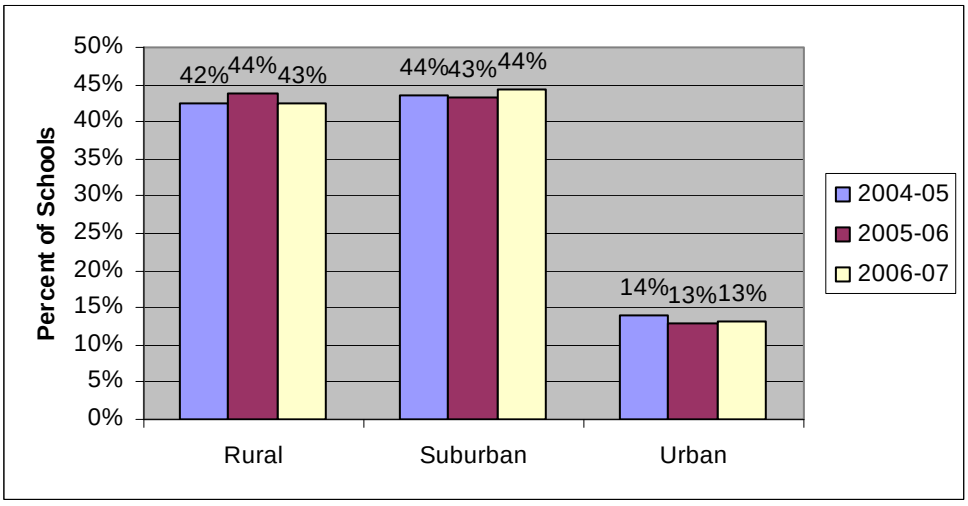


Note: 2004–05 *N* = 4,936; 2005–06 *N* = 6,214; 2006–07 *N* = 8,128.

School Locale

The locale of 334 of the 416 VHS member schools in 2006–07 (80 percent of all schools) was identified in the CCD. As displayed in Figure 7, most VHS member schools are in rural or suburban locales, with each category encompassing 43 percent and 44 percent of all schools, respectively. These proportions were virtually unchanged during the past three years.

Figure 7. Proportion of VHS Schools by Locale

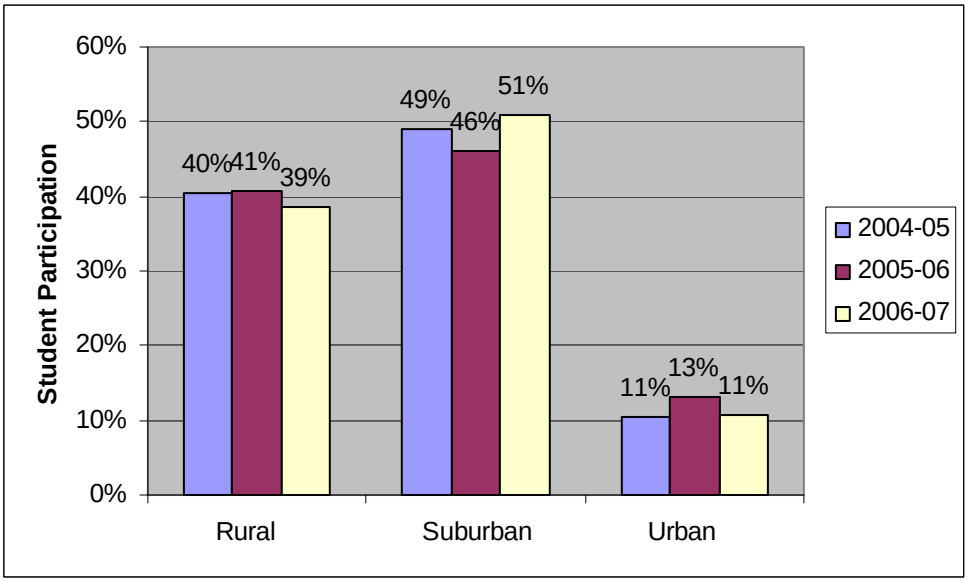


Note: 2004–05 *N* = 271; 2005–06 *N* = 293; 2006–07 *N* = 334.

When looking at the proportion of students enrolled in VHS, the balance is tipped more clearly toward suburban schools. As displayed in Figure 8, slightly more than half of all VHS students

came from suburban schools during 2006–07, five points more than in 2005–06, and three points more than in 2004–05.

Figure 8. Proportion of Students by Locale

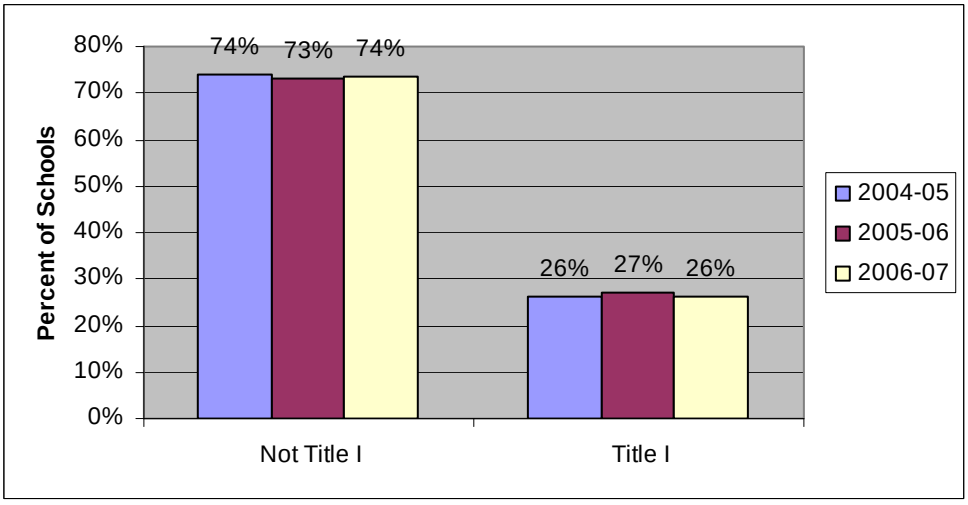


Note: 2004–05 *N* = 4,646; 2005–06 *N* = 6,060; 2006–07 *N* = 6,809.

Title I Schools

The Title I eligibility status of 322 VHS schools (77 percent of the total) was identified in the CCD (12 schools that were found in the CCD were missing data regarding Title I status). The proportion of these schools with Title I eligibility has remained stable over time, with 26 percent eligible in 2004–05, 27 percent eligible in 2005–06, and 26 percent eligible again in 2006–07 (see Figure 9).

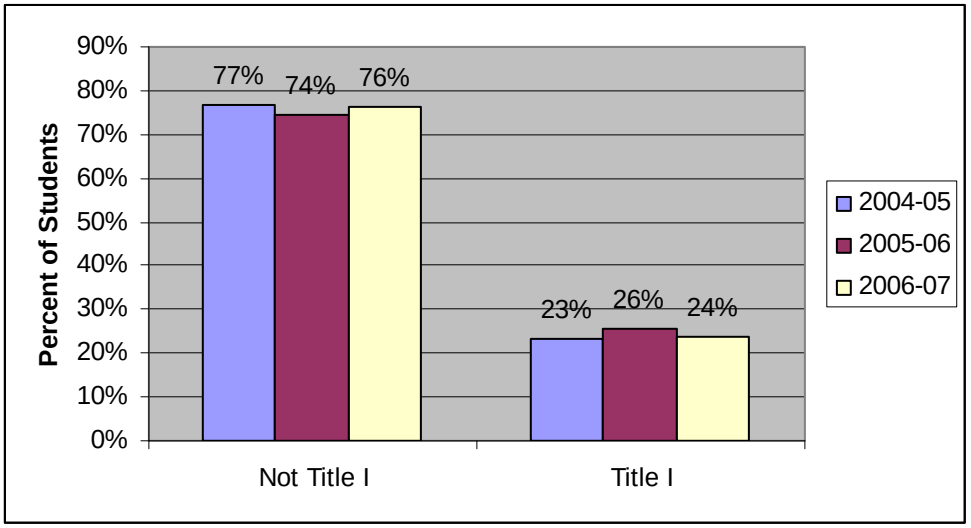
Figure 9. Proportion of Schools by Title I Status



Note: 2004–05 *N* = 264; 2005–06 *N* = 288; 2006–07 *N* = 322.

The level of student enrollment, however, was relatively lower for Title I than non-Title I schools, as displayed in Figure 10. Namely, students from Title I schools constituted about 19 percent of all VHS students in 2006–07, down from about 23 percent in the preceding two years (based on data from 81 percent of all enrolled students in 2006–07). This indicates that Title I schools enrolled students at slightly lower rates than non-Title I schools.

Figure 10. Proportion of Students by Title I Status

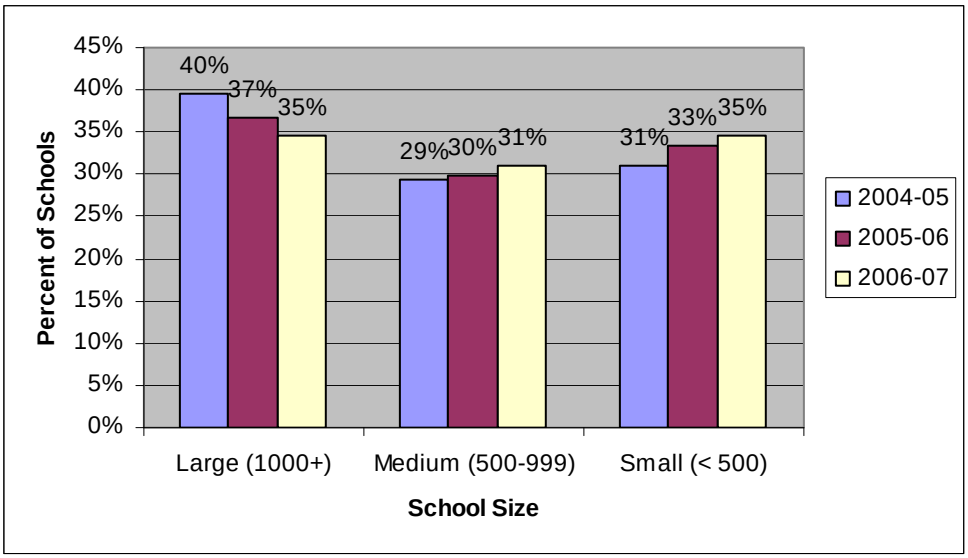


Note: 2004–05 *N* = 4,520; 2005–06 *N* = 5,894; 2006–07 *N* = 6,588.

School Size

The CCD was used to determine the total school enrollment of 333 participating VHS schools (one of the schools found in the CCD was missing data on total school enrollment). Based on total school enrollment, each school was categorized as large, medium, and small (as described in the introduction to this section). VHS schools were distributed fairly evenly among these three size categories, with the proportion of small schools growing and the proportion of large schools falling during the past three years (see Figure 11).

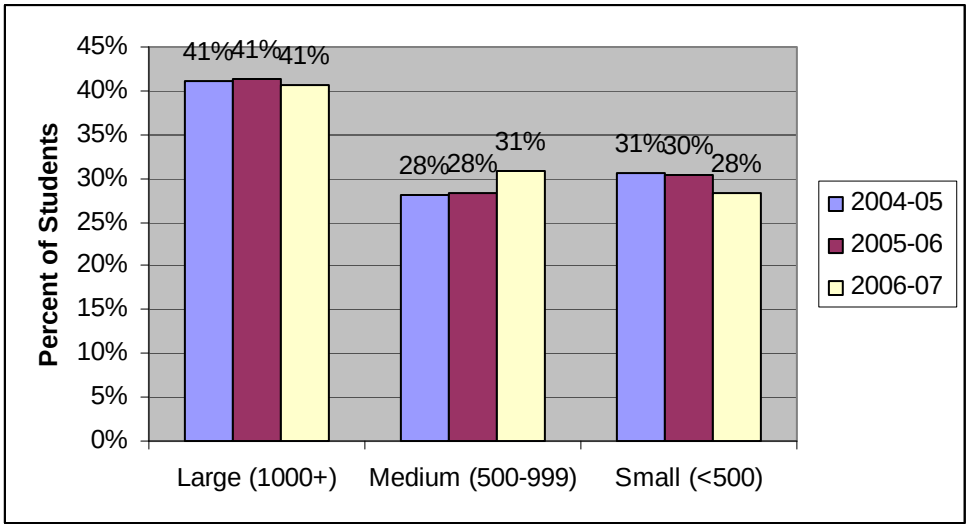
Figure 11. Proportion of VHS Schools of Different Sizes by Year



Note: 2004–05 *N* = 268; 2005–06 *N* = 291; 2006–07 *N* = 333.

The relative proportion of student enrollment from schools of different sizes differs slightly from the overall proportions of these schools (see Figure 12). In 2006–07, the proportion of *students* from large schools (41 percent) somewhat exceeded the overall proportion of large *schools* (35 percent); this proportion of enrollment has remained steady despite the decrease in proportion of large schools over time. Conversely, although the proportion of small schools has grown, their proportion of enrolled students has fallen slightly (from 31 percent in 2004–05 to 28 percent in 2006–07). This is not surprising in light of the fact that large schools by definition have more students to enroll.

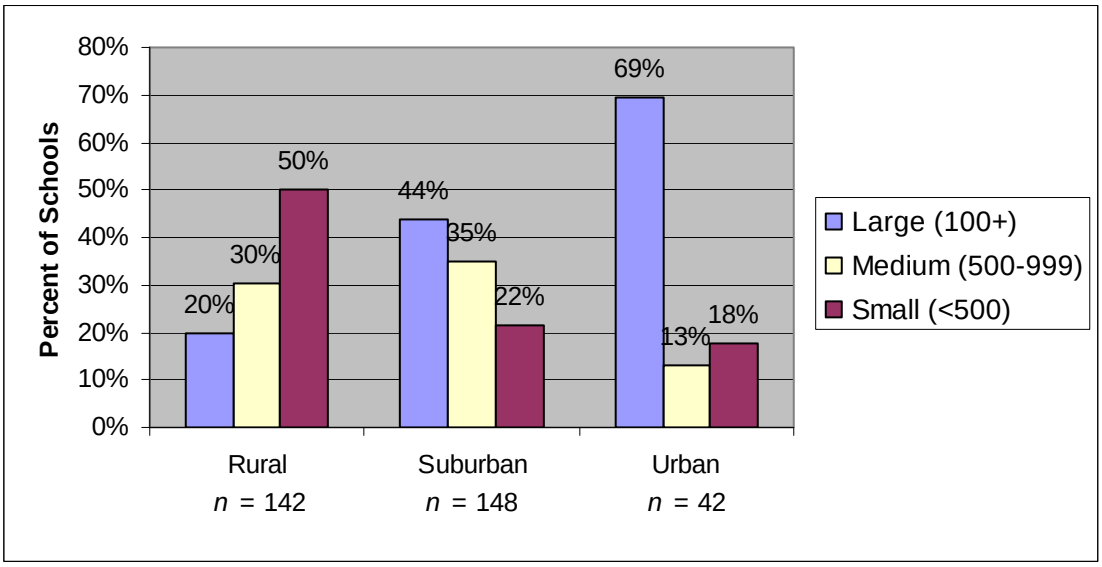
Figure 12. Proportion of Students Enrolled in Schools of Different Sizes by Year



Note: 2004–05 *N* = 4,596; 2005–06 *N* = 6,010; 2006–07 *N* = 6,799.

School Participation by School Size and Locale. Looking at the intersection of school size and locale provides a clearer picture of the typical VHS school (see Figure 13). For the 2006–07 school year, about half of all rural schools were small schools, and more than two thirds of all urban schools were large schools. Suburban schools were more evenly divided among large, medium, and small schools (44 percent, 35 percent, and 22 percent, respectively).

Figure 13. Proportion of Schools of Different Locales and Sizes in 2006–07 (*N* = 333)



Summary

The number of VHS member schools increased strongly in 2006–07 relative to the previous year (23 percent) although the number of schools actually enrolling students increased modestly (6 percent). The proportion of fully participating consortium schools has grown, and this membership category encompasses the largest number of schools (34 percent). Consortium schools (student only and fully participating) comprise 65 percent of all VHS member schools. Fully participating schools, whether consortium members or not, comprise 75 percent of all enrolled students. Three-year retention rates among all VHS member schools stand at 78 percent but are higher for consortium schools than for schools of other membership types.

In terms of school demographics, there were no major changes in school membership or student enrollments except for school size. School membership is now fairly evenly distributed among small, medium, and large schools. Most VHS schools are either suburban or rural, and the majority of VHS students (51 percent) now come from suburban schools. Only a small proportion of VHS schools (13 percent) are urban, and an even smaller proportion of enrollees (11 percent) come from urban schools. Although VHS member schools are present in every region of the country, more than half of its schools are located in New England. More than one quarter of its schools qualify for Title I funds, although such schools enroll less than one fifth of all students. VHS schools are evenly distributed among categories of large, medium, and small schools although the plurality of students comes from large schools.

Chapter 3: Growth in Courses, Course Sections, and Student Enrollment

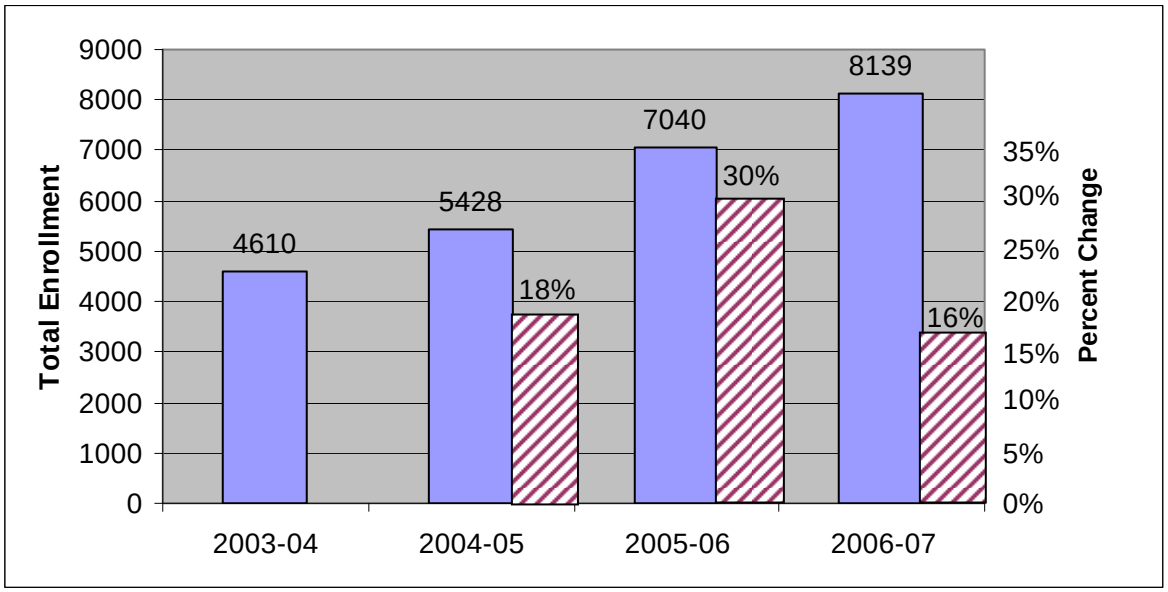
In the past two years, VHS has developed courses in a diverse range of curriculum areas and grade levels to serve the needs of its member schools. The purpose of this chapter is to describe growth in VHS course offerings, course capacity, and student enrollment. Moreover, this chapter describes where this growth is situated in terms of course levels and curriculum areas. The first section of this chapter describes overall growth in enrollment, course offerings, and course sections. The second section examines this growth by course level, and the third section examines growth by course curriculum area.

Overall Growth in Course Offerings, Course Sections, and Student Enrollment

This section describes the overall level of growth in student enrollment, courses, and course sections, as well as this growth's relationship to average class size. There is an important distinction between the terms "course" and "course section." A *course* has a unique name and belongs to a specific curriculum area (e.g., academic writing in the English area) and designated course level (e.g., regular). Courses typically are one semester in duration, except for AP courses that are one year long. A *course section* is the actual class that takes place during a particular semester with a particular teacher and group of students. There may be one or more course sections offered for a given course during a particular semester, depending on the popularity of the course.

Overall, enrollment in VHS courses continued to increase over time, as displayed in Figure 14. There were 8,139 students enrolled in 2006–07, an increase of 16 percent from the previous year and a 50 percent increase from the 2004–05 school year. The rate of growth was somewhat slower than in 2005–06, when enrollment grew by 30 percent from the previous year.

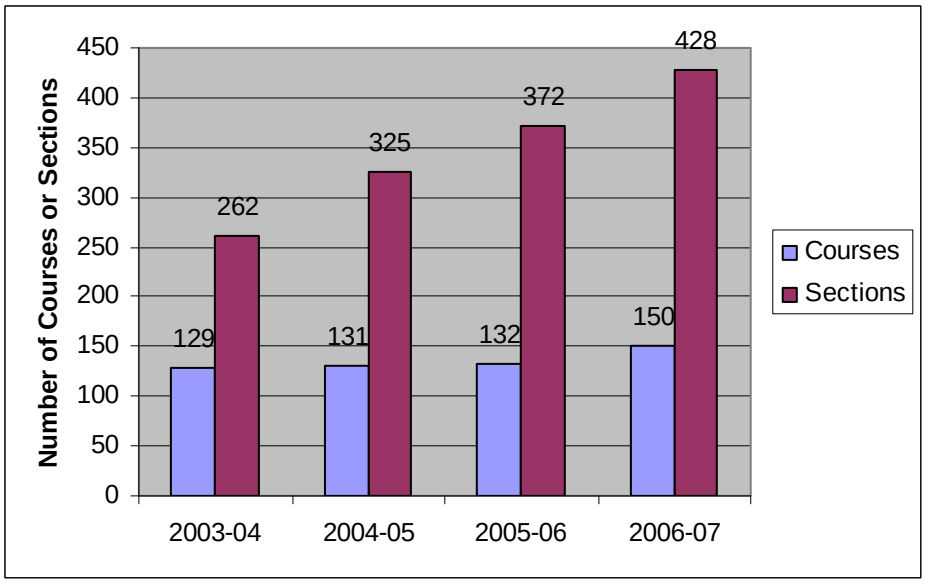
Figure 14. Total Student Enrollment in VHS Courses



Note: Data in this figure are based on enrollment after the drop/add period.

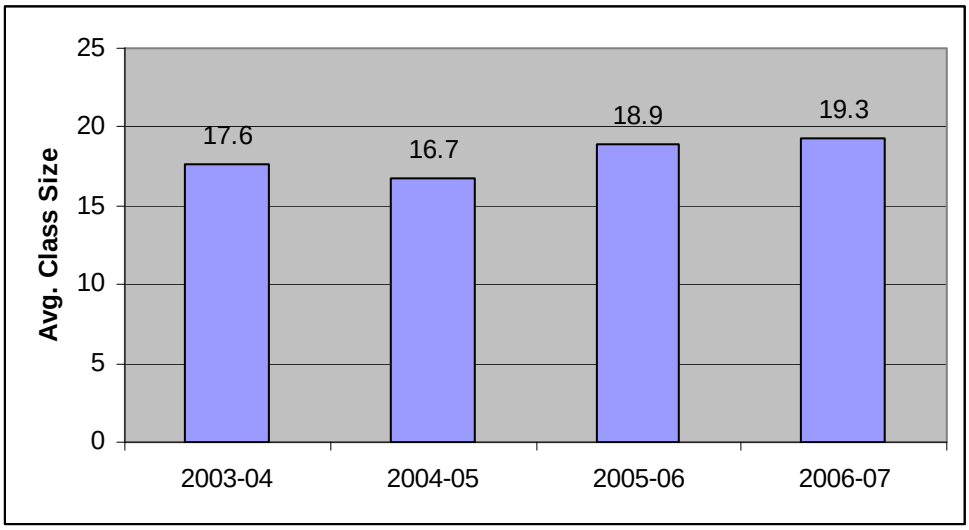
In 2006–07, VHS offered 150 different courses, an increase of 14 percent from the 132 courses offered the year before. The number of course sections increased to 428 sections, up by 15 percent from the year before, and 32 percent from 2004–05. Figure 15 displays the growth in courses and sections.

Figure 15. Number of VHS Courses and Sections by Year



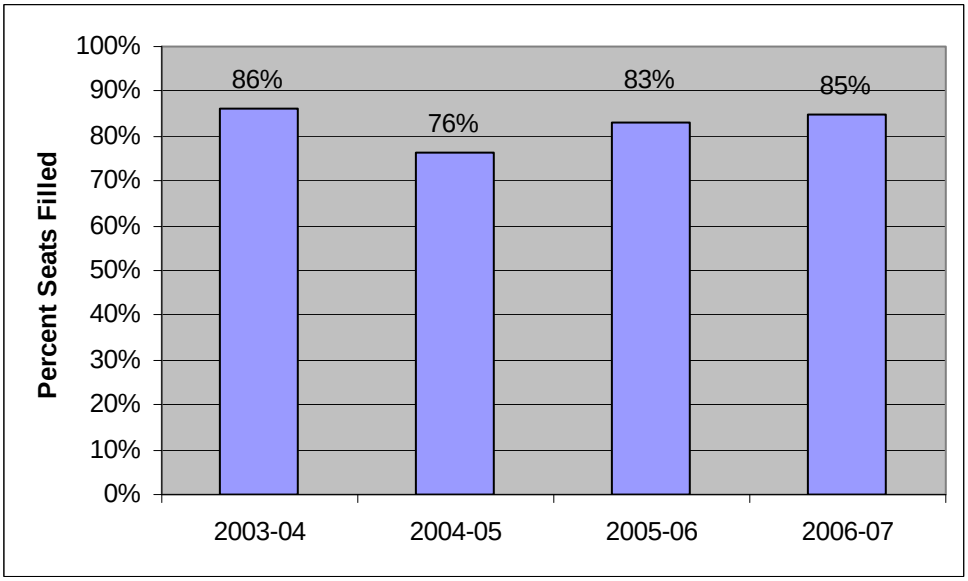
The growth in enrollment and in course sections has a combined effect on average class size (i.e., the average number of students per section). Average class size in 2006–07 was 19.3 students, which is a slight increase from the 18.9 of the previous year (see Figure 16).

Figure 16. Average Class Size by Year



A direct indicator of the supply and demand for seats is the proportion of the total available seats available to schools that are filled with students. This proportion was 85 percent in 2006–07, a slight increase from the 83 percent of the previous year (see Figure 17). The analysis of seat utilization cannot be broken down by course type because these data are connected to schools and not to courses. In fact, these data were not available on the school level, so no disaggregations by school type are possible either.

Figure 17. Seat Utilization Across Years



Overall, it appears that course capacity and course enrollment have each grown at a similar rate of about 15 percent per year, and that average class size has remained steady. The next two sections of this chapter repeat these analyses while disaggregating growth (in course and section

offerings, enrollment, and class size) by course level and curriculum area. The purpose of these sections is to determine whether growth in course capacity is well-matched to the locus of growth in course enrollments.

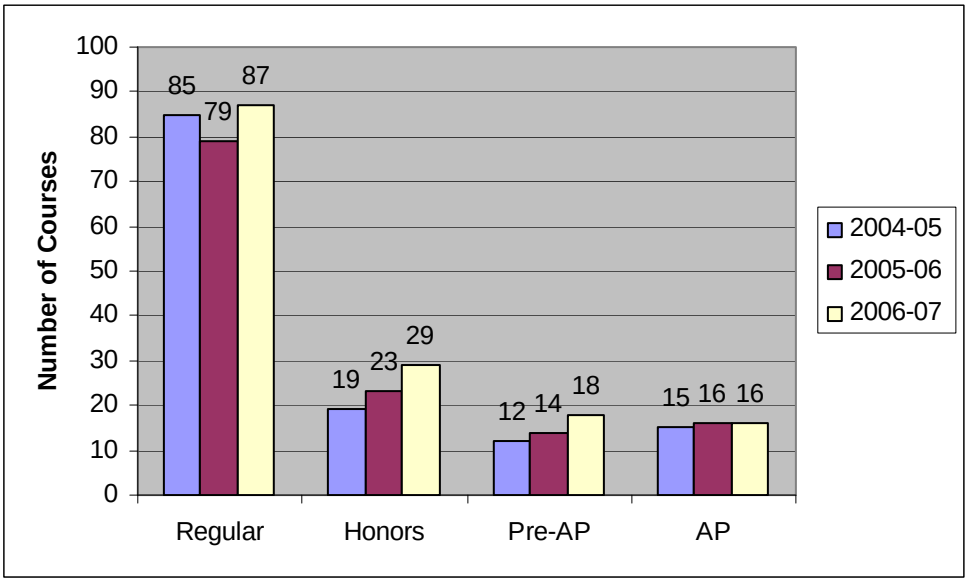
Growth in Course Capacity by Course Level

VHS offers four different levels of courses: regular, honors, pre-AP, and AP. The majority of courses are considered to be at a regular high school level. By contrast, honors courses are designed to be more academically challenging. The third course level, pre-AP, covers the knowledge and skills that are prerequisite to the AP level, such as active questioning, textual analysis, and higher level thinking. These pre-AP courses were designed to give students exposure to advanced study but at a slower pace so that students who are not in the honors track can succeed in them. Courses in these three levels are one semester in duration. Finally, VHS offered AP courses, which presented the content and skills necessary to prepare for the College Board's AP exam. Each AP course is one academic year in duration although students receive a separate grade and credit for each semester (i.e., fall, spring). According to VHS policy, students who enroll in AP classes are expected to take the AP exam.

Number of Courses and Sections Offered at Each Level

As described earlier in this chapter, the number of courses increased by 14 percent in 2006–07. As displayed in Figure 18, VHS added new courses at every level except for the AP level.

Figure 18. Number of Courses Offered at Different Levels



In every course level except pre-AP, VHS expanded the number of course sections. This is displayed in Figure 19 as the number of sections per level and in Figure 20 as the proportion of sections per level. The proportion of pre-AP sections dropped to 5 percent while the proportion of the other three levels grew slightly. The regular level was the most prevalent by far; it

accounted for 62 percent of all course sections. With these figures in mind, it is possible to examine course enrollments to observe whether or not they follow this trend.

Figure 19. Number of Sections Offered at Each Course Level by Year

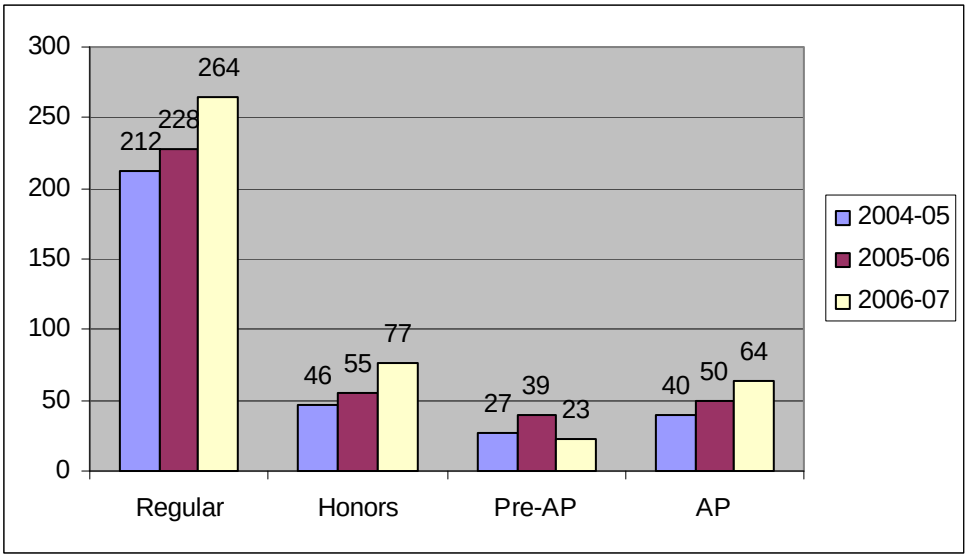
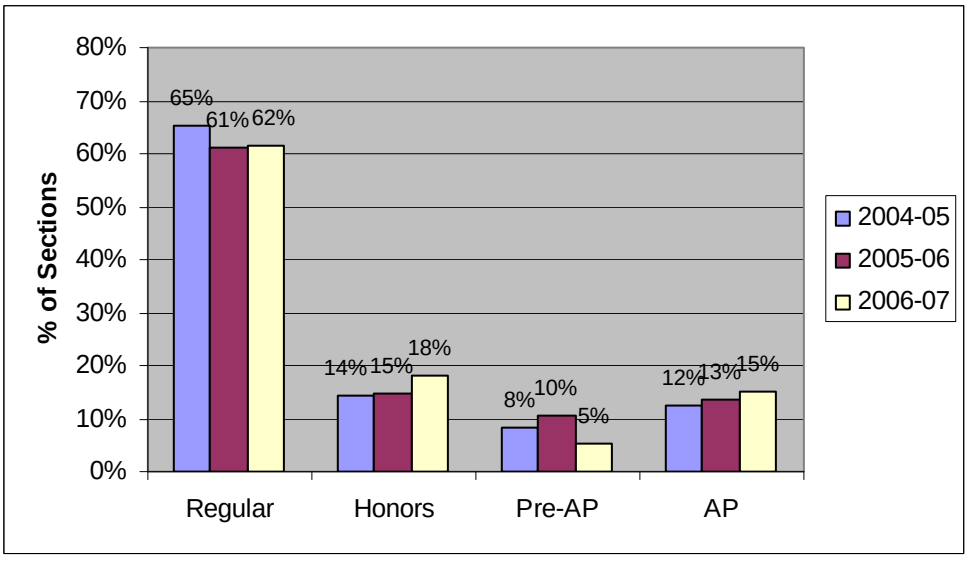


Figure 20. Proportion of Sections Offered at Different Course Levels by Year



Student Enrollment by Course Level

The growth in enrollments in courses of different levels is described in two ways: as the total number of students enrolled in each level per year (Figure 21) and as the proportion of total enrollment in each level (Figure 22). Both approaches to understanding the distribution of enrollment correspond to the pattern for the distribution of course sections. Namely, there is an upward trend for enrollments across three years for regular, honors, and AP courses, and no clear trend for pre-AP courses (which rose and then fell during the past three years). Nearly two thirds

of all students in 2006–07 were enrolled in regular courses, and honors and AP courses accounted for 17 percent and 15 percent of students; only 5 percent were enrolled in pre-AP courses. These proportions have remained fairly steady during the past three years although pre-AP enrollment has dropped by five points since last year. For all course levels in 2006–07, the proportion of enrollment is within one percentage point of the proportion of course sections. This indicates that there are no mismatches between capacity and enrollment.

Figure 21. Number of Students Enrolling in Different Course Levels by Year

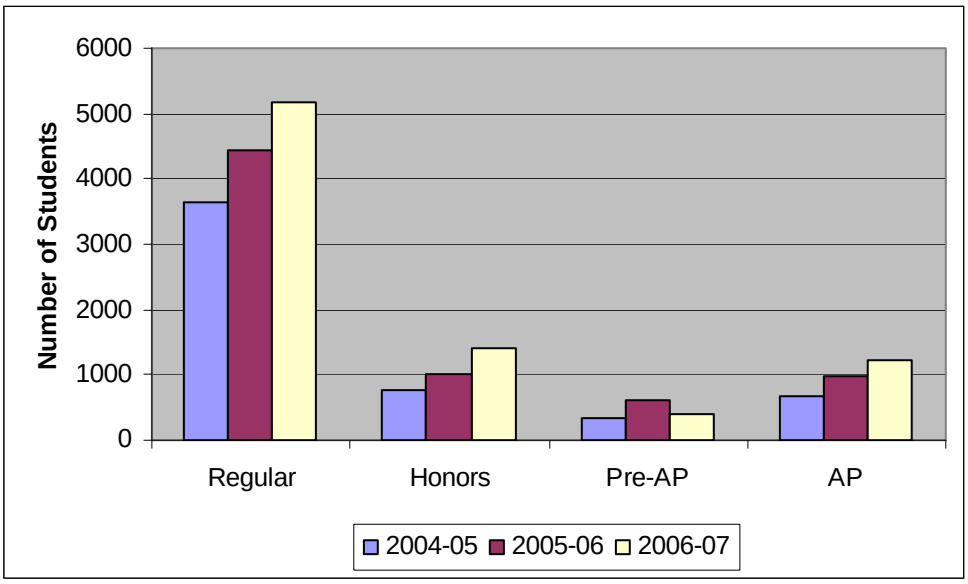
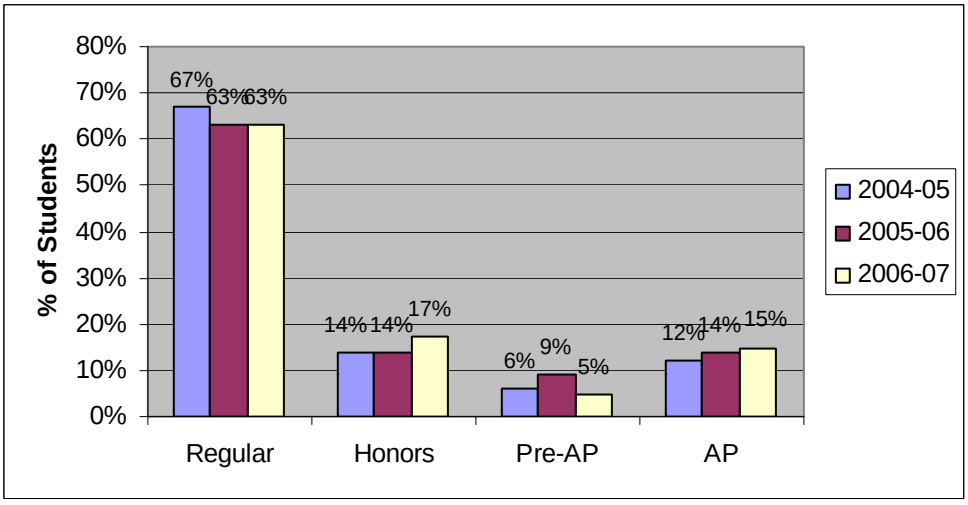


Figure 22. Proportion of Students Enrolling in Different Course Levels

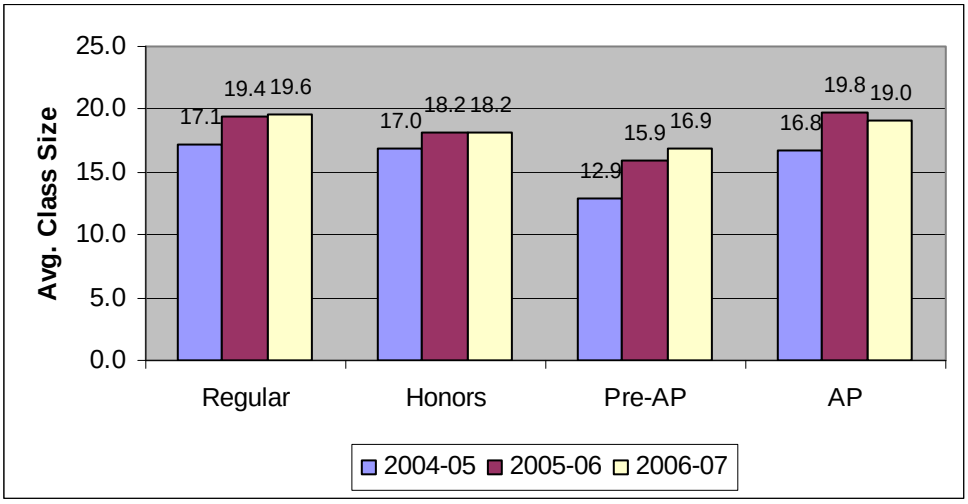


Average Class Size by Course Level

The decision regarding the number of course sections to offer is made by VHS in order to optimize course participation and efficient use of teacher resources. Because the online classes are designed to promote student collaboration, it is necessary to have a critical mass of students

to support group work. Across all course levels, average class size has remained steady since the previous year but has increased compared with 2004–05 (see Figure 23). The highest class size was in regular classes, which had about 20 students on average, and the lowest class size was for pre-AP classes, which had about 17 students on average.

Figure 23. Average Class Size by Course Level and by Year



Summary of Growth by Course Level

In summary, the proportion of course sections and enrolled students remained constant among regular, honors, and AP courses during the past three years. This indicates that growth in course capacity and enrollment was distributed evenly across levels. There was a modest contraction, however, in course sections and student enrollment for courses on the pre-AP level. The proportion of sections offered at each course level closely matches the proportion of enrollment at each course level. Thus, there are no mismatches between capacity and enrollment. Average class size remained constant across course levels compared with last year but has increased across all levels compared with 2004–05. The highest class size was in regular classes, which had about 20 students on average, and the lowest class size was for pre-AP classes, which had about 17 students on average.

Growth in Course Capacity by Curriculum Area

VHS offers courses in the following curriculum areas:

- Art
- Business
- English
- Foreign language
- Life skills
- Mathematics

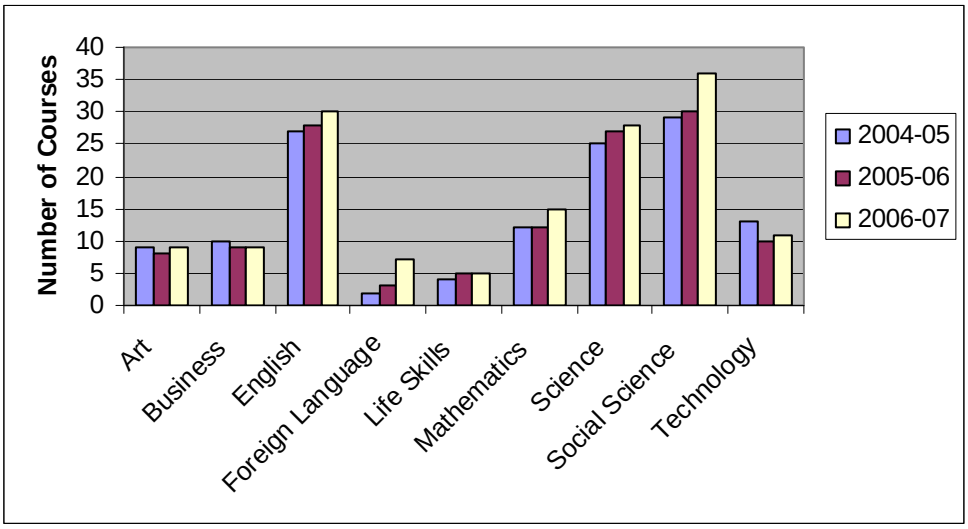
- Science
- Social studies
- Technology

This section describes the course capacity and enrollment for these different course areas. These results may be useful for understanding overall trends in student interest in course areas, in order to identify high-growth curriculum areas.

Number of Courses and Sections Offered for Each Curriculum Area

The distribution of courses by curriculum area is displayed in Figure 24. The largest increases in number of courses have been in social science, which increased from 30 courses to 36 courses, and in foreign language courses, which increased from three courses to seven courses. Overall, English, science, and social science remain the three areas with the most course offerings.

Figure 24. Number of Courses Offered in Different Curriculum Areas



The number of course sections by area is displayed in Figure 25, and the proportion of sections by area is displayed in Figure 26. As with the number of course offerings, the curriculum areas with the greatest number of sections are social science, English, and science, with 94, 89, and 70 sections, respectively. However, whereas social science and English expanded by at least 17 sections in 2006–07, the number of science sections decreased by five. Together, social science, English, and science comprise about three fifths of all sections. The other notable increase in course capacity was in the area of foreign language, where the number of sections expanded from six to 11.

Figure 25. Number of Sections Offered in Each Curriculum Area by Year

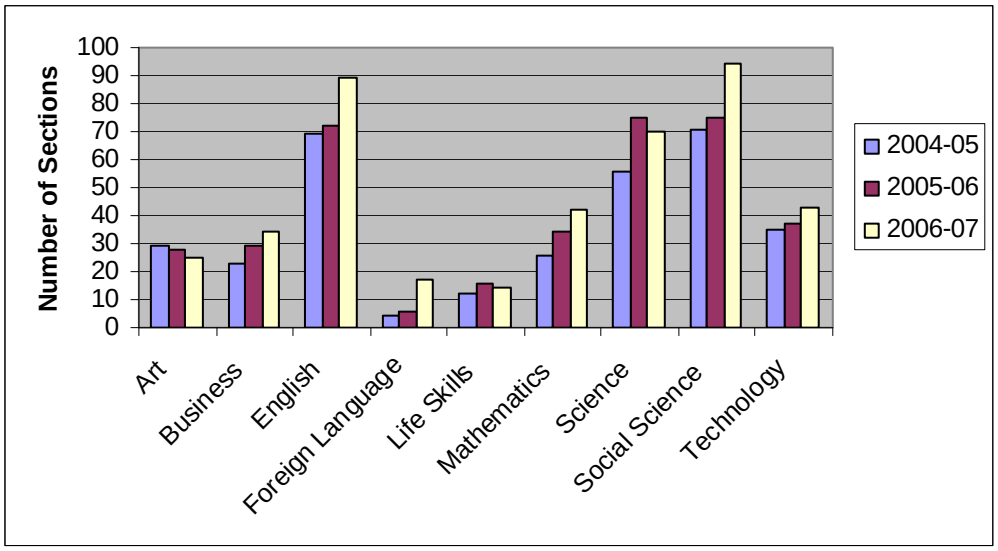
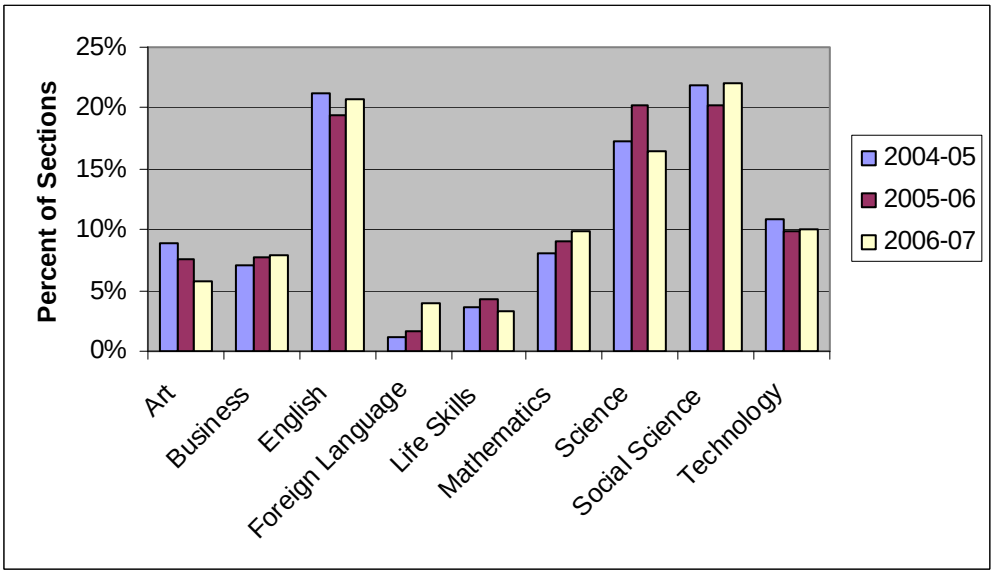


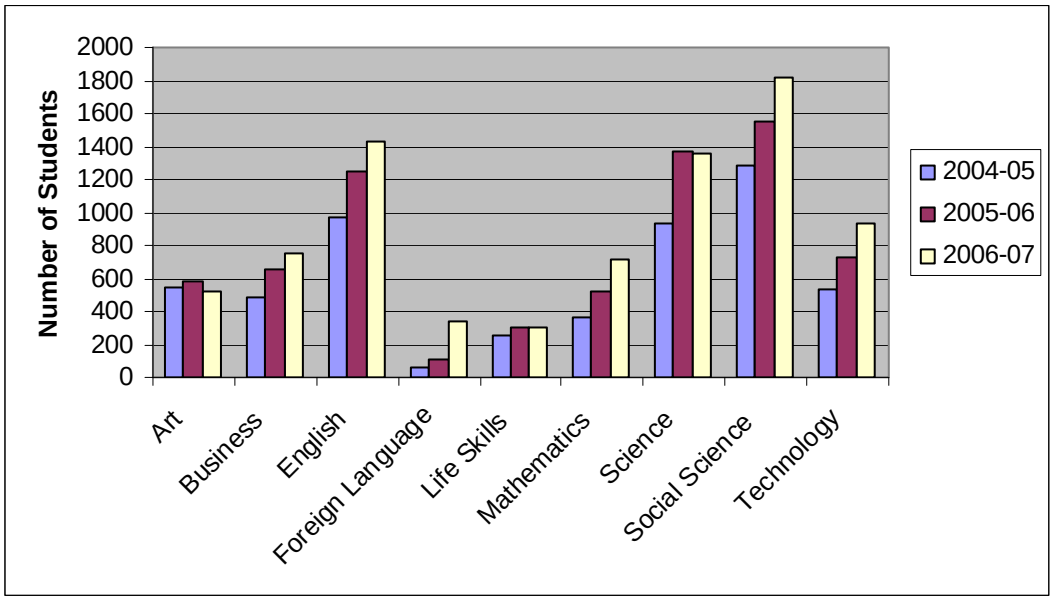
Figure 26. Proportion of Sections Offered in Each Curriculum Area by Year



Student Enrollment by Curriculum Area

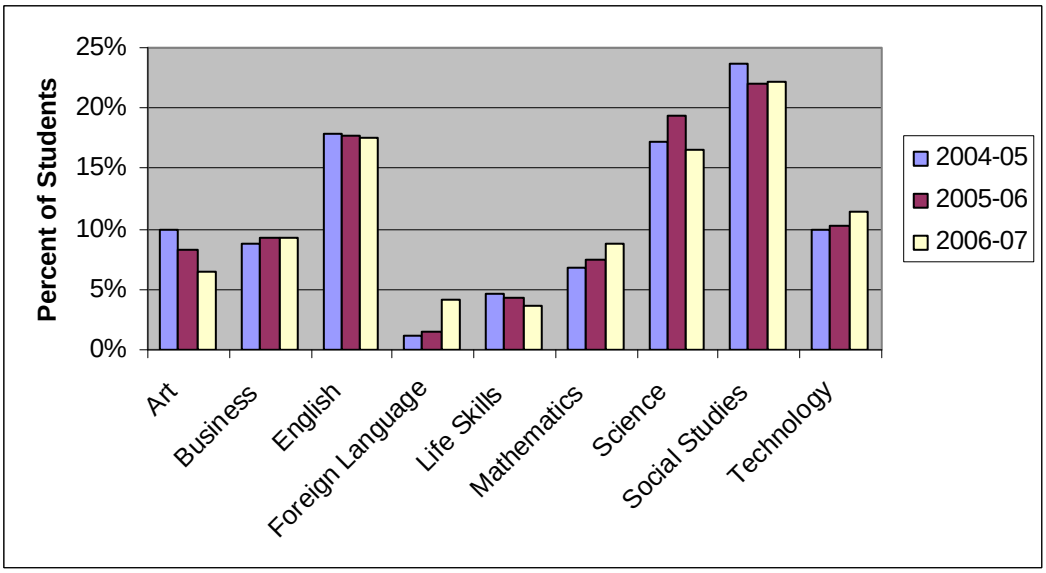
Total student enrollment in different curriculum areas reflects a somewhat similar pattern of growth as the course sections, as displayed in Figure 27. Total enrollment grew by at least 200 students in social science, foreign language, and technology and by at least 100 students in English, mathematics, and business. All six of these areas demonstrate a trend of growth in enrollment across three years. Enrollment leveled off in science after sharp growth the previous year, and total enrollment decreased in art classes from the previous year.

Figure 27. Number of Students by Curriculum Area and by Year



The proportion of students enrolled in each curriculum area is presented in Figure 28. Social science had the highest enrollment by far in 2006–07 (about 22 percent of all students). The next most enrolled areas were English and science, with about 18 percent and 17 percent, respectively, of all students. The proportions of students in foreign language, mathematics, and technology courses have all increased, whereas proportional enrollment in art and science has decreased. All other curriculum areas have remained steady in their proportional enrollments.

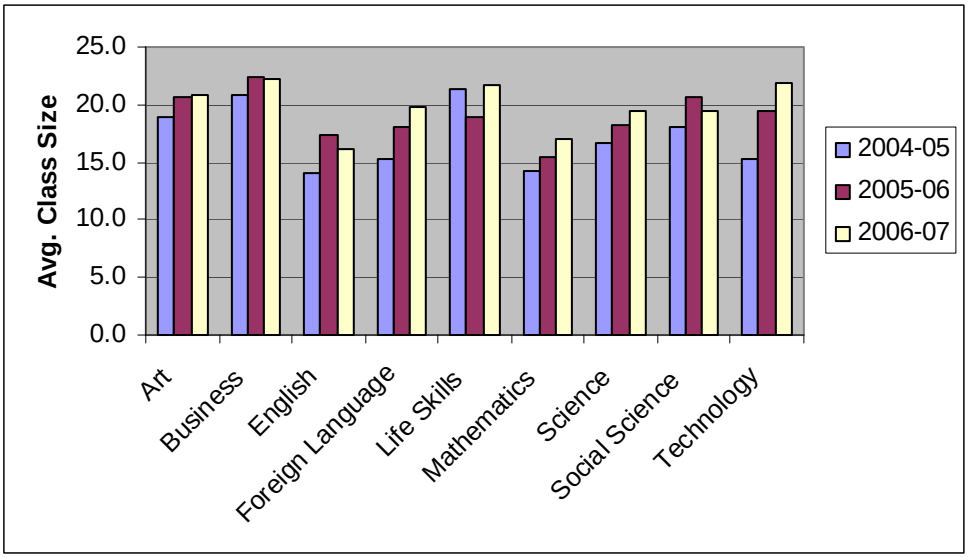
Figure 28. Proportion of Students by Curriculum Area and by Year



Average Class Size by Curriculum Area

The previous sections have presented findings for supply (course capacity) and demand (enrollment). This section describes the average class size for each curriculum area. During the past three years, average class sizes have increased the most for technology courses (from 15 students to 22 students) and foreign language courses (from 15 students to 20 students). The range of class size did not vary greatly among the curriculum areas in 2006–07, as displayed in Figure 29, with most areas having an average size between 19 students and 21 students. The largest average sizes were in business and technology classes, each with about 22 students on average. The smallest were in English and mathematics courses, each with about 17 students on average. Once again, these findings demonstrate that VHS selected the appropriate number of course sections to meet the level of demand.

Figure 29. Average Class Size by Curriculum Area and by Year



Summary of Growth by Curriculum Area

This section described how increases in course offerings, course capacity (i.e., number of sections), and student enrollment were distributed among different curriculum areas over time. The largest increases in number of courses have been in social science and foreign language courses. The overall distribution of course capacity and student enrollment has remained stable across curriculum areas, with two exceptions: there was moderate growth in the proportion of foreign language course capacity and enrolled students, and there was modest contraction for art courses. Course capacity and student enrollment increased (in terms of absolute number) in the following six curriculum areas: business, English, foreign language, mathematics, social science, and technology. The largest numerical growth in enrollments was observed in social science, foreign language, and technology. The curriculum areas with the greatest course capacity and proportion of enrolled students are social science, English, and science (in order of size). Because of the increases in the number of course sections, the average

class sizes in these areas increased only modestly or not at all. However, during the past three years, average class size increased by five or more students for foreign language and technology courses.

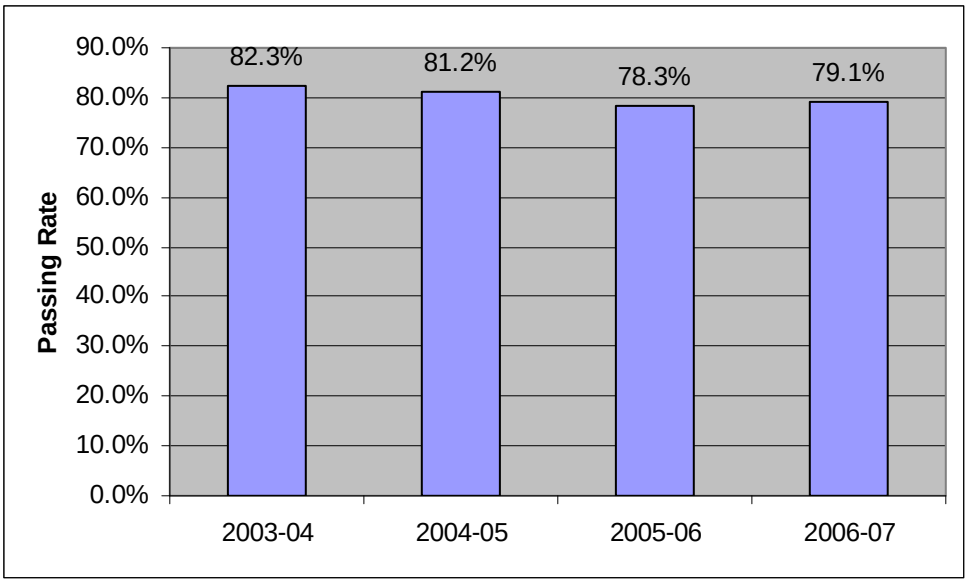
Chapter 4: Passing Rates of VHS Courses

The purpose of this chapter is to explore the variations in passing rates over time, across courses of different types, and across students from different types of schools. The approach of this analysis is to identify the course levels and curriculum areas for which passing rates are consistent and inconsistent over time. Changes in passing rates in either direction may confirm that a change in curriculum is having the desired effect (e.g., providing better scaffolding in rigorous courses) or may draw attention to a trend that needs to be explained (e.g., falling passing rates in a particular area). By the same token, this analysis also highlights trends in passing rates for students from different types of schools. This, too, can confirm whether particular efforts are having the desired effect (e.g., programs to promote success of students in high-poverty schools) or may call attention to the need to target support to certain types of students. This chapter also reports a different sort of passing rate, namely, the AP exam passing rate among VHS students who enrolled in AP courses. This analysis reflects on the effectiveness of the VHS AP-level courses in preparing students for the AP test.

The passing rate for a given VHS course is the proportion of students who achieve a grade of 60 percent or more. Students who withdrew from the course after the drop-or-add period or with a grade of "Incomplete" were counted toward the denominator of the passing rate; these students constituted 7.5 percent of the total. There were 236 students with no grade reported at the time of the analysis; these students were excluded from the denominator in calculations of passing rates.

The overall course passing rates have remained consistently high during the past four years and stood at about 79 percent for the 2006–07 school year (see Figure 30).

Figure 30. Overall VHS Passing Rate by Year



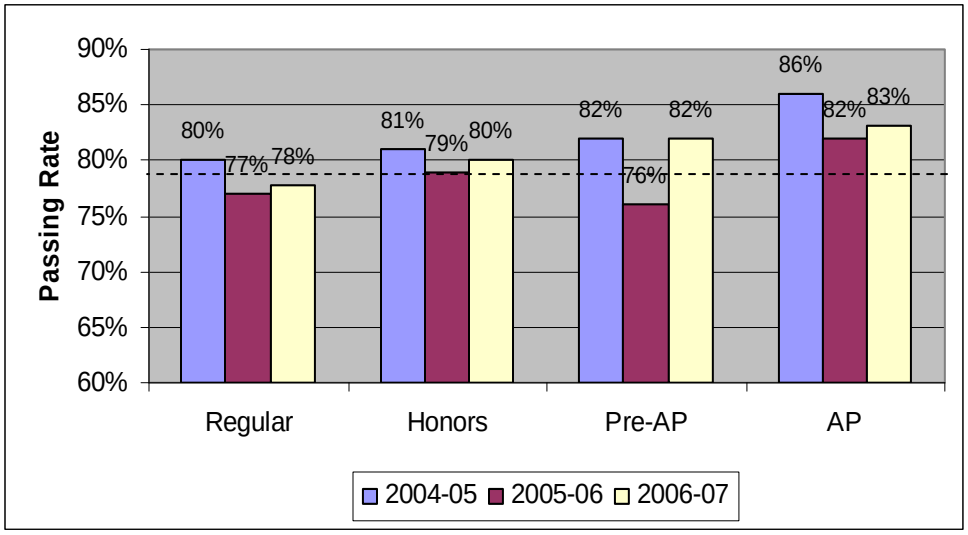
Passing Rates by Course Characteristics

In this section, passing rates are described for both course level and curriculum area.

Passing Rates by Course Level

Passing rates were fairly consistent across different course levels and, to a lesser extent, within course levels across years, as displayed in Figure 31. Overall, students in regular courses had a somewhat lower passing rate (78 percent) than did students in honors, pre-AP, and AP courses (80 percent, 82 percent, and 83 percent, respectively). This may indicate that the students selecting the latter three levels tend to be more academically prepared than students selecting regular courses. These passing rates have been fairly consistent over time, with the exception of pre-AP, which returned to its previous level after falling five points the previous year.

Figure 31. Passing Rates for Course Levels by Year



Note: Dashed line indicates overall passing rate (79.1 percent) in 2006–07.

Passing Rates by Curriculum Area

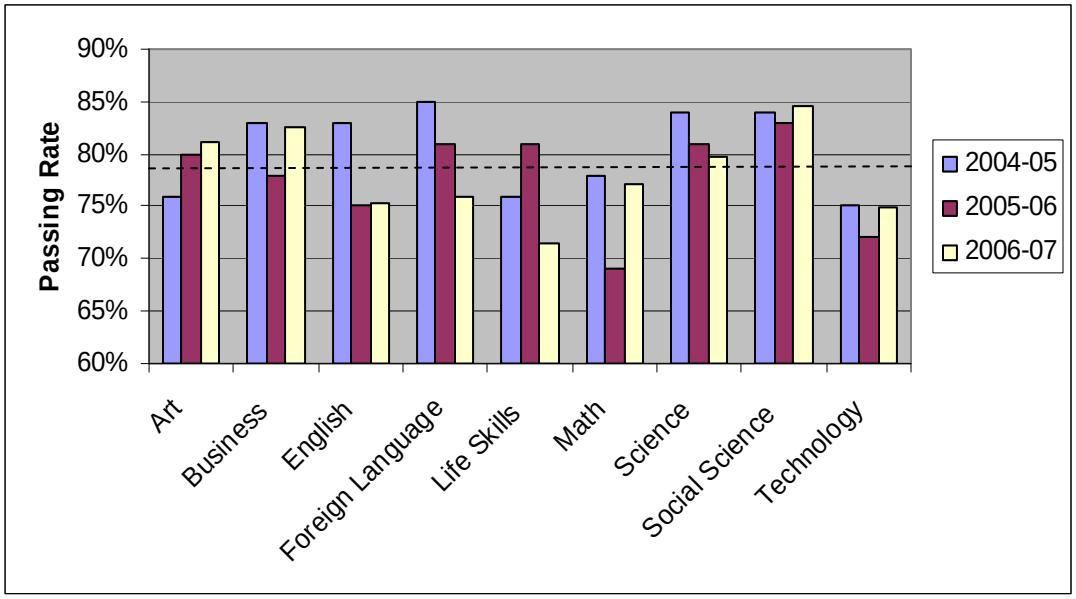
For the most part, the passing rates among the nine curriculum areas did not deviate greatly from the overall rate of 79.1 percent for 2006–07 although there were some noticeable differences. As shown in Figure 32, social science and business courses had the highest overall passing rates (84.5 percent and 82.5 percent, respectively). Four curriculum areas had passing rates more than three percentage points below the overall rate: life skills (71.5 percent), technology (74.8), English (75.4), and foreign language (75.9).

There were several curriculum areas that had large changes compared with the previous year, as follows:

- The passing rates of foreign language classes have fallen by six points since last year and have fallen a total of 10 percentage points since 2004–05.

- The passing rate of life skills classes fell by nearly 10 percentage points since last year and is about five points lower than two years ago.
- The English passing rate dropped by eight points in 2005–06 and remained the same in 2006–07.
- The mathematics and business passing rates rose by eight and five points, respectively, in 2006–07 and are just slightly below where they were two years ago.
- The art passing rate climbed four points in 2005–06 and gained another point in 2006–07.

Figure 32. Passing Rates for Major Curriculum Areas by Year



Note: Dashed line indicates overall passing rate (79.1 percent) in 2006–07.

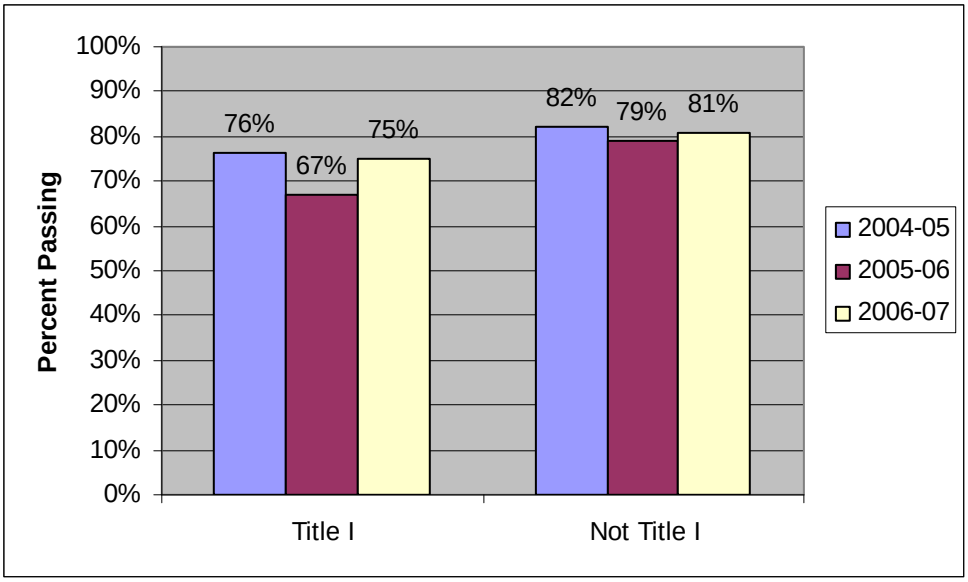
In summary, there is a great deal of consistency in the passing rates by course level and a moderate degree of consistency among different curriculum areas. Compared with 2004–05, the passing rates of different courses levels have not changed more than three percentage points. Students in regular courses had the lowest passing rates, and students in AP courses had the highest passing rates. The passing rates of foreign language, English, and life skills courses have all decreased during the past three years. Passing rates of other curriculum areas have not changed much during the past three years. Relative to the overall VHS rate, technology, foreign language, English, and life skills courses have lower passing rates, and business and social science courses have higher passing rates.

Passing Rates and School Demographics

It is important to examine the influence of school demographics on student passing rates in order to know whether different types of school contexts are associated with the success of students in VHS courses. Three demographic factors were considered: Title I status, school locale, and school size. As shown in Figure 33, students from Title I schools had a somewhat lower passing

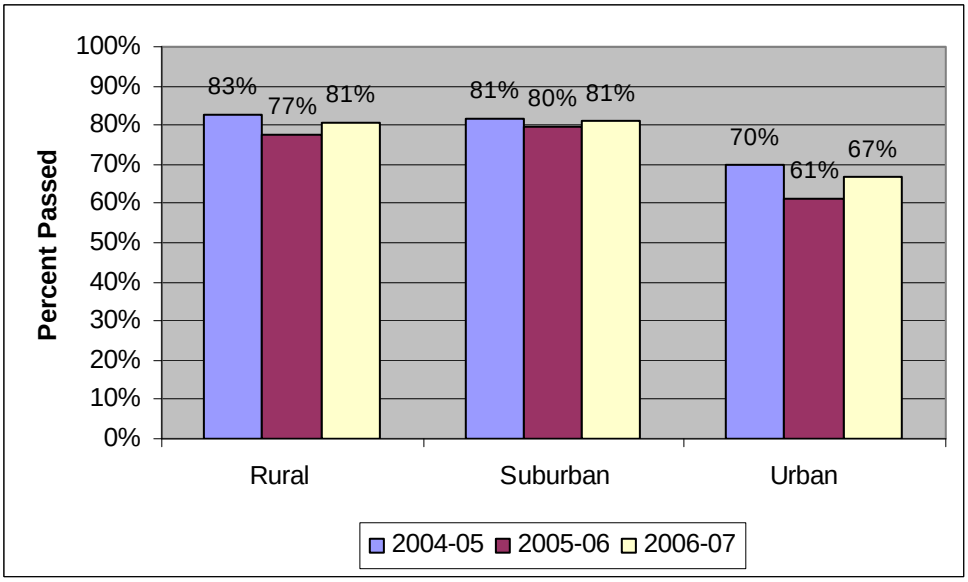
rate than did students from non-Title I schools in 2006–07 (75 percent to 81 percent, respectively). However, this gap has narrowed by more than six percentage points compared with the previous year and now is the same as it was during 2004–05.

Figure 33. Passing Rates by School Title I Status



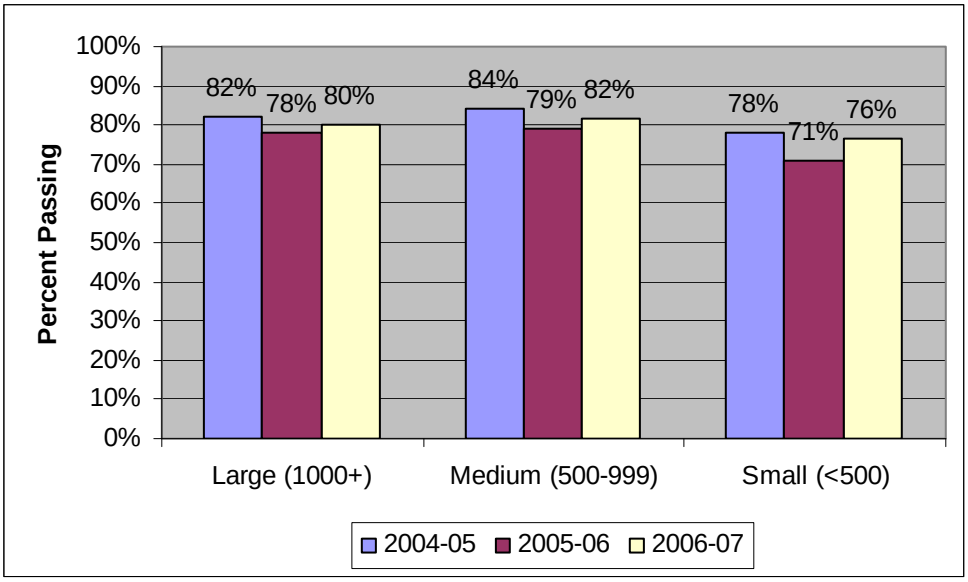
Continuing a trend from previous years, there was a large difference in the passing rates based on school locale (see Figure 34). Whereas rural and suburban schools each had a passing rate of about 81 percent during 2006–07, urban schools had a passing rate of 67 percent. However, this gap of 14 percentage points has narrowed from the 16 and 19 point gaps (for rural and suburban schools, respectively) that were present the previous year and has slightly widened from the 13 and 11 point gaps, respectively, that were present during 2004–05.

Figure 34. Passing Rates by School Locale



There were some modest differences in passing rates based on school size as displayed in Figure 35. Students from smaller schools have a somewhat lower passing rate (76.4 percent) than do students from large- or medium-size schools (79.9 percent and 81.6 percent, respectively). Again, the size of this gap has narrowed somewhat compared with the previous year.

Figure 35. Passing Rates by School Size



In summary, students from urban schools have considerably lower passing rates than students from other locales, and, to a lesser extent, students from Title I and small schools also have lower passing rates. To put these findings in perspective, students from urban schools constitute slightly more than one tenth of the total enrollment of students, students from Title I schools represent less than one fifth, and students from small school represent more than one third of all students.

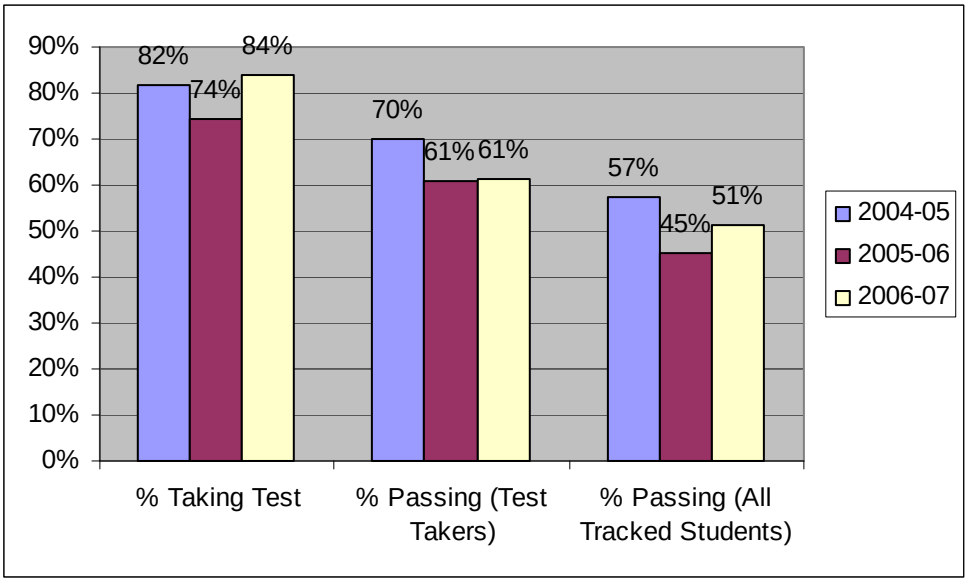
AP Test Outcomes

The final section of this chapter examines outcomes for AP courses. Two test outcomes are tracked for AP students: whether the students took the test and whether they passed it. For each school that enrolled a student in a VHS AP course, VHS staff contacted the school to request a report on the AP test score of those students. Out of 613 students taking AP courses, VHS successfully tracked test outcomes for 566 students (92 percent). Figure 36 displays the proportion of students who took the AP exam; the proportion of students passing the exam out of those who took the exam; and the proportion of students who passed the exam out of all tracked students (including in the denominator those students who did not take the exam).

The proportion of students taking the AP test rose to 84 percent in 2006–07, after having fallen to 74 percent in the previous year. However, the proportion of students passing the exam (out of those taking the exam) remained at 61 percent, the same as the year before and lower than the 70 percent passing in 2004–05. The total proportion of students passing the exam increased to 51 percent, up from 45 percent the previous year but down from 57 percent in 2004–05. In

summary, the number of students taking the AP test increased during the three years, and the total proportion of enrollees passing the test increased relative to the previous year.

Figure 36. Percent of Enrolled AP Students Taking and Passing the AP Test



Chapter 5: Customer Satisfaction With VHS Courses

As stated on the VHS website, a central component of the VHS mission is "to develop and deliver standards-based, student-centered online courses to expand students' educational opportunities and 21st century skills" (VHS, n.d.). Meeting this goal requires VHS to produce high-quality, rigorous course offerings. This section reports the level of satisfaction with course quality as reported by superintendents, principals, site coordinators, VHS teachers, and VHS students on customer surveys. For the latter two types of respondents, their responses will be disaggregated by course type and curriculum area. Response rates by course level and curriculum area are presented in Table 3 and Table 4.

Table 3. Frequency of Teacher and Student Survey Responses by Course Level

Course Level	Teacher *N* = 99	Student *N* = 1,953
AP	18.2%	8.6%
Honors	22.2%	14.8%
Pre-AP	2.0%	5.2%
Regular	57.6%	67.9%

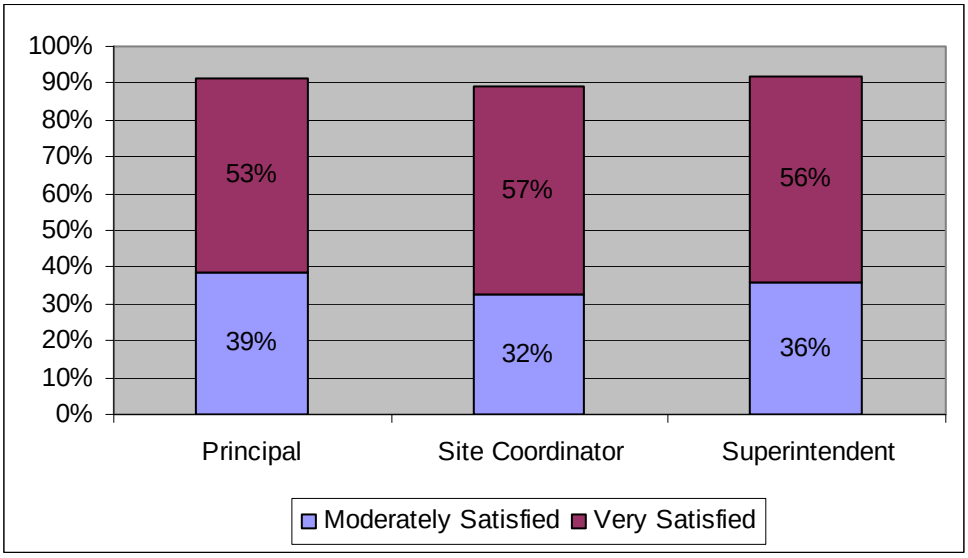
Table 4. Frequency of Teacher and Student Survey Responses by Course Area

Course Area	Teacher *N* = 99	Student *N* = 1,756
Art	5.5%	8.5%
Business	10.1%	13.0%
Foreign language	14.7%	19.5%
Language arts	3.7%	3.1%
Life skills	4.6%	6.0%
Mathematics	10.1%	9.0%
Science	15.6%	13.3%
Social Science	16.5%	19.9%
Technology	10.1%	7.7%

Satisfaction With Course Quality

Superintendents ($N = 50$), principals ($N = 80$), and site coordinators ($N = 177$) completed customer surveys and rated their overall level of satisfaction with VHS courses. The response options for these items were *very satisfied*, *moderately satisfied*, *somewhat satisfied*, *slightly or not satisfied,* and *don't know/no opinion*. As shown in Figure 37, the vast majority of respondents was *very satisfied* or *moderately satisfied* with VHS courses.

Figure 37. Rating of Satisfaction With VHS Courses by Role



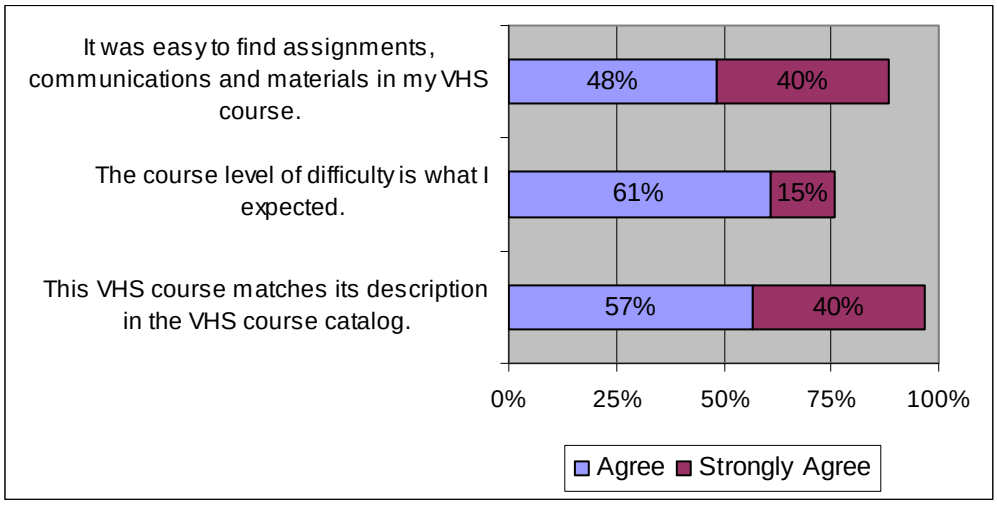
Note: Principal *N* = 80; Site coordinator *N* = 177; Superintendent *N* = 50.

The remaining two sections of this chapter report the more detailed ratings of course quality and teacher facilitation from the student and teacher surveys.

Student Perceptions of Course Quality

VHS students also rated their courses at the end of each semester. They rated their agreement regarding how easy it was for them to find assignments, communications, and materials in their VHS course, whether the difficulty level was what they expected, and whether the VHS course matches its description in the VHS catalog. The overall findings are presented in Figure 38. Regarding course navigation, nearly nine in 10 students agreed (48 percent) or strongly agreed (40 percent) that it was easy to find assignments, communications, and materials in their courses. Nearly every student agreed (57 percent) or strongly agreed (40 percent) that their course matched its description in the course catalog. About three quarters of students agreed (61 percent) or strongly agreed (15 percent) that the course level of difficulty was what they expected.

Figure 38. Student Ratings of Course Quality (*N* = 1,756)

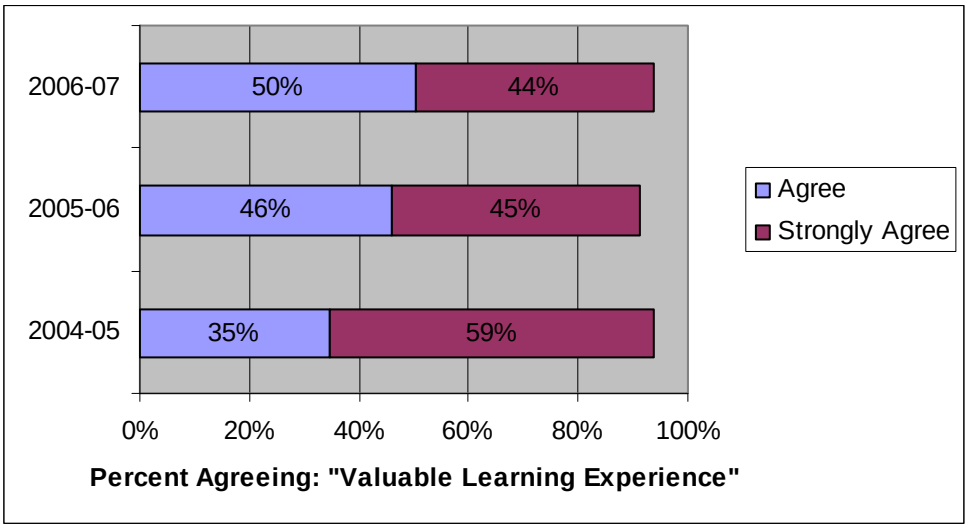


These ratings of course quality did not differ greatly by curricular area. However, roughly 34 percent of students participating in foreign language courses *disagreed* that the course level of difficulty was what they expected. It is unknown whether those who disagreed with this item found the course more or less difficult than they expected.

The same item about course difficulty was presented to VHS students during 2004–05 and 2005–06. Across all three years, the distribution of responses was very similar.

Satisfaction With Learning Experience. Students responded to three items to indicate their satisfaction with their learning experience. First, students rated their agreement that their participation in VHS was a valuable learning experience. In 2006–07, about 94 percent of students *agreed* (50 percent) or *strongly agreed* (44 percent) that their participation in VHS was "a valuable learning experience." This proportion is similar to what was observed last year for the same item, as displayed in Figure 39.

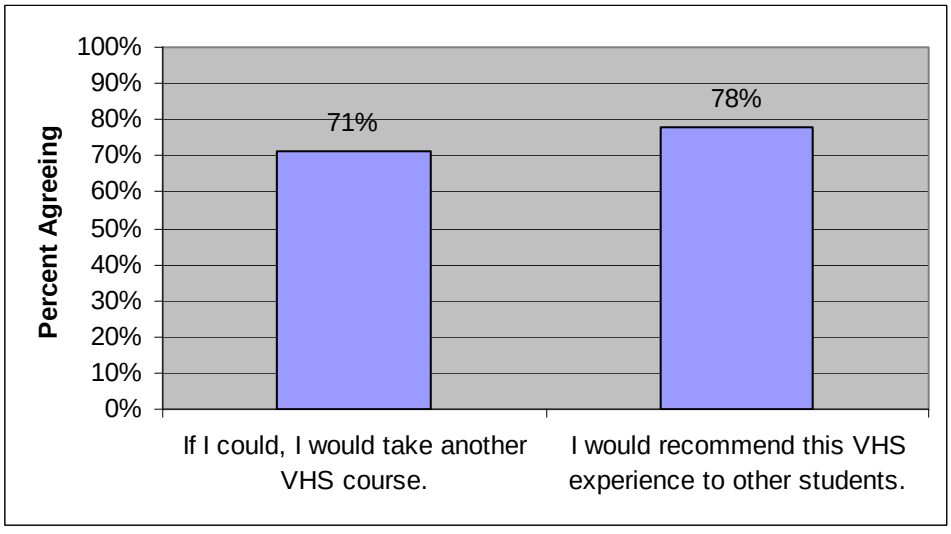
Figure 39. Student Agreement That VHS Was a Valuable Learning Experience by Year



Note: *N* = 1,880 for 2006–07.

Students also responded to two additional Yes/No format items that reflected their level of course satisfaction. As shown in Figure 40, the majority of students would either take another VHS course in the future (71 percent) or would recommend their VHS experience to other students (78 percent). The somewhat lower proportion for the first of these may reflect the fact that some students are preparing to graduate from high school and would not be eligible to take another high school class.

Figure 40. Students' Agreement With Statements About Satisfaction With Learning Experience (*N* = 1,756)



In summary, most students expressed satisfaction with two of three different aspects of course quality: the accuracy of course descriptions and the ease of course navigation. A somewhat smaller proportion of students, but nevertheless a sizable majority, agreed that the difficulty level

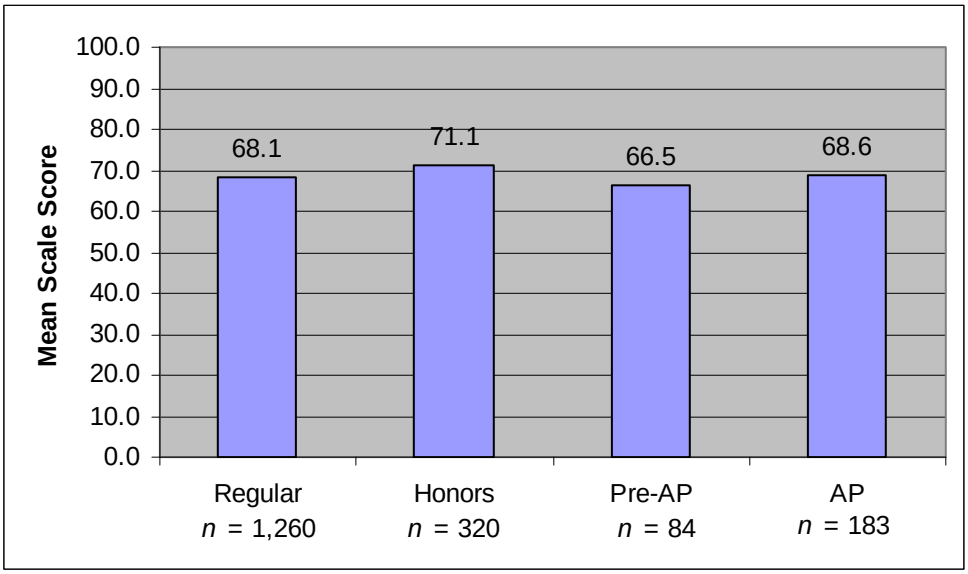
was what they expected. Finally, nearly all students expressed satisfaction with their learning experience, and most would recommend their course to other students.

Student Ratings of VHS Instruction

The effective facilitation of VHS courses is a central component of the VHS vision for online learning. The student survey asked respondents to rate statements describing the level of course facilitation, as indicated by items on communication, course facilitation, and instructor availability. These items were then scaled to create one variable that represents students' overall experience with the teacher's facilitation in their course. These data are useful for identifying different types of courses for which students had relatively greater agreement about the level of teacher facilitation. This scale score ranged from −4.6 to 110.3, with a mean of 68.6 and standard deviation of 19.2. The scale scores can be interpreted in terms of the response category that a respondent is most likely to select. These "cut scores" are as follows: *strongly disagree* is less than a score of 30; *disagree* is from 30 to 43; *agree* is from 44 to 77; and *strongly agree* is 78 or above.

Students from different course levels had similar perceptions of the level of participation, as displayed in Figure 41. Students in honors courses were slightly more likely than those in regular, pre-AP, or AP courses to indicate that their course was well-facilitated.

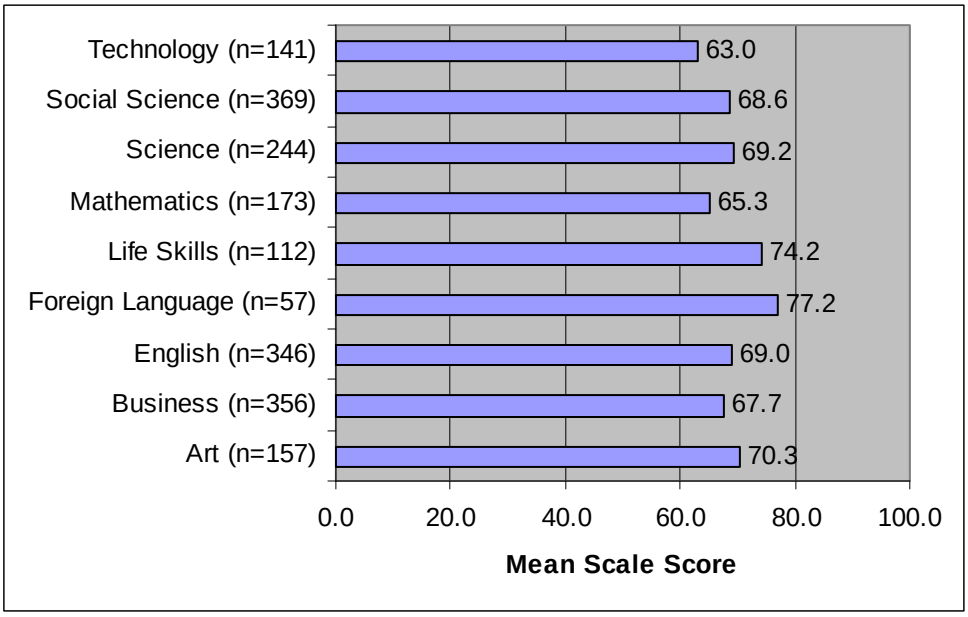
Figure 41. Mean Student Ratings of Teacher Facilitation by Course Level (*N* = 1,847)



Note: Strongly Disagree ≤29; Disagree >29 to <44; Agree ≥44 to <77; Strongly Agree>77.

Figure 42 presents the mean scale level of agreement for ratings of teacher facilitation, disaggregated by curriculum area. Overall, VHS students across areas were consistent in their ratings of course facilitation. The highest mean rating of facilitation was for foreign language and life skills courses (*m*s = 77.2 and 74.2, respectively), and the lowest ratings were for technology and mathematics courses (*m*s = 63.0 and 65.3, respectively).

Figure 42. Mean Student Ratings of Teacher Facilitation by Curriculum Area (*N* = 1,955)



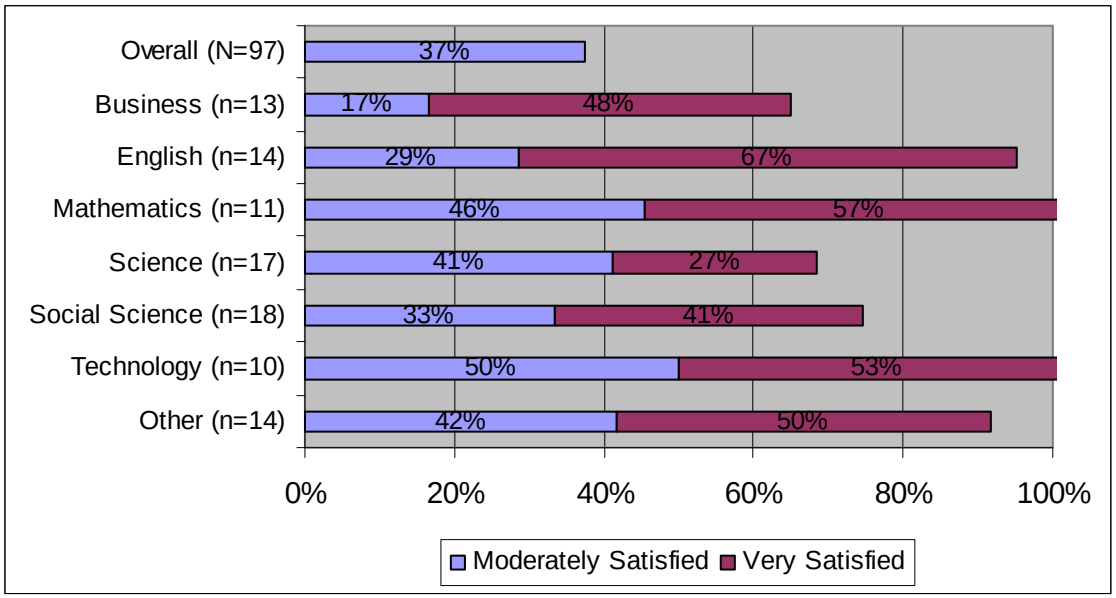
Note: Strongly Disagree ≤29; Disagree >29 to <44; Agree ≥44 to <77; Strongly Agree>77.

Teacher Perceptions of Courses, Instruction, and Learning

This section reports the ratings of teachers regarding course quality, their own instructional techniques, and their students' learning. To begin with, VHS teachers (*N* = 99) rated their overall satisfaction with the quality of the course that they teach. As shown in Figure 43, the majority (85 percent) of teachers reported that they were *moderately satisfied* or *very satisfied* with course quality. Technology teachers appear to be most satisfied (100 percent *moderately satisfied* or *very satisfied*) while mathematics teachers appear to be the least satisfied (46 percent *moderately satisfied* and 27 percent *very satisfied*).

In addition, 90 percent of teachers surveyed indicated that the amount of work assigned to students each week was about right.

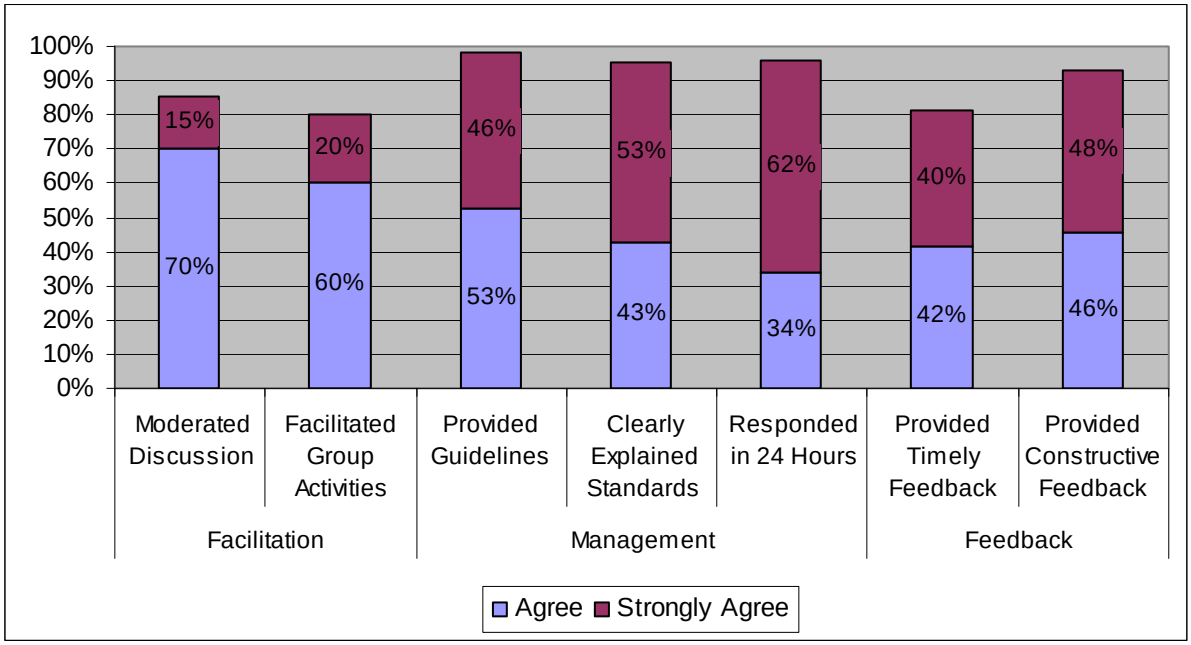
Figure 43. Teacher Satisfaction With Course Quality by Content Area



Teacher Ratings of Course Instruction

When surveyed about their instructional practice in the areas of course facilitation, class management, and their provision of feedback, teachers' levels of agreement varied by survey item (see Figure 44). Regarding their own management of the course, instructors tended to *agree* or *strongly agree* that they provided students with guidelines about how to engage in discussions, that they answered questions within 24 hours, and that they clearly explained the grading standards for assignments. In addition, the majority of instructors *agreed* that they moderated class discussions effectively and that they facilitated group activities effectively. Fewer instructors *strongly agreed* that they moderated discussions or facilitated group activities effectively.

Figure 44. Levels of Teacher Agreement About Instructional Practice (*N* = 99)

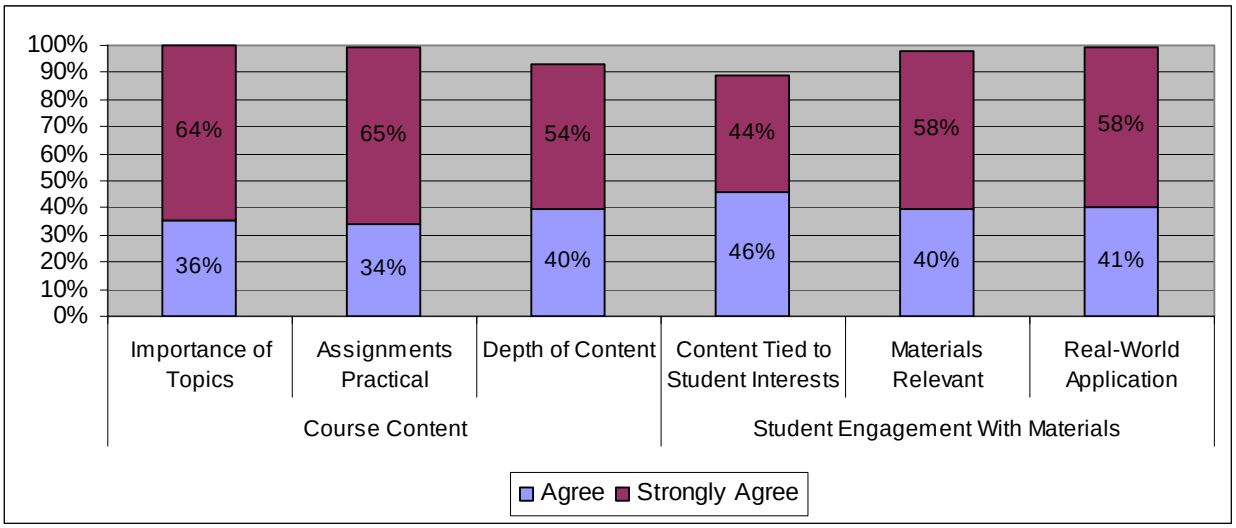


Student Learning

Student engagement in coursework is one indication of course quality. Teachers were surveyed on a number of aspects of their VHS instruction, including relevance of course content and materials, course facilitation through online discussions and group work, and student engagement as indicated by overall student learning and motivation to participate in the course.

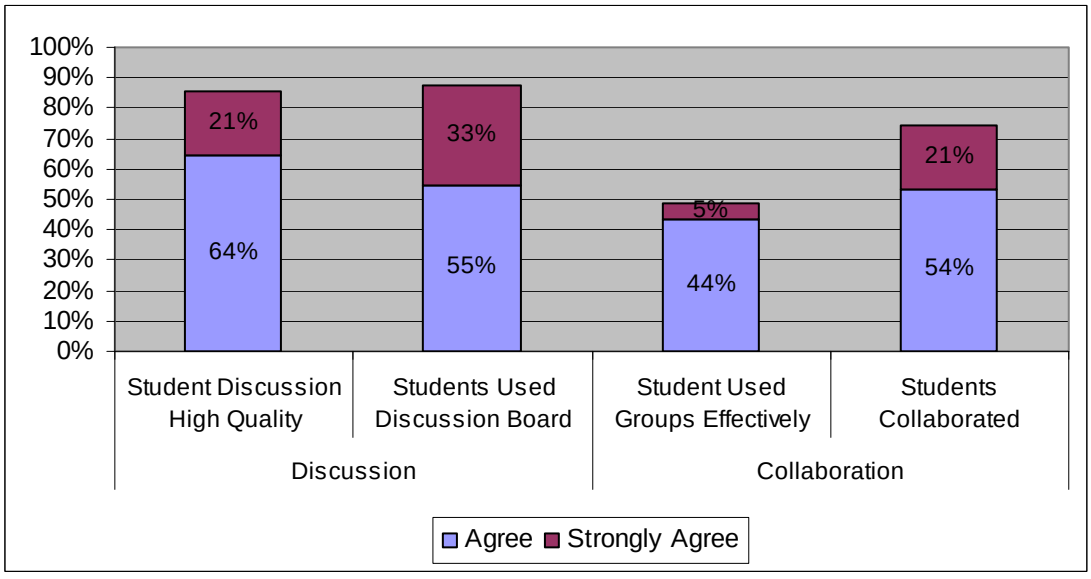
As shown in Figure 45, teachers approach the content of their course in a number of ways. More than two thirds of teachers surveyed *strongly agreed* that the content of their course covered important topics and that the course assignments involved practical applications of knowledge or of skills. In addition, 99 percent of teachers *agreed* or *strongly agreed* that students had the opportunity to connect the course topics to real-world situations.

Figure 45. Level of Teachers Agreement About Course Content (*N* = 99)



Overall, teachers report that students are using the discussion board for VHS participation and to engage in fairly high-quality discussions (see Figure 46). However, nearly 41 percent of teachers *disagreed* that students worked effectively together on group projects.

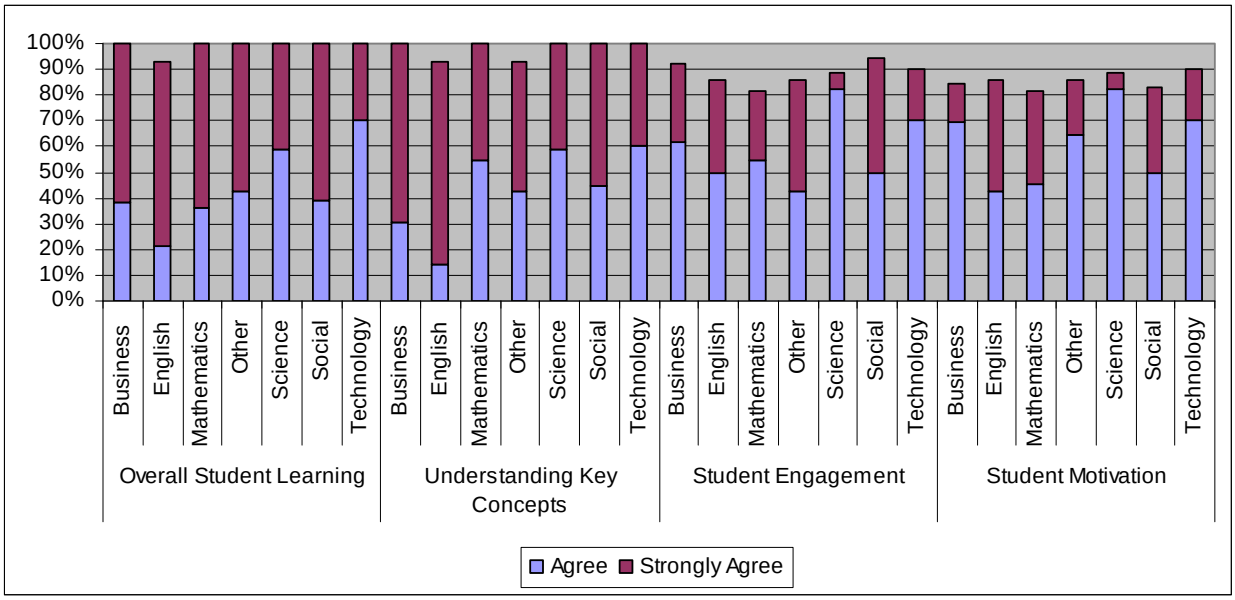
Figure 46. Level of Teacher Agreement About Student Participation (*N* = 99)



With regard to student learning, VHS teachers in all subject areas indicated that their students are learning in their course, that they are understanding key concepts, that they are engaged, and that they are motivated (see Figure 47). Interestingly, teachers in technology courses expressed strong agreement in all four domains of student learning. In addition, teachers report that students in

mathematics courses may be slightly less engaged or motivated than students in other courses, but this distinction is slight.

Figure 47. Teachers' Report on Student Learning by Course Type



In summary, principals, superintendents, teachers, and the students themselves expressed high satisfaction with VHS course quality in the 2006–07 academic year. Overall, students consider their participation in VHS to be a valuable learning experience and would either take VHS courses or recommend VHS course to other students. Students in honors courses were particularly satisfied with the way that their course was facilitated.

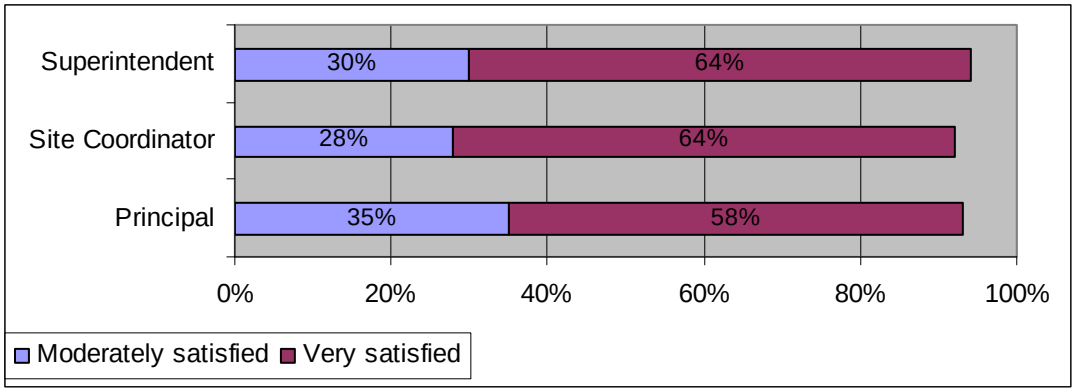
The courses appear to be high quality; however, some courses may not present the appropriate level of challenge for students. Overall, students seem to be engaged in their courses, but teachers may not be seeing as much group participation and collaboration as they would like. Teachers were slightly less satisfied with their ability to moderate discussion or facilitate group activities but did indicate that they were quick to respond to student needs.

Chapter 6: Benefits and Feasibility of Participation

Part of the VHS mission is to "expand students' educational opportunities and 21st century skills and offer professional development to teachers to expand the scope and depth of their instructional skills" (VHS, n.d.). In meeting this mission, VHS provides access to a network of courses that expand the teaching and professional learning opportunities beyond what a brick-and-mortar school can offer. To speak to the success of this part of the mission, this section summarizes customer opinions about what benefits accrued to schools, teachers, and students as a result of VHS participation. In addition, this chapter also summarizes the opinions of VHS participants about the feasibility of participation.

VHS customers generally reported high levels of satisfaction with their school's or district's overall experience with VHS during 2006–07, as displayed in Figure 48. At least 92 percent of respondents reported being *very satisfied* or *moderately satisfied* with their school experience with VHS during the 2006–07 school year. About three fifths of all respondents stated that they were *very satisfied.* A somewhat higher percentage of superintendents and site coordinators (64 percent) reported being *very satisfied* with VHS than did principals (58 percent). In summary, administrators from VHS schools expressed high levels of satisfaction with their schools' VHS experience.

Figure 48. Overall Level of Satisfaction With VHS



Note: Principal $N = 80$; site coordinator $N = 176$; superintendent $N = 50$.

Teachers also rated their overall satisfaction, except their ratings focused on their experience as a VHS teacher rather than the experience of their school as a whole. Eighty-three percent of teachers stated that they were either *very satisfied* (47 percent) or *satisfied* (36 percent) with their experience as a VHS instructor.

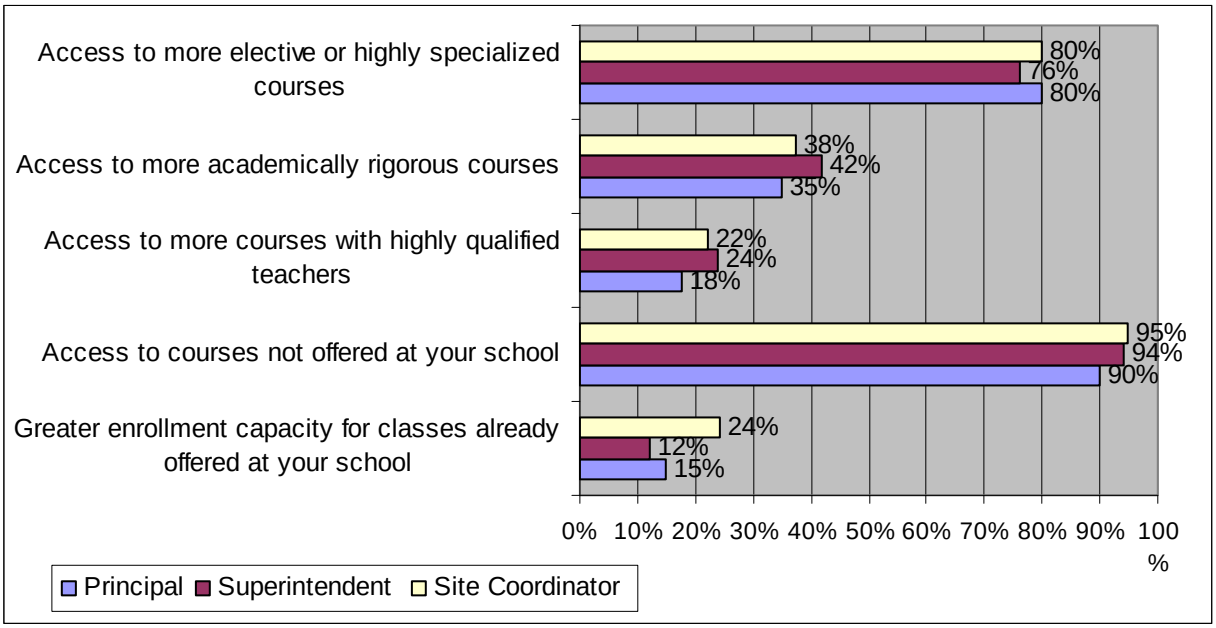
Benefits of Participation

In the 2006–07 VHS customer surveys, superintendents, principals, and site coordinators each were asked to select from a list of benefits the ones that were true for their schools, teachers, and students. These three groups of customers were asked, "In which of the following ways has VHS expanded learning opportunities for your high school?" The rates of endorsement of five types of

expanded opportunities are presented in Figure 49. Overall, there was not much variation in the proportion of responses based on the type of respondent. The main points are as follows:

- The most highly endorsed item, selected by at least 90 percent of all respondents, was that VHS participation provided access to courses not offered at the school.
- About 80 percent of respondents stated that VHS provided access to elective or highly specialized courses.
- Thirty-three to 40 percent of respondents agreed that VHS expanded access to academically rigorous courses.
- The remaining two benefits, related to expanding access to highly qualified teachers and expanding enrollment capacity (for courses currently offered at the school), were relatively infrequently selected.

Figure 49. Proportion of Respondents Endorsing School Benefits of VHS Participation

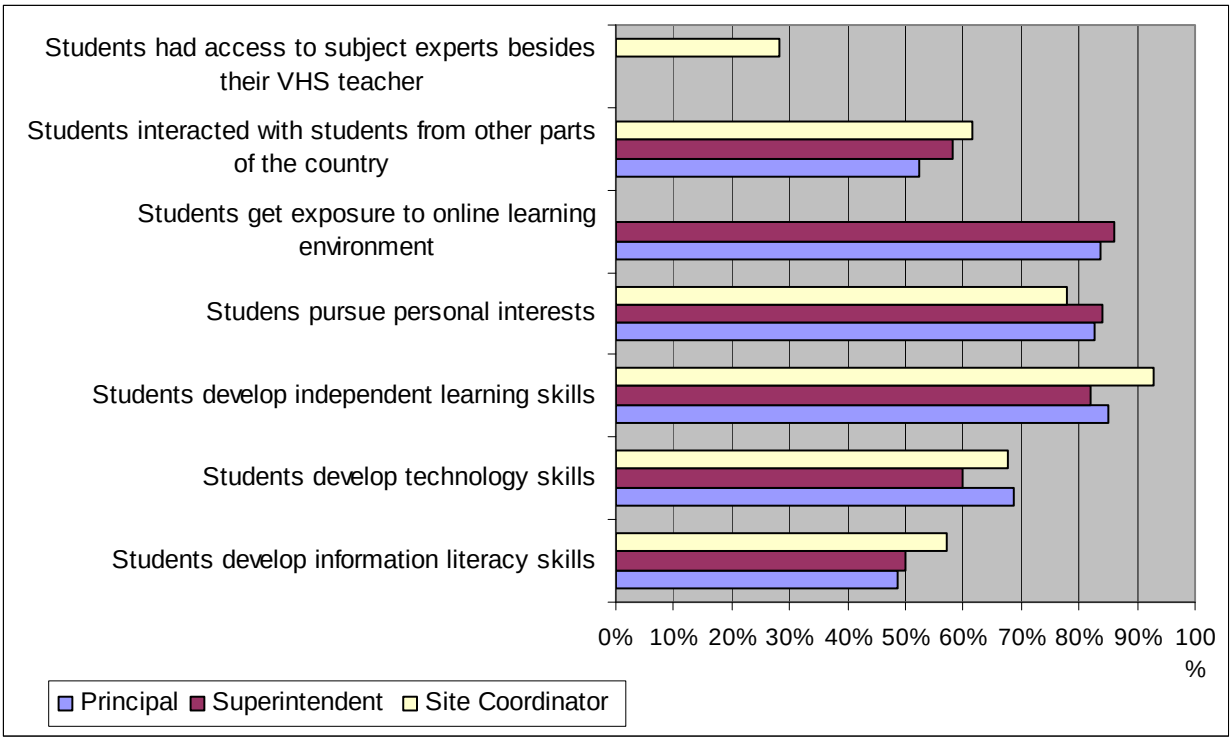


Note: Principal *N* = 80; site coordinator *N* = 177; superintendent *N* = 50.

All three types of respondents were asked, "In which of the following ways have your students benefited from participating in VHS courses?" The rates of endorsement of seven types of expanded opportunities are presented in Figure 50. Note that five of these items were presented to all types of respondents, one was presented just to principals and superintendents, and one was presented just to site coordinators.

Six of the seven benefits were endorsed by at least half of all respondents, indicating that these are all prevalent. The most frequently endorsed student benefits, selected by about 80 percent (or greater) of all respondents, were as follows: exposure to the online learning environment; the opportunity to pursue personal interests; and the opportunity to develop independent learning skills. Relatively few site coordinators (28 percent) endorsed access to subject-matter experts as a benefit.

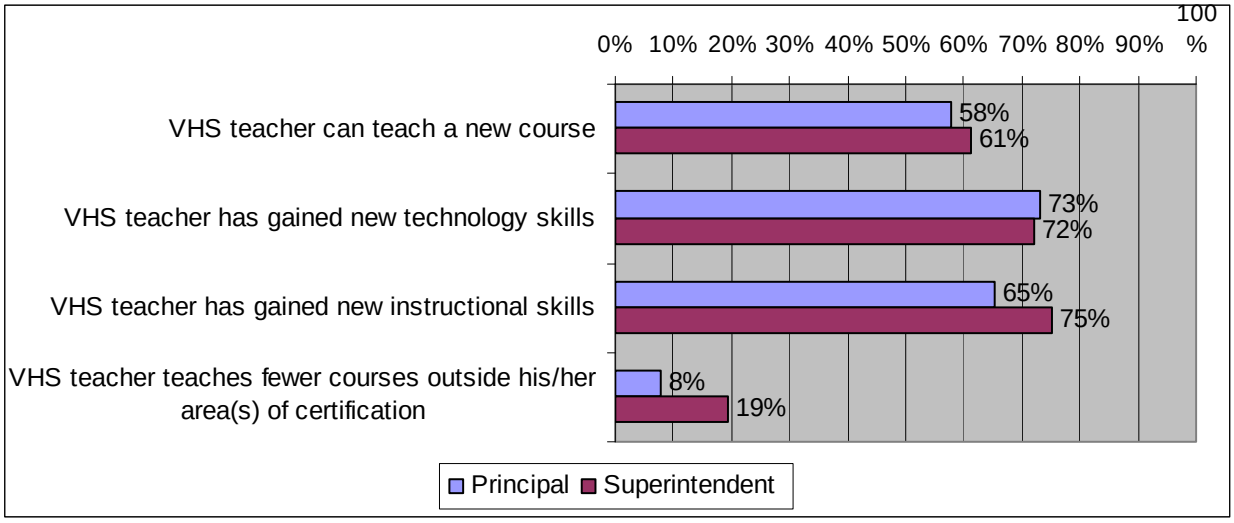
Figure 50. Proportion of Respondents Endorsing Student Benefits of VHS Participation



Note: Principals and superintendents were not presented with the benefit referring to "access to subject experts." Site coordinators were not presented with the option referring to "exposure to online learning."
Principal $N = 80$; site coordinator $N = 177$; superintendent $N = 50$.

Superintendents and principals were asked to endorse four teacher-related benefits. Figure 51 summarizes the endorsement of items presented to administrators. For the three items related to teachers expanding their teaching skills or course repertoire, three fifths to three quarters of administrators endorsed the items. Thus, most administrators believe that their teachers are expanding their skills. However, relatively few administrators endorsed the benefit of reducing the number of teachers teaching outside of their area of certification.

Figure 51. Proportion of Respondents Endorsing Teacher-Related Benefits of VHS Participation



Note: Principal *N* = 80; superintendent *N* = 50.

Summary of Benefits of Participation

In sum, VHS customers are satisfied with their schools' participation in VHS. Most school administrators perceived the benefit of additional courses not offered at their school. The benefit of this expanded access was most typically endorsed for elective classes, and the benefit was less frequently endorsed for access to "rigorous" courses or highly qualified teachers or for access to expanded capacity of courses already being offered at the school. A majority of VHS customers perceived that students benefited from VHS participation in several different ways, with the most prevalent agreement recorded for exposure to the online learning environment; the opportunity to pursue personal interests; and the opportunity to develop independent learning skills. Finally, a majority of administrators perceived that teaching a VHS class expanded a teacher's technology and instructional skills.

Feasibility of Participation

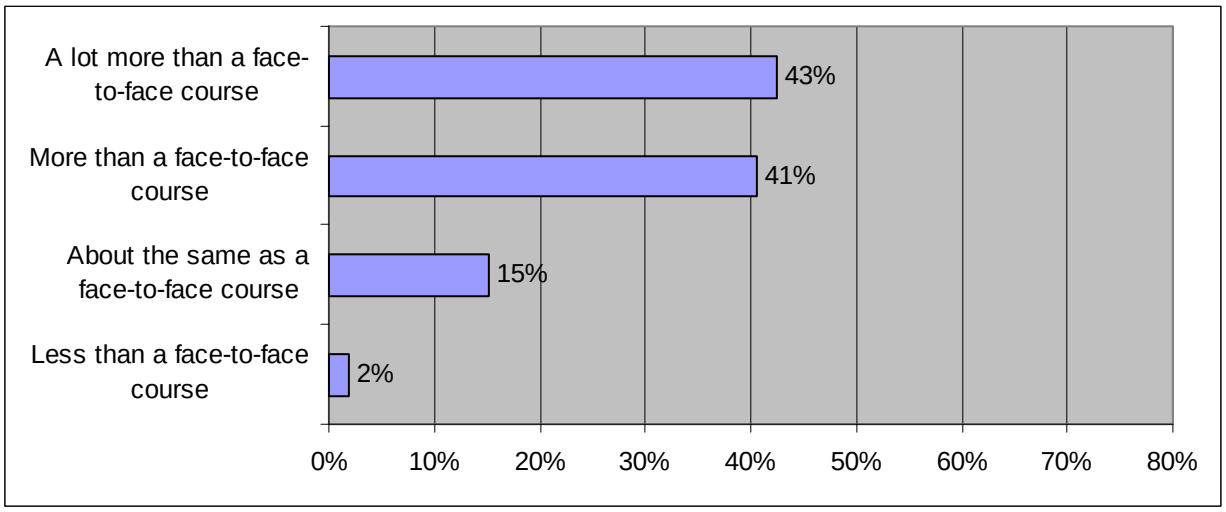
It is crucial to the VHS mission for participation to be feasible for schools. This section presents customer ratings on the following aspects of VHS participation:

- Teachers' perceptions of the time commitment and whether it was manageable.
- Students' perceptions about time and technology resources.
- Principals' and superintendents' perceptions of barriers to participation.
- Superintendents' perceptions of community support.

Time Commitment for Teaching

For VHS to operate successfully, teachers need designated time to prepare for and to teach their course. When surveyed about the time it takes to teach a VHS course in comparison to face-to-face courses, the majority (84 percent) of instructors reported that teaching in VHS is more time consuming (see Figure 52).

Figure 52. Teachers' Time Spent Teaching VHS Course (*N* = 106)



Even though teaching in VHS takes more time than instructing face-to-face, nearly three quarters of VHS instructors found the amount of time they dedicated to VHS was acceptable. Note the following survey findings from teachers (*N* = 106):

- Seventy-three percent of teachers indicated that the amount of time needed to teach a VHS course was acceptable to them.
- Seventy-three percent of teachers reported that their school provided enough time for them to work on their VHS course.

Of course, more than one quarter of all teachers did not agree that they had enough time or that the amount of time was acceptable to them. This suggests that for a sizable minority of teachers, sufficient teaching time is a concern.

Student Resources

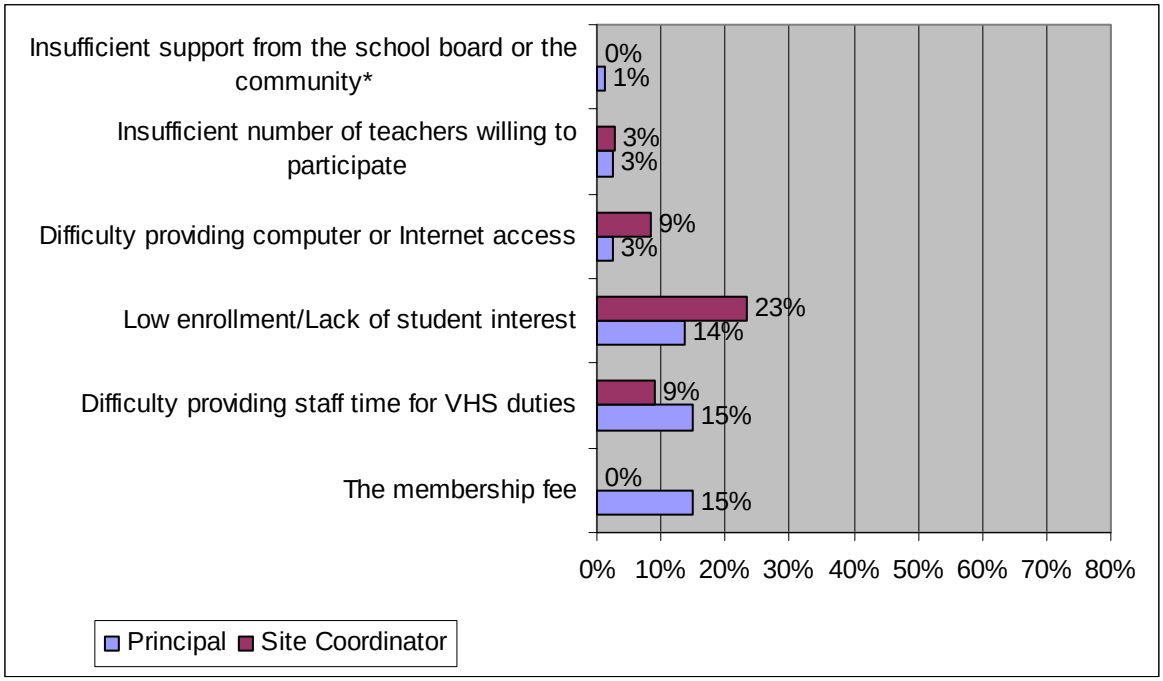
As indicated by the following survey findings, students (*N* = 1,920) appear to have the technological resources and time during the school day to participate in their VHS course:

- Ninety-five percent of students indicated that they had a suitable computer available at their school to use when they need it.
- Ninety percent of students reported that they were given class time during the school day for their VHS course.

Barriers to Participation

Overall, principals and site coordinators reported few barriers to participation in VHS. Nearly 60 percent of principals and 40 percent of site coordinators reported that there were no barriers to their participation in VHS. As shown in Figure 53, the most notable barrier was low enrollment or lack of student interest (reported by 23 percent of the site coordinators). There may be somewhat of a difference in perception between these two administrators (on the one hand) and VHS teachers (on the other) regarding the barrier of providing time for staff to work on their VHS duties.

Figure 53. Principal and Site Coordinator Reported Barriers to Participation in VHS



Note: Site coordinator *N* = 177; principal *N* = 80.
*Site coordinators were not presented with this item on the survey.

Community Support. One aspect of feasibility is community support. Superintendents were unanimous (*N* = 49) in agreeing that participation in VHS was perceived as "a positive district offering by school board members, parents, and community members."

Summary of Feasibility

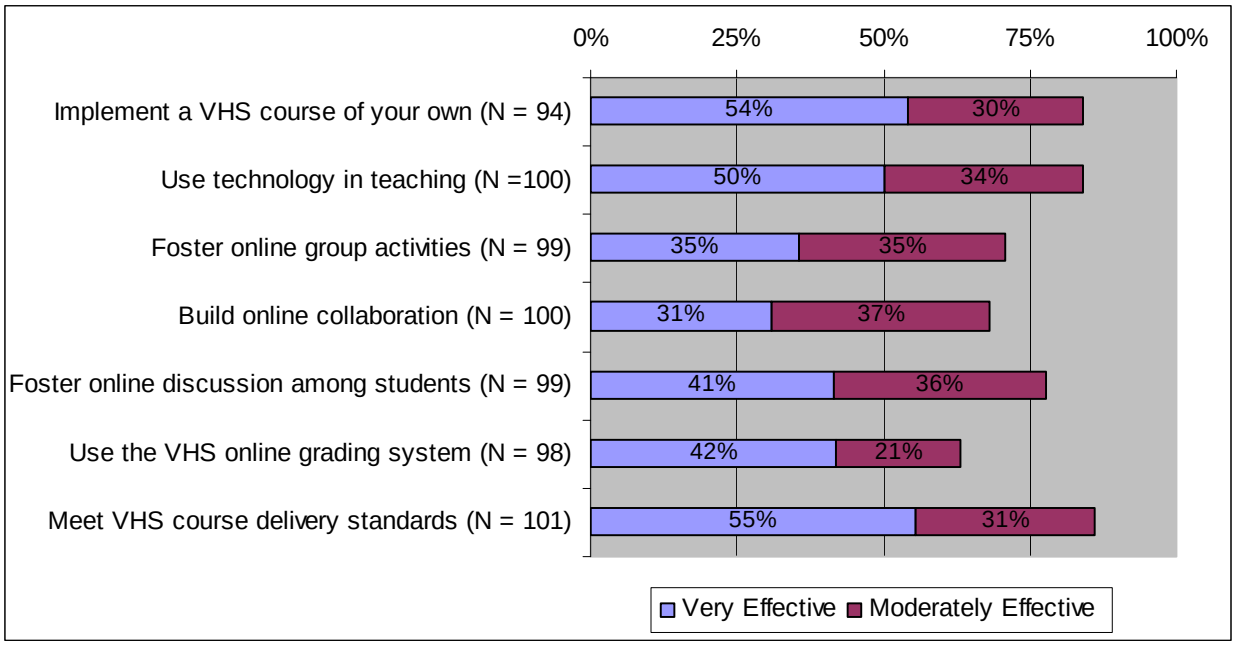
Across all data sources, VHS participation appears to be highly feasible for schools. Although preparing for and teaching a VHS course may be more time consuming than instructing face-to-face courses, most teachers are provided with time during the school day to attend to their VHS course. From the students' perspective, they appear to have the resources within their schools to work on their VHS courses. Low enrollment or lack of student interest, as reported by site coordinators, appears to be the only barrier of note. Finally, all superintendents agreed that their district's participation in VHS was perceived positively by their school board, parents, and community members.

Chapter 7: Effectiveness of VHS Professional Development

Before teaching an online course, every VHS teacher must complete a professional development NetCourse. The purpose of this course is to show teachers how to navigate the technical aspects of online instruction and how to build the skills and strategies they will need to facilitate high-quality online courses. Teachers are assigned a mentor for their first semester of teaching whose role is to provide advice and feedback on their online teaching. Past their first semester, VHS teachers may seek additional support for effective online instruction through COVE. This section summarizes teacher ratings of these professional development resources.

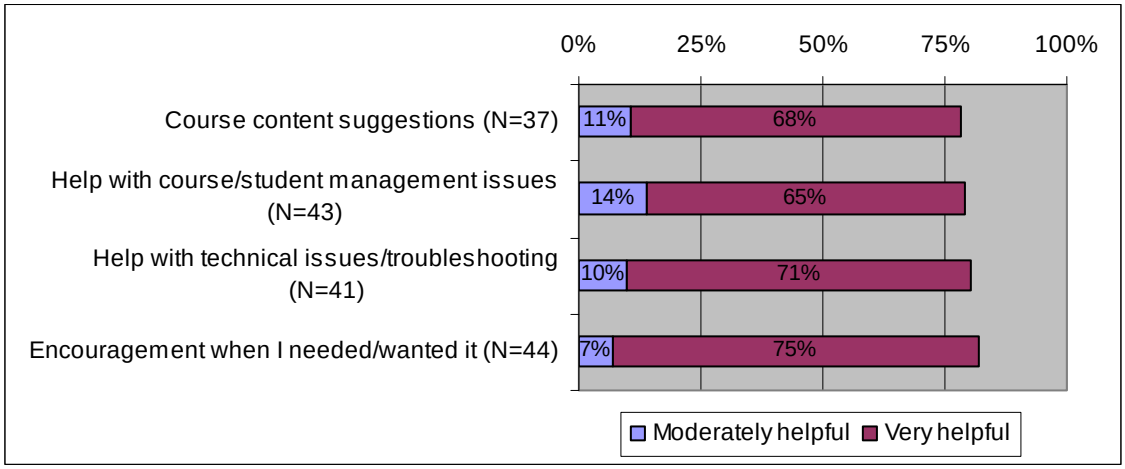
Teachers rated the effectiveness of their professional development NetCourse (see Figure 54). More than three quarters of teachers rated these courses as *very effective* or *moderately effective* in preparing them to implement a VHS course on their own, use technology in teaching, foster online discussions, and meet VHS course delivery standards. A somewhat smaller proportion of teachers (between 61 percent and 69 percent) rated these courses as *very effective* or *moderately effective* in preparing them to foster online group activities, build online collaboration, and use the VHS online grading system.

Figure 54. Teacher Ratings of Effectiveness of Professional Development NetCourse for Preparing Teachers for Various Tasks



Teachers also were asked how helpful their VHS mentor was in providing course content suggestions, helping with course and student management issues, helping with technical issues and troubleshooting, and providing support. About two thirds of respondents reported that these items were not applicable to them, presumably because they no longer had a mentor (after having been evaluated as being a skilled teacher). Of those who did respond to these items, about 80 percent rated the mentor as *very helpful* or *moderately helpful*, with most reporting that their mentor was *very helpful* (see Figure 55).

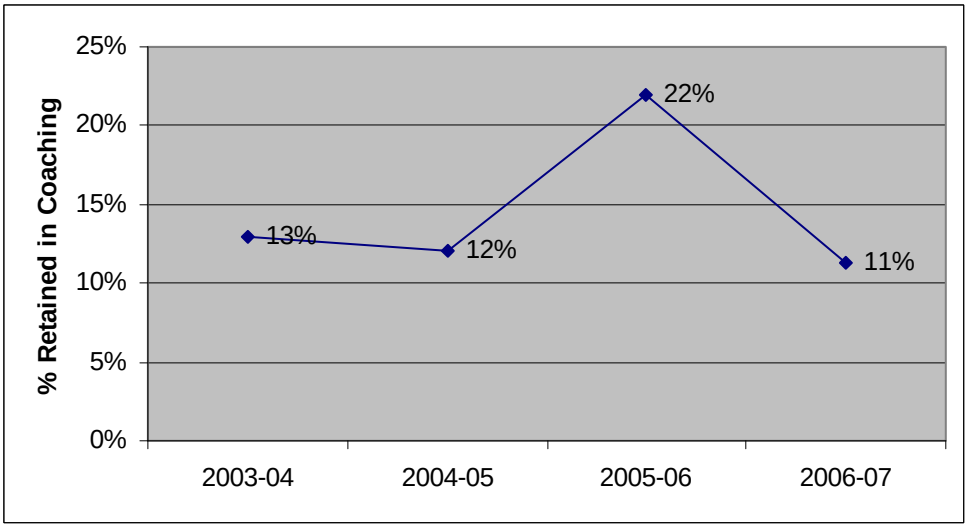
Figure 55. Teacher Reported Helpfulness of VHS Mentor



Note: Teachers who responded "Not Applicable" to these items are excluded from the denominator when calculating percentages.

VHS mentors submit regular evaluations of new teachers to the curriculum coordinator. Based on these evaluations, the mentor and curriculum coordinator decide whether new teachers need to continue to have a mentor during their second semester as a teacher. If so, that teacher is considered to be retained in coaching. Figure 56 illustrates teacher retention rates from the 2001–02 school year through the 2006–07 school year. During the 2006–07 school year, this percentage returned to the level of previous years after a bump in 2005–06. Thus, it appears that VHS teacher training is adequately preparing most teachers for online instruction.

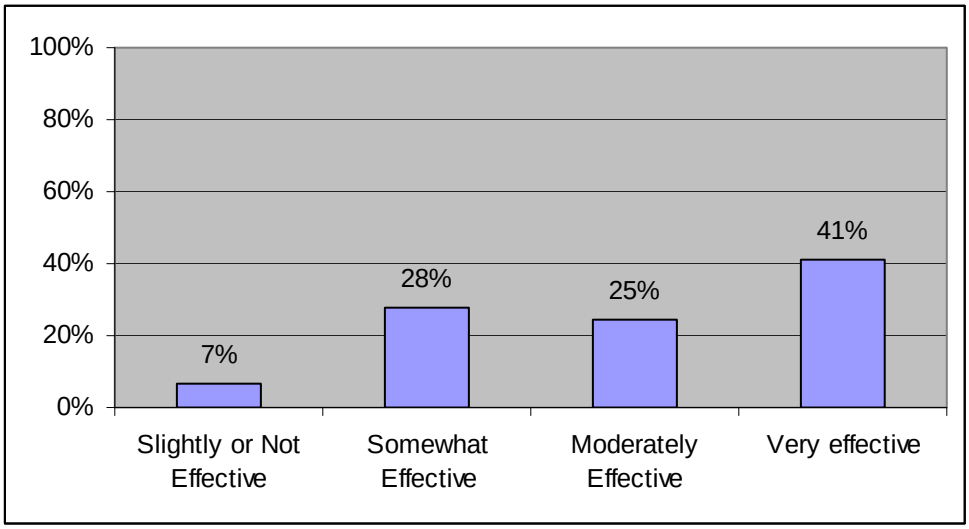
Figure 56. Percent of Teachers Retained in Coaching



Finally, teachers were asked, "How helpful is the COVE when you have questions on technical or course-related issues?" Of the 90 teachers who responded to this item, about one third stated that they had not been to COVE. Excluding these teachers from the denominator, about two

thirds of all teachers said COVE was *very effective* (41 percent) or *moderately effective* (25 percent). Most of the remaining teachers said it was *somewhat effective* (28 percent), and few said it was *slightly or not effective* (7 percent). These findings are displayed in Figure 57.

Figure 57. Teacher Ratings of Helpfulness of COVE (*N* = 90)



Note: Teachers who skipped this item or who indicated that they have not accessed COVE are excluded from the denominator.

In summary, based on teacher responses, professional development was most effective in explaining what VHS is and the technological aspects of the program. Although the professional development sessions were most effective in explaining what VHS is and the technological aspects of the program, the training was slightly less effective in preparing teachers to foster online activities and collaboration and use the grading system in all curriculum areas. Of the instructors who have a VHS mentor, most find that person supportive for a variety of issues that may occur during instruction. A low proportion of teachers were retained in coaching. Finally, two thirds of teachers who accessed COVE last year rated it *moderately effective* or *very effective* in addressing technical or course-related issues.

Chapter 8: VHS Support for Member Schools

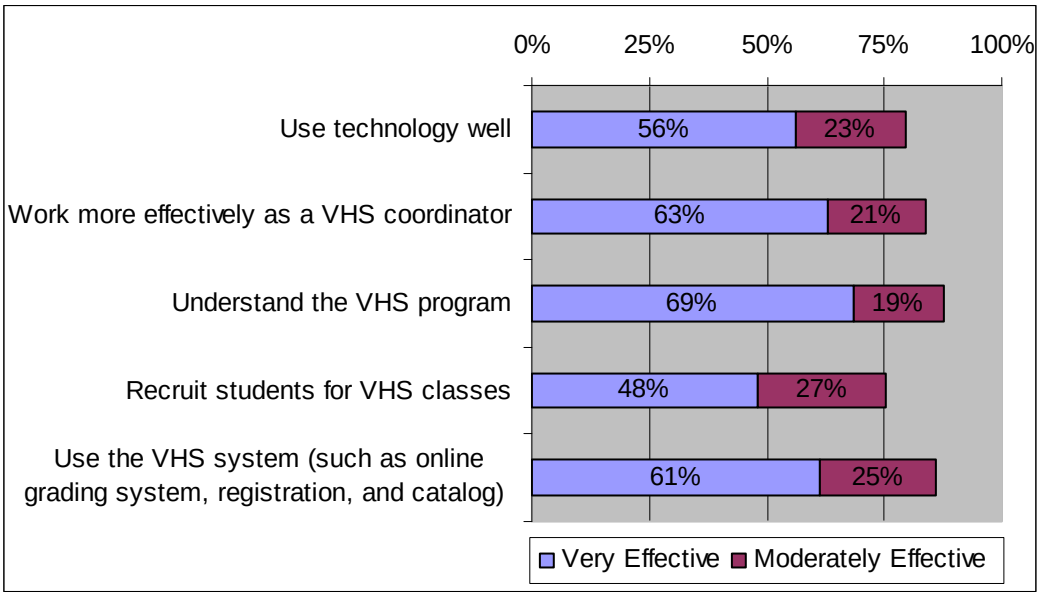
VHS provides several types of services that assist schools with management of online learning and promote high-quality online teaching. This chapter investigates how satisfied key stakeholders (including superintendents, principals, VHS teachers, and site coordinators) were with specific services provided by VHS and examines areas for improvement. These services include training of site coordinators and assistance with the technical and procedural aspects of course administration as well as communication about the VHS program.

Site Coordinator Training

The VHS SCO is a four-week online training course for site coordinators to learn VHS policies and procedures and the skills they need to manage online learning at their school. Site coordinators were asked how effective the orientation was in preparing them to fulfill several key components of their role.

As shown in Figure 58, site coordinators reported that the VHS SCO was effective in a variety of ways. More than three quarters of site coordinators reported that the orientation was *moderately* or *very effective* in preparing them to use technology well, understand the VHS program, recruit students for VHS classes, and use the VHS systems.

Figure 58. Site Coordinators Ratings of Effectiveness of VHS Site Coordinator Orientation (*N* = 137)



In addition, 98 percent of principals (*N* = 50) responded "yes" to a survey item that asked whether their VHS site coordinator received adequate training from VHS.

Technical and Administrative Support

Providing technical support to site coordinators and teachers is one of the essential functions of VHS. Survey respondents were generally satisfied with the technical support they received through VHS, as summarized in the following points (respondents who did not seek assistance were excluded from the denominator):

- Teachers rated the helpfulness of the assistance they received from VHS staff members regarding the Blackboard platform ($N = 71$); specific problems with students, site coordinators, and schools ($N = 68$); and other aspects of technical assistance ($N = 85$). At least 90 percent of teachers found VHS staff to be helpful on these matters, with at least 75 percent finding them *very helpful*.
- Similarly, 95 percent of principals ($N = 70$) reported that they are *very satisfied* (69 percent) or *moderately satisfied* (26 percent) with the technical support they received from VHS.
- The contact center is one of the primary ways VHS provides technical assistance to site coordinators. More than 90 percent of teachers and site coordinators ($N = 105$) reported being *satisfied* with the service they received from the contact center, with 78 percent stating that they were *very satisfied*.

Administrative Procedures and Communication

Site coordinators and principals expressed a high degree of satisfaction with a variety of VHS administrative processes, including creating student accounts, registering students for VHS classes, dropping students from classes, and obtaining grade reports. For the first three of these processes, more than 90 percent of site coordinators ($N = 137$) were *very satisfied* or *moderately satisfied* with the administrative procedures, with at least 80 percent being *very satisfied*. For obtaining grade reports, satisfaction among site coordinators was about 77 percent, with 47 percent *very satisfied* and 30 percent *moderately satisfied*. Principals expressed similar levels of satisfaction, though they rated just student registration and accessing grade reports.

Site coordinators and principals also expressed a high degree of satisfaction with the availability of courses. Site coordinators ($N = 137$) and principals ($N = 76$) rated their satisfaction with the level of course availability. More than 85 percent of both respondents were *very satisfied* or *moderately satisfied* with the administrative procedures, with at least 47 percent stating that they were *very satisfied*.

VHS uses a variety of forms of communication to keep superintendents, principals, teachers, and site coordinators apprised of program news. The form of communication respondents found most useful varied by their position. Although teachers were most likely to report that the VHS weekly announcements were very beneficial, the site coordinators, principals, and superintendents were most likely to give this assessment to the VHS website.

Summary

What Are the Characteristics of VHS's Member Schools, and Where Is VHS Experiencing Growth in Its Member Base?

The number of VHS member schools increased strongly in 2006–07 relative to the previous year (23 percent) although the number of schools actually enrolling students increased modestly (6 percent). The proportion of fully participating consortium schools has grown, and this membership category encompasses the largest number of schools (34 percent). Consortium schools (student only and fully participating) comprise 65 percent of all VHS member schools. Fully participating schools, whether consortium members or not, comprise 75 percent of all enrolled students. Three-year retention rates among all VHS member schools stand at 78 percent but are higher for consortium schools than for schools of other membership types.

In terms of school demographics, there were no major changes in school membership or student enrollments except for school size. School membership is now fairly evenly distributed among small, medium, and large schools. Most VHS schools are either suburban or rural, and the majority of VHS students (51 percent) now come from suburban schools. Only a small proportion of VHS schools (13 percent) are urban, and an even smaller proportion of enrollees (11 percent) come from urban schools. Although VHS member schools are present in every region of the country, more than half of its schools are located in New England. More than one quarter of its schools qualify for Title I funds although such schools enroll less than one fifth of all students. VHS schools are evenly distributed among categories of large, medium, and small schools although the plurality of students comes from large schools.

To What Extent Did VHS Experience Growth in Terms of Course Offerings, Course Capacity, and Student Enrollment in 2006–07?

VHS expanded its course offerings, course capacity, and student enrollment by about 15 percent (on all measures) from the previous year. Moreover, VHS course capacity has kept pace with this greater demand, as indicated by only modest growth in average class size from the previous year.

The proportion of course sections and enrolled students remained constant among courses at different levels during the past three years. This indicates that growth in course capacity and enrollment was distributed evenly across levels. There was a modest contraction, however, in course sections and student enrollment for courses on the pre-AP level. The proportion of sections offered at each course level closely matches the proportion of enrollment at each course level. Thus, there are no mismatches between capacity and enrollment. Average class size remained constant across course levels compared with last year but has increased across all levels compared with 2004–05. The highest class size was in regular classes, which had about 20 students on average, and the lowest was for pre-AP classes, which had about 17 students on average.

Are VHS Courses Consistent in Their Passing Rates Across Different Course Types and School Demographic Characteristics?

The overall VHS course passing rate rose slightly in 2006–07 and now stands at about 79 percent. There is a great deal of consistency in the passing rates by course level and a moderate degree of consistency among different curriculum areas. Compared with 2004–05, the passing rates of different courses levels have not changed more than three percentage points. Students in regular courses had the lowest passing rates, and students in AP courses had the highest passing rates. The passing rates of foreign language, English, and life skills courses have all decreased during the past three years. Passing rates of other curriculum areas have not changed much during the past three years. Relative to the overall VHS rate, technology, foreign language, English, and life skills courses have lower passing rates, and business and social science courses have higher passing rates.

School demographics seem to have some relation to passing rates. Students from urban schools have considerably lower passing rates than students from other locales, and, to a lesser extent, students from Title I and small schools also have lower passing rates.

Regarding AP testing, there are three metrics: the proportion of students enrolled in AP courses who take the exam, the proportion of the test takers who pass the exam, and the overall proportion of students enrolled in AP courses who pass the exam. Overall, 84 percent of students who took an AP-level course actually took the AP exam, a net increase of two points from 2004–05. Of these students who took the exam, 61 percent earned a passing score, the same as the previous year but down from 70 percent in 2004–05. Of all students who took an AP course, 51 percent earned a passing grade, an increase of six points from the previous year but a decrease of six points from 2004–05.

How Satisfied Are VHS Customers With the Quality of VHS Courses and Instruction?

Principals, superintendents, and the students themselves expressed high satisfaction with VHS courses in the 2006–07 academic year. In particular, most students reported that their course was a valuable learning experience, and most would take another VHS course or recommend one to a friend. Students gave their courses high ratings on measures of quality although about one quarter of students (the same as in years past) did not feel their courses were at the appropriate level of difficulty. VHS students indicated that their courses were facilitated well although a greater proportion of students in mathematics and technology courses *disagreed* that their course was well-facilitated. Student ratings of facilitation were particularly high in honors courses.

Teachers strongly agreed that course content was appropriate and that it promoted student engagement. Regarding their instructional practice, teachers strongly agreed that they managed their courses well and agreed (somewhat less strongly) that they provided feedback. Most teachers agreed that they facilitated their course using appropriate techniques although the strength of this agreement was somewhat less than with the other aspects of instructional practice. Overall, teachers reported high levels of student participation in discussions but somewhat lower levels of effective student collaboration. Finally, teachers reported high levels of student learning, with some modest variations among different curriculum areas.

What Are the Benefits of VHS Participation to Students, Teachers, and Schools?

VHS customers are satisfied with their schools' participation in VHS. Most school administrators perceived the benefit of additional courses not offered at their school. The benefit of this expanded access was most typically endorsed for elective classes, and the benefit was less frequently endorsed for access to "rigorous" courses or highly qualified teachers, or for expanded capacity of courses already being offered at the school. A majority of VHS customers perceived that students benefited from VHS participation in several different ways, with the most prevalent agreement recorded for exposure to the online learning environment; the opportunity to pursue personal interests; and the opportunity to develop independent learning skills. Finally, a majority of administrators perceived that teaching a VHS class expanded a teacher's technology and instructional skills.

How Feasible Is VHS Membership and Participation for Schools and Districts?

Across all data sources, VHS participation appears to be highly feasible for schools. Although preparing for and teaching a VHS course may be more time consuming than instructing face-to-face courses, most teachers are provided with time during the school day to attend to their VHS course. From the students' perspective, they appear to have the resources within their schools to work on their VHS courses. Low enrollment or lack of student interest, as reported by site coordinators, appears to be the only barrier of note. Finally, all superintendents agreed that their district's participation in VHS was perceived positively by their school board, parents, and community members.

How Effective Is VHS Training and Professional Development for Preparing Teachers for Online Instruction?

The professional development that site coordinators and teachers received appears to have prepared them for working with VHS. Although the professional development sessions were most effective in explaining what VHS is and the technological aspects of the program, the training was slightly less effective in preparing teachers to foster online activities and collaboration and to use the grading system in all curriculum areas. Of the instructors who have a VHS mentor, most find that person supportive for a variety of issues that may occur during instruction. A low proportion of teachers were retaining in coaching. Two thirds of teachers who accessed COVE last year rated it *moderately effective* or *very effective* in addressing technical or course-related issues. Finally, VHS teacher training is effective, as indicated by the low numbers of teachers retained in coaching.

How Satisfied Are VHS Customers With VHS Services and Communications?

VHS offers support services to teachers, site coordinators, and other administrators to help them manage the technical and procedural aspects of VHS participation. At least 90 percent of teachers, site coordinators, and principals expressed satisfaction with technical support for course facilitation or for administrative procedures. Most site coordinators and teachers who had dealings with the VHS contact center were satisfied with the service they received. Most principals and site coordinators expressed satisfaction with VHS administrative procedures. The form of communication with VHS that respondents found most useful varied by their position.

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