



E&R Report No. 07.06

November 2007

**NORTH CAROLINA VIRTUAL PUBLIC SCHOOLS  
REVIEW OF SUMMER SCHOOL 2007**

Author: Anisa Rhea, Ph.D.

**ABSTRACT**

*In summer 2007, 995 Wake County Public School System (WCPSS) students enrolled in online courses provided free of charge by the North Carolina Virtual Public School (NCVPS). Whereas most students were seeking to recover credits, some students enrolled in courses for credit acceleration. Students who elected to take accelerated courses were more likely than students registered for credit recovery courses to terminate their enrollment. Few students who initially enrolled in NCVPS had successful academic outcomes as indicated by the small proportion who received passing course grades from NCVPS (28.2%) and who demonstrated proficiency on End-of-Course (EOC) exams (13.5%). However, students enrolled for credit acceleration had higher success rates on both measures than students trying to recover credits. Survey results reveal that students taking accelerated EOC courses were also likely to possess the characteristics attributed to successful online learners. The guidelines for enrollment and the structures and processes of NCVPS should be evaluated to assess whether participation in NCVPS is an appropriate option to promote students' academic success.*

**INTRODUCTION**

The North Carolina Virtual Public School (NCVPS) was established by the North Carolina State Board of Education as an online school community. NCVSP offers high school and middle school students credit recovery and credit acceleration course options. A central objective of NCVPS is to provide students the opportunity to enroll in courses that they cannot take at their local school. The primary purpose of this report is to review the enrollment and academic achievement results of WCPSS students who participated in NCVPS during the summer of 2007. This study presents districtwide findings in an effort to provide WCPSS high school administrators with valuable data to consider when making decisions regarding potential NCVPS enrollment.

Key Topics

Background.....	p. 3
Enrollment Data.....	p. 6
Achievement Data .....	p. 11
Survey Results .....	p. 15
Discussion.....	p. 17

This report begins with a brief description of the initiation and purpose of NCVPS, the characteristics of NCVSP students, and the type of NCVPS courses available. Descriptive analyses of districtwide enrollment data are provided for all WCPSS students who elected to participate in NCVPS for summer school in 2007. The enrollment data allow the exploration of such questions as:

- How many students enrolled in NCVPS courses during the summer of 2007?
- How many enrollments were for credit recovery, how many were for credit acceleration, and what course subjects were chosen?
- What was the enrollment pattern for students enrolled in credit recovery courses compared to those in accelerated courses? Were students who were trying to recover credit more likely to drop courses than students who were taking courses for acceleration?

Academic achievement data, including grades received from NCVPS and End-of-Course (EOC) exam results, of students who maintained their NCVPS course enrollments are presented. These data offer insight into the viability of NCVPS as an option for WCPSS students by addressing the following questions:

- Do NCVPS courses promote and support students' academic success?
- Do students enrolled in NCVPS courses tend to earn passing course grades and are those taking EOC courses scoring proficient on the EOC exam?
- Does the success rate vary by type of course?

Finally, the report summarizes responses to a survey that NCVPS students completed during the EOC exam. The survey consisted of ten multiple-choice questions about students' perceptions of their online experience in EOC courses. The data allow an examination of the following questions:

- Do students taking EOC courses for credit recovery report similar online learning experiences as students taking EOC courses for credit acceleration?
- What are students' perceptions on the importance of interactions with the teacher and other students in the online environment? Were the interactions timely?
- How do students equate their online learning experience with EOC courses taken at their school?
- Do students taking EOC courses possess some of the attributes correlated to a successful online learner?
- Are students interested in future NCVPS enrollment?

Taken together, the information presented in this study can help school administrators identify whether NCVPS is promoting and supporting students' academic success by positively contributing to the WCPSS vision ("Working as a community of educators and stakeholders, with support of the broader community, we will ensure that every child educated in our school system graduates on time, prepared for the future") and Goal 2008 ("By 2008, 95 percent of students in grades 3 through 12 will be at or above grade level as measured by the State of North Carolina End-of-Grade or Course tests, and all student groups will demonstrate high growth").

## BACKGROUND

### What is NCVPS?

Online courses, also known as virtual schools, are a major trend in U.S. education. According to a recent article, 24 states provide virtual school programs offering more than 500,000 courses (Sturgeon, 2007). The U.S. Department of Education identified virtual learning as an approach that could be used to support efforts to improve student achievement (Clark, 2007). Virtual school programs provide enhanced educational opportunities to students, with the prime advantage of providing access to courses that may otherwise be unavailable.

In September 2002, the North Carolina General Assembly endorsed a general statute to create the Business Education Technology Alliance (BETA). The State Board of Education (SBE) and the BETA Commission established the E-Learning Commission (NC Public Schools News Release, 2005). In an effort to establish a virtual high school for North Carolina students, the E-Learning Commission, under the leadership of SBE Chair Howard Lee and Lieutenant Governor Beverly Purdue, was charged with launching NCVPS.

The purpose of NCVPS is to provide the opportunity for students across the state to take high school and college preparatory classes that are otherwise unavailable at their local school in a “virtual” teaching environment (NCVPS Web site). The site also asserts that NCVPS is part of the public schools of North Carolina and that all courses are required to be taught by NC-certified teachers. The parent information page on the NCVPS Web site states that “NC Virtual Public School will provide students with expanded academic options by offering online courses and online services such as test preparation, career planning services, and more at **NO COST** to your student.” For example, in addition to academic courses, students may register for SAT or ACT test preparation as well as Advanced Placement (AP) exam reviews. NCVPS assures parents that all NCVPS courses will meet the curriculum content standards that are set forth by the NC Department of Public Instruction and the recognized quality assurance standards for e-learning courses (NCVPS Web site).

### Who are NCVPS students?

Virtual courses are intended to augment a student's local school's program of study rather than serve as a proxy of it. As such, participation in VPS (according to the NCVPS Web site) is suggested for students who:

- desire to take an AP course the local school does not offer,
- need to complete a remaining requirement for graduation in a semester and the course needed at the local school is already full that semester,
- want to graduate from high school in three years,
- are home-bound or hospital-bound due to illness or injury and wish to remain on schedule to graduate on time, or
- are transfers or who need to make up a credit.

Although students with a variety of academic backgrounds and needs enroll in virtual schools, it is important to recognize that online courses may not be the best choice for all students. The NCVPS Web site and the *Guidelines for NCVPS Participation* enumerate attributes that are likely contributors to successful online learning experiences. For instance, students with attributes such as commitment, self-motivation, and conscientious time management are cited as prime candidates for virtual schools. Advanced computer skills are not necessary; however, NCVPS recommends that students demonstrate a working knowledge of email, file transfers, and the Internet. Additionally, most student communications are written in the virtual environment; therefore, strong expressive literacy skills and good keyboarding practices are essential. These traits and attributes of a successful online learner are corroborated in current literature addressing virtual education programs (Clark, 2007).

NCVPS also explains when it is not in the best interest of a student to enroll in online courses.

- The student does not meet the profile of a successful online student.
- The student will not have reliable access to the appropriate computer hardware.
- The student does not personally desire to take an online course.

According to the *Guidelines for NCVPS Participation*, students must receive approval from the principal or other designee at their local school to enroll in NCVPS courses. A copy of the *Guidelines for NCVPS Participation* that was sent to NC superintendents, high school principals, and middle school principals on August 20, 2007, by the NCVPS interim executive director may be found in Appendix 1 to this report.

### **What are the NCVPS courses?**

NCVPS courses can be taken for credit recovery or credit acceleration. Credit recovery courses are intended for students who have not successfully completed the course during the school year but, nevertheless, possess a basic understanding of the main concepts. Accelerated courses are designed for students taking the course for the first time. The pacing of these courses is fast; therefore, students who are independent learners, academically advanced, and possess excellent computer skills are ideal candidates. In the summer, the duration of the credit recovery courses is five weeks, compared to eight weeks for the accelerated courses.

The delivery of virtual courses may be synchronous or asynchronous (Clark, 2007). NCVPS states that the online courses are designed for an appropriate combination of synchronous and asynchronous delivery. Synchronous tools are utilized to provide direct communication and additional support to online students. Instructors are required to establish weekly online office hours to support individualized instructional needs through whiteboard instruction and communication with students via phone, and to organize small-group, text-based exchanges to increase online collaborative opportunities. Asynchronous tools are helpful for promoting student engagement and active learning and increasing student and teacher interactions. Some examples are discussion boards, e-mail/file exchanges, student-centered learning communities, instructor-led courses, differential instruction, and project-based learning. These synchronous and asynchronous modes of interaction appear to be consistent with NC standards for online

K-12 courses as published by LEARN North Carolina (2005). It is not clear, however, the extent to which NCVPS courses are actually being delivered as asynchronous or synchronous.

Although NCVPS serves NC public schools, it does not grant diplomas. Once a student completes an online course, the NCVPS grade is submitted to the local school and becomes part of the student's academic record. As stated in the *Guidelines for NCVPS Participation*, it is the local school's responsibility to administer any required EOC and Career-Technical Education (CTE) tests. All WCPSS students are required to take EOC exams in Algebra I, Algebra II, Biology, Chemistry, Civics and Economics, English I, Geometry, Physical Science, Physics, and U.S. History, which count as 25% of the student's final grade in the course. Therefore, local schools must use the NCVPS course grade and the EOC exam score to compute the final grade for students who enrolled in online EOC courses, before they receive credit on their school transcripts.

In the summer of 2007, NCVPS offered six EOC courses: Algebra I, Algebra II, Civics and Economics (C&E), English I, Geometry, and U.S. History. Algebra I, C&E, English I, and U.S. History are four of the five EOC assessments that WCPSS students must pass to partially fulfill the state-mandated graduation requirements known as the NC High School Exit Standards. The consequences of the EOC testing results extend beyond the individual student enrolled in a NCVPS course. The EOC exam results are also applicable for determining the local school's performance as measured by the ABCs of Public Education and Annual Yearly Progress (AYP). EOC exam results for students who completed NCVPS courses in the summer of 2007 will be used in performance and growth calculations for WCPSS schools for the 2007-08 school year.

## METHODOLOGY

### Data Sources and Sample

Enrollment and course grade data for WCPSS students enrolled in NCVPS during the summer of 2007 were retrieved by WCPSS Instructional Technology staff from a section of the NCVPS Web site for authorized users. The major issues with the data were that the NCVPS did not:

- post enrollment and course grade data in a timely manner,
- include student IDs or course codes in the dataset, and
- produce a WCPSS districtwide dataset (each school had a password-protected spreadsheet).

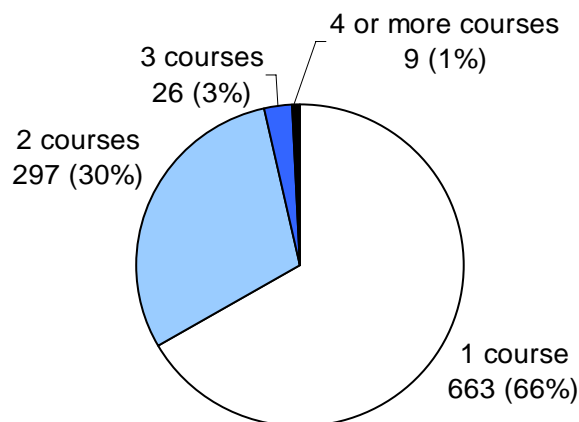
The WCPSS Testing Office processed EOC exam outcomes and EOC survey results documenting students' perceptions of their NCVPS experience. These data were then provided to WCPSS Program Accountability staff and merged into a single dataset containing enrollment and course information, course grade and exam results, and students survey responses for each individual course enrollment for the summer of 2007. The analytic sample for this report includes 995 students, comprising 1,378 individual enrollments in NCVPS courses.

### NCVPS ENROLLMENT RESULTS

During the summer of 2007, just under 1,000 WCPSS students initially enrolled in NCVPS, including 989 high school students and six middle school students. About one third of the 995 students enrolled in more than one course, resulting in 1,378 individual enrollments. Student enrollment data presented in Figure 1 show that:

- 663 students were enrolled in one NCVPS course, and
- 332 students were enrolled in more than one NCVPS course.

**Figure 1**  
**Students Enrolled in NCVPS Courses for Summer 2007**

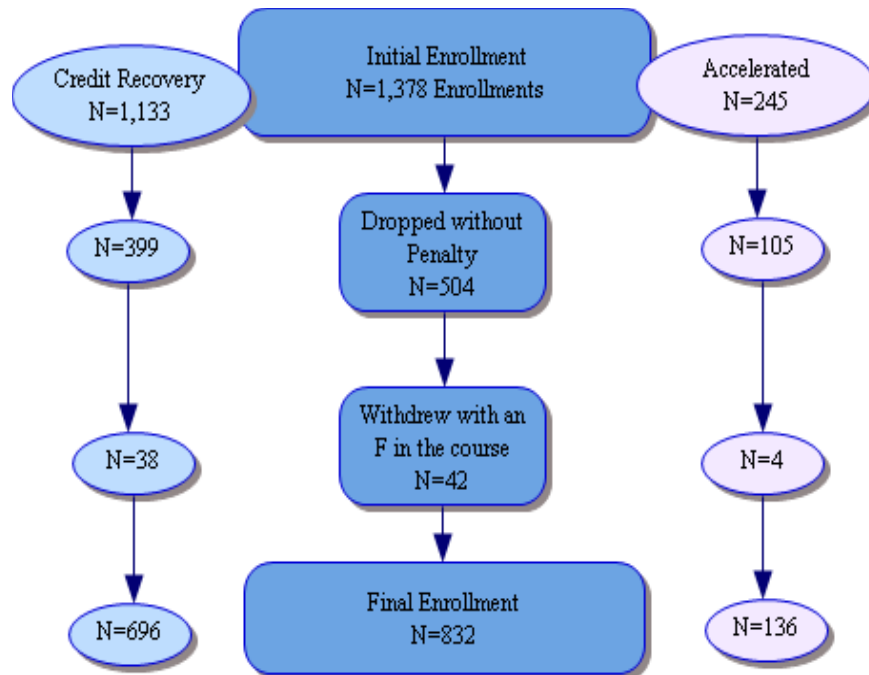


**Individual Enrollments**

Figure 2 illustrates the enrollment pattern of the WCPSS student participants in NCVPS during the summer of 2007.

- The vast majority (82.2%) of the 1,378 enrollments were in credit recovery courses rather than in accelerated courses (17.8%).
- About one third (36.6%) of all individual enrollments in courses were dropped without penalty by the specified drop date.
- Only 3.0% of all individual enrollments withdrew with an F in the course, meaning that they did not drop the course by the designated deadline.
- Students enrolled in accelerated courses were more likely to drop courses, and to do so without penalty, than students enrolled in credit recovery courses.

**Figure 2  
Total NCVPS Enrollment for Summer 2007**



### Credit Recovery Course Individual Enrollments

Table 1 presents enrollment data for credit recovery courses during the summer of 2007, including the number of enrollments and the percentage of enrollments that were dropped without penalty, dropped late (withdrawn with an F), and maintained. The frequencies of credit recovery course enrollments are pictured in Figure 3.

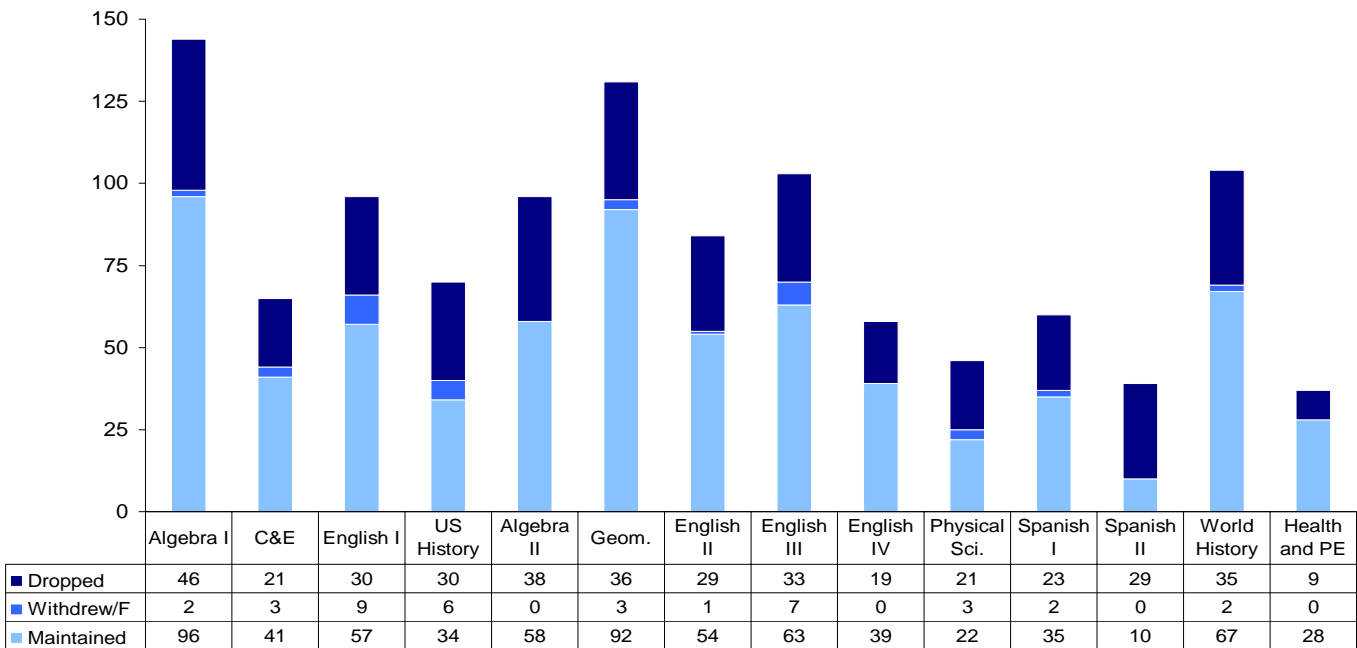
- Algebra I, Geometry, World History, and English III were the most popular credit recovery course choices for online enrollments in the summer of 2007.
- Of the 1,133 individual enrollments in credit recovery courses, 35.2% were dropped by the deadline.
  - By course, about one third of all individual enrollments were dropped without penalty.
  - Health and PE had the lowest drop rate (24.3%), whereas Spanish II had the highest (74.4%).
- Overall, 3.4% of all initial credit recovery enrollments withdrew with an F in the course.
- Between 48.6%-70.2% of individual enrollments in EOC courses were maintained.
  - Among EOC course enrollments, students were most likely to remain in Geometry and Algebra I.
- Overall, less than two thirds (61.4%) of all credit recovery enrollments were maintained.

**Table 1**  
**Credit Recovery Course Enrollment for Summer 2007**

	Course	Enrolled	Dropped	Withdrew/F	Maintained
<b>High School Exit Standards EOCs</b>	Algebra I	144	31.9%	1.4%	66.7%
	C&E	65	32.3%	4.6%	63.1%
	English I	96	31.3%	9.4%	59.4%
	U.S. History	70	42.9%	8.6%	48.6%
<b>EOCs</b>	Algebra II	96	39.6%	0.0%	60.4%
	Geometry	131	27.5%	2.3%	70.2%
<b>Electives/Other</b>	English II	84	34.5%	1.2%	64.3%
	English III	103	32.0%	6.8%	61.2%
	English IV	58	32.8%	0.0%	67.2%
	Physical Science	46	45.7%	6.5%	47.8%
	Spanish I	60	38.3%	3.3%	58.3%
	Spanish II	39	74.4%	0.0%	25.6%
	World History	104	33.7%	1.9%	64.4%
	Health and PE	37	24.3%	0.0%	75.7%
	<b>Total</b>	<b>1,133</b>	<b>399 (35.2%)</b>	<b>38 (3.4%)</b>	<b>696 (61.4%)</b>

Interpretation Example: Of the 144 credit recovery enrollments in Algebra I, 31.9% were dropped, 1.4% were withdrawn with an F, and 66.7% were maintained.

**Figure 3**  
**Frequency of Credit Recovery Enrollment Patterns for Summer 2007**



Interpretation example: Of the 144 credit recovery enrollments in Algebra I, 46 were dropped, 2 were withdrawn with an F, and 96 were maintained.

**Accelerated Course Individual Enrollments**

The number of accelerated course enrollments and the percentage that were dropped without penalty, withdrawn with an F, and maintained are presented in Table 2. The frequencies of accelerated course enrollments are illustrated in Figure 4.

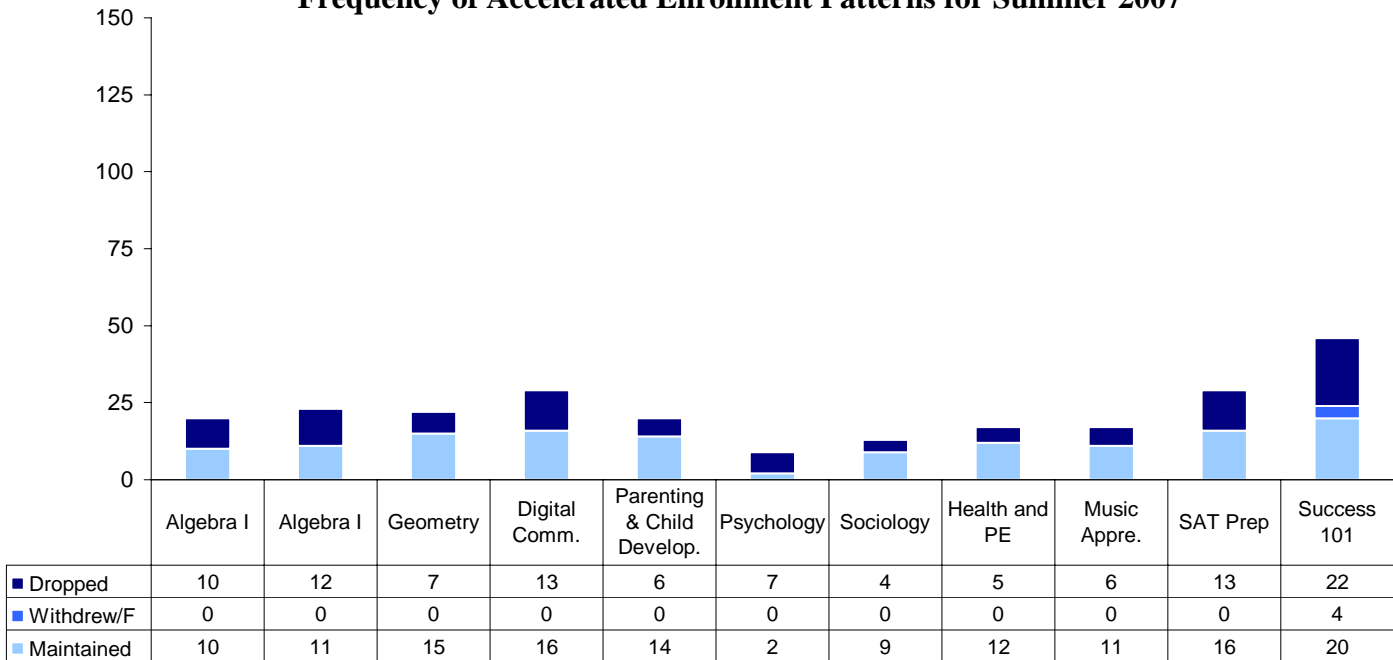
- Success 101 was the accelerated course that students most frequently enrolled in for the summer of 2007, followed by SAT Prep and Digital Communications.
- Forty-three percent of accelerated enrollments were dropped by the deadline.
  - Between one third and one half of all accelerated course enrollments were dropped without penalty.
  - Psychology had the highest drop rate (77.8%) with seven of the initial nine enrollments dropped.
- Four enrollments, which were in Success 101, were dropped late (withdrawn with an F).
- Students were most likely to maintain their enrollments in Health and PE, Parenting and Child Development, and Sociology.
- Considering EOC courses, about half of the enrollments in Algebra I and Algebra II were maintained compared to about two thirds of Geometry.
- Overall, slightly over half (55.5%) of the 245 enrollments were maintained; and thus, were eligible for credit.

**Table 2**  
**Accelerated Course Enrollment for Summer 2007**

	Course	Enrolled	Dropped	Withdrew/F	Maintained
<b>High School Exit Standards EOC</b>	Algebra I	20	50.0%	0.0%	50.0%
	Algebra II	23	52.2%	0.0%	47.8%
<b>EOC</b>	Geometry	22	31.8%	0.0%	68.2%
	Digital Communications	29	44.8%	0.0%	55.2%
<b>Career-Tech</b>	Parenting and Child Development	20	30.0%	0.0%	70.0%
	Psychology	9	77.8%	0.0%	22.2%
<b>Electives/Other</b>	Sociology	13	30.8%	0.0%	69.2%
	Health and PE	17	29.4%	0.0%	70.6%
	Music Appreciation	17	35.3%	0.0%	64.7%
	SAT Prep	29	44.8%	0.0%	55.2%
	Success 101	46	47.8%	8.7%	43.5%
	<b>Total</b>		<b>245</b>	<b>105 (42.9%)</b>	<b>4 (1.6%)</b>

Interpretation Example: Of the 20 accelerated enrollments in Algebra I, half were dropped and half were maintained.

**Figure 4**  
**Frequency of Accelerated Enrollment Patterns for Summer 2007**



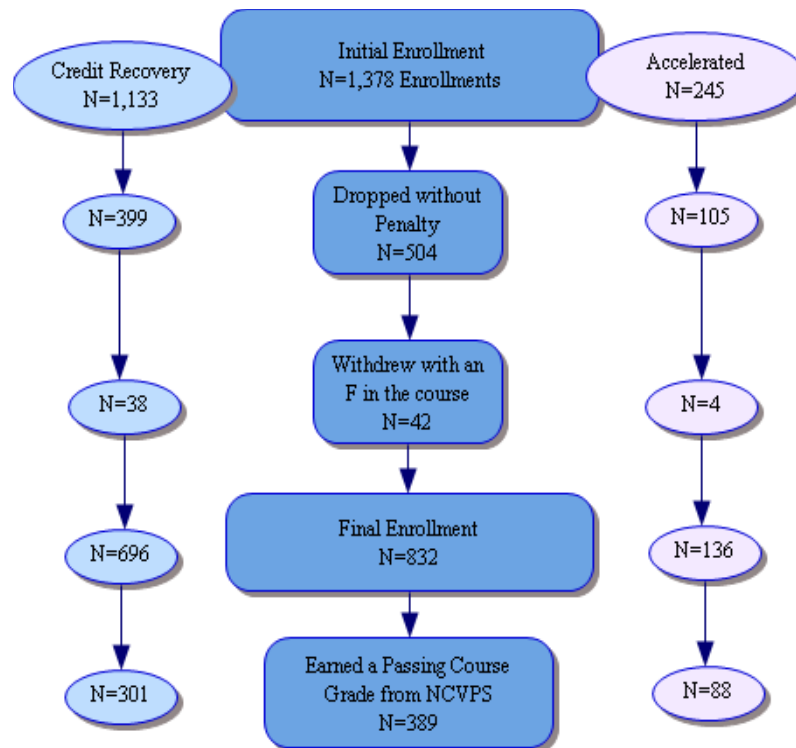
Interpretation example: Of the 20 accelerated enrollments in Algebra I, 10 were dropped and 10 were maintained.

### NCVPS ACHIEVEMENT RESULTS

Figure 5 illustrates the trend in achievement results, e.g., those enrollments that yielded a passing grade from NCVPS, for all summer 2007 participants.

- Slightly less than half (46.8%) of the 832 maintained enrollments received a passing grade in the course from NCVPS.
- A broader measure of the success rate, which takes into account the number of initial enrollments, produces a substantially different outcome. Of the 1,378 initial enrollments, 28.2% received a passing grade from NCVPS.
- Regardless of how success is measured, students enrolled in accelerated courses were more likely to received passing grades from NCVPS than students enrolled in credit recovery courses.

**Figure 5**  
**Total NCVPS Achievement Results for Summer 2007**

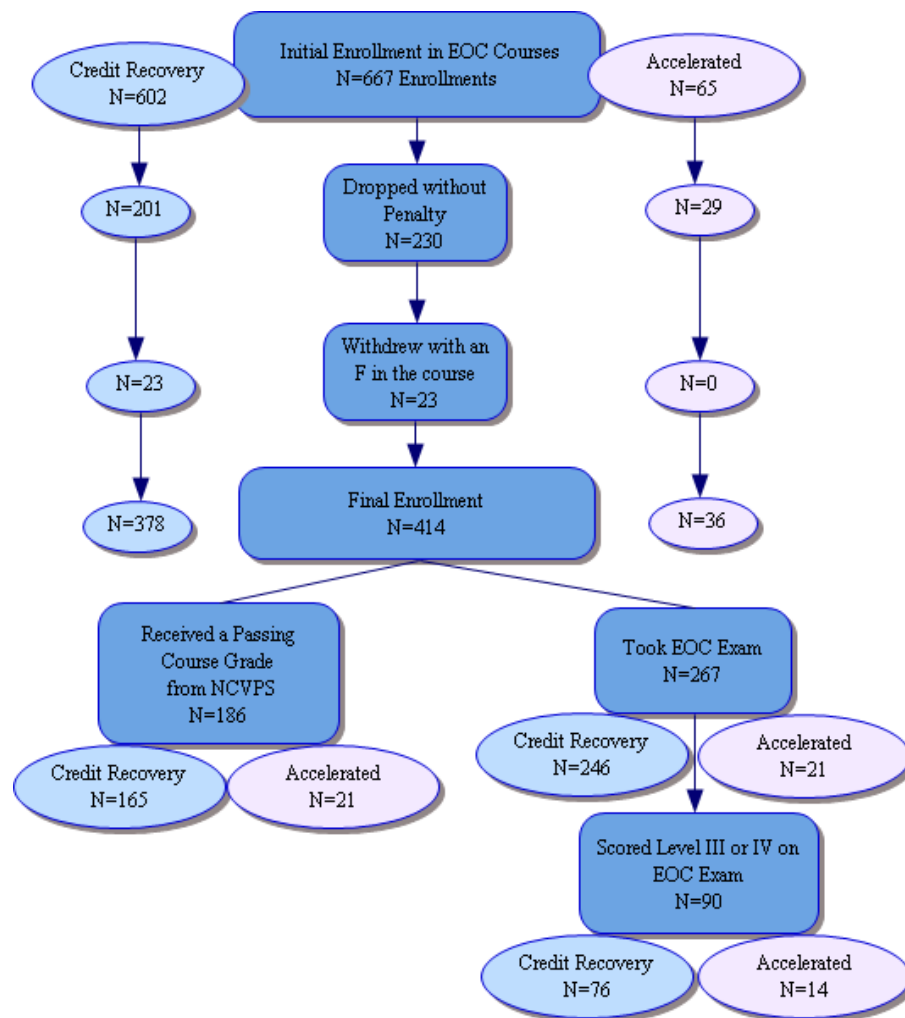


All WCPSS students who participated in NCVPS during the summer of 2007 by enrolling in Algebra I, Algebra II, Civics and Economics, English I, Geometry, and U.S. History courses were expected to take the corresponding EOC exam at one of the WCPSS high schools. Any EOC course grade students received from NCVPS did not include the EOC exam results, which count as 25% of the student’s final grade in the course.

Two indicators of academic success, students' course grades from NCVPS and EOC exam achievement levels, are presented in Figure 6.

- EOC course enrollment composed half (48.4%) of all initial enrollments in NCVPS and 62.1% of all EOC course enrollments were maintained.
- Of the 414 maintained EOC course enrollments, 44.9% received a passing course grade from NCVPS. This indicator of success declines to 27.9% when comparing the number of initial enrollments in EOC courses to the number that received a passing course grade.
- About two thirds of the enrollments in EOC courses fulfilled the requirement of taking the corresponding EOC exam, resulting in 147 enrollments that did not meet EOC testing requirements.
- About one third of the completed EOC exams were proficient. The success rate is reduced considerably by taking into account all initial enrollments in EOC courses as compared to the number of proficient EOC exams. A very small percentage (13.5%) of initial EOC course enrollments went on to pass the required EOC exam.

**Figure 6**  
**NCVPS EOC Achievement Results for Summer 2007**



**Credit Recovery Course Achievement Results**

Table 3 presents achievement results for credit recovery courses during the summer of 2007, based on final enrollment data. The percentage of the maintained/final enrollments that received passing course grades from NCVPS and the percentage with proficient EOC exam results are provided. Earning a passing course grade from NCVPS does not appear to be a strongly related with scoring proficient on the EOC exam.

- Less than half (43.2%) of the final enrollments in credit recovery courses received a passing grade in the course from NCVPS.
- Slightly less than one fourth (20.1%) of all final EOC enrollments scored proficient on the EOC exam. This percentage includes enrollments of students who did not take the EOC exam.
- Students enrolled in Spanish II and English III were most successful in terms of receiving passing course grades from NCVPS.
- Among EOC courses, Geometry and U.S. History enrollments produced the greatest rates of passing course grades from NCVPS; however, students enrolled in either course were less likely to pass the EOC exam.
- Between 14.1%-28.1% of enrollees in EOC courses had proficient exam scores. Students enrolled in English I held the highest proficiency rate, whereas students enrolled in Geometry held the lowest.

**Table 3  
Credit Recovery Course Achievement Results for Summer 2007**

	<b>Course</b>	<b>Final Enrollment</b>	<b>Earned a Passing NCVPS Course Grade</b>	<b>Passed EOC Exam</b>
<b>High School Exit Standards EOCs</b>	Algebra I	96	28.1%	19.8%
	C&E	41	41.5%	19.5%
	English I	57	40.4%	28.1%
	U.S. History	34	52.9%	20.6%
<b>EOCs</b>	Algebra II	58	48.3%	22.4%
	Geometry	92	56.5%	14.1%
<b>Electives/Other</b>	English II	54	29.6%	na
	English III	63	58.7%	na
	English IV	39	38.5%	na
	Physical Science	22	31.8%	na
	Spanish I	35	34.3%	na
	Spanish II	10	60.0%	na
	World History	67	55.2%	na
	Health and PE	28	21.4%	na
	<b>Total</b>	<b>696</b>	<b>301 (43.2%)</b>	<b>76 (20.1%)</b>

Interpretation example: Of the 96 final enrollments in Algebra I, 28.1% received a passing course grade from NCVPS and 19.8% scored proficient on the EOC exam.

**Accelerated Course Achievement Results**

Summer 2007 achievement data for accelerated courses, including the number of final enrollments and percentage of enrollments that did receive passing course grades from NCVPS as well as the percentage that produced proficient EOC exam results, are provided in Table 4. Achievement results for accelerated enrollments are stronger than those seen among credit recovery enrollments. Nevertheless, success in NCVPS courses in terms of receiving a passing grade does not suggest sufficient mastery of the skills and knowledge needed to produce proficient EOC exam results.

- About two thirds (64.7%) of students who maintained their accelerated course enrollments earned a passing grade in the course from NCVPS.
- Although 38.9% of final enrollments in EOC accelerated courses passed the EOC exam, the high pass rate among Algebra II students carried most of the weight in this calculation. Students enrolled in Algebra II were considerably more likely than students enrolled in other EOC courses to earn passing course grades from NCVPS and to score proficient on the EOC exam.
- All individual enrollments in Psychology resulted in passing course grades from NCVPS and Music Appreciation enrollees also fared well in terms of passing course grades.
- Students enrolled in Algebra I had the lowest success rates in terms of course grades and had low passing EOC exam results.

**Table 4  
Accelerated Course Achievement Results for Summer 2007**

	<b>Course</b>	<b>Final Enrollment</b>	<b>Earned a Passing Course Grade</b>	<b>Passed EOC Exam</b>
<b>High School Exit Standards EOC</b>	Algebra I	10	40.0%	30.0%
<b>EOC</b>	Algebra II	11	81.8%	72.7%
	Geometry	15	53.3%	20.0%
<b>Career-Tech</b>	Digital Communications	16	68.8%	0.0%
	Parenting and Child Development	14	50.0%	0.0%
<b>Electives/Other</b>	Psychology	2	100.0%	0.0%
	Sociology	9	77.8%	0.0%
	Health and PE	12	75.0%	0.0%
	Music Appreciation	11	90.9%	0.0%
	SAT Prep	16	43.8%	0.0%
	Success 101	20	70.0%	0.0%
	<b>Total</b>	<b>136</b>	<b>88 (64.7%)</b>	<b>14 (38.9%)</b>

Interpretation example: Of the 10 final enrollments in Algebra I, 40.0% received a passing course grade from NCVPS and 30.0% scored proficient on the EOC exam.

## EOC SURVEY RESULTS

All NCVPS students taking EOC exams in the summer of 2007 were given a survey consisting of ten questions regarding their NCVPS experience. The survey questions were on the front of each EOC exam answer sheet. Responses were intended to be a reflection of the student's experience in the EOC course for which they were being assessed. Students taking more than one EOC course may have completed more than one survey. As previously shown in Figure 6, 267 EOC exams were taken, including 246 exams from credit recovery course enrollments and 21 exams from accelerated course enrollments. The survey response rate was 94.8%. The results of the 253 completed EOC surveys are presented in Table 5. A copy of the survey questions as they appeared on the EOC exam is available in Appendix 2.

Findings from the completed surveys indicate a disparity in the NCVPS experience among students taking EOC courses for credit recovery compared to students trying to attain accelerated credits. Compared to students seeking to recover credits, students taking accelerated courses were more likely to state that the online courses were more interesting and difficult than courses at their school. Nevertheless, students in credit recovery EOC courses were more likely than students in accelerated EOC courses to consider taking another online course.

- Whereas the vast majority of respondents agreed that communication with the teacher was an important part of the course, fewer held the same opinion about communication with other students taking the online course (i.e., one half of credit recovery enrollments compared to about one third of accelerated enrollments).
- Regardless of type of course, respondents said that they received communications from teachers in a timely manner — almost immediately or, more commonly, within one to two days.
- Students taking accelerated courses were more likely to believe that the online EOC course was more interesting than courses at their school than students taking courses to recover credit (38.1% compared to 18.1%).
- More than half (57.1%) of students taking courses for accelerated credit also responded that work in the online course was harder than school courses, compared to about one third of students taking credit recovery courses who held the same belief.
- Most (71.4%) students taking accelerated courses said that they spent four or more hours on the online course per week. Fewer than half (44.8%) of students in credit recovery courses spent that much time on the course, and slightly less than one fourth did not offer a response.
- When asked about the accessibility of Web sites needed for the course, a higher percentage of students taking accelerated courses (76.2%) than students taking credit recovery courses (57.8%) agreed that they had no problems.
- Usually doing schoolwork without anyone pushing them to get it done was the personal description most frequently selected by students in accelerated courses (61.9%), whereas students taking courses for credit recovery most often described themselves as sometimes needing others to encourage them to do their schoolwork (44.8%).

**Table 5**  
**EOC Survey Results by Type of Course for Summer 2007**

	Credit Recovery		Accelerated		
	<i>n</i>	%	<i>n</i>	%	
Q1	I strongly agree that communication with students was important.	25	10.8%	3	14.3%
	I agree that communication with students was important.	91	39.2%	4	19.0%
	I disagree that communication with students was important.	73	31.5%	8	38.1%
	I strongly disagree that communication with students was important.	28	12.1%	6	28.6%
	No response	15	6.5%	0	0.0%
Q2	I strongly agree communication with teacher was important.	135	58.2%	11	52.4%
	I agree communication with teacher was important.	62	26.7%	7	33.3%
	I disagree communication with teacher was important.	15	6.5%	1	4.8%
	I strongly disagree communication with teacher was important.	7	3.0%	0	0.0%
	No response	19	8.2%	2	9.5%
Q3	I received a response, feedback, or score three or more days later.	52	22.4%	3	14.3%
	I received a response, feedback, or score within one or two days.	97	41.8%	9	42.9%
	I received a response, feedback, or score almost immediately.	63	27.2%	7	33.3%
	No response	20	8.6%	2	9.5%
Q4	This course was more interesting than courses at my regular school.	42	18.1%	8	38.1%
	This course was just as interesting as courses at my regular school.	91	39.2%	5	23.8%
	This course was less interesting than courses at my regular school.	78	33.6%	6	28.6%
	No response	21	9.1%	2	9.5%
Q5	The work in this course was harder than school courses.	85	36.6%	12	57.1%
	The work in this course was about the same as school courses.	97	41.8%	6	28.6%
	The work in this course was easier than school courses.	34	14.7%	2	9.5%
	No response	16	6.9%	1	4.8%
Q6	I spent two hours or less on this course weekly.	16	6.9%	1	4.8%
	I spent more than two hours but less than three hours on this course.	20	8.6%	1	4.8%
	I spent three to four hours on this course weekly.	36	15.5%	3	14.3%
	I spent more than four hours on this course weekly.	104	44.8%	15	71.4%
	No response	56	24.1%	1	4.8%
Q7	I strongly agree that I had no problems accessing the website I needed.	47	20.3%	8	38.1%
	I agree that I had no problems accessing the website I needed.	87	37.5%	8	38.1%
	I disagree that I had no problems accessing the website I needed.	50	21.6%	1	4.8%
	I strongly disagree that I had no problems accessing the website.	30	12.9%	2	9.5%
	No response	18	7.8%	2	9.5%
Q8	I usually do my schoolwork without anyone pushing me to get it done.	86	37.1%	13	61.9%
	I sometimes need others to encourage me to do my schoolwork.	104	44.8%	4	19.0%
	I hardly ever do my schoolwork unless someone is pushing me to do it.	20	8.6%	2	9.5%
	No response	22	9.5%	2	9.5%
Q9	Yes, I would consider taking another online course in the future.	149	64.2%	11	52.4%
	No, I would not consider taking another online course in the future.	64	27.6%	9	42.9%
	No response	19	8.2%	1	4.8%
Q10	Yes, I would be willing to participate in a focus group.	64	27.6%	8	38.1%
	No, I would not be willing to participate in a focus group.	155	66.8%	11	52.4%
	No response	13	5.6%	2	9.5%
<b>Total survey responses</b>		<b>232</b>		<b>21</b>	

## DISCUSSION

Enrollment data in NCVPS for the summer of 2007 clearly indicate that WCPSS students most frequently participated in NCVPS as a means of recovering credits. Students were much less likely to enroll in courses for the purpose of gaining credits prior to the 2007-08 school year. Of the 995 students and 1,378 individual enrollments, 82.2% enrolled in credit recovery courses with the most frequent enrollments in Algebra I and Geometry. Conversely, 17.8% of all initial enrollments were in accelerated courses.

The enrollment patterns of NCVPS participation during the summer of 2007 reveal that a sizable proportion of WCPSS students who opted to take online courses did not maintain their course enrollments. Among initial enrollments in courses that would allow students to recover credits, 36.6% were dropped and another 3.0% were dropped after the deadline resulting in a W/F on their transcript. Interestingly, students who elected to take accelerated courses were more likely than students registered for credit recovery courses to terminate their enrollment and to do so without receiving any penalty. The difference in the drop rates between credit recovery and accelerated enrollments could be attributable to a number of factors. Perhaps students taking accelerated courses were more likely to pay attention to drop dates and/or they were better able to judge the fit of the course to their needs sooner than students taking credit recovery courses. Also, the sense of urgency to recover a credit may have compelled those student enrollees to make an attempt at completing the courses, even if they found it challenging. The difference could be as straightforward as the disparate lengths of time between the first day of class and date to withdraw without penalty among credit recovery and accelerated courses. Although credit recovery courses started four days after accelerated courses, the date to drop credit recovery courses was three days before the accelerated course drop deadline. It may also be that the guidelines for student participation published by NCVPS were not closely followed, resulting in a higher drop rate among students whose enrollment was misguidedly approved.

NCVPS courses did not appear to promote and support the academic success of most WCPSS students. Two indicators of academic success, students' course grades from NCVPS and EOC exam achievement levels, suggest that for those student participants who completed online courses in the summer of 2007, NCVPS did not positively contribute to the WCPSS vision of on-time graduation or to the fulfillment of Goal 2008. Of the initial 1,378 enrollments, 28.2% received a passing grade from NCVPS. Almost half of all initial enrollments were in courses that require an EOC exam, and a very small percentage (13.5%) of these enrollments resulted in demonstrated proficiency on the exam. Earning a passing course grade from NCVPS does not appear to be strongly related to scoring proficient on the EOC exam. These findings are particularly worrisome indicators of students' success in fulfilling the NC high school exit standards.

Measures of success do vary among students enrolled in courses for credit recovery compared to students seeking credit acceleration. Online courses taken during the summer of 2007 did not prove to be a solid method of credit recovery for high school students based on the low rates of passing course grades or proficient EOC exam scores. Although it is uncertain whether these students would have achieved higher academic marks if they had repeated courses at their local schools, the findings do caution school administrators to assess the appropriateness of NCVPS

courses for all students. Students enrolled in accelerated courses fared much better academically, although the overall success rate is still well below 95%. Considering the success rate by course, a few courses appear to be more suitable for online learning than others. For example, enrollees in Psychology, Music Appreciation, and Sociology were very likely to earn passing course grades. The outcomes of EOC course enrollments were less noteworthy, although students who completed Algebra II were more successful than students in other courses in terms of earning passing course grades and scoring proficient on EOC exams. In all likelihood, students who enrolled in accelerated courses were more apt than credit recovery enrollees to possess characteristics ascribed to successful online learners. These findings show strong support for the conception and adherence to NCVPS enrollment guidelines.

Survey results of students taking EOC exams reveal a disparity in online learning experiences among students taking accelerated courses and students taking credit recovery courses. This disparity may be associated with the attributes held by each group of students. Survey responses suggest that students who completed accelerated EOC courses are self-initiators and independent workers who possess solid levels of motivation and computer skills; traits that NCVPS identified in the profile of a successful online learner. These students were also more likely than students taking credit recovery courses to perceive that the online course was harder than school courses and they were more likely to adjust their work time by spending more than four hours a week on the course. It is probable that these attributes and behaviors contributed to the success that many students taking accelerated courses achieved. Nevertheless, achievement data, which show a 21.5% proficiency rate on the EOC exam based on initial accelerated EOC course enrollments, suggest that the predictors of success in an online learning course extend beyond the characteristics of the individual student to the structures and processes of NCVPS.

The synthesis of data suggests that the costs and benefits of enrollment in NCVPS should be carefully evaluated when considering NCVPS as an educational option for WCPSS students. Offering courses that are currently unavailable to students at their local school and providing opportunities for remediation and acceleration are two inducements of NCVPS participation. Also, considering the academic results produced by students who took online courses in the summer of 2007, it appears that the educational needs of most students are not fully being met. Access to courses and the financial practicality of enrollment in NCVPS should not be the primary motivating factors for enrollment. If online instruction is not effective in supporting students' academic needs and students are not ideal candidates for participation, then perhaps other options should be considered.

Even though students take courses through NCVPS, ultimately, their local schools are held accountable for their performance. As such, not only do the performance outcomes have considerable effects on the educational future of individual WCPSS students, but the district may face accountability consequences as well. Reliable information about NCVPS's policies is essential for students, parents, and principals to exercise sound judgment regarding potential enrollment and to best meet the needs of individual WCPSS students as well as the district.

## REFERENCES

Clark, S. (2007). Developing effective virtual education programs. *Informed Educator*. Alexandria: VA. Educational Research Service.

Guidelines for NCVPS participation. (2007). North Carolina Virtual Public Schools.

LEARN North Carolina (2005). Quality standards for online K-12 courses. Retrieved October 15, 2007, from <http://www.learnnc.org/support/coursestandards-k12>

North Carolina Public Schools News Releases 2004-05 (2005, April). State e-learning commission formed to develop virtual high school and other learning opportunities. Retrieved July 25, 2007, from <http://www.ncpublicschools.org/newsroom/news/2004-05>

North Carolina Virtual Public Schools Web site <http://www.ncvps.org/index.html>

Sturgeon, J. (2007, March). Creating an effective virtual school program. Retrieved August 29, 2007, from <http://www.districtadministration.com/>



**North Carolina  
Virtual Public School**

Friday Institute for Educational Innovation  
1890 Main Campus Dr.  
Raleigh, NC 27606  
919.513.8550  
[www.ncvps.org](http://www.ncvps.org)

To: North Carolina Superintendents, High School Principals, Middle School Principals  
From: The North Carolina Virtual Public School  
Date: August 20, 2007

The North Carolina Virtual Public School (NCVPS) established by the North Carolina State Board of Education, is an online school community serving K-12 public school students throughout the state of North Carolina. These courses are targeted for high school and middle school students needing to take courses that may not be available at their local school or that they cannot take on campus due to scheduling conflicts.

The courses will be taught by North Carolina certified teachers who have been trained to teach online and are working within their areas of concentration.

NCVPS serves the public schools of North Carolina. It is non-diploma granting organization, but instead provides courses a student otherwise would not be able to enroll in at the student's local school. When the course is successfully completed, grades are transferred to the local school for placement on the student's transcript. The NCVPS provides the teachers and certain support services for the online courses. The primary cost to the school district is the provision of textbooks and any other materials as required by the course. The school or student must also provide the computer and access to the internet.

The attached information contains the finalized guidelines necessary for your participation with NCVPS.

Note that each district office, middle school, and high school needs to identify a NCVPS contact person. These designees should register themselves by contacting Barbara Poole at [barbara.poole@ncvps.org](mailto:barbara.poole@ncvps.org) no later than August 29, 2007 ([www.ncvps.org](http://www.ncvps.org)).

Should you have any questions please contact Tammy Pearson at (919) 513-8550.

Sincerely,  
Jim Barber  
Interim Executive Director  
North Carolina Virtual Public School  
(919) 513-8551

## **Guidelines for North Carolina Virtual Public School Participation**

The North Carolina Virtual Public School (NCVPS), in partnership with North Carolina public schools, provides online instruction available any time and any place to North Carolina public school students. The first set of course offerings will focus on students needing to take high school level courses.

### Responsibilities of the North Carolina Virtual Public School:

- Provides access to curriculum and instruction for students enrolled in NCVPS courses. NCVPS teachers, North Carolina certified and working within their areas of concentration, interact continually with students and provide progress reports for your review. Student progress can be monitored via access through the Blackboard course management system.
- Awards final grade for successful completion of the course and transfers that grade to you for placement on the student's transcript
- Provides access to on line PSAT, SAT, ACT, AP, and GRE exam reviews
- Provides in-service training to your staff who interface with NCVPS
- Provides training and information awareness programs about NCVPS to meet the needs of public school communities
- Administers uniform standards and a withdrawal policy for students enrolling in NCVPS courses.

### Responsibilities of the district:

- Assigns a district level contact person for communication between the school district and NCVPS and communication with each local school NCVPS advisor. This person is the district NCVPS advisor. The NCVPS advisor will be responsible for registering students and approving student schedules. NOTE: Students will be required to come to campus to register for NCVPS courses.
- Notifies parents and students of the opportunity and benefits of NCVPS and adopts policies to encourage students to take courses when needed
- Creates and maintains on line accounts with NCVPS for district administrators for report monitoring

- Orders textbooks and materials for courses. Textbook information and other necessary materials lists will be provided by NCVPS to the central office NCVPS advisor.
- Serves as a liaison between the student and NCVPS. Student and parent grievances should be handled by the local school/district. NCVPS will provide any information necessary regarding grades, academic integrity and student performance. In addition, a Student/Parent Handbook will be sent to all district level distance learning advisors and be posted on our website – [www.ncvps.org](http://www.ncvps.org).

Responsibilities of the local school:

Provide an onsite contact for students taking NCVPS courses. This person may be the NCVPS advisor, administrator or a facilitator. This contact will serve as the first point of contact for any problems and should be available regularly via email or by phone. This person does need a background in the subjects they facilitate, but they will be a shoulder for the students to lean on and a disciplinarian when students need to get back on task. This person is an advocate for both the student and the teacher, and their role plays an integral part in these courses.

- Provides NCVPS courses as an appropriate educational option
- Notifies parents and students of the opportunity and benefits of NCVPS and adopt policies to encourage students to take courses when needed
- Verifies that the selected courses are appropriately based on the academic history, age, and grade level of the student
- Registers students for NCVPS courses- NOTE: Students will be required to come to campus to register for NCVPS courses.
- Provides students access to computers with Internet capability when students are taking NCVPS courses on the school campus. Informs students taking NCVPS courses off the school campus about appropriate hardware, software, and Internet requirements.
- Accepts final course grade as determined by NCVPS and enters credit for successful student completion of NCVPS courses
- Creates and maintains on line accounts with NCVPS for local school administrators for report monitoring
- Assigns a school level contact person for communication between the school, the central office NCVPS advisor, and NCVPS. This person is the school NCVPS

advisor. In the event this person should no longer be available, the school will assign these duties to another individual and contact NCVPS with the new information.

- Assumes responsibility for students taking NCVPS Advanced Placement courses with regard to ordering, paying for, and administering Advanced Placement exams in accordance with The College Board guidelines. Upon request, the school will provide NCVPS with the student's score on the Advanced Placement exam.
- Assumes responsibilities for test administration when required, this includes scheduling the End of Course test for courses that may require this as well as any CTE tests (VoCATS).

### Student enrollment guidelines

NCVPS is not a diploma granting program. Instead, it provides courses to students that otherwise would not be able to take at his or her local school. Students may take online courses from school, home, community center, or any location with appropriate hardware and Internet connection. The reasons to take an online course through NCVPS are many and include, but are not limited to, the following:

- NCVPS courses may accommodate students wanting to take courses not available locally
- NCVPS courses may accommodate students wanting to take courses whose sections at the local school are already full
- NCVPS courses may accommodate students who are home bound or hospital bound due to illness or injury
- NCVPS courses may accommodate students who already have a full load and wish to take additional courses
- NCPVS courses may accommodate students whose schedule does not permit taking certain courses during the school day
- NCVPS courses may accommodate students whose special circumstances cannot be addressed locally
- NCVPS courses may accommodate students who want to graduate ahead of schedule from school
- NCVPS courses may be used as options for suspended students or for those students in need of remediation

Registration dates will be communicated to each school. The school NCVPS advisor will register and enroll students by visiting the NCVPS web site ([www.ncvps.org](http://www.ncvps.org)). Students will also use the NCVPS web site as a login portal to their online courses.

Student enrollment in NCVPS courses requires the approval from the student's school of record. Approval may come from the principal or other designee.

### Characteristics of Successful Online Learners

While distance learning opportunities provide tremendous benefits to students in regards to course offerings, student-centered instruction, flexible scheduling, and heightened critical thinking and written communication skills, there are specific learner characteristics that promote greater student success in online learning environments. The following guidelines may assist in identifying students for distance learning opportunities.

- Autonomous learners are generally skilled in the areas of responsibility and self-regulation, necessary for managing course assignments and deadlines through online environments.
- Academically motivated learners commonly exhibit an internal locus of control, affording online students the persistence necessary in achieving desired goals.
- Grade level reading ability is a critical determinant of student success in online environments, as much of the course is delivered through written communication.
- Proficiency in written communication is required of students, as online courses are dependent not only upon live classroom discussions but also upon group discussion boards and written assignment submissions.
- Basic computer skills are necessary for students to function in an online learning environment, as students will utilize word processing software, email capabilities, and Internet resources in completing assignments and activities.
- Parental support has also been found to promote student success in online learning, as parents will generally work to ensure students meet deadlines and have the necessary resources available to them.
- Computer and Internet access at home, although not required, can certainly provide an advantage to students participating in distance learning courses, as students, many times, prefer to continue their work on assignments and communications outside of their regular school, or even take courses at home during the evening or on week-ends.

### The North Carolina Virtual Public School Instructional Model

The North Carolina Virtual Public School utilizes an online educational environment to provide increased educational opportunities to public school students across the state through an anytime, anyplace instructional model. An anytime, anyplace instructional model accommodates scheduling flexibility, provides students opportunities to accelerate learning, delivers instruction to homebound students, extends student learning beyond the traditional school day, and offers credit recovery options to students throughout the year.

To accommodate student needs and provide optimal flexibility, NCVPS online offerings are designed for an appropriate combination of synchronous and asynchronous delivery, affording students access to their courses 24 hours a day, seven days a week. Through web-based, asynchronous tools, such as discussion boards, email, file exchange, collaboration groups, and online testing, student-centered learning communities are established to promote student engagement and active learning in the online environment. All courses are instructor-led to facilitate group interaction, differential instruction, project based and inquiry learning, while increasing student-student and teacher-student exchanges.

In addition to the asynchronous online format, synchronous tools, such as whiteboard, text-based chat, and telephone or V.O.I.P. are utilized to provide real-time communication and additional support to online students. Instructors are required to establish weekly online office hours to support individualized instruction. They have a few options in communicating with students. These options include: whiteboard instruction; communicate with students via phone, and organize small group, text-based exchanges to increase student engagement and online collaborative opportunities. These office hours are a courtesy to assist the student through live interaction with the teacher. These office hours will occur after normal school hours. For students taking NCVPS courses on campus during the regular school day, email will be the primary contact between students and teachers.

The North Carolina Virtual Public School supports a wide array of instructional materials, online resources and communication tools to foster higher levels of cognitive learning, critical thinking, ICT (Information and Technology) and 21<sup>st</sup> Century learning skills. These instructional resources provide for student interaction with outside experts, simulations and case studies, role playing, debates, brainstorming, group projects, and the use of technology for student products and alternate assessment practices.

### The On-line Course Experience

Once registered the student and the student's guardian will participate in an orientation call. The telephone call has two purposes. First, the call adds a personal element to the virtual learning environment. Secondly, the call verifies the student has prepared for the course by successfully completing the online student tutorial. During the call the teacher will:

- confirm enrollment
- explain the basics of the course
- address getting started and how to access the course
- discuss what course materials are needed
- discuss correct configuration of software and hardware
- discuss your timetable for completing the course
- explain assessments and grading

- discuss how to submit work
- share contact information needed to contact the teacher
- answer your questions and concerns

Students will be required to complete an online orientation for their course, usually conducted during the first week of instruction. This orientation is part of the Blackboard course and will be accessible with the student login information generated at the time of registration approval.

What are your next steps?

- The school district central office identifies which staff member will serve as the district NCVPS advisor and registers that information on the NCVPS web site no later than (date). Contact information including name, school district, school address, phone number, and email address is needed. In the event this person should no longer be available, the school will assign these duties to another individual and contact NCVPS with the new information.
- Each high school and middle school identifies which staff member will serve as the school NCVPS advisor and registers that information on the NCVPS web site no later than August 17, 2007. Contact information including name, school, school address, phone number and email address is needed. In the event this person should no longer be available, the school will assign these duties to another individual and contact NCVPS with the new information.
- NCVPS will immediately contact the NCVPS advisors and begin a virtual orientation program. If a new NCVPS advisor is registered during the school year, please contact Barbara Poole, [barbara.poole@ncvps.org](mailto:barbara.poole@ncvps.org) to schedule the orientation.
- The course list is published on our website – [www.ncvps.org](http://www.ncvps.org). The list will also be sent to all superintendents, high school principals, middle school principals, and NCVPS advisors for dissemination. Some courses may be provided and taught by outside vendors. This information will be on our website also.
- Please visit our website to learn more – [www.ncvps.org](http://www.ncvps.org).

**Appendix 2**  
**End-of-Course Survey Summer 2007**

- 1. Communication with other students was an important part of this course.**
  - A. Strongly Agree
  - B. Agree
  - C. Disagree
  - D. Strongly Disagree
  
- 2. Communication with the teacher was an important part of this course.**
  - A. Strongly Agree
  - B. Agree
  - C. Disagree
  - D. Strongly Disagree
  
- 3. How quickly did you usually get responses from your teacher in this course (answers to questions, feedback or grades on your assignments, etc.)?**
  - A. Three or more days later
  - B. Within 1-2 days
  - C. Almost immediately
  
- 4. Compared to courses I've taken at my regular school, this course was:**
  - A. More interesting
  - B. Just as interesting
  - C. Less interesting
  
- 5. I had no problems accessing the websites I needed for this course.**
  - A. Strongly Agree
  - B. Agree
  - C. Disagree
  - D. Strongly Disagree
  
- 6. Compared to courses I've taken at my regular school, the work I had to do was:**
  - A. Harder
  - B. About the same
  - C. Easier
  
- 7. The number of hours I spent working on this course was about:**
  - A. 2 hours or less per week
  - B. More than 2 hours but less than 3 hours per week
  - C. 3 to 4 hours per week
  - D. More than 4 hours per week
  
- 8. Which statement best describes you?**
  - A. I usually do my schoolwork without anyone pushing me to get it done.
  - B. I sometimes need others to encourage me to do my schoolwork.
  - C. I hardly ever do schoolwork unless someone is pushing me to do it.
  
- 9. Would you consider taking another course online in the future?**
  - A. Yes
  - B. No
  
- 10. Would you be willing to participate in a focus group at a later date to talk more about your experience in this course?**
  - A. Yes
  - B. No