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ABSTRACT

This report presents the findings from a personal computer (PC) and Internet Survey administered to Northern Virginia Community College (NVCC) students in spring 1999. The survey measured students' access to and knowledge of personal computers, e-mail, and the Internet--both at home and at work. There was a 65% response rate, with 353 of 540 students replying to the survey. Overall, NVCC students had a high rate of access to and usage of computers at home. Over 95% used a computer at least one hour a week and approximately 86% had access to e-mail and the Internet from home, with the majority (61%) using the Internet between one and nine times per week. At work, 61% of the respondents also had access to a computer. Of these, 62% used e-mail, 58% used the Internet, and the majority (70%) used a work computer between one and nine times per week. The NVCC respondents had a very high rate of computer access compared with national statistics. Sections of the report include: (1) Personal Computer and Internet Usage at Home; (2) Personal Computer and Internet Usage at Work; (3) Personal Computer and Internet Usage at Home--Campus Analysis; and (4) Personal Computer and Internet Usage at Work--Campus Analysis. The report contains 50 tables. Appended is a copy of the survey instrument. (RDG)

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NVCC STUDENT USE OF PERSONAL COMPUTERS AND INTERNET



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Office of Institutional Research
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The Office of Institutional Research (OIR) would like to thank the NVCC students who participated in the PC and Internet Survey. OIR would also like to thank the faculty and staff at the five NVCC campuses who administered the survey and assisted in the data collection process.

NVCC STUDENT USE OF PERSONAL COMPUTERS AND INTERNET

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NVCC STUDENT USE OF PERSONAL COMPUTERS AND INTERNET

Executive Summary

This report presents the findings from the PC and Internet Survey administered to NVCC students in Spring 1999. The survey measured NVCC students' access to and knowledge of personal computers, e-mail, and the Internet, both at home and at work. The surveys were distributed in 21 randomly selected NVCC classes at all five campuses. There was a 65% response rate, with 353 out of 540 students responding to the survey. The results of the survey are presented in four sections in this report.

Section I: Personal Computer and Internet Usage at Home

- Eighty-six percent of the respondents had access to a computer at home, 86% of the respondents had access to e-mail at home, and 86% of the respondents had access to the Internet at home.
- Ninety-six percent of those who had a computer at home used it. The majority of the respondents (68%) used their home computer between 1 to 9 times per week.
- A large percentage of the respondents (48%) used their home computer between 1 to 9 hours per week.
- Ninety-three percent of the respondents used a home computer for activities related to school. Similarly, 92% used a home computer for personal/leisure purposes, and 46% used a home computer for activities related to work.
- Respondents used a home computer for 2.7 hours (median) per week for school related activities. However, the mean or average was 5.4 hours per week. The difference between the mean and median indicates that a small group of respondents spent a large proportion of their home computer time on school related activities. Therefore, in this context, the median hours per week was a more appropriate measure of average use.
- Respondents used a home computer for 3.9 hours (median) per week for personal/leisure activities.
- The median hours per week indicated that over 50% of the respondents did not use a home computer for work related activities.
- Eighty-two percent of the respondents accessed the Internet from a home computer.
- The majority of the respondents (61%) accessed the Internet between 1 to 9 times per week.

Section II: Personal Computer and Internet Usage at Work

- Out of 325 respondents, 61% had access to a computer at work.
- Seventy-two percent of the respondents had access to e-mail, and 69% had access to the Internet on a work computer.
- Of 197 respondents, 94% used a computer while at work.
- Sixty-two percent of the respondents used e-mail on a work computer and 58% used the Internet on a work computer.

- The majority of the respondents (70%) used a work computer between 1 to 9 times per week.
- Forty-seven percent of the respondents used a work computer 30 hours or more per week.
- Respondents used a work computer for 24 hours per week (median) for activities related to work.

Section III: Personal Computer and Internet Usage at Home – Campus Analysis

- Over 81% of the respondents from each campus had access to a personal computer at home.
- The majority of the respondents from each campus (over 81%), had access to an e-mail account on their home computer. Woodbridge Campus had the highest percentage of respondents who had e-mail access on their home computers (96%).
- Eighty percent or more of the respondents, from all of the campuses, had access to the Internet from a home computer.
- The majority of the respondents, regardless of campus, used the Internet from a home computer. Except for students from the Manassas Campus, a higher percentage of respondents had access to the Internet than actually used the Internet on a home computer.

Section IV: Personal Computer and Internet Usage at Work – Campus Analysis

- Fifty-nine percent or more of the respondents from the Annandale, Alexandria, Manassas, and Woodbridge Campuses had access to a computer at work. More respondents from each campus had access to a computer at home than at work.
- The majority of the respondents from all five campuses (66% or more) had access to e-mail on a work computer.
- There was a 18% difference between respondents from the Manassas Campus and respondents from the Loudoun Campus who could access the Internet from work (81% and 63% respectively).
- The greatest percentage of respondents who used an e-mail account on a work computer were from the Woodbridge Campus (72%), followed by respondents from the Alexandria Campus (67%).
- More respondents from all five campuses used the Internet at home than at work.
- More respondents, regardless of campus, had access to the Internet than actually used the Internet on a work computer.

NVCC STUDENT USE OF PERSONAL COMPUTERS AND INTERNET

Introduction

This report presents the findings from a survey administered to NVCC students in Spring 1999. The PC and Internet Survey measured NVCC students' access to personal computers and the Internet, both at home and at work. The Office of Institutional Research (OIR) at NVCC conducted the survey to collect information in order to plan and provide the latest technology to students as well as anticipate students' computer needs. The data was also analyzed by individual campuses in order to provide more detailed information. This report is the first in a two part series based on data collected from the PC and Internet Survey. The second report, titled "NVCC Student Use Of Personal Computers and Internet By Gender, Age, and Race of Respondent", provides a detailed analysis of technology usage patterns by NVCC students according to demographic variables.

The surveys were distributed in 21 randomly selected NVCC classes at all five campuses during the Spring 1999 semester.¹ Of these 21 classes, 8 were night classes and 13 were day classes. The classes were from twelve disciplines: business management and administration, English as a Second Language, information systems technology, speech and drama, legal assisting, psychology, English, history, math, economics, physical education and recreation, and marketing. Of the 540 distributed surveys, a total of 353 students responded (65% response rate).

The PC and Internet Survey instrument was divided into two parts.² Part A of the survey contained questions regarding students' personal computer information and usage at home. This part included questions on access to personal computers, e-mail usage, Internet access and usage, and home computer activities related to school, personal/leisure, or work. Questions were also included which pertained to hardware of personal computers. Part B of the survey consisted of questions relating to students' computer usage at work. This part of the survey asked students if they had access to a computer at work, access to e-mail at work, Internet access and usage, and approximate time spent using a computer at work. The survey also asked questions regarding operating systems and hardware information for work computers. In addition, the survey asked students what percentages of their computer activities at work were either school, personal/leisure, or work related. The survey also allowed students to write any comments concerning the survey topic.

This report is divided into four parts. Section I presents respondents' computer and Internet usage patterns on a home computer. Section II presents similar information only for computer and Internet usage on a work computer. Survey information on home computer and Internet usage by the respondents' campus is presented in Section III. Finally, Section IV presents work computer and Internet usage by the respondents' campus.

¹ In order to obtain a representative sample of students, a technique known as "stratified random sampling" was used in selecting the students for the survey.

² A copy of the survey instrument is attached at the end of the report.

It is important to note that the sample size varied because of changes in the number of students responding to each question. The same number of students did not respond to each question in the PC and Internet Survey. Since the responses to each question were analyzed separately, the variations in the sample size did not affect the data results.

The Appendix of this report presents data from questions asked on the PC and Internet Survey, which were not discussed in detail in the body of the report. The information presented in the Appendix primarily pertains to computer hardware issues and thus may not be relevant to the majority of the readers.

Section I: Personal Computer and Internet Usage at Home

Personal Computer Information and Usage at Home

A total of 353 NVCC students responded to the question "Do you have access to a PC at home?" Of those respondents, 86% had access to a computer at home (see Table 1).

Table 1: PC Access at Home

PC Access	Respondents	
	#	%
Yes	304	86.1
No	49	13.9
Total	353	100.0%

A 1997 study conducted by the National Telecommunications and Information Administration (NTIA) of the Department of Commerce, found that 37% of the surveyed households had a computer, 26% of the surveyed households had a modem, and 19% of the surveyed households had on-line access.³ The substantially higher computer access rate for NVCC students (86% versus 37%) could be the result of the population that was sampled for the NVCC survey. NVCC students are not a representative sample of the entire population, as they are expected to possess computer skills in order to obtain a degree. In addition, the NVCC survey was a self-reported instrument, administered in a class setting, which could have led to slightly inflated findings. Also, a recent study conducted by Scarborough Research of New York stated that the Washington, D.C. metro area currently leads the nation in Internet access. Approximately 60% of the adults in the Washington metro area use the Internet.⁴ These factors and others could explain the high computer access and usage rate for NVCC students compared to national statistics.

Table 2 presents information on e-mail access on a home computer. Out of 304 respondents, 86% (262 students) had access to an e-mail account on their home computer. Fourteen percent of the respondents (41 students) did not have access to an e-mail account.

Table 2: Availability of E-mail on Home Computers

Availability of E-mail on Home Computer	Respondents	
	#	%
Yes	262	86.2
No	41	13.5
Don't know	1	0.3
Total	304	100.0%

³ Source: "Falling Through the Net II: New Data on the Digital Divide," National Telecommunications and Information Administration (1998): 1-5.

⁴ Source: "DC Region Leads Nation in Net Access," The Washington Post (10/17/99): A1 & A8.

In addition to e-mail access information, 304 students responded to the question, "Is your home computer connected to the Internet?" Eighty-six percent of the respondents stated that their home computer was connected to the Internet and 14% stated that their home computer was not connected to the Internet (see Table 3). The majority (88%) of the respondents stated that their home computer had a modem (see Appendix Table A1) and 69% of the students stated that the modem speed was 33.6 Kbps or higher (see Appendix Table A2).

A study "The American Freshman: National Norms for Fall 1998", which was conducted by the Higher Education Research Institute at UCLA, found that 83% of beginning freshmen used the Internet for research or homework. In addition, 66% of the new freshmen communicated through the use of e-mail.⁵ The NVCC student usage patterns for the Internet and e-mail appear to be similar to the findings of this study with approximately 86% of the surveyed NVCC students having access to both the Internet and e-mail (see Tables 2 and 3).

Table 3: Internet Connection on Home Computer

Internet Connection	Respondents	
	#	%
Yes	260	85.5
No	43	14.2
Don't know	1	0.3
Total	304	100.0%

In addition to the above questions, the survey asked students whether they were able to load software on their home computer without assistance. Of the 304 students who responded to this question, the majority (79%) were able to load software on their home computer by themselves (see Appendix Table A3). Students were also asked what type of operating system was on their home computer. Eighty-nine percent of the respondents stated that the operating system for their home computer was either Windows 95 or Windows 98, 6% had other Windows operating systems, and 1% had Apple McIntosh operating systems (see Appendix Table A4). The majority of the students (77%) also stated that their home computer was less than three years old (see Appendix Table A6) and 59% of the students had a Pentium computer (see Appendix Table A7).

Table 4 presents the responses to the survey question "Does your home computer have a CD-ROM?" Out of 304 responses, 91% stated that their home computer had a CD-ROM. Five percent more students had a CD-ROM on their home computer compared to access to e-mail or the Internet on a home computer. In addition, 89% of the respondents stated that their home computer had a sound card and speakers (see Appendix Table A5).

⁵ Source: "The American Freshman: National Norms for Fall 1998," The Higher Education Research Institute (January 1999): 1-3.

Table 4: CD-ROM on Home Computer

CD-ROM	Respondents	
	#	%
Yes	277	91.1
No	21	6.9
Don't know	6	2.0
Total	304	100.0%

Out of 304 responses, 96% of the students used a home computer (see Table 5).⁶ This response rate indicates that almost everyone, who had a computer at home, used the computer. For those who stated that they did not use a home computer, the respondents were asked to state the reasons. Students gave the following reasons: no interest in using computers; lack of computer knowledge; insufficient memory, speed, and space on a home computer; and no need to use a home computer.

Table 5: Responses to the Survey Question "Do You Use Your Home PC?"

Use of Home PC	Respondents	
	#	%
Yes	293	96.4
No	11	3.6
Total	304	100.0%

Frequency of Home Computer Usage

Two hundred and ninety-six students responded to the survey question "How often do you use your home computer (How many times a week)?" This was the first of two questions intended to measure the frequency of home computer use. Ninety-eight percent of the respondents used a home computer at least once a week. Specifically, 36% of the respondents used their home computer between 1 to 4 times per week, followed by 31% of the respondents who used their home computer between 5 to 9 times per week. This indicates that approximately one-third of the respondents used their home computer on average once a day (see Table 6). However, this information should be interpreted with caution. There was difficulty in making distinctions between discrete tasks and continuous activities on a home computer. Students who used a home computer for four hours may have stated that they used a computer one time for the day. Other students in the same situation may have stated that they used a computer several times per day according to the various activities they conducted.

⁶ This question was asked to verify that the respondent, not just other household members, used a home computer.

Table 6: Frequency of Home Computer Use Per Week

Frequency of Home Computer Use Per Week	Respondents	
	#	%
Did Not Use	6	2.0
1-4 Times	107	36.2
5-9 Times	93	31.4
10-19 Times	45	15.2
20-29 Times	29	9.8
30+ Times	16	5.4
Total	296	100.0%

Students were also asked how many hours per week they used their home computer. Out of 287 respondents, approximately one-half stated that they used their home computer between 1 to 9 hours per week. Slightly over one-fourth of the respondents stated that they used their home computer between 10 to 19 hours per week (see Table 7). In addition, almost one-fourth of the respondents used a home computer 20 hours or more per week. This translates into this group using a computer an average of 3 or more hours per day.

Table 7: Use of Home Computer: Hours Per Week

Hours Per Week Using Home PC	Respondents	
	#	%
Did Not Use	7	2.4
1-9 Hours	138	48.1
10-19 Hours	76	26.5
20-29 Hours	31	10.8
30-39 Hours	16	5.6
40+ Hours	19	6.6
Total	287	100.0%

Home Computer Usage for School, Personal/Leisure, and Work Activities

The survey asked the students what proportion of home computer activities were related to school, leisure, or work. Ninety-three percent of the respondents used a home computer for some school related activities.⁷ Seven percent of the respondents did not use their home computer for any school related activities (see Table 8).

The average hours were calculated for all of the respondents who used a home computer for school activities. According to Table 8, respondents used a home computer for 2.7 hours (median) per week for school related activities. However, the mean or average was 5.4

⁷ For more detailed information on the percentage of computer use which was school related, refer to Table A8 in the Appendix.

hours per week. This indicated that a small number of respondents had a high level of computer use per week for school activities. Therefore, in this context, the median hours per week was a more appropriate measure of use. The median was determined by organizing the number of hours spent on school activities from the lowest to the highest value. The midpoint of this range was the median (see Table 8).⁸

Table 8: Use of Home Computer for School Related Activities

Conducted School Related Activities on Home Computer	Respondents	
	#	%
Yes	272	92.8
No	21	7.2
Total	293	100.0%
Range of Hours Spent on School Activities: 0 to 59.4 Hours/Week		
Median Hours on School Activities:	2.7 Hours/Week	
Mean Hours on School Activities:	5.4 Hours/Week	

Students were also asked what percentage of their home computer activities were personal/leisure related. Ninety-two percent of the respondents used a home computer for some personal/leisure related activities (see Table 9).⁹ Respondents used a home computer for 3.9 hours (median) per week for personal/leisure activities. The mean was 6.0 hours per week, indicating that a small number of respondents used the computer for a large amount of time per week. Therefore, the median hours per week was a more appropriate measure of computer use for personal/leisure activities (see Footnote 8 for explanation).

⁸ If the responses were normally distributed, the mean and median would have been similar in value. The difference between the mean and median indicates that a small group of respondents spent a large proportion of their home computer time on school related activities. When calculating the averages, this small group of respondents inflated the mean value.

⁹ For more detailed information on the percentage of computer use which was personal/leisure related, refer to Table A9 in the Appendix.

Table 9: Use of Home Computer for Personal/Leisure Related Activities

Conducted Personal/Leisure Related Activities on Home Computer	Respondents	
	#	%
Yes	269	92.1
No	23	7.9
Total	292	100.0%
Range of Hours Spent on Personal/Leisure Activities: 0 to 59.4 Hours/Week		
Median Hours on Personal/Leisure Activities: 3.9 Hours/Week		
Mean Hours on Personal/Leisure Activities: 6.0 Hours/Week		

In addition, students were asked what percentage of their home computer activities were work related. The median hours per week indicated that over 50% of the respondents did not use a home computer for work related activities (see Table 10).¹⁰ However, the mean hours per week that respondents conducted work related activities on a home computer was 2.2. Again, a small number of respondents spent a large amount of time using a home computer for work activities, thus the mean value was inflated (see Footnote 8 for a detailed explanation).

Table 10: Use of Home Computer for Work Related Activities

Conducted Work Related Activities on Home Computer	Respondents	
	#	%
Yes	135	46.4
No	156	53.6
Total	291	100.0%
Range of Hours Spent on Work Activities: 0 to 44.5 Hours/Week		
Median Hours on Work Activities: 0 Hours/Week		
Mean Hours on Work Activities: 2.2 Hours/Week		

Internet Usage at Home

Information in this section pertains to the availability of the Internet and its usage by NVCC students. The survey asked students whether they accessed the Internet from home. Three hundred and four students responded to this question, with 82% of the respondents using the Internet (see Table 11). The reasons why students did not use the Internet are presented in Table 12. A large percent of the respondents (29%) did not have access to the Internet from home.

¹⁰ For more detailed information on the percentage of computer use which was work related, refer to Table A10 in the Appendix.

Table 11: Usage of Internet on Home Computer

Internet Usage	Respondents	
	#	%
Yes	250	82.2
No	54	17.8
Total	304	100.0%

Table 12: Reasons for Not Accessing the Internet from a Home Computer *

Reasons for No Internet Access	Respondents	
	#	%
No Interest in Using the Internet	4	4.1
Lack of Internet Knowledge	7	7.2
Computer Has Insufficient Memory, Speed, or Disk Space	19	19.6
Don't Need To Use Internet at Home	13	13.4
Difficulty Accessing Service Provider	8	8.2
Other	18	18.6
No Access to the Internet from Home	28	28.9
Total	97	100.0%

* Multiple responses were allowed for this question.

Table 13 presents the number of times per week students used the Internet from their home computer. The majority of the respondents (61%) used the Internet between 1 to 9 times per week. This was followed by 17% of the respondents using the Internet between 10 to 19 times per week. Over 10% of the respondents used the Internet over 20 times per week. This indicates a very high use of the Internet by this group of students (an average of accessing the Internet three times per day) from their home computer. Ten percent of the respondents did not access the Internet at all, indicating a group of respondents who did not use this form of technology.

Table 13: Times Per Week Accessing the Internet from a Home Computer

Internet Access Per Week	Respondents	
	#	%
Did Not Access	27	9.8
1 to 9 Times	168	61.1
10 to 19 Times	47	17.1
20 to 29 Times	20	7.3
30+ Times	13	4.7
Total	275	100.0%

Section II: Personal Computer and Internet Usage at Work

Personal Computer Information and Usage at Work

While Section I of this report pertains to computer and Internet usage at home, Section II addresses survey questions related to computer and Internet usage at work. The survey questions in both sections were very similar.

Three hundred and twenty-five students responded to the question "Do you have access to a computer at work?" Sixty-one percent of the respondents had access to a computer at work (see Table 14).

Table 14: PC Access at Work

PC Access	Respondents	
	#	%
Yes	197	60.6
No	128	39.4
Total	325	100.0%

In addition, 72% of the respondents had access to an e-mail account on their work computer, followed by 22% stating that they did not have access to e-mail. Six percent of the respondents did not know if they had access to e-mail at work. This group of respondents probably did not have access to a computer at work as well (see Table 15).

Table 15: Availability of E-mail on Work Computer

E-mail Account on Work Computer	Respondents	
	#	%
Yes	141	71.6
No	44	22.3
Don't know	12	6.1
Total	197	100.0%

Table 16 presents responses to the survey question "Is your work computer connected to the Internet?" Of 197 responses, 69% stated that their work computer was connected to the Internet. Approximately 3% more respondents had access to an e-mail account at work compared to access to the Internet at work (see Table 15 and Table 16).

Table 16: Access to Internet on Work Computer

Access to the Internet	Respondents	
	#	%
Yes	136	69.0
No	45	22.9
Don't know	16	8.1
Total	197	100.0%

As in the previous section, the survey asked questions relating to computer hardware and the technical abilities of the students. Approximately 49% of the students were able to load software on their work computer by themselves. Forty percent of the students said they could not load software (see Appendix, Table A13). This compares to answers in the previous section where 79% of the respondents said they could load software on their computer by themselves (see Appendix, Table A3). It appears that this response measures not only the ability to load software but also the appropriate permission to load software in the workplace. The majority of the students (69%) also stated that the operating system for their work computer was either Windows 95 or 98. Fourteen percent of the respondents did not know what type of operating system was installed on their work computer (see Appendix Table A14). In addition, 70% of the respondents stated that their work computer had a CD-ROM and 53% stated that their work computer had a sound card and speakers (see Appendix Table A16). Over 80% of the students stated that the speed of their work computer modem was 33.6 Kbps or higher (see Appendix Table A12).

Table 17 presents responses to the survey question "How old is your work computer?" One hundred and ninety-seven students responded to this question, with 43% of the students stating that their work computer was between one to three years old. This was followed by 25% of the respondents who stated that their work computer was less than one year old. Eighteen percent of the respondents did not know how old their work computer was. In addition, the majority (55%) of the respondents had a Pentium computer at work (see Appendix Table A17).

Table 17: Age of Work Computer

Age of Work Computer	Respondents	
	#	%
Less than one year	49	24.9
1-3 years old	85	43.1
Over 3 years old	28	14.2
Do not know	35	17.8
Total	197	100.0%

Over 94% of the respondents (186 students) used a computer at work (see Table 18).¹¹ Of those who did not use a computer at work, there were three responses stating no interest in

¹¹ This question was asked to verify that the respondent, not just other co-workers, used a computer at work.

using computers, one response stating a lack of computer knowledge, 10 responses stating no need to use a PC at work, and three “other” responses.¹²

Table 18: Usage of Computer at Work

Use of Computer at Work	Respondents	
	#	%
Yes	186	94.4
No	11	5.6
Total	197	100.0%

The majority of the respondents (62%) used e-mail at work. A smaller percentage of respondents, 58%, used the Internet at work (see Table 19).

Table 19: Usage of E-mail and Internet at Work

	Usage of E-mail		Usage of Internet	
	Respondents		Respondents	
	#	%	#	%
Yes	123	62.4	114	57.9
No	74	37.6	83	42.1
Total	197	100.0%	197	100.0%

Students were asked how many times a week they used their computer at work. The responses are presented in Table 20, with the majority (70%) of the students stating that they used their work computer between 1 to 9 times per week. This was followed by 13% of the students who used their work computer 30 times or more per week. This information should be interpreted with caution in a work setting. There was difficulty in making distinctions between discrete tasks and continuous work on a computer. Students who worked for eight hours may have stated that they used a computer one time for the day. Other students in the same situation may have stated that they used a computer several times per day according to the various job activities they conducted.

Table 20: Use of Work Computer Per Week

Use of Work Computer Per Week	Respondents	
	#	%
Did Not Use	16	8.1
1 to 9 Times	137	69.5
10 to 19 Times	13	6.6
20 to 29 Times	6	3.1
30+ Times	25	12.7
Total	197	100.0%

¹² Multiple responses were allowed for this question.

Table 21 presents information on how many hours per week that students used a computer at work. Ninety-two percent of the respondents used a computer at work for at least one hour or more per week. A large percent of the respondents, 47%, used a work computer 30 hours or more per week. This group of students may have engaged in predominantly computer-related work. In addition, 60% of the respondents used a computer more than 20 hours per week.

Table 21: Use of Work Computer: Hours Per Week

Hours Per Week Using Work PC	Respondents	
	#	%
Did Not Use	16	8.1
1 to 9 Hours	46	23.4
10 to 19 Hours	17	8.6
20 to 29 Hours	26	13.2
30+ Hours	92	46.7
Total	197	100.0%

Work Computer Usage for School, Personal/Leisure, and Work Activities

Table 22 presents the percentage of work computer activities conducted by respondents, which relate to school. The majority of the respondents (60%) did not conduct any school related activities on a work computer. However, 40% of the respondents used their work computer, to varying degrees, for school related activities. The median hours per week indicated that more than 50% of the respondents did not use a work computer for any school related activities (see Table 22).

Table 22: Use of Work Computer for School Related Activities

Conducted School Related Activities on Work Computer	Respondents	
	#	%
Yes	75	40.3
No	111	59.7
Total	186	100.0%
Range of Hours Spent on School Activities:	0 to 14 Hours/Week	
Median Hours on School Activities:	0.0 Hours/Week	
Mean Hours on School Activities:	1.4 Hours/Week	

Table 23 presents the percentage of work computer activities conducted by respondents, which were personal/leisure related. Forty-nine percent (91 students) of the respondents stated that none of their work computer activities were personal/leisure related. Fifty-one percent (94 students) of the respondents used a work computer for some personal/leisure related purposes. On average, the respondents spent 2.4 hours per week conducting personal/leisure activities. The median of the responses was 0.5 hours per week. The difference between these two values indicates that a small group of respondents had a high proportion of conducting personal/leisure activities. These responses increased the value of the mean (see Footnote 8 for a more detailed explanation).

Table 23: Use of Work Computer for Personal/Leisure Related Activities

Conducted Personal/Leisure Related Activities on Work Computer	Respondents	
	#	%
Yes	94	50.8
No	91	49.2
Total	185	100.0%
Range of Hours Spent on Personal/Leisure Activities:		
	0 to 24 Hours/Week	
Median Hours on Personal/Leisure Activities:	0.5 Hours/Week	
Mean Hours on Personal/Leisure Activities:	2.4 Hours/Week	

Table 24 presents the percentage of work computer activities, conducted by respondents, which were related to work. Eighty-seven percent of the respondents conducted work related activities and 13% did not. The mean for work related activities was 21.7 hours per week and the median was 24 hours per week (see Table 24). Unlike respondents' use of a work computer for school activities or for leisure activities, the mean and median values were relatively close. This indicates that the distribution of the responses was a normal, bell-shaped curve.

Table 24: Use of Work Computer for Work Related Activities

Conducted Work Related Activities on Work Computer	Respondents	
	#	%
Yes	161	87.0
No	24	13.0
Total	185	100.0%
Range of Hours Spent on Work Activities:		
	0 to 79 Hours/Week	
Median Hours on Work Activities:	24.0 Hours/Week	
Mean Hours on Work Activities:	21.7 Hours/Week	

Section III: Personal Computer and Internet Usage at Home – Campus Analysis

Personal Computer Information and Usage at Home, By Campus

Section III presents information pertaining to computer usage at home according to the respondents' home campus. Table 25 shows that the majority of the respondents from each campus had access to a personal computer at home. Due to the differences in the sizes of the campuses, the number of respondents varied widely. However, the percentage of respondents who had access to a computer varied slightly among the campuses. The percentages of respondents with access to a computer at home ranged from 81% for Alexandria Campus respondents to 94% for Manassas Campus respondents.

Table 25: PC Access at Home, By Campus

PC Access at Home	Alexandria Campus Respondents		Annandale Campus Respondents		Loudoun Campus Respondents		Manassas Campus Respondents		Woodbridge Campus Respondents	
	#	%	#	%	#	%	#	%	#	%
Yes	74	81.3	115	87.1	35	83.3	34	94.4	46	88.5
No	17	18.7	17	12.9	7	16.7	2	5.6	6	11.5
Total	91	100.0%	132	100.0%	42	100.0%	36	100.0%	52	100.0%

Similar to computer access at home, the majority of the respondents from all of the campuses had access to an e-mail account on their home computer (see Table 26). Respondents from the Woodbridge Campus had the highest percentage of e-mail access on a home computer (96%). The percentage of respondents from the other campuses with access to e-mail ranged from 81% to 87%.

Table 26: Availability of E-mail on Home Computer, By Campus

E-mail Account on Home PC	Alexandria Campus Respondents		Annandale Campus Respondents		Loudoun Campus Respondents		Manassas Campus Respondents		Woodbridge Campus Respondents	
	#	%	#	%	#	%	#	%	#	%
Yes	60	81.1	100	87.0	30	85.7	28	82.4	44	95.7
No	13	17.6	15	13.0	5	14.3	6	17.6	2	4.3
Don't Know	1	1.3	0	0.0	0	0.0	0	0.0	0	0.0
Total	74	100.0%	115	100.0%	35	100.0%	34	100.0%	46	100.0%

Table 27 presents information on Internet access from a home computer by the respondents' campus. The majority of respondents, regardless of campus, had Internet access on their home computer. Woodbridge Campus respondents had the highest percentage of Internet access (96%) followed by Loudoun Campus respondents (86%).

Students from both the Alexandria and Annandale Campuses had larger percentages of e-mail access compared to Internet access. Manassas Campus respondents had a larger percentage of Internet access than e-mail access at home.

Table 27: Internet Connection on Home Computer, By Campus

Internet Connection	Alexandria Campus Respondents		Annandale Campus Respondents		Loudoun Campus Respondents		Manassas Campus Respondents		Woodbridge Campus Respondents	
	#	%	#	%	#	%	#	%	#	%
Yes	59	79.7	98	85.2	30	85.7	29	85.3	44	95.7
No	14	18.9	17	14.8	5	14.3	5	14.7	2	4.3
Don't Know	1	1.4	0	0.0	0	0.0	0	0.0	0	0.0
Total	74	100.0%	115	100.0%	35	100.0%	34	100.0%	46	100.0%

Internet Usage at Home, By Campus

Table 28 presents the percentage of respondents, by campus, who used the Internet from a home computer. The majority of the respondents (76% to 94%), regardless of campus, used the Internet from a home computer. Except for respondents from the Manassas Campus, a higher percentage of respondents had access to the Internet compared to those who actually used the Internet (see Table 27 and Table 28). The differences between those respondents who had access to the Internet at home and those that used the Internet at home were approximately 2% to 4%.

Table 28: Usage of Internet on Home Computer, By Campus

Usage of Internet	Alexandria Campus Respondents		Annandale Campus Respondents		Loudoun Campus Respondents		Manassas Campus Respondents		Woodbridge Campus Respondents	
	#	%	#	%	#	%	#	%	#	%
Yes	56	75.7	93	80.9	29	82.9	29	85.3	43	93.5
No	18	24.3	22	19.1	6	17.1	5	14.7	3	6.5
Total	74	100.0%	115	100.0%	35	100.0%	34	100.0%	46	100.0%

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Section IV: Personal Computer and Internet Usage at Work – Campus Analysis

Personal Computer Information and Usage at Work, By Campus

The responses regarding computer and Internet usage on a work computer were analyzed according to the student's campus. Table 29 presents the percentage of respondents, according to home campus, who could access a computer at work. Except for Loudoun Campus respondents, the majority of the students had access to a computer while at work (59% to 64%). There was a smaller percentage of respondents from each campus who had access to a computer at work compared to those who had access to a computer at home (see Table 25 and Table 29). The differences between computer access at work and access at home varied between 22% to 35%.

Table 29: PC Access at Work, By Campus

PC Access at Work	Alexandria Campus Respondents		Annandale Campus Respondents		Loudoun Campus Respondents		Manassas Campus Respondents		Woodbridge Campus Respondents	
	#	%	#	%	#	%	#	%	#	%
Yes	46	59.0	79	63.2	19	48.7	21	63.6	32	64.0
No	32	41.0	46	36.8	20	51.3	12	36.4	18	36.0
Total	78	100.0%	125	100.0%	39	100.0%	33	100.0%	50	100.0%

The majority of the respondents from all five campuses had access to e-mail on a work computer. Woodbridge Campus respondents had the highest percentage of e-mail access on a work computer (81%) followed by Manassas Campus respondents (76%).

Table 30: Availability of E-mail on Work Computer, By Campus

E-mail Account on Work PC	Alexandria Campus Respondents		Annandale Campus Respondents		Loudoun Campus Respondents		Manassas Campus Respondents		Woodbridge Campus Respondents	
	#	%	#	%	#	%	#	%	#	%
Yes	34	73.9	52	65.8	13	68.4	16	76.2	26	81.3
No	10	21.7	21	26.6	4	21.1	3	14.3	6	18.7
Don't Know	2	4.4	6	7.6	2	10.5	2	9.5	0	0.0
Total	46	100.0%	79	100.0%	19	100.0%	21	100.0%	32	100.0%

Table 31 presents the percentage of respondents who had access to the Internet from a work computer, by home campus. There was a 18% difference between respondents from the Manassas Campus and the Loudoun Campus who could access the Internet from work (81% and 63% respectively).

Table 31: Internet Connection on Work Computer, By Campus

Internet Connection	Alexandria Campus Respondents		Annandale Campus Respondents		Loudoun Campus Respondents		Manassas Campus Respondents		Woodbridge Campus Respondents	
	#	%	#	%	#	%	#	%	#	%
Yes	32	69.6	51	64.6	12	63.2	17	81.0	24	75.0
No	10	21.7	22	27.8	5	26.3	2	9.5	6	18.7
Don't Know	4	8.7	6	7.6	2	10.5	2	9.5	2	6.3
Total	46	100.0%	79	100.0%	19	100.0%	21	100.0%	32	100.0%

Table 32 presents the percentage of respondents, by home campus, who used e-mail on a work computer. The greatest percentage of respondents who used an e-mail account was from the Woodbridge Campus (72%).

Table 32: Usage of E-mail on Work Computer, By Campus

Use of E-mail	Alexandria Campus Respondents		Annandale Campus Respondents		Loudoun Campus Respondents		Manassas Campus Respondents		Woodbridge Campus Respondents	
	#	%	#	%	#	%	#	%	#	%
Yes	31	67.4	45	57.0	10	52.6	14	66.7	23	71.9
No	15	32.6	34	43.0	9	47.4	7	33.3	9	28.1
Total	46	100.0%	79	100.0%	19	100.0%	21	100.0%	32	100.0%

Table 33 presents the percentage of respondents, by home campus, who used the Internet at work. The highest percentage of those who used the Internet at work were from the Manassas Campus (62%) followed by respondents from the Annandale Campus (60%). There were smaller percentages of respondents from all five campuses who used the Internet at work compared to home (Table 28 and Table 33). In addition, there were larger percentages of respondents from all five campuses who had access to the Internet at work compared to actually using the Internet at work (see Table 31 and Table 33).

Table 33: Usage of Internet on Work Computer, By Campus

Usage of Internet at Work	Alexandria Campus Respondents		Annandale Campus Respondents		Loudoun Campus Respondents		Manassas Campus Respondents		Woodbridge Campus Respondents	
	#	%	#	%	#	%	#	%	#	%
Yes	26	56.5	47	59.5	9	47.4	13	61.9	19	59.4
No	20	43.5	32	40.5	10	52.6	8	38.1	13	40.6
Total	46	100.0%	79	100.0%	19	100.0%	21	100.0%	32	100.0%

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SUMMARY

This report presents information collected from the PC and Internet Survey given to NVCC students in Spring 1999. The survey collected information on computer, e-mail, and Internet access and usage. The questions pertained to both home computer and work computer use. The survey results were presented for the College and by the home campus of the respondents.

Overall, NVCC students had a high rate of both access and usage of home computers. Over 86% of the respondents had access to a computer at home. Approximately 86% of the respondents had access to e-mail and 86% had access to the Internet on a home computer. A large percent of respondents (68%) used a home computer between one to nine times per week. In addition, a large percent of respondents (48%) spent between one to nine hours per week using a home computer. Eighty-two percent of the respondents accessed the Internet from a home computer, with the majority of the respondents using the Internet between one to nine times per week (61%). The NVCC respondents had a high rate of computer and Internet access compared to other national statistics. There could be several reasons for this factor, including that the Washington metro area has an extremely high rate of computer and Internet use compared to other areas of the country.

A smaller percentage of NVCC students had access to a personal computer at work than at home (61% versus 86%). One hundred and ninety-seven respondents had access to a computer at work, while 141 respondents had access to e-mail. In addition, 136 respondents had access to the Internet on a work computer. Of those students who had access to a computer at work, 62% used e-mail and 58% used the Internet. The majority (70%) of the respondents used a work computer between one to nine times per week.

Overall, there were small differences in computer and Internet usage at home between students from the different campuses. The majority of the students (80% or more), had computer, e-mail, and Internet access at home regardless of campus.

With a few exceptions, respondents from different campuses had similar access to a computer and e-mail at work. A smaller percentage of respondents, from each campus, had access to a computer at work compared to those who had access to a computer at home. Access to the Internet differed by the respondents' campus.

An additional report titled "NVCC Student Use of Personal Computers and Internet By Gender, Age, and Race of Respondent" is also based on data collected from the PC and Internet Survey. This report provides a detailed analysis of technology usage patterns by NVCC students according to demographic variables.

APPENDIX*

* The Appendix presents data collected from the PC and Internet Survey that was not discussed in detail in the text of the report.

APPENDIX

Home Computer Usage

Table A1: Modem on Home Computer

Modem on Home Computer	Respondents	
	#	%
Yes	268	88.2
No	21	6.9
Don't know	15	4.9
Total	304	100.0%

Table A2: Modem Speed on Home Computer

Modem Speed	Respondents	
	#	%
14.4	13	5.4
28.8	62	25.7
36.0	55	22.8
56.0	111	46.1
Total	241	100.0%

Table A3: Ability To Load Software on Home Computer

Ability to Load Software	Respondents	
	#	%
Yes	240	78.9
No	30	9.9
Don't know	34	11.2
Total	304	100.0%

Table A4: Operating System on Home Computer

Operating System	Respondents	
	#	%
Windows 95 or 98	271	89.1
Windows (other)	17	5.6
Apple McIntosh	3	1.0
Apple II	2	0.7
Other	5	1.6
Do not know	6	2.0
Total	304	100.0%

Table A5: Sound Card and Speakers on Home Computer

Sound Card and Speakers	Respondents	
	#	%
Yes	270	88.8
No	25	8.2
Don't know	9	3.0
Total	304	100.0%

Table A6: Age of Home Computer

Age of Computer	Respondents	
	#	%
Less than one year	102	33.6
1-3 years old	133	43.7
Over 3 years old	56	18.4
Do not know	13	4.3
Total	304	100.0%

Table A7: Type of Home Computer

Type of Computer	Respondents	
	#	%
Pentium	180	59.2
486	28	9.2
386	4	1.3
286	3	1.0
McIntosh	9	3.0
Apple II	2	0.6
Other	31	10.2
Do not know	47	15.5
Total	304	100.0%

Table A8: Percentage of Home Computer Activities Related to School

Percentage of Computer Activities Related to School	Respondents	
	#	%
Did Not Use	21	7.2
1% to 19%	34	11.6
20% to 39%	81	27.6
40% to 59%	78	26.6
60% to 79%	36	12.3
80+ %	43	14.7
Total	293	100.0%

Table A9: Percentage of Home Computer Activities Related to Personal/Leisure

Percentage of Computer Activities Related to Personal/Leisure	Respondents	
	#	%
Did Not Use	23	7.9
1% to 19 %	46	15.8
20% to 39 %	61	20.9
40% to 59 %	75	25.7
60% to 79 %	55	18.8
80+ %	32	10.9
Total	292	100.0%

Table A10: Percentage of Home Computer Activities Related to Work

Percentage of Computer Activities Related to Work	Respondents	
	#	%
Did Not Use	156	53.6
1% to 19 %	43	14.8
20% to 39 %	47	16.2
40% to 59 %	30	10.3
60% to 79 %	8	2.7
80+ %	7	2.4
Total	291	100.0%

Work Computer Usage

Table A11: Modem on Work Computer

Modem on Work Computer	Respondents	
	#	%
Yes	132	67.0
No	36	18.3
Don't know	29	14.7
Total	197	100.0%

Table A12: Modem Speed on Work Computer

Modem Speed	Respondents	
	#	%
14.4	5	4.3
28.8	18	15.5
36.0	34	29.3
56.0	59	50.9
Total	116	100.0%

Table A13: Ability To Load Software on Work Computer

Ability to Load Software	Respondents	
	#	%
Yes	97	49.2
No	78	39.6
Don't know	22	11.2
Total	197	100.0%

Table A14: Operating System On Work Computer

Operating System	Respondents	
	#	%
Windows 95 or 98	135	68.6
Windows (other)	15	7.6
Apple McIntosh	3	1.5
Other	16	8.1
Do not know	28	14.2
Total	197	100.0%

Table A15: CD-ROM on Work Computer

CD-ROM	Respondents	
	#	%
Yes	138	70.1
No	39	19.8
Don't know	20	10.1
Total	197	100.0%

Table A16: Sound Card and Speakers on Work Computer

Sound Card and Speakers	Respondents	
	#	%
Yes	105	53.3
No	72	36.5
Don't know	20	10.2
Total	197	100.0%

Table A17: Type of Work Computer

Type of Computer	Respondents	
	#	%
Pentium	108	54.9
486	10	5.1
386	6	3.0
286	2	1.0
McIntosh	6	3.0
Apple II	3	1.5
Other	12	6.1
Do not know	50	25.4
Total	197	100.0%

NORTHERN VIRGINIA COMMUNITY COLLEGE
Office of Institutional Research
A Survey on PC and Internet Usage of NVCC Students

Instructions: In order to provide the latest technology to our students and to anticipate their computer needs, NVCC is gathering information on students' usage of personal computers (PCs) and the Internet. This survey is a primary tool for collecting such information. Be assured that your responses will be kept confidential. Can you please take a few minutes and fill out this survey? Thank you in advance for your cooperation. Your responses will help NVCC make better decisions.

This survey is divided into two sections. Separate sections ask questions about your PC and Internet usage at **home** and **work**.

for office use only:

	0	1	2	3	4	5	6	7	8	9
	0	1	2	3	4	5	6	7	8	9
	0	1	2	3	4	5	6	7	8	9

Social Security Number: _____

Section A: Personal Computer and Internet at Home

The following questions refer to the features of your home personal computer (PC) as well as PC and/or Internet access and usage at home. Please fill in the circle beside the most appropriate answer.

Personal Computer Information and Usage at Home

1. Do you have access to a personal computer (PC) at **home**?

- 1 Yes 2 No ---skip to question 18

2. Is there e-mail on that computer?

- 1 Yes 2 No 3 Don't Know

3. Is your home computer connected to the Internet?

- 1 Yes 2 No 3 Don't Know

4. Does the computer at home have a modem?

- 1 Yes 2 No 3 Don't Know

5. What is the speed of your modem?

- 1 14.4 2 28.8 3 36.0 4 56.0

6. Are you able to load software by yourself on your home computer?

- 1 Yes 2 No 3 Don't Know

7. What is the operating system for your home computer?

- 1 Windows 95 or 98
 2 Windows (other than Windows 95 or 98)
 3 Apple McIntosh
 4 Apple II
 5 Other (Describe: _____)
 6 Don't Know

8. Does your home computer have a CD-ROM?

- 1 Yes 2 No 3 Don't Know

9. Does your home computer have a sound card and speakers?

- 1 Yes 2 No 3 Don't Know

10. How old is your home computer?

- 1 New (within the last year) 2 1-3 years old 3 Over 3 years old 4 Don't Know

11. What type of computer do you have?

- 1 Pentium
 2 486
 3 386
 4 286
 5 McIntosh
 6 Apple II
 7 (Describe: _____)

12. Do you use your home computer?

Yes

No ---If No:

Why not (Mark all that apply & skip to question 18)

- No interest in using computers
- Lack of computer knowledge
- Computer has insufficient memory, speed, or disk space
- Don't need to use the computer
- Other (Describe: _____)

13. How often do you use your home computer? Please indicate approximately how many TIMES a week you use your home PC.

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

times a week

14. Approximately, how many HOURS a week do you use your home PC?

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

hours a week

15. Approximately, how much time (in percentages) do you spend on your home computer engaged in school work, personal/leisure activities, or work? All three areas should total 100% (e.g., 20% on school, 50% on personal, and 30% on work which equals 100%).

School

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Personal/Leisure

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Work

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Internet Usage at Home

16. Do you access the Internet from home?

Yes

No ---If No:

Why not? (Mark all that apply & skip to question 18)

- No interest in using the Internet
- Lack of Internet knowledge
- Computer has insufficient memory, speed, or disk space
- Don't need to use Internet at home
- Difficulty accessing service provider
- Other (Describe: _____)
- No access to the Internet from home

17. How often do you access the Internet from home? Please indicate how many times a week you access the Internet from home.

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

times a week

Section B: Personal Computer and Internet at Work

The following questions refer to the features of your personal computer (PC) at work as well as PC and/or Internet access and usage at work. Please fill in the circle beside the most appropriate answer. IF YOU DO NOT WORK, SKIP TO SECTION C.

Personal Computer Information and Usage at Work

18. Do you have access to a computer at work?

Yes

No ---skip to Section C

19. Is there e-mail on that computer?

Yes

No

Don't Know

20. Is your work computer connected to the Internet?

- 1 Yes 2 No 3 Don't Know

21. Does your work computer have a modem?

- 1 Yes 2 No 3 Don't Know

22. What is the speed of your modem?

- 1 14.4 2 28.8 3 36.0 4 56.0

23. Are you able to load software by yourself on your work computer?

- 1 Yes 2 No 3 Don't Know

24. What is the operating system for your work computer?

- 1 Windows 95 or 98
 2 Windows (other than Windows 95 or 98)
 3 Apple McIntosh
 4 Apple II
 5 Other (Describe: _____)
 6 Don't Know

25. Does your work computer have a CD-ROM?

- 1 Yes 2 No 3 Don't Know

26. Does your work computer have a sound card and speakers?

- 1 Yes 2 No 3 Don't Know

27. How old is your work computer?

- 1 New (within the last year) 2 1-3 years old 3 Over 3 years old 4 Don't Know

28. What type of computer do you have?

- 1 Pentium
 2 486
 3 386
 4 286
 5 McIntosh
 6 Apple II
 7 Other (Describe: _____)
 8 Don't Know

29. Do you use your work computer?

- 1 Yes 2 No --If No: Why not? (Mark all that apply & skip to Section C)
- No interest in using computers
 - Lack of computer knowledge
 - Computer has insufficient memory, speed, or disk space
 - Don't need to use the computer
 - Other (Describe: _____)

30. Do you use e-mail at work?

- 1 Yes 2 No

31. Do you use the Internet at work?

- 1 Yes 2 No

32. How often do you use your work computer? Please indicate approximately how many TIMES a week you use your work PC.

1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

times a week

33. Approximately, how many HOURS a week do you use your work PC?

1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

hours a week

34. Approximately, how much time (in percentages) do you spend on your work computer engaged in school work, personal/leisure activities, or work? All three areas should total 100% (e.g., 20% on school, 50% on personal, and 30% on work).

School

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Personal/Leisure

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Work

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Section C

If you have any comments on this topic, please write them below.

1.

2.

3.

4.

5.

for office use only:

	0	1	2	3	4	5	6	7	8	9
	0	1	2	3	4	5	6	7	8	9
	0	1	2	3	4	5	6	7	8	9

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