Technology Survey

Spring 2011

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1. Introduction

In fall 2010 Northland Pioneer College was awarded a U.S. Department of Education grant under Title III, part A of NASNTI Program to implement the Equitable Access to Gainful Learning Experiences (EAGLE) project (award # P031X100002). Part of the Evaluation Plan of the grant is to administer and analyze annual student, faculty, and staff surveys to assess the use of technology on NPC campuses and centers and to track the EAGLE project effectiveness.

The audience-specific surveys focused primarily on
- satisfaction with technology at NPC, specifically with internet connection reliability and speed, availability of "smart" classrooms, and communication technology; and
- usage of technology for school, work, instruction, research and personal purposes.

2. Methods

The three individually fielded **Technology Surveys** were administered via a web-based survey tool to three distinctive audiences from April 19th through June 14th, 2011. The survey instruments consisted of multiple choice and scale-based questions. The survey populations were defined as:
- Students: All NPC students enrolled in at least one credit-bearing class in spring 2011
- Faculty: All faculty teaching at least one course in spring 2011
- Staff: All staff employed at NPC as of April 19, 2011

The following table describes the population and sample size for each separate survey as well as the associated response rates and confidence intervals[1] at 95 percent confidence level[2].

	Students	Faculty	Staff
Population Size	5,413	201	124
Sample size	134	52	79
Response rate	2.5%	25.9%	63.7%
Confidence interval	+/-8.4%	+/-11.7%	+/-6.7%

In the 2011 administration of the surveys, students were offered a gift card incentive, but no incentive was offered to faculty and staff. As these surveys are replicated in the next four years to collect trend data, increasing sample sizes and thus decreasing confidence intervals will be desirable. Multiple reminders and additional incentives could be considered.

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[1] The confidence interval describes the probable difference between surveying everyone in the population versus surveying a sample drawn from this population. For example, if 80% of the students sampled indicated satisfaction in a specific content area, the actual (true) population parameter falls in the range of 71.6% - 88.4% (80% +/- 8.4%) satisfaction.

[2] The confidence level describes how sure we can be about the population parameter falling within the confidence interval range. Continuing with the above mentioned example, we can be 95 percent sure that the actual (true) population parameter falls in the range of 71.6% - 88.4% (80% +/- 8.4%).

3. Findings

3.1. Dependence on Technology (students only)

Students reported they were less dependent on connecting their own laptop to the NPC network than using NPC's computing equipment to study, prepare for classes, and complete projects.

Table 1: Student Dependence on Technology

	1-5 scale/ Not at all - Very much	
Students	**Mean**	**St. Deviation**
Dependence on connecting laptop to the internet on NPC campus.	2.6	1.6
Dependence on using NPC computers (in the labs or library) to study, complete projects, and prepare for classes.	3.4	1.6

3.2. Satisfaction with Technology

Students, faculty, and staff were the least satisfied with internet connection speed: both staff and faculty reported a below average satisfaction (on a scale 1 to 5, with 1 being not satisfied at all and 5 being satisfied very much, a score below 3 can be considered below average).

Students reported high satisfaction levels with internet reliability and availability of "smart" classrooms—even though a very few NPC classrooms can be actually considered "smart." Faculty and staff were somewhat less satisfied with internet reliability than students, but still rated their satisfaction as better than average. Like students, faculty were relatively satisfied with availability of "smart" classrooms. Perhaps their positive rating (3.6) can be attributed to misunderstanding of the term "smart" classroom as a truly state-of-the-art, instructional technology-rich classroom. Communication technology was positively rated by both faculty (3.6) and staff (3.6).

Table 2: Satisfaction with Internet Connection

Satisfaction*	Students		Faculty		Staff	
	Mean	**St. Dev.**	**Mean**	**St. Dev.**	**Mean**	**St. Dev.**
Speed of the internet connection (affecting the time it takes to download/upload files and ability to stream video online)	3.9	1.3	2.9	1.4	2.8	1.3
Reliability of the internet connection (lack of down-time due to lost connectivity)	4.3	1.1	3.6	1.2	3.5	1.1
Availability of "smart" or model classrooms (classrooms with up-to-date technology, including projectors, computers, etc.)	4.2	1.2	3.6	1.5	N/A	
Communication technology (video and teleconferencing, chat, voicemail etc.)	N/A		3.6	1.3	3.6	1.4

*1-5 scale/ Not at all - Very much

Small sample sizes make assessment of satisfaction by location unreliable. In addition, students reported taking and faculty teaching classes at multiple locations, which would further prevent location-based assessment.

However, when we examine staff satisfaction levels with internet speed connection by location we can detect some location-based differences in satisfaction levels. Staff in Snowflake/Taylor, Show Low, and at Hopi and Springerville-Eagar Centers were more <u>dissatisfied</u> with the internet connection speed than other staff. As already mentioned, caution should be exercised with these conclusions due to sample size issues. Differences in satisfaction levels with other aspects of technology by staff location were not quite as pronounced.

Table 3: Satisfaction with the Internet Connection Speed by Staff Location

	Speed of the Internet Connection					
Staff by Location	**(1)Very Dissatisfied**	**(2)**	**(3)**	**(4)**	**(5)Very Satisfied**	**Respondent Counts**
Winslow	25%	25%	13%	38%		8
Holbrook	16%	22%	19%	25%	19%	32
Snowflake/Taylor	20%	27%	33%	20%		15
Show Low	37%	16%	32%	11%	5%	19
Springerville-Eagar Center		100%				1
Hopi Center	50%		50%			2
Kayenta				100%		1
Total Staff						78

3.3. Use of Technology

More than half of students used course websites and smart classrooms for school; more than half of faculty members reported using digital presentations, course websites, and projectors for instruction; and more than half of staff reported using video conferencing at work. Interestingly, only 15 percent of faculty reported using plagiarism detection software as part of their instructional work.

Table 4: Use of Technology

Type of Technology	**School (Students only)**	**Instruction (Faculty only)**	**Research (Faculty only)**	**Work (Staff only)**
Digital presentations	46%	55%	13%	41%
Digital image manipulation software	19%	17%	8%	31%
Digital audio	40%	30%	4%	36%
Digital video	41%	42%	12%	32%

Streaming audio/video	34%	40%	5%	42%
Course website	56%	53%	4%	31%
Smart classrooms (model classrooms rich in instructional technology)	54%	41%	4%	N/A
Video conferencing	43%	24%	6%	59%
Other virtual environments	3%	2%	4%	3%
Projector	N/A	65%	4%	44
Clickers	N/A	0%	0%	N/A
Plagiarism detection	N/A	15%	N/A	N/A

Using digital audio, video, and streaming audio/video are the most reported uses of technology by student and staff (where and how the technology was used for personal purposes was not subject of this survey). Video conferencing and making/viewing digital presentations were the top uses of technology among faculty members.

Table 5: Personal Use of Technology

Personal Use			
Type of Technology	Students	Faculty	Staff
Digital presentations	15%	17%	23%
Digital image manipulation software	22%	15%	24%
Digital audio	26%	11%	26%
Digital video	26%	12%	28%
Streaming audio/video	28%	13%	30%
Course website	2%	7%	15%
Smart classrooms (model classrooms rich in instructional technology)	5%	4%	N/A
Video conferencing	4%	17%	10%
Other virtual environments	7%	2%	1%
Projector	N/A	2%	7%
Clickers	N/A	0%	N/A
Plagiarism detection	N/A	4%	N/A

Twenty three percent of responding faculty members indicated teaching at least one online class, 11 percent teaching a hybrid class. Eighty one percent of the faculty reported their classes required a significant use of technology.

Table 6: Teaching with Technology

Faculty Responses			
	N	Percent	Percent of Cases

At least one of my classes is taught completely online.	10	20	23%
At least one of my classes can be considered a hybrid class (a combination of in-person and online instruction).	5	10	11%
My in-person classes require a significant use of classroom technology (computers, projectors, access to the internet, etc.)	36	71	81%
Total	51	100	

4. Appendix A: Sample Demographics

4.1. Students

One third of student-respondents reported taking classes mostly in Show Low. Sixty one percent of responding students plan to earn associate degrees and 21 percent intends to transfer to a university. More than half of those who responded attend NPC full-time.

Table 7: Primary Location of Classes

Primary location of classes		
	Frequency	Percent
Show Low	44	33
Holbrook	18	14
Online	16	12
Winslow	15	11
Snowflake/Taylor	14	11
Hopi Center	9	7
Kayenta	7	5
Springerville-Eagar Center	6	5
St. Johns Center	3	2
Total	132	100

Table 8: Primary Goal for Taking Classes

Select your primary, most immediate goal for taking classes at NPC.		
	Frequency	Percent
To earn an associate's degree	82	61
To transfer to a university	28	21
To earn a certificate	14	10

For professional improvement	6	5
For personal enrichment	4	3
Total	134	100

Table 9: Full-time or Part-time Attendance

Full-time/Part-time		
	Frequency	Percent
Full-time	76	57
Part-time	57	43
Total	133	100

4.2. Faculty

Half of the faculty-respondents teach classes in Show Low, nearly a third in Winslow and more than a quarter in Holbrook. Because faculty may teach multiple classes in (or from) different location, the total number of responses in table 10 exceeds the number of respondents. Two thirds of faculty who responded to the survey have been teaching at NPC for at least five years and about the same percentage of them are full-time.

Table 10: Location of Classes Taught by Faculty

Faculty/ Location	Responses		Percent of Cases
	N	Percent	
Winslow	15	20%	30%
Holbrook	13	17%	26%
Snowflake/Taylor	11	15%	22%
Show Low	25	33%	50%
Springerville-Eagar Center	1	1%	2%
Hopi Center	4	5%	8%
St. Johns Center	6	8%	12%
Total	75	100%	

Table 11: Years of Teaching at NPC

Faculty: Years of teaching		
	Frequency	Percent
Less than 5 years	17	33
Between 5 and 10 years	18	35
Between 10 and 15 years	10	19
More than 15 years	7	14
Total	52	100

Faculty: Full-time/Adjunct

	Frequency	Percent
Full-time	34	65
Part-time	18	35
Total	52	100

4.3. Staff

Most of the staff-respondents work from Holbrook, Show Low, and Snowflake/Taylor. Only eight percent of them reported being employed part-time and nearly two-thirds have been working at NAPC at least five years.

Table 13: Staff Location

Staff: Primary location

	Frequency	Percent
Holbrook	32	41
Show Low	19	24
Snowflake/Taylor	15	19
Winslow	8	10
Hopi Center	2	3
Springerville-Eagar Center	1	1
Kayenta	1	1
Total	78	100

Table 14: Full-time/Part-time Status of Staff

Staff: Full-time/Part-time

	Frequency	Percent
Full-time	73	92
Part-time	6	8
Total	79	100

Table 15: Length of Staff Employment at NPC

Staff: Employment length

	Frequency	Percent
Less than 5 years	28	35
Between 5 and 10 years	21	27
Between 10 and 15 years	14	18
More than 15 years	16	20
Total	79	100

5. Appendix B: Survey Instruments

- [Student Technology Survey Instrument](#)
- [Faculty Technology Survey Instrument](#)
- [Staff Technology Survey Instrument](#)