

# **Teaching and Learning Technology Use at Community and Technical Colleges in Washington State: Faculty Survey**

## **Final Report**

**Alan Hardcastle, PhD  
Senior Research Associate**

January 2008



905 Plum St. SE, Bldg. #3  
P.O. Box 43165  
Olympia, WA 98504-3165  
(360) 956-2167



### ***Sponsorship***

Financial support for this project was provided by the State Board for Community and Technical Colleges.

### ***About the WSU Extension Energy Program***

WSU is a recognized leader in energy research, development and technology transfer. WSU's Extension Energy Program works primarily with government agencies, power marketers, utility consortiums, educational institutions, private businesses and industries on projects that promote energy conservation, research, and development of renewable energy sources, and economic and workforce development.

### ***Acknowledgements***

The author would like to thank the instructors who participated in the survey and for their many thoughtful comments during the faculty focus groups. Thanks also to SBCTC staff and leadership for their support of this project. Special thanks to the Technology Task Force and Vision committee members for their support and input on the survey design. Many thanks go to Connie Broughton and Rachel Kessel who worked closely on the design, conduct and completion of this project.

# TABLE OF CONTENTS

<b>Section</b>	<b>Page</b>
<b>Executive Summary</b> .....	1
<b>Introduction and Methodology</b> .....	6
<b>Part One: Survey Results</b> .....	9
<b>Part Two: Faculty Focus Groups</b> .....	27
<b>Part Three: Conclusions and Implications</b> .....	31
<b>Appendices</b>	
<b>Appendix A: Faculty Web Survey</b> .....	35
<b>Appendix B: Respondents by Program/Discipline Area</b> .....	45
<b>Appendix C: Faculty Focus Group Data Summaries</b> .....	46

# Teaching and Learning Technology Use at Community and Technical Colleges in Washington State: Faculty Survey

Alan Hardcastle, PhD  
Washington State University  
Extension Energy Program  
January 2008

## Executive Summary

### Introduction

The State Board for Community and Technology established a system-wide Technology Transformation Task Force to study how colleges use technology today, and how they may use technology in the future. As part of this work, the Task Force requested a survey of faculty to learn about their current use of teaching and learning technologies, faculty support needs, and how technology can support teaching and student learning in the future.

WSU was retained to work with SBCTC staff and Task Force members to design and conduct a web-based survey available to all instructors, followed by three faculty focus groups. Complete survey data was collected from 1551 instructors; sixteen faculty participated in the focus groups.

### Survey Results

**Faculty Technology Use:** The results showed that most respondents already use some type of technology in their teaching, and most believe the technology tools they used are effective. But, the majority of faculty did not incorporate many new or advanced technology tools into their teaching. Around 43 percent of faculty taught hybrid courses last year (some classroom time replaced by using online tools), and an even smaller number (35 percent) taught courses that were fully online (no regular classroom time).

**Technology Awareness:** Faculty become aware of instructional technologies primarily through other instructors, and they cite other instructors as important sources of new technology. Other important sources of technology awareness included professional conferences or workshops, college IT/Technology departments, and college librarians, instructional designers, or distance learning office staff, respectively. Many faculty cited self-directed online searches as an important source of technology information.

**Technology Training and Effectiveness:** Top training priorities included electronic content tools, assessment tools, communication tools and new electronic content tools, respectively. Faculty expressed interest in training for a wide range of specific technologies and tools; website and web-page design was frequently mentioned, as was online and hybrid course development. Faculty reported that the most effective sources of training included self-

taught/self-study approaches, other instructors, college IT/Technology department classes, and professional conferences or workshops, respectively. Faculty emphasized that effective training should be discipline-specific, taught by individuals who understand teaching and are skilled at using the specific technology, and should include a hands-on component that reinforces applied learning and practice.

**Faculty Perspectives:** Several survey items sought to understand the extent to which faculty were receptive to the use of technology in their teaching, their perspectives about the benefits of technology use, and how much support is currently provided by their institution. The results revealed several key points:

- Training and technical support: Around 75 percent of respondents agreed that the training they have received has enabled them to use technology effectively, and 78 percent said they would use technology more often if they had additional training. But, more than one-third of respondents do not believe that they have adequate technical support to use technology in their teaching.
- Benefits of technology: Eighty-seven percent of faculty agreed that technology helps them teach more effectively, and 85 percent agreed that their use of technology helps increase student learning. Only about nine percent of instructors believe that technology will diminish their role in a student's education.
- Expanding the use of technology: Around 64 percent of faculty agreed that incorporating technology into their teaching will require "a lot" of additional time and effort. At the same time, however, around 73 percent agreed that the use of technology for teaching should be expanded in their department or program. Around 69 percent of faculty agreed that student expectations are motivating them to learn more about instructional technologies.

**Sub-Group Analyses:** A limited number of sub-analyses were conducted using demographic variables and some survey items. A summary of these analyses include:

- Proficiency: About 70 percent of instructors identified themselves as "proficient" technology users. Compared to the 25 percent of faculty who said they were not proficient, proficient users were more likely to:
  - Teach substantially more classes that incorporate technology and that use more and higher-level technology tools
  - Be very positive in their attitudes about the use of technology and its benefits
  - Want additional training, especially in higher-level technologies
  - Prefer self-study, professional workshops/conferences, and online options for technology training, rather than one-on-one assistance.
- Age Differences: Relatively few differences were noted when survey items were broken out by age group. There was a slight trend among faculty in the 40-49 age group to use

technology more often than faculty from other age groups, and they tended to use more varieties of advanced technology tools. Several other minor trends were noted.

- **Teaching Status:** Analyses compared full-time and part-time/adjunct faculty on some items. While some differences were noted, there was not much difference between faculty groups on their use of hybrid or fully online courses. Part-timers are somewhat more likely than full-time faculty to:
  - Become aware of technologies through undergraduate /graduate classes or classes on online/technology and teaching.
  - Identify college IT/technology departments and online classes as important sources of technology training (as opposed to other instructors or workshops), mainly because of the convenience they offer.
  - Disagree that incorporating technology into their teaching will require a lot of additional time.

### **Focus Group Findings**

#### **Confirmation and clarification**

All three groups confirmed the survey findings, and there was broad support for the interpretation of the results; none of the focus group participants reported that the findings appeared to be erroneous or that the general interpretation of the findings was incorrect.

#### **Additional themes and input**

Content analyses of the focus group input provided additional depth and meaning to the survey results; faculty input helped to clarify some of the survey comments and also identified some of the underlying challenges and opportunities for future use of teaching and learning technologies:

- **Institutional pressure to use technology:** To boost enrollments or to increase teaching efficiency, over enhanced teaching quality and student success.
- **Lack of faculty input:** Has led to poor decisions about technology options and tools.
- **Advanced needs of early adopters:** Their skills are more advanced than most campus-sponsored training or IT staffs.
- **Early adopters as trainers and mentors:** Faculty are willing to be mentors but want adequate release time, an effective technology infrastructure, and campus commitment.
- **Centralized technology library and network:** To help faculty find and use information, tools and support for teaching and learning tools.
- **Effective tools and practices:** Provide research and information to help faculty choose appropriate and effective teaching and learning technology tools.
- **Assumption that students have technology skills:** Many do not, due to socio-economic status and related factors, geography and local technology infrastructures. Students often lack the skills needed to succeed in technology-enhanced courses. Lack of student readiness can reduce faculty effectiveness and willingness to use teaching technologies.
- **Technology skills assessments:** Should be implemented to measure student technology proficiency.
- **Developmental technology courses:** Should be provided to help students succeed in technology-enhanced programs and in their careers.

## **Conclusions and Implications**

The survey results and focus group findings reveal much about faculty technology use, including how faculty learn about teaching technologies and tools, their training preferences and their personal perspectives on the use of technology to support their instructional role. The main conclusions and implications include:

### **1. Faculty Support Technology Use and Expansion**

The faculty who participated in this survey generally have a positive view about the value and benefits of technology for themselves and for their students; they do not perceive that the use of technology in their teaching will have a deleterious effect on the role they play in providing or supporting student learning. Faculty are engaged in the use of technology for teaching, they view it as effective, and they are interested in being consulted as partners in expanding technology use at their colleges.

Implication: There is a high level of faculty support for incorporating technology into their teaching, and expanding the use of technology within their departments and their colleges. But with this support comes expectations about faculty involvement: faculty want and expect to be consulted, supported and included as partners in defining a successful future for technology-based instruction at their colleges.

### **2. Current Infrastructure Limits Faculty Technology Use**

The more advanced the technology, the less often it is used by faculty in their teaching. While the limited use of technology is related to the availability of training and technical support, an equally important factor is that many instructors report that their college lacks the hardware and software infrastructure they need to use technology effectively; faculty believe that upgrades on both fronts are needed. Many faculty comments described how under-equipped and poorly organized classrooms limited or prevented them from using instructional technologies in their teaching. A third said the technical support they now receive is inadequate.

Implication: Faculty use of technology is limited by an inadequate technology infrastructure, not a lack of willingness to gain new skills or apply instructional technologies. Additional resources are needed to provide timely systems upgrades and technical assistance to ensure that instructors have access to an up-to-date technology foundation that supports their efforts to learn and apply technology tools in their teaching.

### **3. Peer-to-Peer Networks Critical**

That the majority of instructors cite their peers as both their *primary source* of technology information and the *most important source* of new information about technology attests to their expressed preference for a faculty-to-faculty connection regarding teaching technologies. Other instructors understand the core work of teaching and have experience in adapting and teaching technology-enabled courses. But most instructors (and especially part-timers) also rely on other

departments and individuals (IT, distance learning, libraries, and related staffs) as important providers of technology information and assistance.

Implication: Faculty value and desire peer-to-peer interaction to learn and use instructional technologies effectively. Establishing a faculty mentoring network (or networks) and resources that connect advanced technology users with expertise in general and discipline-specific applications to faculty would be a powerful strategy for delivering training, technical assistance and instructional support to instructors locally and system-wide.

#### **4. More Training and Time to Use Technology**

A large majority of faculty are willing and eager to learn and apply new technology tools in their teaching. However, most instructors believe that they lack sufficient training opportunities and the time required to participate in training. They report that they are not given adequate time or technical support to practice and apply these new tools in their courses. Instructors want training that:

- Occurs more often and uses flexible delivery methods (such as online) and time schedules that are convenient for them.
- Upgrades and builds upon their current technology skills and also enables them to move to higher levels and types of technology use that meet their instructional needs.
- Leverages the experience of faculty mentors, who understand teaching and are skilled at implementing specific types of technologies into their teaching.
- Includes adequate release time for training and for developing, adapting, integrating and upgrading courses using these technologies.

Implication: Instructors are unified in their desire for more technology training. A broader commitment is needed from colleges and the college system to expanding professional development opportunities and providing more flexible training delivery options, while recognizing that adequate release time (more so than financial compensation) is critical to enable faculty to further develop their skills and successfully incorporate technology into their teaching.

# Teaching and Learning Technology Use at Community and Technical Colleges in Washington State: Faculty Survey

## Introduction

The State Board for Community and Technical Colleges established a system-wide Technology Transformation Task Force to study how colleges use technology today and how they may use technology in the future. The Task Force is reviewing and collecting information from stakeholders across the system, including reviews of existing research about technology use, and input directly from college leadership, departments, students, faculty and staff. This report summarizes work directed by the Task Force through the Vision Committee to collect input from faculty about ways that technology can support teaching and student learning. The goal is to use the results from all stakeholders to create a vision, plan and funding model for technology that can be supported by the state.

WSU was retained to work with SBCTC staff and Task Force members on the survey design, implementation, data analysis options and this final report. It was determined that the most useful design would entail two steps: First, to implement a web-based survey of CTC faculty regarding their current use of technology, future training needs, and preferences for new technology. Second, to conduct three focus groups of faculty to discuss and confirm the results, and to provide additional input on survey topics and issues not covered in the survey.

## Methodology

The research relied primarily on a web-based survey to collect data directly from college faculty.<sup>1</sup> Web-based surveys are extremely convenient for respondents and offer an efficient approach for collecting quantitative information provided by large numbers of respondents. Written comments were also collected from faculty on some survey items. Following completion of the survey, three faculty focus groups were convened to discuss the results and to collect additional input (described below).

Because the Task Force sought to hear as many viewpoints as possible, all CTC instructors were invited to participate in the survey (rather than using a random or stratified sample approach). This approach can sometimes result a larger overall number of respondents, can provide a potentially richer set of data, and is easier to administer. This method does, however, increase the likelihood of response bias, since only faculty who choose to complete the survey are included, and their responses may not truly represent the broader population.

College vice presidents agreed to distribute invitations via email to all instructors on their campuses and to issue weekly reminders to encourage faculty to participate. Invitation materials assured faculty that their participation was completely voluntary, and that all

---

<sup>1</sup> See Appendix A.

responses would be treated confidentially. College vice presidents were told that they will be able to request copies of their college data following completion of the study and after it had been reviewed by WSU to ensure respondent confidentiality.

**Respondents:** A total of 1551 faculty completed the survey. An average of 46 instructors from each of the 34 colleges participated in the survey. The total sample represents 15 percent of all faculty employed by the state's CTC system in the Fall of 2007 (approximately 10,800 faculty). Only 39 partially-completed surveys were identified, and they were not included in the analyses.

**Survey and Sample Limitations:** Demographic profiles were compared to system-wide data to examine how closely the respondent group matched the population of CTC faculty with regard to age, gender, teaching experience, program type (teaching discipline) and employment status. The comparisons showed that, with a few exceptions, the respondent group reasonably represents the general CTC faculty population. Those exceptions include:

- Faculty employment status: Around two-thirds of all instructors in the CTC system are part-timers. Only 30 percent of the survey respondents were part-time faculty.
- Teaching experience (in Washington CTCs): The respondent group is slightly more experienced than the population of instructors from the CTC system: About 45 percent of CTC system faculty have up to five years teaching experience, compared to 28 percent of the respondent group. The sample is more closely representative of the CTC system for faculty with 15 or more years of teaching experience.
- Program type (discipline): Due to the differences in the classification schemes used by the college system and this survey, direct comparisons of faculty teaching within each program type were often not possible.<sup>2</sup> For those programs that were comparable, in most cases the percentages of faculty teaching in specific program areas were fairly similar between the two groups.

Taken overall, these comparisons suggest that with a few exceptions the backgrounds of the respondent group are reasonably similar to the system-wide population of CTC instructors. A more central factor is that only faculty who were invited and who chose to access and complete the web survey are represented. This fact limits our ability to generalize the results to the broader CTC faculty population.

**Faculty Focus Groups:** College Vice Presidents of Instruction were asked to identify faculty who were considered to be advanced technology users to participate in one of the focus groups.

---

<sup>2</sup> The classification scheme used by the college system integrates different program types into one of 16 categories; some are one-program types (i.e., Health Science) while others integrate multiple program types into a single category (i.e., business, accounting, data processing-IT, secretarial). Project sponsors requested a larger number of discreet programs to enable future analyses by discipline. Therefore, this survey employed the program classification scheme used by the U.S. Department of Education, which consists of 40 different categories defined in the Integrated Postsecondary Educational Data System (IPEDS). This enabled analyses of faculty input by on specific program types. For more information on the classification scheme see: [http://nces.ed.gov/ipeds/find\\_data/cip2000.asp](http://nces.ed.gov/ipeds/find_data/cip2000.asp)

The rationale for selecting experienced users was that these individuals can provide useful input on basic technology training needs and options, as well as input on advanced technologies, tools and training methods. Faculty members who were selected represented a diverse mix of departments and program areas, employment status (tenured and adjunct) and varying levels of college teaching experience.

Three focus groups were held in November at separate college locations (Shoreline Community College, Tacoma Community College, and Big Bend Community College). Instructors from all colleges were invited to participate in whichever focus group was most convenient for them. A total of 16 faculty participated in the focus groups. Discussion notes were recorded for each session, and are presented as data summaries in Appendix C.

### **Organization of the Findings**

The results of this study are presented in four parts:

Part One describes the participants and results of the web survey through the use of summary tables, charts and interpretative analyses. Analyses of written comments provided by faculty are also included. Additional analyses of survey results broken out by faculty demographic variables and responses to specific questions are included near the end of this section.

Part Two summarizes the results of the three faculty group discussions about the survey findings and related topics where additional faculty input was generated.

Part Three integrates findings from the survey and the three faculty focus groups, and provides conclusions and recommendations for consideration by the Technology Transformation Task Force.

Part Four includes appendices containing copies of the web survey, a list of respondents by program type/discipline, and summaries of findings from the focus groups.

## Part One: Survey Results

### Survey Participants and Programs

The demographic information collected during the survey enabled identification of respondents by teaching or program area. Table 1 shows the total number of responses for the 11 departments whose faculty submitted the largest number of completed surveys. Instructors who identified these programs as their primary teaching area accounted for around 75 percent of all participants. As can be seen, a fairly broad mix of program types and disciplines were represented.<sup>3</sup>

**Table 1**

<b>Departments and Number of Faculty Respondents (Top 11 Responding Departments Only).</b>		
ABE/ESL	130	9%
Biological and Biomedical Sciences	72	5%
Business, Management, Marketing	100	7%
Computer Information Sciences	85	6%
Education	45	3%
English Language and Literature	163	11%
Health Professions and Related Clinical Sciences	197	13%
Mathematics and Statistics	116	8%
Physical Sciences	55	4%
Social Sciences	69	5%
Visual and Performing Arts	56	4%
<b>Total</b>	<b>1,088</b>	<b>75%</b>

### Technology Use: By Type and Frequency

The first set of survey questions sought to identify faculty use of instructional technologies across four different categories, including electronic classrooms, web enhanced courses, hybrid courses (some classroom time, some online instruction) and classes that were delivered entirely online. The following table shows the results for each type of technology, and the extent of their use by faculty over the past academic year.

---

<sup>3</sup> The full list of participants by program area can be found in Appendix B.

**Table 2**

**1.** Over the past academic year, *how many of your classes have included the following types of technologies* (check one response per category):

Top number is the count of respondents selecting the option. Bottom % is percent of the total respondents selecting the option.	<b>1-3 classes</b>	<b>4-6 classes</b>	<b>7-9 classes</b>	<b>Over 9 classes</b>	<b>Don't Know</b>	<b>Not Used</b>
<b>Electronic classrooms or computer labs</b>	390 26%	272 18%	221 15%	319 21%	23 2%	261 18%
<b>Web Enhanced Courses</b> (online tools used, but replaces no classroom time)	392 27%	254 18%	191 13%	204 14%	19 1%	387 27%
<b>Hybrid Courses</b> (some classroom time replaced by using online tools)	299 22%	123 9%	76 6%	64 5%	16 1%	769 57%
<b>Online Classes</b> (no regular classroom time)	224 17%	103 8%	59 4%	66 5%	10 1%	876 65%

The table shows that among all respondents, around 80 percent of instructors, used electronic classroom or computer labs in at least some of their classes over the past academic year. Around 26 percent used these technologies in up to three of their classes; around 21 percent used electronic classrooms or labs in more than 9 classes.

Similar percentages and patterns were found for the use of web enhanced courses, where online tools were used without replacing classroom time; however, the number of faculty who reported using web enhanced courses in more than nine classes was only 14 percent.

Response patterns for Hybrid and Online categories underscore a pervasive trend in the data: Simply put, as the amount of technology-based (especially online) instruction increases, fewer faculty report having used it. Analyses of the first and last column percentages exemplify this trend. Data presented in the last column, ‘Not Used’ shows that the percentage of respondents who report not having used the four teaching technologies over the past academic year grew from just 18 percent to 65 percent. Although 35 percent of faculty report teaching purely online courses (no regular classroom time) over the past year, of that group only about half (17 percent) taught online-only for more than three classes.

**Effectiveness of Technology in Enhancing Teaching**

Instructors were also asked to comment on how effective a range of technologies and tools they’ve used have been in enhancing their teaching. The following table shows the different types of technologies, categories and responses. In general, faculty who have used the different

technologies and tools report that the tools have enhanced their teaching. Perhaps even more notable, however, is the large percentage of faculty who report not having used many of these technologies, especially the newer and more advanced types.

**Table 3**

**2.** Of the technologies you have used, *how effective* have the following technologies/tools been in enhancing your teaching? (check one response per category)

Top number is the count of respondents selecting the option. Bottom % is percent of the total respondents selecting the option.	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know	Not Used
<b>Electronic Content Tools</b> (examples: full-text databases & other library resources, e-reserves, Publisher-provided materials, PowerPoint, lecture notes)	570 37%	480 31%	227 15%	23 2%	32 2%	194 13%
<b>New Electronic Content Tools</b> (examples: Camtasia, Games, Animations, Podcasting, Other rich media tools)	173 12%	157 11%	140 9%	34 2%	57 4%	930 62%
<b>Productivity Tools</b> (examples: Microsoft Word, Excel, Access)	818 54%	423 28%	127 8%	17 1%	19 1%	110 7%
<b>Assessment Tools</b> (examples: Online testing tools, Assignment managers, Surveys)	354 23%	302 20%	190 13%	31 2%	41 3%	593 39%
<b>Learning Management Tools</b> (examples: Outcomes management, Standards/objectives mapping, Intelligent or adaptive testing, Rule-based (selective) release of materials)	112 7%	137 9%	141 9%	45 3%	89 6%	970 65%
<b>Communication Tools</b> (examples: Discussion boards, Email with students, Chat/Whiteboard tools, Instant Messenger)	584 39%	386 26%	241 16%	33 2%	13 1%	254 17%
<b>Social Networking Tools</b> (examples: Live-meeting tools (e.g. Webex), Voice chat, Blogs, MySpace, Facebook, Wikis)	81 5%	95 6%	113 8%	49 3%	45 3%	1100 74%

As shown in the first row of the table, about 87 percent of faculty reported having used Electronic Content Tools. Around 68 percent of faculty who used these tools reported that they

were either effective or very effective; only two percent said they were not effective in enhancing their teaching.

Interestingly, 62 percent of respondents reported that they had not used what were described as “New” Electronic Content Tools. This suggests that as a group, instructors are not very familiar with the use of these advanced tools in their teaching. However, of faculty who used these new tools, over 60 percent said they found them to be either effective or very effective.

Not surprisingly, the vast majority of faculty reporting having used different types of Productivity Tools in their jobs.<sup>4</sup> Among those who used them, about 88 percent of faculty reported that they found these productivity tools to be effective or very effective in enhancing their teaching.

Looking near the bottom of the table, a similar pattern emerged regarding faculty use of Communication Tools, which faculty generally regarded favorably. However, 17 percent of instructors reported they had not used these communication tools.

Faculty use of Assessment Tools varied considerably. Of the 61 percent who said they did use assessment tools, more than two-thirds reported that they found them to be effective or very effective. However, around 39 percent of instructors reported that they had not used electronic Assessment Tools in their teaching.

The results for Learning Management Tools and Social Networking Tools were very similar. The data show that neither of these tools is widely used by faculty. As shown in the table, a large majority of faculty reported that they did not use these tools in their teaching last year: Around 74 percent said they did not use social networking tools, and about 65 percent of faculty said they did not use learning management tools. Of faculty who did use these tools, however, around half said they were effective or very effective in enhancing their teaching.

## **Awareness and Information about Technology**

Faculty were also asked to identify how they became aware of technologies that could be incorporated into their teaching, and what they believed to be their three most important sources of new information about technology. Although the item values differed somewhat, faculty generally reported that the same four sources that helped them become aware of teaching technologies are also their most important sources of new information about technology.<sup>5</sup> The following two tables show the response patterns and percentages for each item.

---

<sup>4</sup> It is worth noting that 111 instructors—around seven percent—said they did not use these basic tools last year.

<sup>5</sup> As shown below, the survey item on technology awareness asked faculty to identify all sources of information; the item on sources of new information about technology asked faculty to identify only their three most important sources. The different formats likely account for some of the variation in responses between the two items.

**Table 4**

<b>3. How did you become aware of technologies that can be incorporated into your teaching? (Select all that apply)</b>		
Other Instructors	1245	81%
Students	430	28%
Professional Association Journals/Newsletters	371	24%
Professional Conferences or Workshops	821	53%
College IT/Technology Department	781	51%
College Librarians, Instructional Designers, or Distance Learning office/staff	716	47%
Used in my undergrad/graduate classes or professional training	395	26%
Technology Companies/Vendors	303	20%
Class on Online/Technology and Teaching	436	28%
Other (If selected please comment below in Question 5).	135	9%

**Table 5**

<b>4. Please select your three most important sources of new information about technology (*NOTE: Select only 3 items.)*</b>		
Other Instructors	1111	72%
Students	236	15%
Professional Association Journals/Newsletters	259	17%
Professional Conferences or Workshops	727	47%
College IT/Technology Department	658	43%
College Librarians, Instructional Designers, or Distance Learning office/staff	511	33%
Used in my undergrad/graduate classes or professional training	176	11%
Technology Companies/Vendors	260	17%
Classes on Online/Technology and Testing	222	14%
Other (If selected please comment below in Question 5).	150	10%

The tables show that faculty most often identified other instructors to be both their primary source of awareness about technologies used in teaching (81 percent), and their most important source of new information about technology (73 percent). These results are notable for the level of consistency in response patterns between the two survey items and suggest that faculty attach

a high degree of importance to their peers as a source of new information about teaching technologies. Similar response patterns were identified for other items in this section:

- About 53 percent of faculty reported that Professional Conferences or Workshops were also a primary source of information about technologies, while 47 percent of faculty identified conferences or workshops as one of their top sources of new information about technology.
- Fifty-one percent of faculty identified College IT/Technology Departments as their source of teaching technologies; around 43 percent of faculty also identified IT/technology departments as a primary source of new information about technology.
- Fourth was College Librarians, Instructional Designers, or Distance Learning Office/Staff. Around 47 percent of faculty identified these individuals as an important source of awareness about teaching technologies; around 33 percent cited this group as important sources of new information about technology.

#### Faculty comments: Other important sources of technology awareness

A large number of instructors (330 or 21 percent) provided written comments about other important sources of awareness or new information about technology. Respondents named a wide variety of additional sources of information, many of which extended beyond the categories presented in the survey. Analysis of the frequency and content of comments revealed that the five most common descriptions regarding other sources included:

1. Self-directed online internet searches (using search engines such as Google)
2. Technology-related magazines and trade publications (such as 'Wired' magazine)
3. Textbook publishers
4. Friends and relatives outside of college teaching
5. Blogs related to the teaching profession or their discipline

Also mentioned were technology-related websites, personal industry connections, previous employers and former teaching colleagues. In sum, faculty appear to draw from a wide variety of information sources about technology beyond the scope included in the survey. In citing additional sources of information, online internet searches were the most often mentioned way to acquire new technology information.

#### **Faculty Priorities for Technology Training**

Faculty were also asked to identify their three top priorities for technology training from the same broad list of technology categories that were presented in Question 2 (technology effectiveness). Table 5 shows faculty priorities for technology training.

**Table 5**

<b>6. Please select your top 3 priorities for technology training in the future. (NOTE: *select only 3 items)</b>		
<b>Electronic Content Tools</b> (examples: full-text databases & other library resources, e-reserves, Publisher-provided materials, PowerPoint, lecture notes)	779	51%
<b>New Electronic Content Tools</b> (examples: Camtasia, Games, Animations, Podcasting, Other rich media tools)	666	44%
<b>Productivity Tools</b> (examples: Microsoft Word, Excel, Access)	496	33%
<b>Assessment Tools</b> (examples: Online testing tools, Assignment managers, Surveys)	760	50%
<b>Learning Management Tools</b> (examples: Outcomes management, Standards/objectives mapping, Intelligent or adaptive testing, Rule-based (selective) release of materials)	480	31%
<b>Communication Tools</b> (examples: Discussion boards, Email with students, Chat/Whiteboard tools, Instant Messenger)	717	47%
<b>Social Networking Tools</b> (examples: Live-meeting tools (e.g. Webex), Voice chat, Blogs, MySpace, Facebook, Wikis)	364	24%
<b>Other</b> (if selected, please explain in comment box below)	89	6%

The results show that four technology topics were highly rated by faculty for future training. First, 51 percent of faculty identified Electronic Content Tools (ECTs) as a top priority for technology training in the future. This finding points to a expressed need by faculty for additional training in these technologies. As noted earlier, the vast majority of respondents (87 percent) reported that they already use these tools in their teaching, and most said that they are effective; only 13% said they did not use these tools.

A similar percentage of faculty identified Assessment Tools (50 percent) and New Electronic Content Tools (44 percent) as among their three highest training priorities. As described earlier, the majority of instructors did not use these assessment tools or new ECTs last year.<sup>6</sup> Thus, the responses in this section suggest that they are indeed interested in training that will enable them to use these tools in the future.

---

<sup>6</sup> Results from Question 2 showed that 39 percent of faculty said they did not use electronic assessment tools, while 62 percent said they did not use new ECTs.

Fourth, Communication Tools were identified by 47 percent of faculty as a high priority for future technology training. Since 83 percent of faculty said they already use these tools, it appears that they are interested in ongoing training in this area, whether to upgrade their skills, learn about different tools and new applications, or both.

Although the identification of Productivity Tools (at 33 percent) and Learning Management Tools (at 31 percent) were somewhat lower as priorities for future training, these results are instructive: A third of faculty expressed interest in more training in productivity tools, even though around 93 percent of faculty say they currently use them. This desire for additional training likely reflects instructors' interest in learning how to use these tools more effectively, efficiently or creatively.

Interestingly, while there are a similar number of current users, the results show that instructors were more interested in training to use new ECTs than Learning Management Tools. This difference may be due to instructors' earlier responses, where they rated new ECTs as somewhat more effective in enhancing their teaching than learning management tools (see Table 2).

#### Faculty comments on 'other' technologies for which training is important.

Instructors were also invited to identify other technologies for which they believed additional faculty training is important. Around 13 percent (208) of respondents provided comments in this section. The content of the responses was extremely broad, both in terms of the technologies they identified and the ways in which more training would be beneficial. The most frequently mentioned technology training identified by faculty included the following:

1. Website or web-page design
2. Online and hybrid course development
3. Integration of different kinds of technology tools and applications
4. Pedagogy and technology training for faculty
5. Discipline-specific technology training

Other technology-related topics faculty identified included visual imaging/media tools, graphics, and specific products such as Dreamweaver, Blackboard, WebCT, and basic presentation and productivity tools such as Powerpoint and Excel. Ensuring that students have access to the technologies faculty use to develop and deliver instruction was also mentioned by a few respondents.

Taken together, the results in this section show that respondents are interested in additional technology training that will further their ability to incorporate these tools into their teaching. Faculty priorities for training appear to be related to their perceptions about technology effectiveness. Given their current level of technology use, described earlier, instructor preferences for training suggest that most faculty want to build upon their current foundation of technology skills and to extend their ability to incorporate new tools they do not currently use in their teaching.

## Most Effective Sources of Training

Respondents were also asked to identify what they believed to be the three most effective sources of training for developing the skills needed to incorporate technology in their college teaching. Those results are shown in Table 6, below.

**Table 6**

<b>8. Select the 3 most effective sources of training for developing the skills needed to incorporate technology into your college teaching. (NOTE: *select only 3 items)</b>		
Other Instructors	793	51%
Students	58	4%
Self-taught/self-study	817	53%
Professional Conferences or Workshops	690	45%
College IT/Technology Department Classes on Online/Technology and Teaching	716	46%
Online Classes on Technology and Teaching	387	25%
College Librarians, Instructional Designers, or Distance Learning Office/staff	423	27%
College Technology Coordinator (One-on-one)	417	27%
Technology Companies/Vendors	146	9%
Other (if selected, please explain in comment box below)	37	2%

The results show that faculty most often identified four primary sources of training as most effective:

First was Self-Taught/Self-Study: At 53 percent, the most effective source of training identified by faculty was self-taught/self-study. This finding is consistent with many of the comments provided by faculty, which indicate that many instructors are already learning independently and using their own time to develop new technology skills and applications.

Second, around 51 percent of faculty identified Other Instructors as one of their most important sources of training for teaching technologies. This finding is generally consistent with the results for earlier survey items regarding the source of faculty awareness and new information about technology.

Third was College IT/Technology Department Classes: About 46 percent of faculty identified classes on online/technology and teaching to be among the most effective sources of training on technology.

Fourth was Professional Conferences or Workshops: Around 45 percent of faculty selected conferences or workshops as among their most effective sources of training. This finding is also

consistent with the results for earlier survey items regarding the source of faculty awareness and new information about technology. This source is also notable as conferences and workshops include opportunities for peer-to-peer interaction, networking and informal teaching among faculty.

#### Faculty comments on ‘other’ effective training sources:

Faculty were invited to identify ‘other’ sources of technology training they believed to be effective. Around seven percent (107) of respondents provided comments in this section. Many of the comments reinforced that one-on-one training provided by an individual—whether another instructor, librarian, a distance learning or technology coordinator—is a key feature of effective technology training. This appeared to be especially true for faculty with limited technology skills. Other frequently mentioned features emphasized instructors’ comments that training is most effective when it is:

- Discipline-specific and can be customized to meet the instructor’s unique instructional needs
- Taught by an individual (ideally a ‘mentor’) who has teaching experience and specific knowledge of the technology
- Includes a hands-on component, so that faculty can immediately apply the technology to reinforce the conceptual learning and encourage practice and continued use.

Although it was provided as a response choice, a number of faculty wrote to emphasize online courses and tutorials as other effective sources of training. Their reasons included the convenience and flexibility that online delivery offers, but also because of the extensive range of subject matter that is available through institutions, software companies and vendors. College Teaching and Learning Centers were mentioned by several respondents. A number of faculty reported that their department or institution lacked the staff and resources to provide one-on-one training, mentoring or other personalized support.

### **Faculty Perspectives on Technology**

Another purpose of the survey was to understand instructors’ attitudes and perceptions about technology. Specifically, the goal was to ascertain the extent to which faculty were receptive to the use of technology in their teaching, their perspectives about the benefits of technology use, and how much support is currently provided by their institution.

The ten items included in this section are described below in Table 7. Respondents were asked to select one response option for each statement. Although there are many ways in which the individual survey items are associated, in order to simplify the reporting in this section, most items are discussed in related groups.

**Table 7**

<b>10.</b> Please indicate the extent to which you agree or disagree with each of the 10 statements below:					
Top number is the count of respondents selecting the option. Bottom % is percent of the total respondents selecting the option.	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>Don't Know</b>
<b>1)</b> The training I have received has enabled me to use technology effectively in my teaching.	274 18%	869 57%	251 16%	69 4%	72 5%
<b>2)</b> Compared to other faculty, I am a proficient technology user.	382 25%	689 45%	302 20%	71 5%	99 6%
<b>3)</b> If the college/college system provided additional training I would be more inclined to use technology in my teaching.	576 38%	610 40%	191 12%	45 3%	109 7%
<b>4)</b> My college provides me with adequate technology support and expertise to help me incorporate technology in my teaching.	221 14%	695 45%	385 25%	175 11%	63 4%
<b>5)</b> Technology helps me teach more effectively.	700 46%	627 41%	99 6%	28 2%	76 5%
<b>6)</b> Incorporating technology in my teaching helps to increase student learning.	689 45%	607 40%	80 5%	21 1%	134 9%
<b>7)</b> Relying more on technology in my teaching will diminish my role in a student's education.	36 2%	101 7%	594 39%	679 44%	117 8%
<b>8)</b> Even with more training and technical support, incorporating technology into my teaching will require a lot of additional time and effort.	335 22%	648 42%	354 23%	134 9%	54 4%
<b>9)</b> The use of technology for teaching should be expanded in my department/program.	438 29%	671 44%	224 15%	45 3%	146 10%
<b>10)</b> Student expectations are motivating me to learn more about the use of technology in my teaching.	408 27%	639 42%	333 22%	71 5%	76 5%

**Training and Technical/Institutional Support (Items 1, 3 and 4)**

As shown above for item 1, around 75 percent of faculty either agreed (57 percent) or strongly agreed (18 percent) that training they have already received has enabled them to use technology

effectively in their teaching. Only 20 percent of respondents disagreed or strongly disagreed with the statement; five percent of faculty said they ‘don’t know.’

A similar distribution of scores was recorded for item 3, which showed that 78 percent of faculty agreed that they would likely use technology more often if they were provided additional training. Compared to the results for item 1, faculty were twice as likely to ‘strongly agree’ with this statement, and a smaller number disagreed.

For item 4, regarding the adequacy of technical support and expertise provided by the college, the results show that while 59 percent of faculty agree or strongly agree that they receive adequate support, more than one-third of faculty believe that the support they currently receive is inadequate to help them incorporate technology into their teaching.

Taken overall, the results suggest that while faculty agree that training they have already received has helped them use technology in their teaching, they are interested in additional training to develop new skills and apply new tools in their teaching. Although the majority of faculty agree that they receive adequate technical support, 36 percent say they do not. Faculty clearly regard the provision of professional development opportunities and skilled technical support as central to their ability to adopt and apply teaching technologies.

### **The Benefits of Technology (Items 5, 6 and 7)**

The willingness of faculty to learn and apply technologies in their teaching also relates to their attitudes and beliefs about the benefits of technology for their students and themselves. The results for item 5 show that an overwhelming majority of faculty (87 percent) agree or strongly agree that technology helps them teach more effectively. And, an equally enthusiastic proportion of faculty report that their use of technology helps to increase student learning (see Item 6). It is worth noting that around 9 percent of faculty responded that they ‘don’t know’ on this item.

Finally, for item 7, around 83 percent of faculty disagreed or strongly disagreed that technology would diminish their role in a student’s education. Here again, it is worth noting that about 8 percent of respondents indicated that they ‘don’t know’ on this item, suggesting that some faculty have not yet formed an opinion on this topic.

To summarize, respondents have expressed a very positive view of the value and benefits of technology for themselves and for their students, and they do not perceive that the use of technology in their teaching will have a deleterious effect on the role they play in providing or supporting student learning. Although some faculty may take exception, and some remain unsure, there appears to be a high level of agreement among faculty about the beneficial nature of teaching technologies.

### **Support for Expanding the Use of Technology (Items 8, 9 and 10)**

Several items related to instructors’ motivation for technology use, and their attitudes about expanding the use of technology in their teaching and in their department. As shown for Item 8, around 64 percent of faculty agree that incorporating new technologies into their teaching will require “a lot” of additional time and effort from them. While no definitions were provided about the actual amount of additional time and effort that faculty might spend converting existing

courses or developing new ones to incorporate technology, it seems clear that most faculty believe that some extra effort will be required. Interestingly, however, nearly one-third of faculty disagreed with the statement; it may be that these responses are from faculty who are already experienced in converting or developing their courses using technology, and they have become efficient with this process.

Regarding Item 9, it is interesting to note that while 73 percent of faculty believe that the use of technology should be expanded in their department or program, fully 10 percent of faculty chose not to offer an opinion on this item. This may reflect some degree of ambiguity by faculty about extending the use of technology beyond their personal span of control, whether faculty believe they have the infrastructure or institutional support grow technology use, or for other reasons.

Finally, around 69 percent of faculty agree or strongly agree that student expectations are behind their motivation to learn more about the use of technology in their teaching (see Item 10). The 27 percent of faculty who disagreed with this statement may consist of a small minority who simply don't feel student expectations as a driving force.<sup>7</sup> It is also possible, however, that faculty who are advanced users of technology may even be more experienced with technology than their students, especially if those students include populations that are not heavy users of technology, such as students from low-income families or economically disadvantaged groups who lack the resources to have acquired technology experience, or students from rural areas where the technology infrastructure is not well-developed in their communities.

### **Proficiency with Technology (Item 2)**

This item was included to gauge the extent to which faculty consider themselves to be generally proficient in the use of technology for teaching, but also to enable analytical comparisons between faculty groups based on self-reported technology proficiency. Although the resulting measure is subjective, when used in combination with other survey items and comments it does provide a useful way to measure faculty perceptions about their own technology competence.

As shown below, 70 percent of faculty either agreed (18 percent) or strongly agreed (57 percent) that compared to their peers they consider themselves 'proficient' technology users. While there may be several reasons for this result, it seems likely that faculty who are interested in the use of technology are more likely to participate in a survey about technology use. By extension, those who are interested in technology may also be more likely to have the skills needed to complete a web-based survey.

Subgroup analyses comparing faculty who regard themselves as proficient compared to those who do not are described in detail in a separate section of this report (see below).

### **Additional Comments: Major themes and issues.**

Near the end of the survey faculty were invited to provide additional comments or suggestions about ways their college or the college system could better support their use of technology. About 22 percent of faculty (340) provided written comments in this section. The responses covered many topics, including references to the need for specific training and software,

---

<sup>7</sup> Further analysis would be required to confirm this proposition.

discipline-based applications concerns about inadequate release time, more technical support and greater commitment from campus leadership for technology-enabled instruction. A thematic analysis of the responses revealed a handful of core topics and related issues that were emphasized by many respondents. Those topics are summarized below:

1. Professional Development and Training: By far the predominant topic was the need for more technology training. For many instructors, the issue was one of simply having enough opportunities to learn how to incorporate technology into their teaching, especially discipline-specific topics and applications. One instructor put it this way: “The state needs to provide more funding for training, online course development, and support staff for technology. There is not enough time or support for me to do many of the things I’d like to.” Some instructors reported that current training is frequently offered at times that are not convenient for them. Many faculty, especially adjunct instructors, requested that training be offered outside of peak teaching hours, or online, to make it easier for them to participate.
2. Time to Learn and Apply: Lack of release time to participate in training was often mentioned, but just as often were concerns about how too little time is allowed for faculty to apply what they’ve learned in training to develop or convert their courses, to practice using the technologies they were taught. Many faculty emphasized that developing and implementing technology-enabled instruction requires more time and effort by faculty than ‘traditional’ courses. Faculty typically requested that more release time be provided to learn, develop and prepare to teach technology-enabled courses, rather than additional compensation. One instructor said: “The major hindrance to learning to use technology more effectively is ‘time’ [sic] to learn it and adapt course content to use it effectively.”
3. Mentoring and Peer-to-Peer Support: A number of respondents suggested development of a system of trained mentors or skilled peers who can work one-on-one with faculty (in-person and online). While some faculty reported that technical support at their campus was very helpful, many felt that information technology staff lack the training or experience to teach technology effectively to faculty. The need for one-on-one mentoring was especially important to faculty who were relatively inexperienced technology users. One new adopter said: “I would really like to use more technology in my teaching. However, I need lots of handholding and am worried about getting enough help.”
4. Technology Infrastructure to Support Instruction: Many instructors said their campus or department lacks the basic hardware and software infrastructure needed to support technology-enabled instruction; many said that more frequent hardware and software upgrades are needed. One instructor put it this way: “I am asked to use all this technology, but have outdated equipment and not enough bandwidth. So, I waste time waiting for things to happen. I was an early adopter and now I am paying for it with antiquated equipment. I can do better using a laptop and wireless than I can using my desktop computer. That is just wrong.”

Many faculty said they were frustrated because their classrooms are not equipped with (or organized to effectively use) the hardware or software tools they need to use technology effectively in their teaching. Other faculty emphasized that their students need better access to technology as well.

5. Technical Support: Even though faculty indicate they have a preference for peer-to-peer contact for training and information on technology, they also want additional technical support. Most often, faculty say they want this technical support to come from campus IT departments and experts for hardware, software and general application assistance. But many faculty report that their IT departments are already spread too thin, while others reported that IT staffs focus so much on maintaining administrative systems that they cannot adequately support their instructional needs. According to one instructor: “[College] needs more technicians to service and address the software and hardware needs of instructors. Technicians are overworked and underpaid. The college needs to hire more techs to meet the demand of the technologically savvy environment.”
6. Part-Time Faculty Needs: Many part-time instructors reported feeling left out of the technology and training loops at their campus. Like full-time faculty, many part-timers use their own equipment for technology-enabled teaching, and they typically develop technology skills on their own time. Part-timers report there are relatively few opportunities for training where they teach, and what is available is not offered at times that are convenient for them; many requested more online training options through their college. Part-timers echoed the concerns of full-time faculty about inadequate or outdated hardware and software, and poorly-organized classrooms, but they also indicated that their access to technology is very limited or restricted by the college.
7. Technology Must Support Learning: Many faculty cautioned not to invest in technology ‘for technology’s sake.’ Rather, technology investments should be based on evaluation research and other evidence that specific technology investments will enhance teaching and boost student learning. One faculty member wrote the following: “Some parts of the ‘technology thing’ [sic] are mere fads; some are sound practices of already proved worth; some are promising avenues which will take additional refinement. Yet we make policy (and allocate funding) without sufficient attention to this distinction. This situation poses an astonishingly complex barrier to developing sound policy. I wish you good luck and great wisdom—you’ll need both.”
8. Shared Library Resources: Several faculty emphasized to the need for an integrated system that would enable faculty and students to have centralized access to university library collections and databases so that students could use these resources in their courses and research, and for use by faculty to enhance their courses and stay current in their disciplines.

## Sub-Group Analyses

The collection of various demographic variables from respondents enabled separate analyses of survey results by sub-group. The overall focus of the research on identifying main effects and time constraints limited the number of sub-analyses conducted in this report. The selection of sub-analyses was based on sponsor input and preliminary analyses by the author. The results of these analyses are described below.

1. **Analyses by Proficiency:** As described earlier, about 70 percent of faculty either agreed (18 percent) or strongly agreed (57 percent) that compared to their peers they are ‘proficient’ technology users. In comparing survey responses of those who viewed themselves as technologically proficient with those who do not, several interesting patterns emerged:

### a. Proficient users:

- Teach substantially more classes that incorporate technology (electronic classrooms, web-enhanced courses, hybrid and fully online courses)
- Use more types of technology tools (all types, and especially higher-level technologies such as new electronic content tools, etc.)
- Tend to be positive in their attitudes about the use of technology and its benefits
- Want additional training, especially in higher-level technologies
- Prefer self-study, professional workshops/conferences, and online options for technology training.

### b. Non-proficient users:

- Teach fewer classes using technology of all types
- Use lower-level technologies and tools in their teaching (i.e., basic electronic content tools, but not many use newer ECTs or other more advanced tools).
- Are moderately positive about technology, and they are less sure of its benefits
- Want training in basic and low-level technologies
- Prefer other instructors, college it/technology department classes, and professional workshops/conferences as their sources of technology training.

2. **Analyses by age group:** Relatively few differences were observed when the survey items were broken out by age group. There was a slight trend among instructors in the 40-49 age group to use technology more often (number of classes), and to use more types of advanced technologies (i.e., new electronic content tools, communication and social networking tools) than instructors in the other age cohorts, but these trends were not systematic. Other selected findings include:

- Faculty in the 60-69 age cohort were less likely to view themselves as being ‘proficient’ technology users; however, they were just as likely as other age cohorts to agree that additional training would make them more inclined to use technology in their teaching.

- At the same time, there was a trend among faculty in the older age groups to be more guarded in their responses about the benefits of technology for increasing student learning.
  - Faculty in the 50-59 and 60-69 age cohorts were more likely than the other age cohorts to identify basic electronic content tools, productivity tools and communication tools as among their highest priorities for training in the future. These two cohorts were also less likely than the other age cohorts to identify training in social networking tools or learning management tools as a high priority. These results are generally consistent with the sub-analyses regarding self-reported proficiency, described earlier.
3. **Analyses by Teaching Status (Full-time vs. Part-time Faculty):** It is important to note that the proportion of part-time faculty who completed the survey was smaller (about 30 percent) than the broader population of part-timers who teach at Washington CTCs (about 67 percent). Nevertheless, the large sample size enabled comparisons of these two groups across the survey items. Some of the key findings include:
- Full-time faculty report that they teach more classes using electronic classrooms or labs, and web-enhanced courses, but there is not much difference between full-time and part-time faculty on their use of hybrid or totally online courses.<sup>8</sup>
  - Part-time faculty are somewhat less likely than full-timers to become aware of technologies through other instructors, professional associations, journals or newsletters, conferences and workshops, or college librarians, designers or distance learning staffs. Part-timers are somewhat more likely to say they became aware of technologies through undergraduate/graduate classes or through classes on online/technology and teaching.
  - Full-timers are somewhat more likely to report that other instructors and professional conferences/workshops are important sources about new technologies. Part-timers are somewhat more likely to suggest other sources to learn about new technologies, especially undergraduate-graduate coursework, and classes on online/technology and teaching.
  - Part-timers are somewhat more likely to identify college IT/technology departments and online classes as important sources of training for developing technology skills. These findings are consistent with written comments by part-timers, described earlier, about the need for training and support options that are more convenient for them.

---

<sup>8</sup> Analyses of technology use by employment status are not readily comparable since part-time faculty typically teach fewer classes during an academic year than full-time faculty. For the same reason, however, the finding that part-timers teach hybrid and fully online courses no less often than full-time faculty suggests that part-timers probably account for a larger proportion of technology-enabled instruction overall. Further study beyond this project would be needed to confirm this proposition.

- Part-timers (56 percent) are less likely than full-time faculty (68 percent) to agree that incorporating technology into teaching will require a lot of additional time.

## **Part Two: Faculty Focus Groups**

Three faculty focus groups were convened to review the preliminary survey results, to confirm, correct or clarify the findings, and to collect additional data directly from faculty who were considered to be advanced technology users. As described earlier, the rationale for selecting experienced users was that these individuals could provide useful input on basic technology training needs and options, as well as input on advanced technologies, tools and training methods. Faculty members who participated represented a diverse mix of departments, program areas, and levels of college teaching experience.

Summary notes from each of the three focus group meetings are included in Appendix C. The notes were reviewed and edited to ensure confidentiality.

The focus group process included a standard protocol that was used for each 90-minute meeting. The author presented the preliminary survey findings to each group, followed by a facilitated discussion of the major findings. Key discussion topics included the following:

1. Accuracy of the survey findings:
  - a. Types of technology used in classes and frequency of use
  - b. Effectiveness of tools
  - c. Technology awareness and key sources of new technology
  - d. Training priorities and sources
  - e. Perspectives and perceptions - use of technology in teaching
  
2. Other considerations for supporting faculty technology use

### **Confirmation and clarification**

All three groups confirmed the survey findings, and there was broad support for the interpretation of the results; none of the focus group participants reported that the findings appeared to be erroneous or that the general interpretation of the findings was incorrect.

The few exceptions voiced by faculty were related to the general structure of the survey and definitions. For example, a faculty member in one group commented that the general use of “technology” was very generic as used in some sections of the survey; he suggested that future survey projects should more clearly define this term. An instructor from another group pointed to the difficulty of defining technology “proficiency” as used in the survey. Several faculty from each group expressed interest in additional breakouts of the results by such demographic variables as discipline, age and experience.

### **Additional Themes and Input**

Content analyses of the focus group input provided additional depth and meaning to the survey results; faculty input helped to clarify some of the survey comments and also identified some of the underlying challenges and opportunities for future use of teaching and learning technologies. Several dominant themes were expressed during all three meetings, while others were more

specific to particular colleges or individuals. Included below is a summary of the dominant themes that cut across all three groups.

1. **Pressure to use technology:** Many instructors reported that they are pressured to use technology as a means to boost enrollments or to increase teaching efficiency. Faculty described how offering online or hybrid courses and alternatives for students is viewed as another way to market college programs to a broader number of students. Many faculty said that while they agree that giving students more options is positive, administrators' motivation is to increase student enrollments; faculty said the expectation to convert traditional courses into online and hybrid formats is frequently not accompanied by the necessary funding, time and technical support needed to develop and deliver high quality programs.
2. **Lack of faculty input:** A related concern expressed by many faculty was that the institutional pressure to use teaching technologies has frequently resulted in poor decisions about the choice of technology tools; there were many instances where faculty pointed to decisions by administrators to invest in hardware, software and licenses for technology tools without consulting with faculty who were experienced technology users to help determine which options would be most effective and useful to faculty. The result, according to many faculty, was being "stuck" with expensive investments in technologies that were ineffective or that faculty found difficult to use.
3. **Advanced needs of early adopters:** Focus group participants comprised a unique group of instructors who were selected in part for their advanced knowledge and use of teaching and learning technologies. A unique problem they face is that they often are more knowledgeable about teaching and learning technologies than the trainers and IT support staffs who are tasked to support them. This is not an unfamiliar condition for these faculty: early adopters are advanced, in part, because they have taken it upon themselves to learn these technologies. However, for these faculty—and other proficient users—the training options sponsored by colleges are often geared to new or moderately skilled users, with few advanced courses or assistance. Early adopters compensate by looking outside of the campus community for advanced training; however, this requires additional time and effort outside of their regular work, and there are no guarantees that the technologies they find most useful will be recognized or supported at their campuses.
4. **Early adopters as trainers and mentors:** Focus group participants were willing to support the college by serving as mentors and trainers to their faculty colleagues. Indeed, they expressed great interest in serving in this role on their campuses and system-wide, as needed. But this group of experienced users was also quick to say that they would need adequate release time, a technology infrastructure (appropriate hardware, software, facilities and IT support) and a commitment from campus leadership for them to provide this unique service to other faculty.

5. **Centralized technology library and network:** Faculty stressed the need for a centralized site where all faculty could go to seek information, tools and support for their use of teaching and learning tools; many thought this should be a system-wide service. Moreover, faculty saw this resource as a vehicle for advanced users to submit examples of their work to adapt and adopt teaching and learning technologies into their courses and classrooms. Faculty also saw the potential for this site to encourage faculty networking opportunities, online training and mentoring for instructors who want support from other faculty in their disciplines or to get feedback on new technology tools or teaching strategies.
6. **Effective tools and practices:** Participants recommended that additional information and research should be made available to faculty to help them discern the effectiveness of various teaching and learning technologies, and to assist them in selecting which tools are most appropriate for their courses. Faculty pointed out that the tools and applications that are appropriate for some disciplines and classes can vary considerably, and that both advanced and new technology users would benefit from research and evidence-based recommendations about the types of tools and strategies are most likely to prove effective in their teaching.

Although faculty were asked to focus specifically on the technology needs of instructors, individuals in each group were adamant that faculty needs and the future uses of teaching and learning technologies are dependent on the characteristics and circumstances of the students they are intended to serve. The primary themes, observations and recommendations raised by instructors during each focus group included the following:

- A. **Don't assume students have technology skills:** Faculty noted that while many students are advanced users of various technologies, many are not. Similarly, instructors reported that many students who are skilled in the use of some personal technology devices and software (the iPod, for example) frequently have little knowledge of other technologies, including the tools commonly used for online college courses and programs. The assumption by administrators (and students) that they can quickly master teaching and learning technology tools, or that online courses will somehow be easier, has caused many students to struggle in online courses and require tutoring in the technologies. A number of instructors said they believe this is a contributing cause of high dropout rates in many online courses.

Many instructors stressed that the socio-economic status, ethnicity and geographic location of students, and related circumstances can have a profound effect on student participation in online education. These factors can affect the extent of students' experience with some technologies, their willingness to participate in technology-enhanced classes and programs, and their ability to invest in hardware and software needed to participate in online and hybrid courses. The availability of Internet services available to students in their communities (whether broadband or dialup, for instance) can also influence student participation. Students in rural communities may have limited access to these resources due to their distance from a local college or library. Students

for whom English is a second language must also learn and adapt to a technology lexicon, and their basic training needs may be higher compared to other students.

Taken together, these factors related to how prepared students are for technology-enhanced education, can present many challenges for faculty. For instance, disparity in the skill levels among student populations can require faculty to spend a great deal of time tutoring some students in how to use technology tools and technical problem solving, rather than focusing on course content or pedagogy and can discourage faculty from learning or using higher level technology tools in their courses; lack of student readiness may cause faculty to be late-adopters to avoid using some teaching and learning technologies entirely.

- B. **Implement technology skills assessments:** Faculty recommended that colleges (or the CTC system) should develop and require all incoming students to take an assessment to gauge students' level of technology proficiency. A few instructors indicated that an assessment of this type was already in use on their campus, and that it has proven to be a beneficial supplement to other placement tools and as a means for recommending developmental technology courses or training as a prerequisite for courses that use advanced technology tools.
  
- C. **Provide developmental technology courses:** A related recommendation by faculty was the development of a series of developmental courses to help students gain the skills needed to succeed in college courses that regularly use teaching and learning technologies. Results from the technology skills assessments could be used to determine the extent to which a student's technology skills are underdeveloped, and for which students should be encouraged to seek remediation. Faculty stressed that the need for basic technology skills is ubiquitous, and the lack of technology skills puts students at a disadvantage as learners in the classroom and as future employees in the workplace.

### **Part Three: Conclusions and Implications**

The survey results provide useful information about faculty technology use, including how faculty learn about teaching technologies and tools, their training preferences and their personal perspectives on the use of technology to support their instructional role. The focus group discussions confirmed the survey findings and provided additional themes for consideration. Although the design of the research limits our ability to generalize the findings to all faculty, the large number of respondents, reasonably similar demographic profiles, and analyses of written comments and focus group input provide a consistent foundation for the general conclusions and implications described below.

#### **Faculty Support Technology Use and Expansion**

Perhaps the single most telling finding of this study is that faculty generally have a positive view about the value and benefits of technology for themselves and for their students; they do not perceive that the use of technology in their teaching will have a deleterious effect on the role they play in providing or supporting student learning. While there were some slight variations in the degree of agreement, and some exceptions exist, this general trend was found to persist regardless of whether faculty regarded themselves to be proficient technology users, by differences in employment status, or among different age groups. Faculty are engaged in the use of technology for teaching, they view teaching and learning technologies as effective, and they are interested in being consulted as partners in expanding technology use at their colleges.

It comes as no surprise, then, that while the majority of faculty said they believe that incorporating new technologies into their teaching will require more time and effort, nearly three-quarters agreed that the use of technology should be expanded in their department. The majority of respondents consider themselves to be technologically proficient, and they already use many basic technologies in their teaching. For most, student expectations are influencing their willingness to learn more about technology-enabled teaching and apply it in their classrooms.

**Implication:** There is a high level of faculty support for incorporating technology into their teaching and expanding the use of technology within their departments and their colleges. But with this support comes expectations about faculty involvement: The survey results, written comments and key topics raised by faculty during the focus groups underscore that instructors appreciate and expect to be consulted about what kinds of technologies should be added, and they want to be part of the process of identifying, evaluating and choosing technology enhancements. In short, faculty want and expect to be consulted, supported and included as partners in defining a successful future for technology-based instruction at their colleges.

#### **Current Infrastructure Limits Faculty Technology Use**

The results show an inverse relationship between faculty use of technology and how advanced a particular technology is. Put simply, the more advanced the technology, the less often it is used

by faculty in their teaching. The findings regarding technology effectiveness further underscore the limited use by faculty of advanced technology tools. The dividing line is most pronounced when online technologies are introduced, whether in hybrid courses or for fully online courses, which were used by only 35 percent of faculty last year.

While the limited use of technology is certainly related to a general lack of training and technical support, an equally important factor is that many instructors report that their college (or department) lacks the basic hardware, software and facilities infrastructure they need to use technology effectively in their teaching; they believe that upgrades on each of these fronts are needed. Many written comments and focus group input from faculty described how under-equipped and poorly organized classrooms constrained or even prevented them from using instructional technologies in their teaching.

While instructors clearly want more teaching and learning technology training and assistance to come from their peers, they also want skilled technical support to come from other sources. But more than a third of respondents (36 percent) said the support they currently receive is not adequate. Many faculty wrote that inadequate resources and priorities cause their IT departments to be spread too thin, or cause IT staffs to focus so much on maintaining administrative systems that they cannot adequately support their instructional needs; early adopters are often more knowledgeable and skilled in these technologies than the IT staffs who are assigned to support them.

The perceived lack of infrastructure and technical support puts faculty in a negative double-bind. First, faculty do not believe they have the tools they need to use technology effectively, even if they have had training. Second, those who *do* possess the skills and interest in using technology tools in their teaching are faced with infrastructure limitations and related obstacles that moderate or prevent their success. These conditions likely dampen faculty enthusiasm and may reduce their willingness to use new technology or to pursue additional training; written comments and focus group input from faculty suggest that this has already occurred.

In short, while many instructors are already using technology in their courses, they typically consist primarily of base-level technologies and tools. As discussed below, the availability of technology training (and the time needed to learn and apply technology for instructional purposes) probably help explain why instructional technologies are not used more frequently. But the lack of a stable technology infrastructure—including hardware, software and technical support—is also a plausible explanation for instructors' limited use of technology tools.

**Implication:** Faculty use of teaching and learning technology is limited by an inadequate technology infrastructure, not a lack of willingness to gain new skills or apply instructional technologies. Additional resources are needed to provide timely systems upgrades and technical assistance to ensure that instructors have access to an up-to-date technology foundation that supports their efforts to learn and apply technology tools in their teaching.

### **Peer-to-Peer Networks Critical**

There is a high level of consistency between what faculty identified as their key sources of technology information, and the importance they attach to those sources. The majority of instructors identify their peers as both their *primary source* of technology information and the *most important source* of new information about technology. This finding attests to their expressed preference for continued faculty-to-faculty connections to support their use of teaching and learning technologies. The identification of professional conferences and workshops as a second most frequently cited source provides further evidence of instructors' interest in opportunities for peer-to-peer interaction for the purpose of learning and applying teaching and learning technologies, and to further that learning through a faculty support network.

The strong preference for instructor-provided technology training provides further evidence of the importance that faculty place on colleagues to support their use of technology in their teaching. Indeed, many of the written comments provided by faculty underscore the value that faculty place on learning directly from one of their peers, primarily because they understand the core work of teaching and because they have experience in adapting and teaching technology-enabled courses. Faculty who are early adopters and willing to mentor less-proficient users are highly valued by their colleagues; experienced early adopters are very willing to mentor and support other faculty, especially if they are given adequate time, resources and institutional support.

It should also be noted, however, that most instructors do not discount the value of other sources of technology support; the survey results, comments and focus group input also attest to faculty's reliance on many other departments and individuals (IT, distance learning, libraries, and related staffs) as important providers of technology information and assistance.

**Implication:** Faculty value and desire peer-to-peer interaction to learn and use instructional technologies effectively. Establishing a faculty mentoring network (or networks) and resources that connect advanced technology users with expertise in general and discipline-specific applications to faculty would be a powerful strategy for delivering training, technical assistance and instructional support to instructors locally and system-wide.

### **More Training and Time to Use Technology**

The many different data points and comparative analyses included in this study all underscore that there is a strong desire by faculty for additional training to support their use of teaching and learning technologies. The results show that most instructors are eager to learn and apply new technology tools in their teaching. However, most instructors believe that they lack sufficient training opportunities and training options, and that there is too little time available to participate in training. Faculty report that they are not given adequate time or technical support to practice and apply these new tools in their courses.

As mentioned earlier, there were many differences in responses among faculty on these themes, depending mainly on their current level of technology use, proficiency, training priorities and

employment status. However, there are far more similarities than differences among faculty regarding the need for technology training. Specifically, instructors appear to be in agreement about their need for training that:

- Occurs more often and uses flexible delivery methods (such as online) and time schedules that are convenient for them
- Upgrades and builds upon their current technology skills, and also enables them to move to higher-levels and types of technology use that meet their instructional needs
- Leverages the experience of faculty mentors, who understand teaching and are skilled at implementing specific types of technologies into their teaching
- Includes adequate release time for training—which is more important to them than receiving additional compensation—in addition to adequate time *following* training to develop, adapt and upgrade their courses using these technologies

**Implication:** Instructors are unified in their desire for more technology training. A broader commitment is needed from colleges and the college system to expand professional development opportunities and provide more flexible training delivery options, while recognizing that adequate release time (more so than financial compensation) is critical to enable faculty to further develop their skills and successfully incorporate technology into their teaching.

## Part Four: Appendices

### Appendix A: Web Survey

#### Faculty Technology Survey

##### Introduction

The State Board for Community and Technical Colleges is sponsoring this survey to learn how faculty use technology, to identify training needs, and to hear how faculty believe technology can be used most effectively. Research on technology-based instruction shows that college students increasingly want and value technology incorporated into their college learning experiences.

All faculty in the community and technical college system are invited to complete this survey. The results will be used to create a vision, plan and funding model for technology that will be supported by the state. Washington State University (WSU) is conducting this survey for the State Board.

The survey will take 10-15 minutes to complete. Your participation is completely voluntary, and all responses will be treated confidentially. You are free to not answer any questions you may find objectionable, and you can decline to participate at any time.

If you have any questions regarding the study or the survey website, please contact the WSU Project Director, Alan Hardcastle, at 360-956-2167 or [hardcast@wsu.edu](mailto:hardcast@wsu.edu). This research has been reviewed and approved by the Institutional Review Board at WSU (IRB). If you have any questions about your rights as participants, you can contact the WSU IRB at (509) 335-3668.

##### Instructions

The survey questions relate to your current and future use of technology. Please read each question and reply using the response format provided.

1

Over the past academic year, *how many of your classes* have included the following types of technologies (check one response per category):



1	2	3	4	5	6
<b>1-3 classes</b>	<b>4-6 classes</b>	<b>7-9 classes</b>	<b>Over 9 classes</b>	<b>Don't Know</b>	<b>Not Used</b>

Electronic classrooms or computer labs

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Web Enhanced Courses (online tools used, but replaces no classroom time)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Hybrid Courses (some classroom time replaced by using online tools)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Online Classes (no regular classroom time)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------



## 2

Of the technologies you have used, *how effective* have the following technologies/tools been in enhancing your teaching? (check one response per category)

1	2	3	4	5	6
<b>Very Effective</b>	<b>Effective</b>	<b>Somewhat Effective</b>	<b>Not Effective</b>	<b>Don't Know</b>	<b>Not Used</b>

**Electronic Content Tools** (examples: full-text databases & other library resources, e-reserves, Publisher-provided materials, PowerPoint, lecture notes)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

**New Electronic Content Tools** (examples: Camtasia, Games, Animations, Podcasting, Other rich media tools)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

**Productivity Tools** (examples: Microsoft Word, Excel, Access)

1 2 3 4 5 6

**Assessment Tools** (examples: Online testing tools, Assignment managers, Surveys)

1 2 3 4 5 6

**Learning Management Tools** (examples: Outcomes management, Standards/objectives mapping, Intelligent or adaptive testing, Rule-based (selective) release of materials)

1 2 3 4 5 6

**Communication Tools** (examples: Discussion boards, Email with students, Chat/Whiteboard tools, Instant Messenger)

1 2 3 4 5 6

**Social Networking Tools** (examples: Live-meeting tools (e.g. Webex), Voice chat, Blogs, MySpace, Facebook, Wikis)


1 2 3 4 5 6



3


How did you become aware of technologies that can be incorporated into your teaching? (Select all that apply)


- Other Instructors
- Students
- Professional Association Journals/Newsletters
- Professional Conferences or Workshops
- College IT/Technology Department
- College Librarians, Instructional Designers, or Distance Learning office/staff
- Used in my undergrad/graduate classes or professional training
- Technology Companies/Vendors

- Class on Online/Technology and Teaching
  - Other (If selected please comment below in Question 5).
- 

---

4

Please **select your three most important sources of new information about technology** (\*NOTE: Select only 3 items.) 

- Other Instructors
  - Students
  - Professional Association Journals/Newsletters
  - Professional Conferences or Workshops
  - College IT/Technology Department
  - College Librarians, Instructional Designers, or Distance Learning office/staff
  - Used in my undergrad/graduate classes or professional training
  - Technology Companies/Vendors
  - Classes on Online/Technology and Testing
  - Other (If selected please comment below in Question 5).
- 

---

5


Do you have other important sources of technology awareness? (or you selected "Other" in question 3 or 4). If so, please describe in the box below:




## Faculty Technology Survey

Now we'd like your input on technology training for faculty...

6

Please **select your top 3** priorities for technology training in the future.  
(NOTE: \*select only 3 items) 


- Electronic Content Tools** (examples: full-text databases & other library resources, e-reserves, Publisher-provided materials, PowerPoint, lecture notes)
- New Electronic Content Tools** (examples: Camtasia, Games, Animations, Podcasting, Other rich media tools)
- Productivity Tools** (examples: Microsoft Word, Excel, Access)
- Assessment Tools** (examples: Online testing tools, Assignment managers, Surveys)
- Learning Management Tools** (examples: Outcomes management, Standards/objectives mapping, Intelligent or adaptive testing, Rule-based (selective) release of materials)
- Communication Tools** (examples: Discussion boards, Email with students, Chat/Whiteboard tools, Instant Messenger)
- Social Networking Tools** (examples: Live-meeting tools (e.g. Webex), Voice chat, Blogs, MySpace, Facebook, Wikis)
- Other** (if selected, please explain in comment box below)  


7

If there are other technologies for which you think additional training is important, please describe them here:

8

**Select the 3 most effective sources of training** for developing the skills needed to incorporate technology into your college teaching.

(NOTE: \*select only 3 items) 


- Other Instructors
- Students
- Self-taught/self-study
- Professional Conferences or Workshops
- College IT/Technology Department Classes on Online/Technology and Teaching
- Online Classes on Technology and Teaching
- College Librarians, Instructional Designers, or Distance Learning Office/staff
- College Technology Coordinator (One-on-one)
- Technology Companies/Vendors
- Other (if selected, please explain in comment box below)



9

If there are other sources of training that you believe are effective, please describe them here:

10

Please indicate the extent to which you agree or disagree with each of the 10 statements below: 

1	2	3	4	5
<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>Don't Know</b>

1) The training I have received has enabled me to use technology effectively in my teaching.

2) Compared to other faculty, I am a proficient technology user.

3) If the college/college system provided additional training I would be more inclined to use technology in my teaching.

4) My college provides me with adequate technology support and expertise to help me incorporate technology in my teaching.

5) Technology helps me teach more effectively.

6) Incorporating technology in my teaching helps to increase student learning.

7) Relying more on technology in my teaching will diminish my role in a student's education.

8) Even with more training and technical support, incorporating technology into my teaching will require a lot of additional time and effort.

9) The use of technology for teaching should be expanded in my

department/program.

1       2       3       4       5

10) Student expectations are motivating me to learn more about the use of technology in my teaching.

1       2       3       4       5



**Almost done! Only a few questions to go!**

## Faculty Technology Survey

11

Please indicate your primary college from the pull-down list. If you work for more than one college, please choose the one you work for most often.

12

Please use the following pull-down list to indicate the one department that best represents your primary teaching area/discipline (*select only one*).

13

Please indicate your age 

Under 30       30-39       40-49       50-59       60-69       70 or older

- 1
- 2
- 3
- 4
- 5
- 6



14

Please indicate your gender:

---

**Male**

**Female**

---

1

2



15

Please indicate your total years of *all* community or technical college teaching experience:

---

**<1-5**

**6-10**

**11-15**

**16-20**

**21-25**

**26-29**

**30+**

---

1

---

2

---

3

---

4

---

5

---

6

---

7



16

Please indicate your total years of community or technical college teaching experience *in Washington State*:

---

**<1-5**

**6-10**

**11-15**

**16-20**

**21-25**

**26-29**

**30+**

---

1

---

2

---

3

---

4

---

5

---

6

---

7



17

Please indicate your current teaching status:

---

**Full-time Tenured  
or Tenure Track**

---

**Part-time/Adjunct**

---

1

2



---

**18**

If you have other comments, thoughts or suggestions on ways the college or college system can better support your use of technology, please describe them below:

---

**THANK YOU for participating.**

Survey Page 3

---

## Appendix B: Number of Respondents by Program/Discipline Area

12. Please use the following pull-down list to indicate the one department that best represents your primary teaching area/discipline ( <i>select only one</i> ).		
ABE/ESL	130	9%
Agriculture/Agriculture Operations	9	1%
Architecture and Related Services	2	0%
Area, Ethnic, Cultural and Gender Studies	2	0%
Biological and Biomedical Sciences	72	5%
Business, Management, Marketing	100	7%
Communication/Journalism	42	3%
Communications Technologies	15	1%
Computer Information Sciences	85	6%
Construction Trades	23	2%
Education	45	3%
Engineering	17	1%
Engineering Technologies	17	1%
English Language and Literature	163	11%
Family and Consumer Sciences/Human Sciences	13	1%
Foreign Languages, Literature and Linguistics	31	2%
GED	15	1%
Health Professions and Related Clinical Sciences	197	13%
History	22	1%
Legal Professions and Studies	10	1%
Liberal Arts and Sciences/General Studies	35	2%
Library Science	35	2%
Mathematics and Statistics	116	8%
Mechanic and Repair Technologies	36	2%
Military Technologies	1	0%
Multi/Interdisciplinary Studies	3	0%
Natural Resources and Conservation	2	0%
Parks, Recreation, Leisure and Fitness Studies	9	1%
Personal and Culinary Services	8	1%
Philosophy and Religious Studies	6	0%
Physical Sciences	55	4%
Precision Production	3	0%
Psychology	37	2%
Public Administration and Social Services	4	0%
Science Technologies	12	1%
Security and Protective Services	4	0%
Social Sciences	69	5%
Theology and Religious Vocations	0	0%
Transportation and Materials Moving	9	1%
Visual and Performing Arts	56	4%
<b>Total</b>	<b>1510</b>	<b>100%</b>

## Appendix C: Faculty Focus Group Data Summaries

### Group A

- Technology use is now required for some programs, as in dental hygiene program at Pierce.
- Are we talking about other technologies in addition to online classrooms? Examples: video, ITV.
- Instructors in the group found no surprises in the findings.
- How instructors want “training” or professional development depends on the proficiency of the instructor and his/her interest in technology.
- Proficiency is difficult to define. For instance, a student might use MySpace, but the same student might not know how to attach a file.
- The results of the study should take the age of instructors into account. Does the age of the instructor matter in terms of technology use or proficiency?
- There are weaknesses in training/professional development, but also in the resources available and in assisted practice. Showing someone how to do something once is not enough. This is true for both faculty and students.
- The more proficient users of technology for teaching and learning are not afraid to try things or to “break” the software.
- Teaching and learning can be limited by available resources such as size limits or bandwidth.
- Colleges might restrict or discourage use of open source tools such as wikis, blogs or uTube because they fear losing control.
- Sometimes colleges buy a key technology, but they do not have enough people trained on campus to support the technology. Should cross train staff.
- How do you get information and energy from early adopters to new users? How do you get just in time help for faculty?
- How can we capture experiments by early adopters? Shoreline and Edmonds use mentors who are instructors given release time to help faculty. Problems: The mentor money is one-time. Once it’s gone, the program stops. Edmonds has four instructors who help faculty and do workshops during release time.
- Instructors prefer release time—time is key.
- Technology support programs that are self-support can be a problem.
- Faculty can use release time to develop products and then make the products available.
- Trainers should be faculty because they have invested in teaching and learning, not just in how the buttons work.
- Instructors will have both content and experience in using tools.

- Faculty mentors are less formal and more comfortable for other faculty.
- First level (early adopters) like to play with technology. Let that sift down to the second level of instructors who are only interested in using proven techniques and technologies.
- Most faculty want to know what does work and what to watch out for.
- Faculty want to learn from somebody who knows the tool.
- Content doesn't matter; function matters.
- Develop a pool of resources, a library that anyone can access.
- The discipline doesn't matter.
- Distance learning staff and IT staff are not the same. Distance learning staff would more likely know about teaching and learning. IT staff "keep the lights on."
- Distance learning staff has not increased in proportion to the number of technology users for teaching and learning.
- Suggestion that we talk about instructional technology rather than distance learning technology.
- There are turf wars between distance learning and IT. We need to merge and define functions so faculty can get the help they need easily.
- Maybe students are learning the wrong software. Maybe they should be learning Sharepoint rather than Blackboard because that is software they will use at work. Tools for life.
- Some software has a high learning curve (Chalk and Wire)
- Don't need technology to teach writing, but students will need to use it when they leave school.
- Schools are behind in professional software needed for vocational programs.
- Should the dollars be aimed at the 75% or the 25%? On the high achievers or the new users?
- Aim for a state library of electronic content tools and tutorials or galleries.
- Make clear whether tools are cross platform.
- How do you capture the interest of new users?
- We should create a network that includes all levels of users.
- Training should address the question, "Why use this stuff?" in the context of students, disciplines and technology literacy.
- Part time faculty might not be on the listserv used to invite to take the survey; they might be teaching for multiple colleges.
- The paperless classroom is hard to demand of part-time faculty because they might not have the resources or the time to learn new tools. Part-time faculty should be paid to attend training.
- How well are part-time instructors prepared?
- At some campuses, instructors are not allowed to teach online as part of load. This makes online "other." Colleges worry that instructors will not be on campus.

- Investment resources must include physical resources so tools just work.
- Early adopters figured it out on their own time and their own dime.
- We have no long-term maintenance plan for teaching and learning technologies.
- It is important to examine how technology affects student learning and retention.
- Retention is an issue for completely online courses. We should track this and develop techniques to mitigate difficulties of learning completely online: online office hours, face-to-face support, live chat (Meebo is a chat widget).
- Students should be required to do a technology assessment just as they are required to do a writing or math assessment so they will be ready to learn using new technologies. Week Zero in Blackboard is not enough.
- Testing—need to talk about this
- Figure out how to make online courses available to state employees (WAOL issue).
- Distance learning is not funded enough.
- Technology expert teachers should be paid more.
- We need to combat the perception that online courses are “lesser.”
- We need a state wide faculty resource.

## **Group B**

- Faculty responses to the online survey were based on what technology is available now and what works or is reliable now—not what they might prefer. So their choices would reflect what is important, but not necessarily what they would prefer.
- Instructors have to fend for themselves. They rely on other instructors because they have few options for assistance.
- Self-study works, but it might not be the first choice. Instructors want more training and more training options.
- On-campus trainers can't keep up with advanced faculty users. Training is aimed at the wide middle and there are too few trainers for the range of users
- A campus might not have any training except the online class (WAOL). And doing that is isolated
- How do we define technology for this survey? Is a book technology? A blackboard?
- Instructors need a guide to the available technologies, a guide to the “zoo,” a classification system. For instance, audio tools, note-taking tools, etc.
- Instructors don't know what is out there. Ann Snyder says, “Technology is only the things we don't understand.”
- Does technology drive pedagogy or does pedagogy drive technology? The answer for proficient users might be different from the answer for new users.
- Instructors—especially new users—want to know whether the technology will work before the invest time.
- Faculty mentors, who are compensated, perhaps, with release time, would be the best to help other instructors. Right now proficient users are doing this work for free. We need a reward for being mentors.
- Could provide mentors by campus or statewide. Maybe a list of experts.
- What would make it worthwhile to be a mentor? Proficient faculty are already mentoring other faculty, so anything that recognizes their efforts would be helpful.
- They would prefer “time” over money. (Release time)
- Another view: Hire somebody. Instructors are already spread thin. There should be a statewide person or persons, plus people needed at each campus.
- Instructors can't get help with advanced pedagogy, for example, how to create a great discussion online that is grounded in the course outcomes.
- Right now proficient users to go instructional designers for the “what” or “this is what I want to do; how do we make the technology work?” They don't go to instructional designers for “how” as in “How do I get a particular learning outcome?”
- Good help with pedagogy is the same problem for all levels of users. (In other words, instructors can get help with how to use the technology, but it is harder to get help with the pedagogical problems/issues for both proficient and new users)
- Pedagogy might be even more important for new users because they are still concerned that the technology will actually work for student learning. They don't know yet that it will.
- If we are learner focused, the type of technology doesn't matter.
- For example: Students in face-to-face class need a lot of training to use Blackboard. We can't assume all students have a certain level of technology skills or access. They don't.
- Who are we leaving behind when we use technology for teaching and learning?

- How do we manage the cost? How much cost is passed on to the students? For example, a college buys clickers for a few classrooms. Soon more instructors want to use clickers, but there is no budget to buy more. Another example: Instructors put materials online and push the cost of printing materials onto the students.
- If technology works well, it should help students learn. But how good does the technology have to be? Can we use any projector or does it have to be an Elmo?
- How do we balance teaching and learning technology costs with the other equipment costs, especially in technical programs?
- Students need to continue to learn how to use technology as they enter the work place; therefore, it is valuable to teach them using technology.
- Instructors don't hear about efficiencies of costs, but they hear about convenience for students. The concern for student learning is not driving the push for more technology
- What students want for convenience might not fit with what best helps them learn.
- Assessment. How do we know what works? How do we compare online and face-to-face classes and techniques? The drop rate is high; but the waiting list is also high. How do we evaluate that?
- It's not just about faculty use of technology but also about students. It's up to the faculty to teach students how to use classroom technology.
- No significant difference—many studies show that there is no significant difference in student performance in various delivery modalities. Instructors need access to that research and more research on how modality affects learning.
- The more important question is what makes ANY class work for students.
- We know that not all content, not all students, not all instructors do best online. So how do you figure out which ones, what content, which instructors should work electronically?
- Instructors resist the idea of using technology just because it is there.
- Overheads are still useful. Don't abandon older technology that works just because there is something new.
- We need funding for technology for individual instructors—they need equipment and software that works. Instructors should not be buying the technology themselves.
- Students need technology training—this is for all ages of students. Younger students are not necessarily proficient in the tools they need for college classrooms.
- How do you get students into advising? (so they don't fail in online courses) Maybe electronic advising that is available 24 x 7?
- Instructors in this group enjoy using technology and find it to be effective. They can get to know students better online.
- One instructor hated teaching online, but she uses lots of technology in her classrooms
- Online teaching is acceptable, but the cap is a deterrent because it is the same for online classes as it is for face-to-face classes, and online takes more effort.
- The instructor who teaches hybrid courses might be perceived by other instructors as trying to get out of work—meeting with students for fewer class sessions is “cheating.” Those who use online tools know that this is not true.
- Instructors might see online classrooms as a threat because the administration is pushing them. “They will MAKE us teach online.”

## Group C

- Interesting to break down by category—teaching discipline, age, years of teaching experience
- Want training in both newer tools and older tools. There is a difference in demographics and the experience of students. Some students might not have access or experience with online technologies. Therefore, students need the training, too.
- Students also need the infrastructure—if they are on dial-up or don't have [Microsoft] Office.
- Students might not know how to incorporate technology. Still have students in accounting or business technology who have never been on a computer. Some because they are older; younger ones have used computers in school.
- Look at support for students as well. Instructors have to take time away from classes to help students. Basic technology training, workshops, etc., for students. Computer Professor-type CD tools
- Spend a lot of time on opening email, attaching files, saving files. Students didn't even know they had an email account. They couldn't figure out how to get in. Didn't know how to attach files in Outlook. Then written in off-brand or old word processing file—don't know how to Save As.
- Hard to continue to be excited about technology when have to spend so much time explaining basics to students.
- No computer proficiency exam yet, but every college should have one. Wouldn't be hard. Do just like math and English skills.
- Students: Half place below college level in English and math, they will also place below level in computer skills.
- Treat like developmental courses—must build the tool box. Have to have basic keyboarding, etc., in order to succeed in other learning. Smart students can fail without those basic skills.
- Flip side is that students who do have the skills, and use the tools in class, still a problem. Used a textbook online, and students stopped doing assignments—computer gave them a headache, assignments were boring—no change in student achievement. Heard from students that they thought it was busy work, why come to class AND go on computer? That requires extra effort from students.
- Not seeing the push as coming from the students—maybe the push is from admin.
- Duke passed out iPods, asked professors to do podcasts, what happened?
- We just keep doing it. Business technology students have to have those skills. Need the skills when they transfer—need to use computers to get BA.
- to reach out to rural populations, technologies are useful for that. Also want to figure out how integrate into classes on campus—and that keeps this instructor going.
- Look at demographics of colleges and examine how technology is being used. Many students are first generation college students and don't have keyboarding skills (might use children to type for them).
- Technology that we are given doesn't allow us to do the things we need to do.

- Research online—arguing Supreme Court case—students don't know how to start, how to think about keywords, search engines, even though student appears to know technology (media player, instant messaging) doesn't have search skills.
- Library resources are lacking and are not evenly distributed across colleges. Online databases, for example.
- People who are implementing the technology do not understand how it would work in the classroom. If they consult faculty, they don't use the feedback. "We've already spent the money, so we're not going to try to reinvest."
- Persistent problem—technology not ready or doesn't work.
- 
- Can't make changes faculty ask for because college tied to a contract. Why stick with a product that doesn't work.
- Have to deploy it even if it doesn't work because they spent the money on it. Product came with bugs, no documentation, had to deploy without documentation and with bugs. Instructors make choice not to use.
- Pressure to use IT, but IT decisions made by IT staff rather than instruction. Doesn't work. Poor instructions for use.
- Faculty who are not proficient have given up. Or they rely on technology-proficient faculty.
- Have great IT technicians, but they can't fix everything because of the disconnect between IT tech support and IT management.
- Don't tell students they will have tools and not deliver.
- These are political and structural impediments.
- Training by IT staff individually or self-taught. Problem for part-time staff who don't have time to train.
- Instructor-led training is good. Need proficient users to bridge the gap between IT and faculty.
- More confused after some training because IT staff using a different language that non-proficient users don't understand.
- Maybe IT should have to teach for a quarter so they know what it means. They don't know how hard it is to use the tools.
- Still faxing stuff for ITV classes.
- Would you take release time to help teach or develop professional development? Would absolutely teach other faculty—it is so important to education. Those faculty who are interested need it. All agree.
- 
- Doing it anyway just getting called into offices as you walk down the hallway. Not wanting to be compensated for helping, but it's a lot.
- Willing to do it, but want technology that works.
- About both time and money.
- Instructor created handout for faculty and students to show how to use new tools. Otherwise no information. IT changes a feature, but doesn't tell anyone, so now the documentation is worthless, and the tool doesn't work anyway.
- Would love to help faculty, but would like it to be something that would persist for a while and work over time.
- Great atmosphere on campus—family—willing to help each other.

- Willingness is there, but maybe not even time allowed for IT folks to do it.
- Did training sessions for students in new student orientation, and it worked very well. Students learned how to use computers and the support person was available for the first week.
- Other faculty on campuses are technology proficient—yes, a few at each.
- No sense of how experience varies among other CTCs.
- Deans are pro-online. But experience was poor and backing off.
- Don't use WAOL because of technology fee, also because not “ours” and investment in local solution. But other tools are inadequate for teaching. Can't work with local peers in WAOL classroom because of pooled enrollment. Students benefit from working together.
- What would be ideal situation to learn about technology? Central location where could be sure would get information that is useful and reliable.
- Must focus on students. They have to know how to use technology. Students need to also be helped to understand the dangers of social networking and the safety of sites. Use and misuse of online social sites. Teach safety and responsibility.